

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 22, 2024

Paul Henchan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - Gollner T4N-R67W-S27 L02

Work Order #2407143

Enclosed are the results of analyses for samples received by Summit Scientific on 07/11/24 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 fluid and cursive, with the first name being more prominent.

Natalie Tessier For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Gollner T4N-R67W-S27 L02

Project Number: UWRWE-A3585-ABN

Project Manager: Paul Henchan

Reported:
07/22/24 07:21

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST-0.5FT	2407143-01	Soil	07/10/24 14:55	07/11/24 16:30
PWV E-4FT	2407143-02	Soil	07/10/24 15:00	07/11/24 16:30
PWV B-5FT	2407143-03	Soil	07/10/24 15:05	07/11/24 16:30
SEP DL-3FT	2407143-04	Soil	07/10/24 15:10	07/11/24 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.

Client: Fremont Enviornmental		Send Data To:		Send Invoice To:	
Address:		Project Manager: Paul Henehan		Company: Noble	
City/State/Zip:		E-Mail: Fremont Distribution List		Project Name/Location:	
Phone: 303-261-6246		Project Name: Gollner T4N-R67W-S27102		AFE#:	
Sampler Name: Stanley Gilbert		Project Number:		PO/Billing Codes: UWRWE-A3585-ABN	
				Contact: Mike Montoya	

					Preservative				Matrix			Analysis Requested							Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX, TMBs, Naph.	TPH	PAH (915)	EC, SAR, Ph, Boron	Metals (915)	TDS, Chloride, Sulfate	HOLD
1	AST-0.5FT	7/10/24	14:55	2			X			X			X	X	X	X	X		
2	PWV E-4FT		15:00	1															
3	PWV B-5FT		15:05	1															
4	SEP DL-3FT		15:10	1															
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: <i>[Signature]</i>	Date/Time: 7/10/24 17:20	Received by: Summit North	Date/Time: 7/10/24 17:20	TAT Business Days	Field DO	Notes:
Relinquished by: 52	Date/Time: 7/12/24 16:50	Received by: <i>[Signature]</i>	Date/Time: 7/12/24 16:50	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	Field Turb.	
Temperature Upon Receipt: 7.9	Corrected Temperature: 0	IR gun #:		HNO3 lot #:		

S₂

Sample Receipt Checklist

S2 Work Order#

2407143

Client: Fremont

Client Project ID:

Gollner T4N-R6TW-S27 102

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #:

☐ ☐ ☐ ☐ ☐

Matrix (Check all that apply)

Air

☐

Soil

☒

Solid

☐

Water

☐

Other

☐

Temp (°C)

7.9

Thermometer #

1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ice
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	no times
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Custodian Printed Name

Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

AST-0.5FT
2407143-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/10/24 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHG0341	07/12/24	07/13/24	EPA 8260B	
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	"	"	"	"	"	"	

Date Sampled: **07/10/24 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0383	95.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0397	99.3 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0425	106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/10/24 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHG0344	07/12/24	07/13/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/10/24 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	9.47	75.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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AST-0.5FT
2407143-01 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **07/10/24 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHG0331	07/12/24	07/13/24	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	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **07/10/24 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0215	64.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0184	55.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/10/24 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHG0340	07/12/24	07/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/10/24 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Reported:
07/22/24 07:21

AST-0.5FT
2407143-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	6.02	0.200	mg/kg dry	1	BHG0346	07/12/24	07/16/24	EPA 6020B
Barium	187	0.400	"	"	"	"	"	"
Cadmium	0.425	0.200	"	"	"	"	"	"
Copper	7.12	0.400	"	"	"	"	"	"
Lead	14.2	0.200	"	"	"	"	"	"
Nickel	7.29	0.400	"	"	"	"	"	"
Silver	0.0631	0.0200	"	"	"	"	"	"
Zinc	25.6	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/10/24 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0379	07/15/24	07/15/24	EPA 7196A	

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

Date Sampled: **07/10/24 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	40.0	0.0500	mg/L dry	1	BHG0339	07/12/24	07/16/24	EPA 6020B	
Magnesium	7.22	0.0500	"	"	"	"	"	"	
Sodium	0.859	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/10/24 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0328	0.00100	units	1	BHG0421	07/16/24	07/16/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/10/24 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Reported:
07/22/24 07:21

AST-0.5FT
2407143-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	85.6	%	1	BHG0337	07/12/24	07/12/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/10/24 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0804	0.0100	mmhos/cm	1	BHG0357	07/12/24	07/15/24	EPA 120.1	

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

Date Sampled: **07/10/24 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.57		pH Units	1	BHG0358	07/12/24	07/15/24	EPA 9045D	

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Project: Noble - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

PWV E-4FT
2407143-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/10/24 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHG0341	07/12/24	07/13/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.060	0.0050	"	"	"	"	"	"	
Xylenes (total)	5.2	0.10	"	10	"	"	07/13/24	"	
1,2,4-Trimethylbenzene	6.7	0.050	"	"	"	"	"	"	E
1,3,5-Trimethylbenzene	4.3	0.050	"	"	"	"	"	"	
Naphthalene	0.16	0.0038	"	1	"	"	07/13/24	"	
Gasoline Range Hydrocarbons	290	5.0	"	10	"	"	07/13/24	"	

Date Sampled: **07/10/24 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0345	86.3 %	50-150		"	"	07/13/24	"	
Surrogate: Toluene-d8	0.118	295 %	50-150		"	"	"	"	S-02
Surrogate: 4-Bromofluorobenzene	0.183	457 %	50-150		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/10/24 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1900	50	mg/kg	1	BHG0344	07/12/24	07/13/24	EPA 8015M	
C28-C36 (ORO)	240	50	"	"	"	"	"	"	

Date Sampled: **07/10/24 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.34	58.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Reported:
07/22/24 07:21

PWV E-4FT
2407143-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/10/24 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0565	0.00500	mg/kg	1	BHG0331	07/12/24	07/13/24	EPA 8270D SIM	O-02
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.00630	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	0.0383	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0157	0.00500	"	"	"	"	"	"	
Fluorene	0.110	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.0452	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.691	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	1.97	0.00500	"	"	"	"	"	"	

Date Sampled: **07/10/24 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.00696	20.9 %	40-150		"	"	"	"	S-04
Surrogate: Fluoranthene-d10	0.0145	43.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/10/24 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHG0340	07/12/24	07/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/10/24 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

PWV E-4FT
2407143-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	5.17	0.200	mg/kg dry	1	BHG0346	07/12/24	07/16/24	EPA 6020B
Barium	155	0.400	"	"	"	"	"	"
Cadmium	0.278	0.200	"	"	"	"	"	"
Copper	6.59	0.400	"	"	"	"	"	"
Lead	12.1	0.200	"	"	"	"	"	"
Nickel	6.81	0.400	"	"	"	"	"	"
Silver	0.0568	0.0200	"	"	"	"	"	"
Zinc	108	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/10/24 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0379	07/15/24	07/15/24	EPA 7196A	

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

Date Sampled: **07/10/24 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	69.8	0.0500	mg/L dry	1	BHG0339	07/12/24	07/16/24	EPA 6020B	
Magnesium	8.23	0.0500	"	"	"	"	"	"	
Sodium	31.3	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/10/24 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.944	0.00100	units	1	BHG0421	07/16/24	07/16/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/10/24 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

PWV E-4FT
2407143-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	81.5	%	1	BHG0337	07/12/24	07/12/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/10/24 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.147	0.0100	mmhos/cm	1	BHG0357	07/12/24	07/15/24	EPA 120.1	

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

Date Sampled: **07/10/24 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.01		pH Units	1	BHG0358	07/12/24	07/15/24	EPA 9045D	

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Project: Noble - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

PWV B-5FT
2407143-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/10/24 15:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHG0341	07/12/24	07/16/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.014	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.0089	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/10/24 15:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0487	122 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0439	110 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0416	104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/10/24 15:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	95	50	mg/kg	1	BHG0344	07/12/24	07/13/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/10/24 15:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.24	73.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

PWV B-5FT
2407143-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/10/24 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHG0331	07/12/24	07/13/24	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	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.00555	0.00500	"	"	"	"	"	"	

Date Sampled: **07/10/24 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0228	68.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0141	42.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/10/24 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHG0340	07/12/24	07/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/10/24 15:05**

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 - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

PWV B-5FT
2407143-03 (Soil)

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Total Metals by EPA 6020B

Arsenic	6.21	0.200	mg/kg dry	1	BHG0346	07/12/24	07/16/24	EPA 6020B
Barium	186	0.400	"	"	"	"	"	"
Cadmium	0.274	0.200	"	"	"	"	"	"
Copper	5.92	0.400	"	"	"	"	"	"
Lead	9.99	0.200	"	"	"	"	"	"
Nickel	6.23	0.400	"	"	"	"	"	"
Silver	0.0492	0.0200	"	"	"	"	"	"
Zinc	268	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/10/24 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0379	07/15/24	07/15/24	EPA 7196A	

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

Date Sampled: **07/10/24 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	26.8	0.0500	mg/L dry	1	BHG0339	07/12/24	07/16/24	EPA 6020B	
Magnesium	3.34	0.0500	"	"	"	"	"	"	
Sodium	77.6	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/10/24 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.76	0.00100	units	1	BHG0421	07/16/24	07/16/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/10/24 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

PWV B-5FT
2407143-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	83.5	%	1	BHG0337	07/12/24	07/12/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/10/24 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.579	0.0100	mmhos/cm	1	BHG0357	07/12/24	07/15/24	EPA 120.1	

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

Date Sampled: **07/10/24 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.35		pH Units	1	BHG0358	07/12/24	07/15/24	EPA 9045D	

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Project: Noble - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

SEP DL-3FT
2407143-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/10/24 15:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHG0341	07/12/24	07/13/24	EPA 8260B	
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	"	"	"	"	"	"	

Date Sampled: **07/10/24 15:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0446	112 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0405	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0433	108 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/10/24 15:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHG0344	07/12/24	07/13/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/10/24 15:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.60	68.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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PO Box 1289
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Project: Noble - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

SEP DL-3FT
2407143-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/10/24 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHG0331	07/12/24	07/13/24	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	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.00747	0.00500	"	"	"	"	"	"	

Date Sampled: **07/10/24 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0224	67.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0211	63.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/10/24 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHG0340	07/12/24	07/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/10/24 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

SEP DL-3FT
2407143-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	5.62	0.200	mg/kg dry	1	BHG0346	07/12/24	07/16/24	EPA 6020B
Barium	126	0.400	"	"	"	"	"	"
Cadmium	0.237	0.200	"	"	"	"	"	"
Copper	6.46	0.400	"	"	"	"	"	"
Lead	9.72	0.200	"	"	"	"	"	"
Nickel	6.99	0.400	"	"	"	"	"	"
Silver	0.0743	0.0200	"	"	"	"	"	"
Zinc	23.4	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/10/24 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0379	07/15/24	07/15/24	EPA 7196A	

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

Date Sampled: **07/10/24 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	18.1	0.0500	mg/L dry	1	BHG0339	07/12/24	07/16/24	EPA 6020B	
Magnesium	6.40	0.0500	"	"	"	"	"	"	
Sodium	24.2	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/10/24 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.24	0.00100	units	1	BHG0421	07/16/24	07/16/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/10/24 15:10**

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

Project: Noble - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

SEP DL-3FT
2407143-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	86.9	%	1	BHG0337	07/12/24	07/12/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/10/24 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.350	0.0100	mmhos/cm	1	BHG0357	07/12/24	07/15/24	EPA 120.1	

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

Date Sampled: **07/10/24 15:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.72		pH Units	1	BHG0358	07/12/24	07/15/24	EPA 9045D	

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Wellington CO, 80549

Project: Noble - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

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 BHG0341 - EPA 5030 Soil MS

Blank (BHG0341-BLK1)

Prepared & Analyzed: 07/12/24

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	0.0447		"	0.0400		112	50-150			
Surrogate: Toluene-d8	0.0402		"	0.0400		100	50-150			
Surrogate: 4-Bromofluorobenzene	0.0415		"	0.0400		104	50-150			

LCS (BHG0341-BS1)

Prepared & Analyzed: 07/12/24

Benzene	0.101	0.0020	mg/kg	0.100		101	70-130			
Toluene	0.117	0.0050	"	0.100		117	70-130			
Ethylbenzene	0.114	0.0050	"	0.100		114	70-130			
m,p-Xylene	0.226	0.010	"	0.200		113	70-130			
o-Xylene	0.110	0.0050	"	0.100		110	70-130			
1,2,4-Trimethylbenzene	0.109	0.0050	"	0.100		109	70-130			
1,3,5-Trimethylbenzene	0.111	0.0050	"	0.100		111	70-130			
Naphthalene	0.0960	0.0038	"	0.100		96.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0404		"	0.0400		101	50-150			
Surrogate: Toluene-d8	0.0411		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.4	50-150			

Matrix Spike (BHG0341-MS1)

Source: 2407123-01

Prepared & Analyzed: 07/12/24

Benzene	0.0930	0.0020	mg/kg	0.100	ND	93.0	70-130			
Toluene	0.106	0.0050	"	0.100	ND	106	70-130			
Ethylbenzene	0.0985	0.0050	"	0.100	ND	98.5	70-130			
m,p-Xylene	0.193	0.010	"	0.200	ND	96.3	70-130			
o-Xylene	0.0977	0.0050	"	0.100	ND	97.7	70-130			
1,2,4-Trimethylbenzene	0.0891	0.0050	"	0.100	ND	89.1	70-130			
1,3,5-Trimethylbenzene	0.0890	0.0050	"	0.100	ND	89.0	70-130			
Naphthalene	0.0870	0.0038	"	0.100	ND	87.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0466		"	0.0400		116	50-150			
Surrogate: Toluene-d8	0.0402		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.2	50-150			

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Project: Noble - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

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 BHG0341 - EPA 5030 Soil MS

Matrix Spike Dup (BHG0341-MSD1)		Source: 2407123-01			Prepared & Analyzed: 07/12/24					
Benzene	0.0895	0.0020	mg/kg	0.100	ND	89.5	70-130	3.91	30	
Toluene	0.119	0.0050	"	0.100	ND	119	70-130	11.3	30	
Ethylbenzene	0.113	0.0050	"	0.100	ND	113	70-130	13.7	30	
m,p-Xylene	0.221	0.010	"	0.200	ND	110	70-130	13.5	30	
o-Xylene	0.107	0.0050	"	0.100	ND	107	70-130	8.81	30	
1,2,4-Trimethylbenzene	0.0987	0.0050	"	0.100	ND	98.7	70-130	10.3	30	
1,3,5-Trimethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130	12.0	30	
Naphthalene	0.0878	0.0038	"	0.100	ND	87.8	70-130	0.927	30	
Surrogate: 1,2-Dichloroethane-d4		0.0354	"	0.0400		88.5	50-150			
Surrogate: Toluene-d8		0.0406	"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene		0.0392	"	0.0400		98.1	50-150			

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Project: Noble - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

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 BHG0344 - EPA 3550A

Blank (BHG0344-BLK1)

Prepared: 07/12/24 Analyzed: 07/13/24

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	11.6		"	12.5		93.0	30-150			

LCS (BHG0344-BS1)

Prepared: 07/12/24 Analyzed: 07/13/24

C10-C28 (DRO)	558	50	mg/kg	500		112	70-130			
Surrogate: o-Terphenyl	13.7		"	12.5		110	30-150			

Matrix Spike (BHG0344-MS1)

Source: 2407123-01

Prepared: 07/12/24 Analyzed: 07/13/24

C10-C28 (DRO)	500	50	mg/kg	500	ND	100	70-130			
Surrogate: o-Terphenyl	11.6		"	12.5		92.7	30-150			

Matrix Spike Dup (BHG0344-MSD1)

Source: 2407123-01

Prepared: 07/12/24 Analyzed: 07/13/24

C10-C28 (DRO)	423	50	mg/kg	500	ND	84.6	70-130	16.8	20	
Surrogate: o-Terphenyl	9.91		"	12.5		79.3	30-150			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHG0331 - EPA 5030 Soil MS

Blank (BHG0331-BLK1)

Prepared & Analyzed: 07/12/24

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	"								
Surrogate: 2-Methylnaphthalene-d10	0.0302		"	0.0333		90.5		40-150			
Surrogate: Fluoranthene-d10	0.0276		"	0.0333		82.8		40-150			

LCS (BHG0331-BS1)

Prepared & Analyzed: 07/12/24

Acenaphthene	0.0263	0.00500	mg/kg	0.0333		78.8		31-137			
Anthracene	0.0254	0.00500	"	0.0333		76.3		30-120			
Benzo (a) anthracene	0.0267	0.00500	"	0.0333		80.2		30-120			
Benzo (a) pyrene	0.0237	0.00500	"	0.0333		71.1		30-120			
Benzo (b) fluoranthene	0.0238	0.00500	"	0.0333		71.5		30-120			
Benzo (k) fluoranthene	0.0247	0.00500	"	0.0333		74.2		30-120			
Chrysene	0.0267	0.00500	"	0.0333		80.1		30-120			
Dibenz (a,h) anthracene	0.0220	0.00500	"	0.0333		66.1		30-120			
Fluoranthene	0.0253	0.00500	"	0.0333		75.9		30-120			
Fluorene	0.0263	0.00500	"	0.0333		79.0		30-120			
Indeno (1,2,3-cd) pyrene	0.0217	0.00500	"	0.0333		65.2		30-120			
Pyrene	0.0329	0.00500	"	0.0333		98.8		35-142			
1-Methylnaphthalene	0.0295	0.00500	"	0.0333		88.5		35-142			
2-Methylnaphthalene	0.0281	0.00500	"	0.0333		84.2		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0293		"	0.0333		87.8		40-150			
Surrogate: Fluoranthene-d10	0.0262		"	0.0333		78.6		40-150			

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Project: Noble - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHG0331 - EPA 5030 Soil MS

Matrix Spike (BHG0331-MS1)

Source: 2407125-01

Prepared & Analyzed: 07/12/24

Acenaphthene	0.0183	0.00500	mg/kg	0.0333	ND	54.8	31-137		
Anthracene	0.0191	0.00500	"	0.0333	ND	57.4	30-120		
Benzo (a) anthracene	0.0191	0.00500	"	0.0333	ND	57.3	30-120		
Benzo (a) pyrene	0.0170	0.00500	"	0.0333	ND	50.9	30-120		
Benzo (b) fluoranthene	0.0164	0.00500	"	0.0333	ND	49.2	30-120		
Benzo (k) fluoranthene	0.0169	0.00500	"	0.0333	ND	50.6	30-120		
Chrysene	0.0187	0.00500	"	0.0333	ND	56.1	30-120		
Dibenz (a,h) anthracene	0.0144	0.00500	"	0.0333	ND	43.3	30-120		
Fluoranthene	0.0169	0.00500	"	0.0333	ND	50.6	30-120		
Fluorene	0.0187	0.00500	"	0.0333	ND	56.1	30-120		
Indeno (1,2,3-cd) pyrene	0.0154	0.00500	"	0.0333	ND	46.1	30-120		
Pyrene	0.0210	0.00500	"	0.0333	ND	63.0	35-142		
1-Methylnaphthalene	0.0201	0.00500	"	0.0333	ND	60.2	15-130		
2-Methylnaphthalene	0.0196	0.00500	"	0.0333	ND	58.8	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0198		"	0.0333		59.4	40-150		
Surrogate: Fluoranthene-d10	0.0174		"	0.0333		52.2	40-150		

Matrix Spike Dup (BHG0331-MSD1)

Source: 2407125-01

Prepared & Analyzed: 07/12/24

Acenaphthene	0.0195	0.00500	mg/kg	0.0333	ND	58.5	31-137	6.44	30
Anthracene	0.0198	0.00500	"	0.0333	ND	59.3	30-120	3.18	30
Benzo (a) anthracene	0.0194	0.00500	"	0.0333	ND	58.1	30-120	1.37	30
Benzo (a) pyrene	0.0171	0.00500	"	0.0333	ND	51.2	30-120	0.476	30
Benzo (b) fluoranthene	0.0165	0.00500	"	0.0333	ND	49.6	30-120	0.714	30
Benzo (k) fluoranthene	0.0168	0.00500	"	0.0333	ND	50.4	30-120	0.443	30
Chrysene	0.0188	0.00500	"	0.0333	ND	56.3	30-120	0.333	30
Dibenz (a,h) anthracene	0.0171	0.00500	"	0.0333	ND	51.3	30-120	17.1	30
Fluoranthene	0.0193	0.00500	"	0.0333	ND	57.8	30-120	13.3	30
Fluorene	0.0195	0.00500	"	0.0333	ND	58.6	30-120	4.35	30
Indeno (1,2,3-cd) pyrene	0.0160	0.00500	"	0.0333	ND	48.1	30-120	4.29	30
Pyrene	0.0216	0.00500	"	0.0333	ND	64.8	35-142	2.90	30
1-Methylnaphthalene	0.0236	0.00500	"	0.0333	ND	70.7	15-130	16.1	50
2-Methylnaphthalene	0.0213	0.00500	"	0.0333	ND	63.8	15-130	8.26	50
Surrogate: 2-Methylnaphthalene-d10	0.0222		"	0.0333		66.6	40-150		
Surrogate: Fluoranthene-d10	0.0201		"	0.0333		60.4	40-150		

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

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

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

Batch BHG0340 - EPA 3050B

Blank (BHG0340-BLK1)

Prepared: 07/12/24 Analyzed: 07/13/24

Boron ND 2.00 mg/L

LCS (BHG0340-BS1)

Prepared: 07/12/24 Analyzed: 07/13/24

Boron 4.98 2.00 mg/L 5.00 99.6 80-120

Duplicate (BHG0340-DUP1)

Source: 2407137-01

Prepared: 07/12/24 Analyzed: 07/13/24

Boron 0.0521 2.00 mg/L 0.106 67.8 20 QR-01

Matrix Spike (BHG0340-MS1)

Source: 2407137-01

Prepared: 07/12/24 Analyzed: 07/13/24

Boron 5.08 2.00 mg/L 5.02 0.106 99.0 75-125

Matrix Spike Dup (BHG0340-MSD1)

Source: 2407137-01

Prepared: 07/12/24 Analyzed: 07/13/24

Boron 5.34 2.00 mg/L 5.02 0.106 104 75-125 4.96 25

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Project: Noble - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHG0346 - EPA 3050B

Blank (BHG0346-BLK1)

Prepared: 07/12/24 Analyzed: 07/17/24

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 (BHG0346-BS1)

Prepared: 07/12/24 Analyzed: 07/17/24

Arsenic	38.6	0.200	mg/kg wet	40.0	96.4	80-120
Barium	39.0	0.400	"	40.0	97.5	80-120
Cadmium	1.93	0.200	"	2.00	96.4	80-120
Copper	40.3	0.400	"	40.0	101	80-120
Lead	19.1	0.200	"	20.0	95.4	80-120
Nickel	40.4	0.400	"	40.0	101	80-120
Silver	1.92	0.0200	"	2.00	96.0	80-120
Zinc	39.5	0.400	"	40.0	98.7	80-120
Selenium	3.71	0.260	"	4.00	92.7	80-120

Duplicate (BHG0346-DUP1)

Source: 2407142-02

Prepared: 07/12/24 Analyzed: 07/17/24

Arsenic	5.83	0.200	mg/kg dry	5.41	7.40	20	QR-03
Barium	226	0.400	"	140	47.2	20	
Cadmium	0.322	0.200	"	0.288	11.1	20	
Copper	6.78	0.400	"	6.82	0.662	20	
Lead	11.0	0.200	"	11.0	0.160	20	
Nickel	7.85	0.400	"	7.57	3.63	20	
Silver	0.0555	0.0200	"	0.0475	15.5	20	
Zinc	25.5	0.400	"	24.9	2.68	20	
Selenium	ND	0.260	"	ND		20	

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Project: Noble - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHG0346 - EPA 3050B

Matrix Spike (BHG0346-MS1)

Source: 2407142-02

Prepared: 07/12/24 Analyzed: 07/17/24

Arsenic	55.7	0.200	mg/kg dry	53.3	5.41	94.3	75-125			
Barium	266	0.400	"	53.3	140	237	75-125			QM-07
Cadmium	2.87	0.200	"	2.67	0.288	97.0	75-125			
Copper	32.0	0.400	"	53.3	6.82	47.2	75-125			QM-05
Lead	35.8	0.200	"	26.7	11.0	92.8	75-125			
Nickel	33.1	0.400	"	53.3	7.57	47.8	75-125			QM-05
Silver	2.54	0.0200	"	2.67	0.0475	93.4	75-125			
Zinc	51.5	0.400	"	53.3	24.9	49.9	75-125			QM-05
Selenium	3.78	0.260	"	5.33	ND	70.8	75-125			QM-07

Matrix Spike Dup (BHG0346-MSD1)

Source: 2407142-02

Prepared: 07/12/24 Analyzed: 07/17/24

Arsenic	53.5	0.200	mg/kg dry	50.9	5.41	94.5	75-125	4.00	25	
Barium	213	0.400	"	50.9	140	145	75-125	21.8	25	QM-07
Cadmium	2.69	0.200	"	2.54	0.288	94.3	75-125	6.69	25	
Copper	30.4	0.400	"	50.9	6.82	46.3	75-125	5.14	25	QM-05
Lead	34.5	0.200	"	25.4	11.0	92.5	75-125	3.44	25	
Nickel	31.6	0.400	"	50.9	7.57	47.2	75-125	4.63	25	QM-05
Silver	2.39	0.0200	"	2.54	0.0475	92.3	75-125	5.85	25	
Zinc	49.7	0.400	"	50.9	24.9	48.9	75-125	3.47	25	QM-05
Selenium	3.44	0.260	"	5.09	ND	67.5	75-125	9.41	25	QM-07

Post Spike (BHG0346-PS1)

Source: 2407142-02

Prepared: 07/12/24 Analyzed: 07/17/24

Arsenic	113		ug/l	100	10.1	103	75-125			
Barium	381		"	100	262	119	75-125			
Cadmium	5.62		"	5.00	0.540	102	75-125			
Copper	61.8		"	100	12.8	49.0	75-125			QM-01
Lead	71.0		"	50.0	20.6	101	75-125			
Nickel	63.9		"	100	14.2	49.7	75-125			QM-01
Silver	5.11		"	5.00	0.0890	100	75-125			
Zinc	99.4		"	100	46.6	52.8	75-125			QM-01
Selenium	8.46		"	10.0	0.205	82.5	75-125			

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Project: Noble - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHG0379 - 3060A Mod

Blank (BHG0379-BLK1)

Prepared & Analyzed: 07/15/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHG0379-BS1)

Prepared & Analyzed: 07/15/24

Chromium, Hexavalent 25.2 0.30 mg/kg wet 25.0 101 80-120

Duplicate (BHG0379-DUP1)

Source: 2407143-01

Prepared & Analyzed: 07/15/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHG0379-MS1)

Source: 2407143-01

Prepared & Analyzed: 07/15/24

Chromium, Hexavalent 28.3 0.30 mg/kg dry 29.2 ND 96.8 75-125

Matrix Spike Dup (BHG0379-MSD1)

Source: 2407143-01

Prepared & Analyzed: 07/15/24

Chromium, Hexavalent 28.7 0.30 mg/kg dry 29.2 ND 98.2 75-125 1.44 20

Summit Scientific

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Project: Noble - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

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

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

Batch BHG0339 - General Preparation

Blank (BHG0339-BLK1)

Prepared: 07/12/24 Analyzed: 07/16/24

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

LCS (BHG0339-BS1)

Prepared: 07/12/24 Analyzed: 07/16/24

Calcium	5.07	0.0500	mg/L wet	5.00	101	70-130
Magnesium	5.47	0.0500	"	5.00	109	70-130
Sodium	5.61	0.0500	"	5.00	112	70-130

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Project: Noble - Gollner T4N-R67W-S27 L02

Project Number: UWRWE-A3585-ABN

Project Manager: Paul Henchan

Reported:
07/22/24 07:21

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

Summit Scientific

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

Batch BHG0337 - General Preparation

Duplicate (BHG0337-DUP1)		Source: 2406108-04			Prepared & Analyzed: 07/12/24						
% Solids	84.3		%		85.1			0.905		20	

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Project: Noble - Gollner T4N-R67W-S27 L02
Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

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

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

Batch BHG0357 - General Preparation

Blank (BHG0357-BLK1)

Prepared: 07/12/24 Analyzed: 07/15/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHG0357-BS1)

Prepared: 07/12/24 Analyzed: 07/15/24

Specific Conductance (EC) 0.151 0.0100 mmhos/cm 0.150 101 95-105

Duplicate (BHG0357-DUP1)

Source: 2407142-01

Prepared: 07/12/24 Analyzed: 07/15/24

Specific Conductance (EC) 0.202 0.0100 mmhos/cm 0.204 1.28 20

Summit Scientific

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PO Box 1289
Wellington CO, 80549

Project: Noble - Gollner T4N-R67W-S27 L02

Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

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

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

Batch BHG0358 - General Preparation

LCS (BHG0358-BS1)

Prepared: 07/12/24 Analyzed: 07/15/24

pH	9.13	pH Units	9.18	99.5	95-105
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Duplicate (BHG0358-DUP1)

Source: 2407142-01

Prepared: 07/12/24 Analyzed: 07/15/24

pH	8.51	pH Units	8.62	1.28	20
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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Gollner T4N-R67W-S27 L02

Project Number: UWRWE-A3585-ABN
Project Manager: Paul Henchan

Reported:
07/22/24 07:21

Notes and Definitions

S-04	A sample matrix effect prevented complete surrogate recovery.
S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
QM-01	The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
O-02	Due to matrix interference, the sample cannot be accurately quantitated. The reported result is qualitative.
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