

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 27, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Watson 66N65W 28SWNW

Work Order #2409328

Enclosed are the results of analyses for samples received by Summit Scientific on 09/20/24 17:46. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Jacob Wood". The signature is written in a cursive, flowing style.

Jacob Wood For Paul Shrewsbury

President



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

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST01@0-0.5'	2409328-01	Soil	09/20/24 10:00	09/20/24 17:46
PWV01-B@5'	2409328-02	Soil	09/20/24 10:05	09/20/24 17:46
PWV01-E@3'	2409328-05	Soil	09/20/24 10:11	09/20/24 17:46
SEP01-DL@3'	2409328-07	Soil	09/20/24 10:55	09/20/24 17:46
SEP01-FL@3'	2409328-08	Soil	09/20/24 11:08	09/20/24 17:46
BKG01@0-0.5'	2409328-09	Soil	09/20/24 11:30	09/20/24 17:46
BKG01@3'	2409328-10	Soil	09/20/24 11:32	09/20/24 17:46
BKG01@5'	2409328-11	Soil	09/20/24 11:34	09/20/24 17:46

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.*

<b>Send Data To:</b>		<b>Send Invoice To:</b>
Client: Noble/Tasman	Project Manager: Jake Whritenour	Company: <u>Noble</u>
Address: 6855 W. 119th Ave.	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location: <u>Watson 66N65W-28SWNW</u>
City/State/Zip: Broomfield/CO/ 80020		AFE#: <u>UWRWE - A4071 - ABN</u>
Phone: 303 999 6040	Project Name: <u>Watson 66N65W-28SWNW</u>	PO/Billing Codes:
Sampler Name: Jon Meier	Project Number:	Contact: <u>Mike Montoya</u>

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD		
1	AST01@0-0.5'	9/20/24	10:00	3			X			X			X	X	X	X	X	X			
2	PWV01-B@5'		10:05	3			X			X			X	X	X	X	X	X			
3	PWV01-N@3'		10:07	3			X			X			X	X	X	X	X	X	X		
4	PWV01-S@3'		10:09	3			X			X			X	X	X	X	X	X	X	X	
5	PWV01-E@3'		10:11	3			X			X			X	X	X	X	X	X	X	X	
6	PWV01-W@3'		10:13	3			X			X			X	X	X	X	X	X	X	X	
7	Sep01-DL@3'		10:55	3			X			X			X	X	X	X	X	X	X	X	
8	SEP01-FL@3'		11:08	3			X			X			X	X	X	X	X	X	X	X	
9	BKG01@0-0.5'		11:30	2			X			X			X	X	X	X	X	X	X	X	
10	BKG01@3'		11:32	2			X			X			X	X	X	X	X	X	X	X	
11	BKG01@5'		11:34	2			X			X			X	X	X	X	X	X	X	X	
12																					
13																					
14																					
15																					

Relinquished by: <u>[Signature]</u>	Date/Time: <u>9/20/24 1345</u>	Received by: <b>Tasman Lock Box</b>	Date/Time: <u>9/20/24 1345</u>	TAT Business Days	Field DO	Notes:
Relinquished by: <u>Tasman Lock Box</u>	Date/Time: <u>9/20/24 1746</u>	Received by: <u>[Signature]</u>	Date/Time: <u>9/20/24 1746</u>	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: <u>8.2</u>	Corrected Temperature: _____	IR gun #: _____	HNO3 lot #: _____			

S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2409328Client: NWETAClient Project ID: Watson (W-285UNW)

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

Airbill #:

	-			
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Matrix (Check all that apply)

Air

☐

Soil/Solid

☒

Water

☐

Other

☐

Temp (°C)

8.2

Thermometer #

1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? <sup>(1)</sup> 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"/>	
If custody seals are present, are they intact? <sup>(1)</sup>	<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 <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , 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? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<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)? <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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> 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):				

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.AS  
Custodian Printed Name9/20/24  
Date/Time



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

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**AST01@0-0.5'**  
**2409328-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **09/20/24 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHI0812	09/24/24	09/24/24	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: **09/20/24 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0392	98.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0401	100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0390	97.4 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/20/24 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0813	09/24/24	09/25/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/20/24 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	9.54	76.3 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**AST01@0-0.5'**  
**2409328-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **09/20/24 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHI0793	09/24/24	09/24/24	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: **09/20/24 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0319	95.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0392	118 %	40-150		"	"	"	"	

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

Date Sampled: **09/20/24 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHI0738	09/23/24	09/24/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **09/20/24 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**AST01@0-0.5'**  
**2409328-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	3.67	0.200	mg/kg dry	1	BHI0803	09/24/24	09/26/24	EPA 6020B
Barium	72.5	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	5.20	0.400	"	"	"	"	"	"
Lead	5.61	0.200	"	"	"	"	"	"
Nickel	4.75	0.400	"	"	"	"	"	"
Silver	0.0260	0.0200	"	"	"	"	"	"
Zinc	18.8	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **09/20/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0879	09/25/24	09/26/24	EPA 7196A	

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

Date Sampled: **09/20/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	250	0.0500	mg/L dry	1	BHI0773	09/23/24	09/25/24	EPA 6020B	
Magnesium	12.3	0.0500	"	"	"	"	"	"	
Sodium	13.1	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **09/20/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.219	0.00100	units	1	BHI0933	09/26/24	09/26/24	Calculation	

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

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**Reported:**  
09/27/24 09:45

**AST01@0-0.5'**  
**2409328-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **09/20/24 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	92.7			%	1	BHI0824	09/24/24	09/24/24	Calculation	

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

Date Sampled: **09/20/24 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.278	0.0100		mmhos/cm	1	BHI0776	09/23/24	09/24/24	EPA 120.1	

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

Date Sampled: **09/20/24 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.70			pH Units	1	BHI0775	09/23/24	09/24/24	EPA 9045D	

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Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**PWV01-B@5'**  
**2409328-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **09/20/24 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHI0812	09/24/24	09/24/24	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: **09/20/24 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0403	101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0401	100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0386	96.4 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/20/24 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0813	09/24/24	09/25/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/20/24 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.93	63.4 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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**Reported:**  
09/27/24 09:45

**PWV01-B@5'**  
**2409328-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **09/20/24 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHI0793	09/24/24	09/24/24	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: **09/20/24 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0260	78.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0289	86.8 %	40-150		"	"	"	"	

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

Date Sampled: **09/20/24 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHI0738	09/23/24	09/24/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **09/20/24 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**PWV01-B@5'**  
**2409328-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	4.25	0.200	mg/kg dry	1	BHI0803	09/24/24	09/26/24	EPA 6020B
Barium	86.1	0.400	"	"	"	"	"	"
Cadmium	0.213	0.200	"	"	"	"	"	"
Copper	6.07	0.400	"	"	"	"	"	"
Lead	7.29	0.200	"	"	"	"	"	"
Nickel	5.44	0.400	"	"	"	"	"	"
Silver	0.0340	0.0200	"	"	"	"	"	"
Zinc	22.8	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **09/20/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0879	09/25/24	09/26/24	EPA 7196A	

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

Date Sampled: **09/20/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2080	0.0500	mg/L dry	1	BHI0773	09/23/24	09/25/24	EPA 6020B	
Magnesium	161	0.0500	"	"	"	"	"	"	
Sodium	3.65	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **09/20/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0208	0.00100	units	1	BHI0933	09/26/24	09/26/24	Calculation	

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

Date Sampled: **09/20/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**PWV01-B@5'**  
**2409328-02 (Soil)**

**Summit Scientific**

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

% Solids	90.0	%	1	BHI0824	09/24/24	09/24/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **09/20/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.193	0.0100	mmhos/cm	1	BHI0776	09/23/24	09/24/24	EPA 120.1	

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

Date Sampled: **09/20/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.64		pH Units	1	BHI0775	09/23/24	09/24/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**PWV01-E@3'**  
**2409328-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **09/20/24 10:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHI0812	09/24/24	09/24/24	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: **09/20/24 10:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0406	102 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0401	100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0394	98.5 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/20/24 10:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0813	09/24/24	09/25/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/20/24 10:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.40	59.2 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**PWV01-E@3'**  
**2409328-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **09/20/24 10:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHI0793	09/24/24	09/24/24	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: **09/20/24 10:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0181	54.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0210	62.9 %	40-150		"	"	"	"	

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

Date Sampled: **09/20/24 10:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHI0738	09/23/24	09/24/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **09/20/24 10:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**PWV01-E@3'**  
**2409328-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	4.47	0.200	mg/kg dry	1	BHI0803	09/24/24	09/26/24	EPA 6020B
Barium	95.9	0.400	"	"	"	"	"	"
Cadmium	0.223	0.200	"	"	"	"	"	"
Copper	5.72	0.400	"	"	"	"	"	"
Lead	7.48	0.200	"	"	"	"	"	"
Nickel	5.83	0.400	"	"	"	"	"	"
Silver	0.0365	0.0200	"	"	"	"	"	"
Zinc	21.9	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **09/20/24 10:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0879	09/25/24	09/26/24	EPA 7196A	

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

Date Sampled: **09/20/24 10:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	622	0.0500	mg/L dry	1	BHI0773	09/23/24	09/25/24	EPA 6020B	
Magnesium	28.0	0.0500	"	"	"	"	"	"	
Sodium	0.829	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **09/20/24 10:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.00883	0.00100	units	1	BHI0933	09/26/24	09/26/24	Calculation	

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

Date Sampled: **09/20/24 10:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**PWV01-E@3'**  
**2409328-05 (Soil)**

**Summit Scientific**

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

% Solids	85.0	%	1	BHI0824	09/24/24	09/24/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **09/20/24 10:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.122	0.0100	mmhos/cm	1	BHI0776	09/23/24	09/24/24	EPA 120.1	

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

Date Sampled: **09/20/24 10:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.84		pH Units	1	BHI0775	09/23/24	09/24/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**SEP01-DL@3'**  
**2409328-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **09/20/24 10:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHI0812	09/24/24	09/24/24	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: **09/20/24 10:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0398	99.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0399	99.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0389	97.4 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/20/24 10:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0813	09/24/24	09/25/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/20/24 10:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.92	63.3 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**SEP01-DL@3'**  
**2409328-07 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **09/20/24 10:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHI0793	09/24/24	09/24/24	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: **09/20/24 10:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0181	54.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0177	53.1 %	40-150		"	"	"	"	

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

Date Sampled: **09/20/24 10:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHI0738	09/23/24	09/24/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **09/20/24 10:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**SEP01-DL@3'**  
**2409328-07 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	4.60	0.200	mg/kg dry	1	BHI0803	09/24/24	09/26/24	EPA 6020B
Barium	87.4	0.400	"	"	"	"	"	"
Cadmium	0.208	0.200	"	"	"	"	"	"
Copper	5.70	0.400	"	"	"	"	"	"
Lead	7.43	0.200	"	"	"	"	"	"
Nickel	5.62	0.400	"	"	"	"	"	"
Silver	0.0334	0.0200	"	"	"	"	"	"
Zinc	21.0	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **09/20/24 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0879	09/25/24	09/26/24	EPA 7196A	

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

Date Sampled: **09/20/24 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	4230	0.0500	mg/L dry	1	BHI0773	09/23/24	09/25/24	EPA 6020B	
Magnesium	196	0.0500	"	"	"	"	"	"	
Sodium	25.8	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **09/20/24 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.105	0.00100	units	1	BHI0933	09/26/24	09/26/24	Calculation	

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

Date Sampled: **09/20/24 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**SEP01-DL@3'**  
**2409328-07 (Soil)**

**Summit Scientific**

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

% Solids	88.3	%	1	BHI0824	09/24/24	09/24/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **09/20/24 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.203	0.0100	mmhos/cm	1	BHI0776	09/23/24	09/24/24	EPA 120.1	

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

Date Sampled: **09/20/24 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.80		pH Units	1	BHI0775	09/23/24	09/24/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**SEP01-FL@3'**  
**2409328-08 (Soil)**

**Summit Scientific**

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

Date Sampled: **09/20/24 11:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHI0812	09/24/24	09/24/24	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: **09/20/24 11:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0398	99.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0399	99.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0385	96.2 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/20/24 11:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHI0813	09/24/24	09/25/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/20/24 11:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.59	60.7 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**SEP01-FL@3'**  
**2409328-08 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **09/20/24 11:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHI0793	09/24/24	09/24/24	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: **09/20/24 11:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0191	57.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0219	65.8 %	40-150		"	"	"	"	

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

Date Sampled: **09/20/24 11:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHI0738	09/23/24	09/24/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **09/20/24 11:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**SEP01-FL@3'**  
**2409328-08 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	4.44	0.180	mg/kg dry	1	BHI0803	09/24/24	09/26/24	EPA 6020B
Barium	77.5	0.360	"	"	"	"	"	"
Cadmium	0.259	0.180	"	"	"	"	"	"
Copper	5.49	0.360	"	"	"	"	"	"
Lead	6.71	0.180	"	"	"	"	"	"
Nickel	5.45	0.360	"	"	"	"	"	"
Silver	0.0320	0.0180	"	"	"	"	"	"
Zinc	20.5	0.360	"	"	"	"	"	"
Selenium	ND	0.234	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **09/20/24 11:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHI0879	09/25/24	09/26/24	EPA 7196A	

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

Date Sampled: **09/20/24 11:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	813	0.0500	mg/L dry	1	BHI0773	09/23/24	09/25/24	EPA 6020B	
Magnesium	41.6	0.0500	"	"	"	"	"	"	
Sodium	2.12	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **09/20/24 11:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0197	0.00100	units	1	BHI0933	09/26/24	09/26/24	Calculation	

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

Date Sampled: **09/20/24 11:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**SEP01-FL@3'**  
**2409328-08 (Soil)**

**Summit Scientific**

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

% Solids	87.7	%	1	BHI0824	09/24/24	09/24/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **09/20/24 11:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.171	0.0100	mmhos/cm	1	BHI0776	09/23/24	09/24/24	EPA 120.1	

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

Date Sampled: **09/20/24 11:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.69		pH Units	1	BHI0775	09/23/24	09/24/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**BKG01@0-0.5'**  
**2409328-09 (Soil)**

**Summit Scientific**

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

Date Sampled: **09/20/24 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BHI0738	09/23/24	09/24/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **09/20/24 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	4.58	0.200		mg/kg dry	1	BHI0803	09/24/24	09/26/24	EPA 6020B	
Barium	85.1	0.400		"	"	"	"	"	"	
Cadmium	0.210	0.200		"	"	"	"	"	"	
Copper	7.04	0.400		"	"	"	"	"	"	
Lead	7.20	0.200		"	"	"	"	"	"	
Nickel	5.58	0.400		"	"	"	"	"	"	
Silver	0.0349	0.0200		"	"	"	"	"	"	
Zinc	25.5	0.400		"	"	"	"	"	"	
Selenium	ND	0.260		"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **09/20/24 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BHI0879	09/25/24	09/26/24	EPA 7196A	

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

Date Sampled: **09/20/24 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	138	0.0500		mg/L dry	1	BHI0773	09/23/24	09/25/24	EPA 6020B	
Magnesium	19.7	0.0500		"	"	"	"	"	"	
Sodium	37.1	0.0500		"	"	"	"	"	"	

Summit Scientific

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

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**BKG01@0-0.5'**  
**2409328-09 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **09/20/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.782	0.00100	units	1	BHI0933	09/26/24	09/26/24	Calculation	

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

Date Sampled: **09/20/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.0		%	1	BHI0824	09/24/24	09/24/24	Calculation	

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

Date Sampled: **09/20/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.436	0.0100	mmhos/cm	1	BHI0776	09/23/24	09/24/24	EPA 120.1	

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

Date Sampled: **09/20/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.15		pH Units	1	BHI0775	09/23/24	09/24/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**BKG01@3'**  
**2409328-10 (Soil)**

**Summit Scientific**

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

Date Sampled: **09/20/24 11:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BHI0738	09/23/24	09/24/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **09/20/24 11:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	5.07	0.200		mg/kg dry	1	BHI0803	09/24/24	09/26/24	EPA 6020B	
Barium	106	0.400		"	"	"	"	"	"	
Cadmium	0.266	0.200		"	"	"	"	"	"	
Copper	5.07	0.400		"	"	"	"	"	"	
Lead	8.18	0.200		"	"	"	"	"	"	
Nickel	6.47	0.400		"	"	"	"	"	"	
Silver	0.0388	0.0200		"	"	"	"	"	"	
Zinc	21.4	0.400		"	"	"	"	"	"	
Selenium	ND	0.260		"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **09/20/24 11:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BHI0879	09/25/24	09/26/24	EPA 7196A	

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

Date Sampled: **09/20/24 11:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	79.3	0.0500		mg/L dry	1	BHI0773	09/23/24	09/25/24	EPA 6020B	
Magnesium	12.8	0.0500		"	"	"	"	"	"	
Sodium	22.9	0.0500		"	"	"	"	"	"	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**BKG01@3'**  
**2409328-10 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **09/20/24 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	<b>0.629</b>	0.00100	units	1	BHI0933	09/26/24	09/26/24	Calculation	

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

Date Sampled: **09/20/24 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>85.6</b>		%	1	BHI0824	09/24/24	09/24/24	Calculation	

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

Date Sampled: **09/20/24 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>0.326</b>	0.0100	mmhos/cm	1	BHI0776	09/23/24	09/24/24	EPA 120.1	

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

Date Sampled: **09/20/24 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	<b>8.40</b>		pH Units	1	BHI0775	09/23/24	09/24/24	EPA 9045D	

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

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**BKG01@5'**  
**2409328-11 (Soil)**

**Summit Scientific**

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

Date Sampled: **09/20/24 11:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BHI0738	09/23/24	09/24/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **09/20/24 11:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	5.94	0.180		mg/kg dry	1	BHI0803	09/24/24	09/26/24	EPA 6020B	
Barium	181	0.360		"	"	"	"	"	"	
Cadmium	0.285	0.180		"	"	"	"	"	"	
Copper	6.56	0.360		"	"	"	"	"	"	
Lead	10.7	0.180		"	"	"	"	"	"	
Nickel	7.49	0.360		"	"	"	"	"	"	
Silver	0.0427	0.0180		"	"	"	"	"	"	
Zinc	23.8	0.360		"	"	"	"	"	"	
Selenium	ND	0.234		"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **09/20/24 11:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BHI0879	09/25/24	09/26/24	EPA 7196A	

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

Date Sampled: **09/20/24 11:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	59.5	0.0500		mg/L dry	1	BHI0773	09/23/24	09/25/24	EPA 6020B	
Magnesium	12.7	0.0500		"	"	"	"	"	"	
Sodium	21.8	0.0500		"	"	"	"	"	"	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**BKG01@5'**  
**2409328-11 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **09/20/24 11:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	<b>0.669</b>	0.00100	units	1	BHI0933	09/26/24	09/26/24	Calculation	

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

Date Sampled: **09/20/24 11:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>82.6</b>		%	1	BHI0824	09/24/24	09/24/24	Calculation	

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

Date Sampled: **09/20/24 11:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>0.318</b>	0.0100	mmhos/cm	1	BHI0776	09/23/24	09/24/24	EPA 120.1	

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

Date Sampled: **09/20/24 11:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	<b>8.35</b>		pH Units	1	BHI0775	09/23/24	09/24/24	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

## 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 BHI0812 - EPA 5030 Soil MS

##### Blank (BHI0812-BLK1)

Prepared & Analyzed: 09/24/24

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	0.0403		"	0.0400		101	50-150			
Surrogate: Toluene-d8	0.0400		"	0.0400		99.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0400		97.4	50-150			

##### LCS (BHI0812-BS1)

Prepared & Analyzed: 09/24/24

Benzene	0.0976	0.0020	mg/kg	0.100		97.6	70-130			
Toluene	0.102	0.0050	"	0.100		102	70-130			
Ethylbenzene	0.0978	0.0050	"	0.100		97.8	70-130			
m,p-Xylene	0.198	0.010	"	0.200		99.0	70-130			
o-Xylene	0.102	0.0050	"	0.100		102	70-130			
1,2,4-Trimethylbenzene	0.100	0.0050	"	0.100		100	70-130			
1,3,5-Trimethylbenzene	0.0979	0.0050	"	0.100		97.9	70-130			
Naphthalene	0.0950	0.0038	"	0.100		95.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0399		"	0.0400		99.8	50-150			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		99.9	50-150			

##### Matrix Spike (BHI0812-MS1)

Source: 2409328-01

Prepared & Analyzed: 09/24/24

Benzene	0.0911	0.0020	mg/kg	0.100	ND	91.1	70-130			
Toluene	0.0907	0.0050	"	0.100	ND	90.7	70-130			
Ethylbenzene	0.0926	0.0050	"	0.100	ND	92.6	70-130			
m,p-Xylene	0.185	0.010	"	0.200	ND	92.4	70-130			
o-Xylene	0.0926	0.0050	"	0.100	ND	92.6	70-130			
1,2,4-Trimethylbenzene	0.0880	0.0050	"	0.100	ND	88.0	70-130			
1,3,5-Trimethylbenzene	0.0886	0.0050	"	0.100	ND	88.6	70-130			
Naphthalene	0.0819	0.0038	"	0.100	ND	81.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0401		"	0.0400		100	50-150			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.5	50-150			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**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 BHI0812 - EPA 5030 Soil MS**

Matrix Spike Dup (BHI0812-MSD1)	Source: 2409328-01			Prepared & Analyzed: 09/24/24						
Benzene	0.0988	0.0020	mg/kg	0.100	ND	98.8	70-130	8.09	30	
Toluene	0.0972	0.0050	"	0.100	ND	97.2	70-130	6.96	30	
Ethylbenzene	0.0922	0.0050	"	0.100	ND	92.2	70-130	0.422	30	
m,p-Xylene	0.184	0.010	"	0.200	ND	92.1	70-130	0.309	30	
o-Xylene	0.0936	0.0050	"	0.100	ND	93.6	70-130	0.999	30	
1,2,4-Trimethylbenzene	0.0898	0.0050	"	0.100	ND	89.8	70-130	2.03	30	
1,3,5-Trimethylbenzene	0.0902	0.0050	"	0.100	ND	90.2	70-130	1.78	30	
Naphthalene	0.0839	0.0038	"	0.100	ND	83.9	70-130	2.39	30	
Surrogate: 1,2-Dichloroethane-d4	0.0436		"	0.0400		109	50-150			
Surrogate: Toluene-d8	0.0403		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	50-150			

Summit Scientific

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

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**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 BHI0813 - EPA 3550A**

**Blank (BHI0813-BLK1)**

Prepared: 09/24/24 Analyzed: 09/25/24

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	10.4		"	12.5		83.3	30-150			

**LCS (BHI0813-BS1)**

Prepared: 09/24/24 Analyzed: 09/25/24

C10-C28 (DRO)	404	50	mg/kg	500		80.7	70-130			
Surrogate: o-Terphenyl	9.10		"	12.5		72.8	30-150			

**Matrix Spike (BHI0813-MS1)**

Source: 2409328-01

Prepared: 09/24/24 Analyzed: 09/25/24

C10-C28 (DRO)	565	50	mg/kg	500	ND	113	70-130			
Surrogate: o-Terphenyl	11.8		"	12.5		94.7	30-150			

**Matrix Spike Dup (BHI0813-MSD1)**

Source: 2409328-01

Prepared: 09/24/24 Analyzed: 09/25/24

C10-C28 (DRO)	548	50	mg/kg	500	ND	110	70-130	3.00	20	
Surrogate: o-Terphenyl	11.2		"	12.5		89.4	30-150			

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

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

## 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	Notes

#### Batch BHI0793 - EPA 5030 Soil MS

##### Blank (BHI0793-BLK1)

Prepared & Analyzed: 09/24/24

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	0.0353		"	0.0333		106	40-150			
Surrogate: Fluoranthene-d10	0.0443		"	0.0333		133	40-150			

##### LCS (BHI0793-BS1)

Prepared & Analyzed: 09/24/24

Acenaphthene	0.0223	0.00500	mg/kg	0.0333		67.0	31-137			
Anthracene	0.0221	0.00500	"	0.0333		66.4	30-120			
Benzo (a) anthracene	0.0222	0.00500	"	0.0333		66.7	30-120			
Benzo (a) pyrene	0.0207	0.00500	"	0.0333		62.2	30-120			
Benzo (b) fluoranthene	0.0174	0.00500	"	0.0333		52.1	30-120			
Benzo (k) fluoranthene	0.0185	0.00500	"	0.0333		55.6	30-120			
Chrysene	0.0228	0.00500	"	0.0333		68.5	30-120			
Dibenz (a,h) anthracene	0.0214	0.00500	"	0.0333		64.3	30-120			
Fluoranthene	0.0201	0.00500	"	0.0333		60.3	30-120			
Fluorene	0.0225	0.00500	"	0.0333		67.5	30-120			
Indeno (1,2,3-cd) pyrene	0.0225	0.00500	"	0.0333		67.5	30-120			
Pyrene	0.0242	0.00500	"	0.0333		72.6	35-142			
1-Methylnaphthalene	0.0193	0.00500	"	0.0333		57.9	35-142			
2-Methylnaphthalene	0.0208	0.00500	"	0.0333		62.3	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0203		"	0.0333		61.0	40-150			
Surrogate: Fluoranthene-d10	0.0224		"	0.0333		67.1	40-150			

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Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

## 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	Notes

#### Batch BHI0793 - EPA 5030 Soil MS

##### Matrix Spike (BHI0793-MS1)

Source: 2409328-01

Prepared & Analyzed: 09/24/24

Acenaphthene	0.0152	0.00500	mg/kg	0.0333	ND	45.6	31-137				
Anthracene	0.0149	0.00500	"	0.0333	ND	44.7	30-120				
Benzo (a) anthracene	0.0152	0.00500	"	0.0333	ND	45.5	30-120				
Benzo (a) pyrene	0.0181	0.00500	"	0.0333	ND	54.4	30-120				
Benzo (b) fluoranthene	0.0135	0.00500	"	0.0333	ND	40.4	30-120				
Benzo (k) fluoranthene	0.0152	0.00500	"	0.0333	ND	45.5	30-120				
Chrysene	0.0149	0.00500	"	0.0333	ND	44.6	30-120				
Dibenz (a,h) anthracene	0.0150	0.00500	"	0.0333	ND	44.9	30-120				
Fluoranthene	0.0144	0.00500	"	0.0333	ND	43.2	30-120				
Fluorene	0.0153	0.00500	"	0.0333	ND	46.0	30-120				
Indeno (1,2,3-cd) pyrene	0.0160	0.00500	"	0.0333	ND	48.0	30-120				
Pyrene	0.0145	0.00500	"	0.0333	ND	43.5	35-142				
1-Methylnaphthalene	0.0138	0.00500	"	0.0333	ND	41.3	15-130				
2-Methylnaphthalene	0.0134	0.00500	"	0.0333	ND	40.2	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0138		"	0.0333		41.5	40-150				
Surrogate: Fluoranthene-d10	0.0154		"	0.0333		46.1	40-150				

##### Matrix Spike Dup (BHI0793-MSD1)

Source: 2409328-01

Prepared & Analyzed: 09/24/24

Acenaphthene	0.0166	0.00500	mg/kg	0.0333	ND	49.7	31-137	8.66	30		
Anthracene	0.0141	0.00500	"	0.0333	ND	42.4	30-120	5.08	30		
Benzo (a) anthracene	0.0140	0.00500	"	0.0333	ND	42.1	30-120	7.72	30		
Benzo (a) pyrene	0.0169	0.00500	"	0.0333	ND	50.7	30-120	7.04	30		
Benzo (b) fluoranthene	0.0156	0.00500	"	0.0333	ND	46.8	30-120	14.6	30		
Benzo (k) fluoranthene	0.0147	0.00500	"	0.0333	ND	44.2	30-120	3.00	30		
Chrysene	0.0134	0.00500	"	0.0333	ND	40.3	30-120	10.2	30		
Dibenz (a,h) anthracene	0.0181	0.00500	"	0.0333	ND	54.4	30-120	19.1	30		
Fluoranthene	0.0134	0.00500	"	0.0333	ND	40.1	30-120	7.26	30		
Fluorene	0.0175	0.00500	"	0.0333	ND	52.5	30-120	13.3	30		
Indeno (1,2,3-cd) pyrene	0.0190	0.00500	"	0.0333	ND	56.9	30-120	16.9	30		
Pyrene	0.0143	0.00500	"	0.0333	ND	43.0	35-142	1.03	30		
1-Methylnaphthalene	0.0145	0.00500	"	0.0333	ND	43.4	15-130	4.84	50		
2-Methylnaphthalene	0.0144	0.00500	"	0.0333	ND	43.2	15-130	7.06	50		
Surrogate: 2-Methylnaphthalene-d10	0.0149		"	0.0333		44.6	40-150				
Surrogate: Fluoranthene-d10	0.0145		"	0.0333		43.4	40-150				

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

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**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 BHI0738 - EPA 3050B**

**Blank (BHI0738-BLK1)**

Prepared: 09/23/24 Analyzed: 09/24/24

Boron ND 2.00 mg/L

**LCS (BHI0738-BS1)**

Prepared: 09/23/24 Analyzed: 09/24/24

Boron 5.18 2.00 mg/L 5.00 104 80-120

**Duplicate (BHI0738-DUP1)**

**Source: 2409315-01**

Prepared: 09/23/24 Analyzed: 09/24/24

Boron 0.166 2.00 mg/L 0.166 0.373 20

**Matrix Spike (BHI0738-MS1)**

**Source: 2409315-01**

Prepared: 09/23/24 Analyzed: 09/24/24

Boron 5.43 2.00 mg/L 5.00 0.166 105 75-125

**Matrix Spike Dup (BHI0738-MSD1)**

**Source: 2409315-01**

Prepared: 09/23/24 Analyzed: 09/24/24

Boron 5.58 2.00 mg/L 5.00 0.166 108 75-125 2.76 25

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Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**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 BHI0803 - EPA 3050B**

**Blank (BHI0803-BLK1)**

Prepared: 09/24/24 Analyzed: 09/26/24

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 (BHI0803-BS1)**

Prepared: 09/24/24 Analyzed: 09/26/24

Arsenic	41.0	0.200	mg/kg wet	40.0	102	80-120
Barium	44.7	0.400	"	40.0	112	80-120
Cadmium	2.18	0.200	"	2.00	109	80-120
Copper	42.4	0.400	"	40.0	106	80-120
Lead	21.2	0.200	"	20.0	106	80-120
Nickel	42.2	0.400	"	40.0	105	80-120
Silver	2.10	0.0200	"	2.00	105	80-120
Zinc	42.8	0.400	"	40.0	107	80-120
Selenium	4.52	0.260	"	4.00	113	80-120

**Duplicate (BHI0803-DUP1)**

Source: 2409327-47

Prepared: 09/24/24 Analyzed: 09/26/24

Arsenic	2.20	0.200	mg/kg dry	2.05	7.16	20
Barium	11.2	0.400	"	11.0	2.05	20
Cadmium	0.0706	0.200	"	0.0604	15.7	20
Copper	9.31	0.400	"	7.83	17.4	20
Lead	11.1	0.200	"	9.03	20.5	20
Nickel	3.47	0.400	"	3.25	6.41	20
Silver	0.0332	0.0200	"	0.0319	3.92	20
Zinc	18.0	0.400	"	17.0	5.68	20
Selenium	ND	0.260	"	ND		20

QR-02

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Broomfield CO, 80020

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**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 BHI0803 - EPA 3050B**

Matrix Spike (BHI0803-MS1)		Source: 2409327-47			Prepared: 09/24/24 Analyzed: 09/26/24					
Arsenic	45.5	0.200	mg/kg dry	47.5	2.05	91.4	75-125			
Barium	51.0	0.400	"	47.5	11.0	84.4	75-125			
Cadmium	2.33	0.200	"	2.37	0.0604	95.6	75-125			
Copper	32.1	0.400	"	47.5	7.83	51.1	75-125			QM-05
Lead	31.0	0.200	"	23.7	9.03	92.7	75-125			
Nickel	26.5	0.400	"	47.5	3.25	48.8	75-125			QM-05
Silver	2.28	0.0200	"	2.37	0.0319	94.5	75-125			
Zinc	42.3	0.400	"	47.5	17.0	53.2	75-125			QM-05
Selenium	4.99	0.260	"	4.75	ND	105	75-125			

Matrix Spike Dup (BHI0803-MSD1)		Source: 2409327-47			Prepared: 09/24/24 Analyzed: 09/26/24					
Arsenic	43.9	0.180	mg/kg dry	43.7	2.05	95.6	75-125	3.56	25	
Barium	51.2	0.360	"	43.7	11.0	92.1	75-125	0.365	25	
Cadmium	2.38	0.180	"	2.19	0.0604	106	75-125	2.10	25	
Copper	30.7	0.360	"	43.7	7.83	52.4	75-125	4.43	25	QM-05
Lead	30.5	0.180	"	21.9	9.03	98.1	75-125	1.81	25	
Nickel	25.5	0.360	"	43.7	3.25	50.8	75-125	3.81	25	QM-05
Silver	2.25	0.0180	"	2.19	0.0319	101	75-125	1.39	25	
Zinc	39.9	0.360	"	43.7	17.0	52.2	75-125	5.92	25	QM-05
Selenium	4.92	0.234	"	4.37	ND	112	75-125	1.48	25	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

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

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

**Batch BHI0879 - 3060A Mod**

**Blank (BHI0879-BLK1)**

Prepared: 09/25/24 Analyzed: 09/26/24

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BHI0879-BS1)**

Prepared: 09/25/24 Analyzed: 09/26/24

Chromium, Hexavalent 27.0 0.30 mg/kg wet 25.0 108 80-120

**Duplicate (BHI0879-DUP1)**

**Source: 2409328-01**

Prepared: 09/25/24 Analyzed: 09/26/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BHI0879-MS1)**

**Source: 2409328-01**

Prepared: 09/25/24 Analyzed: 09/26/24

Chromium, Hexavalent 28.4 0.30 mg/kg dry 27.0 ND 105 75-125

**Matrix Spike Dup (BHI0879-MSD1)**

**Source: 2409328-01**

Prepared: 09/25/24 Analyzed: 09/26/24

Chromium, Hexavalent 28.4 0.30 mg/kg dry 27.0 ND 105 75-125 0.190 20

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

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

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

**Batch BHI0773 - General Preparation**

**Blank (BHI0773-BLK1)**

Prepared: 09/23/24 Analyzed: 09/25/24

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

**LCS (BHI0773-BS1)**

Prepared: 09/23/24 Analyzed: 09/25/24

Calcium	5.92	0.0500	mg/L wet	5.00	118	70-130
Magnesium	5.43	0.0500	"	5.00	109	70-130
Sodium	5.40	0.0500	"	5.00	108	70-130

Summit Scientific

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6855 W. 119th Ave.  
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Project: Noble - Watson 66N65W 28SWNW

Project Number: UWRWE-A4071-ABN

Project Manager: Jacob Whritenour

**Reported:**

09/27/24 09:45

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

**Summit Scientific**

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

**Batch BHI0824 - General Preparation**

Duplicate (BHI0824-DUP2)		Source: 2409319-01			Prepared & Analyzed: 09/24/24					
% Solids	96.2		%		96.0		0.219		20	

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**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 BHI0776 - General Preparation**

**Blank (BHI0776-BLK1)**

Prepared: 09/23/24 Analyzed: 09/24/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BHI0776-BS1)**

Prepared: 09/23/24 Analyzed: 09/24/24

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105

**Duplicate (BHI0776-DUP1)**

**Source: 2409328-01**

Prepared: 09/23/24 Analyzed: 09/24/24

Specific Conductance (EC) 0.239 0.0100 mmhos/cm 0.278 14.8 20

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Watson 66N65W 28SWNW

Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

**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 BHI0775 - General Preparation**

**LCS (BHI0775-BS1)**

Prepared: 09/23/24 Analyzed: 09/24/24

pH	9.21	pH Units	9.18	100	95-105
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**Duplicate (BHI0775-DUP1)**

**Source: 2409328-01**

Prepared: 09/23/24 Analyzed: 09/24/24

pH	8.75	pH Units	8.70	0.573	20
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Summit Scientific

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

Project: Noble - Watson 66N65W 28SWNW  
Project Number: UWRWE-A4071-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/27/24 09:45

### 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-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.
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