

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 15, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - UPRC 23-1117 Flowline

Work Order #2408076

Enclosed are the results of analyses for samples received by Summit Scientific on 08/08/24 17:33. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Paul Shrewsbury

President



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - UPRC 23-1117 Flowline

Project Number: UWRWE-A2678-ABN

Project Manager: Jacob Whritenour

Reported:
08/15/24 09:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01R-W@3'	2408076-01	Soil	08/08/24 11:05	08/08/24 17:33
FL01-01@2'	2408076-02	Soil	08/08/24 10:50	08/08/24 17:33
FL01-02@2'	2408076-03	Soil	08/08/24 10:49	08/08/24 17:33

Case Narrative

Project name has been corrected to match COC on 8/15/2024.

This is a revision of the report originally sent on 8/15/2024 at 08:01 MT.

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4653 Table Mountain Drive
Golden, CO 80403
303-277-9310

Lab ID	Page 1 of 1
2408074	

Client: Noble/Tasman	Project Manager: Jake Whritenour	Company: ORION
Address: 6855 W. 119th Ave.	E-Mail: jwhritenour@tasman-geo.com	Project Name/Location:
City/State/Zip: Broomfield/CO/ 80020	Project Name: UPRC 23-1117 Flowline	AFE#: UNRWE-A2678-ABN
Phone: 810-923-0781	Project Number:	PO/Billing Codes:
Sampler Name: Shannon Walus		Contact: Miguel Barron

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested							Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	VOC-915	TPH-915	PAH-915	pH, EC, SAR	Boron-915	Metals-915		HOLD
1	FLOIR-WD3	8/18/24	1105	3			X		X				X	X	X	X	X	X		SAR, EC, pH by saturated paste
2	FLO1-01 @ 2'	I	1050	1			I		I				I	I	I	I	I	I		
3	FLO1-02 @ 2'	I	1049	1			I		I				I	I	I	I	I	I		
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: Shannon Walus	Date/Time: 8/18/24 1400	Received by: Tasman Lock Box	Date/Time: 8/18/24 1400	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: Tasman Lock Box	Date/Time: 8/24/24 1733	Received by: [Signature]	Date/Time: 8/24/24 1733	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 94	Corrected Temperature: 9	IR gun #: 1	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2408076

Client: NW&K Tasmah Client Project ID: UPRC 23-1117 Flowline

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

Matrix (Check all that apply) Air Soil/Solid Water Other

Temp (°C)

Thermometer #

	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"/>	<u>once</u>
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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.

AS
Custodian Printed Name

8/8/24
Date/Time



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - UPRC 23-1117 Flowline

Project Number: UWRWE-A2678-ABN
Project Manager: Jacob Whritenour

Reported:
08/15/24 09:38

FL01R-W@3'
2408076-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/08/24 11:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHH0253	08/09/24	08/12/24	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: **08/08/24 11:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0425	106 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0394	98.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0419	105 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/08/24 11:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHH0256	08/09/24	08/10/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **08/08/24 11:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.06	72.5 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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2408076-01 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **08/08/24 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0266	08/12/24	08/12/24	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: **08/08/24 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0185	55.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0270	80.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/08/24 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0245	08/09/24	08/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/08/24 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: UWRWE-A2678-ABN
Project Manager: Jacob Whritenour

Reported:
08/15/24 09:38

FL01R-W@3'
2408076-01 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	5.40	0.200	mg/kg dry	1	BHH0248	08/09/24	08/13/24	EPA 6020B
Barium	217	0.400	"	"	"	"	"	"
Cadmium	0.298	0.200	"	"	"	"	"	"
Copper	6.97	0.400	"	"	"	"	"	"
Lead	9.70	0.200	"	"	"	"	"	"
Nickel	7.76	0.400	"	"	"	"	"	"
Silver	0.0493	0.0200	"	"	"	"	"	"
Zinc	25.4	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/08/24 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0239	08/09/24	08/09/24	EPA 7196A	

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

Date Sampled: **08/08/24 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	107	0.0500	mg/L dry	1	BHH0294	08/12/24	08/14/24	EPA 6020B	
Magnesium	85.5	0.0500	"	"	"	"	"	"	
Sodium	126	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/08/24 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.20	0.00100	units	1	BHH0384	08/15/24	08/15/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/08/24 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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FL01R-W@3'
2408076-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	84.1	%	1	BHH0247	08/09/24	08/09/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/08/24 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.54	0.0100	mmhos/cm	1	BHH0295	08/12/24	08/13/24	EPA 120.1	

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

Date Sampled: **08/08/24 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.19		pH Units	1	BHH0296	08/12/24	08/13/24	EPA 9045D	

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Project: Noble - UPRC 23-1117 Flowline

Project Number: UWRWE-A2678-ABN
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Reported:
08/15/24 09:38

FL01-01@2'
2408076-02 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/08/24 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHH0253	08/09/24	08/12/24	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: **08/08/24 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0384	95.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0397	99.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0399	99.7 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/08/24 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHH0256	08/09/24	08/10/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **08/08/24 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.01	72.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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FL01-01@2'
2408076-02 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **08/08/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0266	08/12/24	08/12/24	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: **08/08/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0184	55.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0263	79.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/08/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0245	08/09/24	08/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/08/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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FL01-01@2'
2408076-02 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	4.55	0.200	mg/kg dry	1	BHH0248	08/09/24	08/13/24	EPA 6020B
Barium	185	0.400	"	"	"	"	"	"
Cadmium	0.297	0.200	"	"	"	"	"	"
Copper	6.29	0.400	"	"	"	"	"	"
Lead	8.36	0.200	"	"	"	"	"	"
Nickel	7.20	0.400	"	"	"	"	"	"
Silver	0.0444	0.0200	"	"	"	"	"	"
Zinc	22.6	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/08/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0239	08/09/24	08/09/24	EPA 7196A	

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

Date Sampled: **08/08/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	51.7	0.0500	mg/L dry	1	BHH0294	08/12/24	08/14/24	EPA 6020B	
Magnesium	10.8	0.0500	"	"	"	"	"	"	
Sodium	4.21	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/08/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.139	0.00100	units	1	BHH0384	08/15/24	08/15/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/08/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: UWRWE-A2678-ABN
Project Manager: Jacob Whritenour

Reported:
08/15/24 09:38

FL01-01@2'
2408076-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	85.9	%	1	BHH0247	08/09/24	08/09/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/08/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.311	0.0100	mmhos/cm	1	BHH0295	08/12/24	08/13/24	EPA 120.1	

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

Date Sampled: **08/08/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.43		pH Units	1	BHH0296	08/12/24	08/13/24	EPA 9045D	

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Project: Noble - UPRC 23-1117 Flowline

Project Number: UWRWE-A2678-ABN
Project Manager: Jacob Whritenour

Reported:
08/15/24 09:38

FL01-02@2'
2408076-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/08/24 10:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHH0253	08/09/24	08/13/24	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: **08/08/24 10:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0375	93.7 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0395	98.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0418	105 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/08/24 10:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHH0256	08/09/24	08/10/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **08/08/24 10:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.65	77.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Number: UWRWE-A2678-ABN
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Reported:
08/15/24 09:38

FL01-02@2'
2408076-03 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **08/08/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0266	08/12/24	08/12/24	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: **08/08/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0154	46.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0232	69.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/08/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0245	08/09/24	08/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/08/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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FL01-02@2'
2408076-03 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	5.14	0.200	mg/kg dry	1	BHH0248	08/09/24	08/13/24	EPA 6020B
Barium	190	0.400	"	"	"	"	"	"
Cadmium	0.296	0.200	"	"	"	"	"	"
Copper	6.38	0.400	"	"	"	"	"	"
Lead	9.19	0.200	"	"	"	"	"	"
Nickel	7.50	0.400	"	"	"	"	"	"
Silver	0.0467	0.0200	"	"	"	"	"	"
Zinc	23.0	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/08/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0239	08/09/24	08/09/24	EPA 7196A	

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

Date Sampled: **08/08/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	43.9	0.0500	mg/L dry	1	BHH0294	08/12/24	08/14/24	EPA 6020B	
Magnesium	12.2	0.0500	"	"	"	"	"	"	
Sodium	10.8	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/08/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.372	0.00100	units	1	BHH0384	08/15/24	08/15/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/08/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Reported:
08/15/24 09:38

FL01-02@2'
2408076-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	85.9	%	1	BHH0247	08/09/24	08/09/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/08/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.396	0.0100	mmhos/cm	1	BHH0295	08/12/24	08/13/24	EPA 120.1	

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

Date Sampled: **08/08/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.38		pH Units	1	BHH0296	08/12/24	08/13/24	EPA 9045D	

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Project Manager: Jacob Whritenour

Reported:
08/15/24 09:38

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 BHH0253 - EPA 5030 Soil MS

Blank (BHH0253-BLK1)

Prepared: 08/09/24 Analyzed: 08/12/24

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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0398		"	0.0400		99.6	50-150			
<i>Surrogate: Toluene-d8</i>	0.0384		"	0.0400		95.9	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0382		"	0.0400		95.6	50-150			

LCS (BHH0253-BS1)

Prepared: 08/09/24 Analyzed: 08/12/24

Benzene	0.0932	0.0020	mg/kg	0.100		93.2	70-130			
Toluene	0.108	0.0050	"	0.100		108	70-130			
Ethylbenzene	0.110	0.0050	"	0.100		110	70-130			
m,p-Xylene	0.216	0.010	"	0.200		108	70-130			
o-Xylene	0.104	0.0050	"	0.100		104	70-130			
1,2,4-Trimethylbenzene	0.0983	0.0050	"	0.100		98.3	70-130			
1,3,5-Trimethylbenzene	0.101	0.0050	"	0.100		101	70-130			
Naphthalene	0.0857	0.0038	"	0.100		85.7	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0370		"	0.0400		92.4	50-150			
<i>Surrogate: Toluene-d8</i>	0.0407		"	0.0400		102	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0379		"	0.0400		94.8	50-150			

Matrix Spike (BHH0253-MS1)

Source: 2408071-01

Prepared: 08/09/24 Analyzed: 08/12/24

Benzene	0.0885	0.0020	mg/kg	0.100	ND	88.5	70-130			
Toluene	0.102	0.0050	"	0.100	ND	102	70-130			
Ethylbenzene	0.0982	0.0050	"	0.100	ND	98.2	70-130			
m,p-Xylene	0.190	0.010	"	0.200	ND	95.2	70-130			
o-Xylene	0.0929	0.0050	"	0.100	ND	92.9	70-130			
1,2,4-Trimethylbenzene	0.0865	0.0050	"	0.100	ND	86.5	70-130			
1,3,5-Trimethylbenzene	0.0874	0.0050	"	0.100	ND	87.4	70-130			
Naphthalene	0.0841	0.0038	"	0.100	ND	84.1	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0460		"	0.0400		115	50-150			
<i>Surrogate: Toluene-d8</i>	0.0411		"	0.0400		103	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0412		"	0.0400		103	50-150			

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Project Number: UWRWE-A2678-ABN
Project Manager: Jacob Whritenour

Reported:
08/15/24 09:38

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 BHH0253 - EPA 5030 Soil MS

Matrix Spike Dup (BHH0253-MSD1)	Source: 2408071-01			Prepared: 08/09/24 Analyzed: 08/12/24						
Benzene	0.0738	0.0020	mg/kg	0.100	ND	73.8	70-130	18.1	30	
Toluene	0.0850	0.0050	"	0.100	ND	85.0	70-130	18.1	30	
Ethylbenzene	0.0868	0.0050	"	0.100	ND	86.8	70-130	12.3	30	
m,p-Xylene	0.170	0.010	"	0.200	ND	84.9	70-130	11.4	30	
o-Xylene	0.0821	0.0050	"	0.100	ND	82.1	70-130	12.3	30	
1,2,4-Trimethylbenzene	0.0741	0.0050	"	0.100	ND	74.1	70-130	15.4	30	
1,3,5-Trimethylbenzene	0.0753	0.0050	"	0.100	ND	75.3	70-130	14.8	30	
Naphthalene	0.0736	0.0038	"	0.100	ND	73.6	70-130	13.3	30	QM-07
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0413</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0408</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>99.0</i>	<i>50-150</i>			

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Project Number: UWRWE-A2678-ABN
Project Manager: Jacob Whritenour

Reported:
08/15/24 09:38

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 BHH0256 - EPA 3550A

Blank (BHH0256-BLK1)

Prepared & Analyzed: 08/09/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	11.7		"	12.5		94.0	30-150				

LCS (BHH0256-BS1)

Prepared: 08/09/24 Analyzed: 08/10/24

C10-C28 (DRO)	512	50	mg/kg	500		102	70-130				
Surrogate: <i>o</i> -Terphenyl	13.0		"	12.5		104	30-150				

Matrix Spike (BHH0256-MS1)

Source: 2408071-01

Prepared: 08/09/24 Analyzed: 08/10/24

C10-C28 (DRO)	505	50	mg/kg	500	ND	101	70-130				
Surrogate: <i>o</i> -Terphenyl	10.1		"	12.5		80.9	30-150				

Matrix Spike Dup (BHH0256-MSD1)

Source: 2408071-01

Prepared: 08/09/24 Analyzed: 08/10/24

C10-C28 (DRO)	456	50	mg/kg	500	ND	91.1	70-130	10.3	20		
Surrogate: <i>o</i> -Terphenyl	9.30		"	12.5		74.4	30-150				

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Reported:
08/15/24 09:38

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 BHH0266 - EPA 5030 Soil MS

Blank (BHH0266-BLK1)

Prepared & Analyzed: 08/12/24

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	0.0209		"	0.0333		62.6	40-150			
Surrogate: Fluoranthene-d10	0.0267		"	0.0333		80.1	40-150			

LCS (BHH0266-BS1)

Prepared & Analyzed: 08/12/24

Acenaphthene	0.0238	0.00500	mg/kg	0.0333		71.5	31-137			
Anthracene	0.0260	0.00500	"	0.0333		77.9	30-120			
Benzo (a) anthracene	0.0292	0.00500	"	0.0333		87.7	30-120			
Benzo (a) pyrene	0.0226	0.00500	"	0.0333		67.7	30-120			
Benzo (b) fluoranthene	0.0166	0.00500	"	0.0333		49.8	30-120			
Benzo (k) fluoranthene	0.0334	0.00500	"	0.0333		100	30-120			
Chrysene	0.0372	0.00500	"	0.0333		111	30-120			
Dibenz (a,h) anthracene	0.0170	0.00500	"	0.0333		50.9	30-120			
Fluoranthene	0.0290	0.00500	"	0.0333		86.9	30-120			
Fluorene	0.0226	0.00500	"	0.0333		67.9	30-120			
Indeno (1,2,3-cd) pyrene	0.0262	0.00500	"	0.0333		78.6	30-120			
Pyrene	0.0141	0.00500	"	0.0333		42.2	35-142			
1-Methylnaphthalene	0.0220	0.00500	"	0.0333		66.0	35-142			
2-Methylnaphthalene	0.0219	0.00500	"	0.0333		65.8	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0221		"	0.0333		66.3	40-150			
Surrogate: Fluoranthene-d10	0.0307		"	0.0333		92.2	40-150			

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Project Number: UWRWE-A2678-ABN
Project Manager: Jacob Whritenour

Reported:
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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 BHH0266 - EPA 5030 Soil MS

Matrix Spike (BHH0266-MS1)

Source: 2408076-01

Prepared & Analyzed: 08/12/24

Acenaphthene	0.0183	0.00500	mg/kg	0.0333	ND	54.9	31-137		
Anthracene	0.0208	0.00500	"	0.0333	ND	62.5	30-120		
Benzo (a) anthracene	0.0233	0.00500	"	0.0333	ND	69.8	30-120		
Benzo (a) pyrene	0.0165	0.00500	"	0.0333	ND	49.5	30-120		
Benzo (b) fluoranthene	0.0113	0.00500	"	0.0333	ND	33.9	30-120		
Benzo (k) fluoranthene	0.0242	0.00500	"	0.0333	ND	72.7	30-120		
Chrysene	0.0331	0.00500	"	0.0333	ND	99.3	30-120		
Dibenz (a,h) anthracene	0.0166	0.00500	"	0.0333	ND	49.9	30-120		
Fluoranthene	0.0231	0.00500	"	0.0333	ND	69.2	30-120		
Fluorene	0.0186	0.00500	"	0.0333	ND	55.9	30-120		
Indeno (1,2,3-cd) pyrene	0.0157	0.00500	"	0.0333	ND	47.2	30-120		
Pyrene	0.0134	0.00500	"	0.0333	ND	40.3	35-142		
1-Methylnaphthalene	0.0164	0.00500	"	0.0333	ND	49.3	15-130		
2-Methylnaphthalene	0.0164	0.00500	"	0.0333	ND	49.1	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0164		"	0.0333		49.2	40-150		
Surrogate: Fluoranthene-d10	0.0244		"	0.0333		73.1	40-150		

Matrix Spike Dup (BHH0266-MSD1)

Source: 2408076-01

Prepared & Analyzed: 08/12/24

Acenaphthene	0.0179	0.00500	mg/kg	0.0333	ND	53.7	31-137	2.16	30
Anthracene	0.0213	0.00500	"	0.0333	ND	63.8	30-120	2.03	30
Benzo (a) anthracene	0.0241	0.00500	"	0.0333	ND	72.3	30-120	3.56	30
Benzo (a) pyrene	0.0172	0.00500	"	0.0333	ND	51.5	30-120	3.95	30
Benzo (b) fluoranthene	0.0111	0.00500	"	0.0333	ND	33.4	30-120	1.40	30
Benzo (k) fluoranthene	0.0239	0.00500	"	0.0333	ND	71.6	30-120	1.48	30
Chrysene	0.0343	0.00500	"	0.0333	ND	103	30-120	3.65	30
Dibenz (a,h) anthracene	0.0147	0.00500	"	0.0333	ND	44.2	30-120	12.1	30
Fluoranthene	0.0231	0.00500	"	0.0333	ND	69.4	30-120	0.391	30
Fluorene	0.0188	0.00500	"	0.0333	ND	56.5	30-120	1.05	30
Indeno (1,2,3-cd) pyrene	0.0178	0.00500	"	0.0333	ND	53.5	30-120	12.5	30
Pyrene	0.0137	0.00500	"	0.0333	ND	41.1	35-142	1.95	30
1-Methylnaphthalene	0.0172	0.00500	"	0.0333	ND	51.6	15-130	4.59	50
2-Methylnaphthalene	0.0175	0.00500	"	0.0333	ND	52.4	15-130	6.46	50
Surrogate: 2-Methylnaphthalene-d10	0.0174		"	0.0333		52.3	40-150		
Surrogate: Fluoranthene-d10	0.0245		"	0.0333		73.5	40-150		

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - UPRC 23-1117 Flowline

Project Number: UWRWE-A2678-ABN
Project Manager: Jacob Whritenour

Reported:
08/15/24 09:38

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 BHH0245 - EPA 3050B

Blank (BHH0245-BLK1)

Prepared: 08/09/24 Analyzed: 08/13/24

Boron ND 2.00 mg/L

LCS (BHH0245-BS1)

Prepared: 08/09/24 Analyzed: 08/13/24

Boron 5.62 2.00 mg/L 5.00 112 80-120

Duplicate (BHH0245-DUP1)

Source: 2408075-01

Prepared: 08/09/24 Analyzed: 08/13/24

Boron 0.197 2.00 mg/L 0.216 9.25 20

Matrix Spike (BHH0245-MS1)

Source: 2408075-01

Prepared: 08/09/24 Analyzed: 08/13/24

Boron 5.96 2.00 mg/L 5.00 0.216 115 75-125

Matrix Spike Dup (BHH0245-MSD1)

Source: 2408075-01

Prepared: 08/09/24 Analyzed: 08/13/24

Boron 6.10 2.00 mg/L 5.00 0.216 118 75-125 2.23 25

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Project: Noble - UPRC 23-1117 Flowline

Project Number: UWRWE-A2678-ABN
Project Manager: Jacob Whritenour

Reported:
08/15/24 09:38

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHH0248 - EPA 3050B

Blank (BHH0248-BLK1)

Prepared: 08/09/24 Analyzed: 08/13/24

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 (BHH0248-BS1)

Prepared: 08/09/24 Analyzed: 08/13/24

Arsenic	38.6	0.200	mg/kg wet	37.6	103	80-120				
Barium	47.1	0.400	"	37.6	125	80-120				QM-07
Cadmium	1.79	0.200	"	1.88	95.3	80-120				
Copper	36.3	0.400	"	37.6	96.7	80-120				
Lead	17.7	0.200	"	18.8	94.4	80-120				
Nickel	36.4	0.400	"	37.6	96.7	80-120				
Silver	1.77	0.0200	"	1.88	94.1	80-120				
Zinc	34.7	0.400	"	37.6	92.4	80-120				
Selenium	3.79	0.260	"	3.76	101	80-120				

Duplicate (BHH0248-DUP1)

Source: 2408076-01

Prepared: 08/09/24 Analyzed: 08/13/24

Arsenic	5.56	0.200	mg/kg dry	5.40	2.87	20				
Barium	337	0.400	"	217	43.5	20				QR-02
Cadmium	0.294	0.200	"	0.298	1.36	20				
Copper	6.75	0.400	"	6.97	3.21	20				
Lead	10.9	0.200	"	9.70	11.7	20				
Nickel	7.74	0.400	"	7.76	0.211	20				
Silver	0.0470	0.0200	"	0.0493	4.74	20				
Zinc	25.8	0.400	"	25.4	1.57	20				
Selenium	0.208	0.260	"	0.208	0.324	20				

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Broomfield CO, 80020

Project: Noble - UPRC 23-1117 Flowline

Project Number: UWRWE-A2678-ABN
Project Manager: Jacob Whritenour

Reported:
08/15/24 09:38

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 BHH0248 - EPA 3050B

Matrix Spike (BHH0248-MS1)

Source: 2408076-01

Prepared: 08/09/24 Analyzed: 08/13/24

Arsenic	50.5	0.200	mg/kg dry	45.4	5.40	99.5	75-125			
Barium	306	0.400	"	45.4	217	198	75-125			QM-07
Cadmium	2.46	0.200	"	2.27	0.298	95.3	75-125			
Copper	28.3	0.400	"	45.4	6.97	47.1	75-125			QM-05
Lead	31.6	0.200	"	22.7	9.70	96.6	75-125			
Nickel	29.7	0.400	"	45.4	7.76	48.4	75-125			QM-05
Silver	2.17	0.0200	"	2.27	0.0493	93.7	75-125			
Zinc	46.6	0.400	"	45.4	25.4	46.7	75-125			QM-05
Selenium	3.80	0.260	"	4.54	0.208	79.2	75-125			

Matrix Spike Dup (BHH0248-MSD1)

Source: 2408076-01

Prepared: 08/09/24 Analyzed: 08/13/24

Arsenic	52.3	0.200	mg/kg dry	47.2	5.40	99.4	75-125	3.35	25	
Barium	309	0.400	"	47.2	217	196	75-125	0.884	25	QM-07
Cadmium	2.53	0.200	"	2.36	0.298	94.4	75-125	2.63	25	
Copper	30.3	0.400	"	47.2	6.97	49.4	75-125	6.57	25	QM-05
Lead	33.8	0.200	"	23.6	9.70	102	75-125	6.72	25	
Nickel	31.5	0.400	"	47.2	7.76	50.3	75-125	5.73	25	QM-05
Silver	2.23	0.0200	"	2.36	0.0493	92.3	75-125	2.36	25	
Zinc	48.7	0.400	"	47.2	25.4	49.3	75-125	4.36	25	QM-05
Selenium	3.91	0.260	"	4.72	0.208	78.5	75-125	2.84	25	

Summit Scientific

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Project: Noble - UPRC 23-1117 Flowline

Project Number: UWRWE-A2678-ABN
Project Manager: Jacob Whritenour

Reported:
08/15/24 09:38

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHH0239 - 3060A Mod

Blank (BHH0239-BLK1)

Prepared & Analyzed: 08/09/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHH0239-BS1)

Prepared & Analyzed: 08/09/24

Chromium, Hexavalent 24.8 0.30 mg/kg wet 25.0 99.0 80-120

Duplicate (BHH0239-DUP1)

Source: 2408069-01

Prepared & Analyzed: 08/09/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHH0239-MS1)

Source: 2408069-01

Prepared & Analyzed: 08/09/24

Chromium, Hexavalent 29.4 0.30 mg/kg dry 28.7 ND 102 75-125

Matrix Spike Dup (BHH0239-MSD1)

Source: 2408069-01

Prepared & Analyzed: 08/09/24

Chromium, Hexavalent 28.9 0.30 mg/kg dry 28.7 ND 100 75-125 1.97 20

Summit Scientific

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Broomfield CO, 80020

Project: Noble - UPRC 23-1117 Flowline

Project Number: UWRWE-A2678-ABN
Project Manager: Jacob Whritenour

Reported:
08/15/24 09:38

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 BHH0294 - General Preparation

Blank (BHH0294-BLK1)

Prepared: 08/12/24 Analyzed: 08/14/24

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

LCS (BHH0294-BS1)

Prepared: 08/12/24 Analyzed: 08/14/24

Calcium	5.88	0.0500	mg/L wet	5.00		118	70-130			
Magnesium	4.92	0.0500	"	5.00		98.4	70-130			
Sodium	4.95	0.0500	"	5.00		98.9	70-130			

Summit Scientific

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Project: Noble - UPRC 23-1117 Flowline

Project Number: UWRWE-A2678-ABN

Project Manager: Jacob Whritenour

Reported:
 08/15/24 09:38

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

Summit Scientific

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

Batch BHH0247 - General Preparation

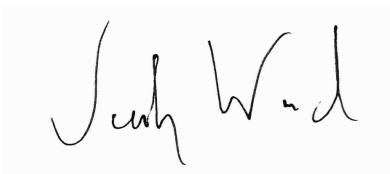
Duplicate (BHH0247-DUP1)

Source: 2408075-01

Prepared & Analyzed: 08/09/24

% Solids	90.6		%		90.7			0.171	20	
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Summit Scientific



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Project: Noble - UPRC 23-1117 Flowline

Project Number: UWRWE-A2678-ABN
Project Manager: Jacob Whritenour

Reported:
08/15/24 09:38

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 BHH0295 - General Preparation

Blank (BHH0295-BLK1)

Prepared: 08/12/24 Analyzed: 08/13/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHH0295-BS1)

Prepared: 08/12/24 Analyzed: 08/13/24

Specific Conductance (EC) 0.158 0.0100 mmhos/cm 0.150 105 95-105

Duplicate (BHH0295-DUP1)

Source: 2408076-01

Prepared: 08/12/24 Analyzed: 08/13/24

Specific Conductance (EC) 1.54 0.0100 mmhos/cm 1.54 0.0648 20

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Project: Noble - UPRC 23-1117 Flowline

Project Number: UWRWE-A2678-ABN
Project Manager: Jacob Whritenour

Reported:
08/15/24 09:38

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 BHH0296 - General Preparation

LCS (BHH0296-BS1)

Prepared: 08/12/24 Analyzed: 08/13/24

pH	9.18	pH Units	9.18	100	95-105
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Duplicate (BHH0296-DUP1)

Source: 2408076-01

Prepared: 08/12/24 Analyzed: 08/13/24

pH	8.19	pH Units	8.19	0.00	20
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Summit Scientific



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6855 W. 119th Ave.
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Project: Noble - UPRC 23-1117 Flowline

Project Number: UWRWE-A2678-ABN
Project Manager: Jacob Whritenour

Reported:
08/15/24 09:38

Notes and Definitions

- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- 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.
- 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