

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 06, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Walcker AB 12-08 Multi

Work Order #2408340

Enclosed are the results of analyses for samples received by Summit Scientific on 08/27/24 17:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Natalie Tessier". The signature is fluid and cursive, with the first name being more prominent.

Natalie Tessier For Paul Shrewsbury  
President



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

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST01@0-6"	2408340-01	Soil	08/27/24 10:32	08/27/24 17:40
AST02@0-6"	2408340-02	Soil	08/27/24 10:37	08/27/24 17:40
SEP01-FL@2'	2408340-03	Soil	08/27/24 10:04	08/27/24 17:40
SEP01-DL@2'	2408340-04	Soil	08/27/24 10:09	08/27/24 17:40
PWV01-S@2'	2408340-05	Soil	08/27/24 10:45	08/27/24 17:40
PWV01-B@4'	2408340-06	Soil	08/27/24 10:53	08/27/24 17:40
PWV02-E@2'	2408340-07	Soil	08/27/24 10:58	08/27/24 17:40
PWV02-B@4'	2408340-08	Soil	08/27/24 11:04	08/27/24 17:40
BKG01@0-6"	2408340-09	Soil	08/27/24 11:21	08/27/24 17:40
BKG01@2'	2408340-10	Soil	08/27/24 11:22	08/27/24 17:40
BKG01@4'	2408340-11	Soil	08/27/24 11:23	08/27/24 17:40

#### Case Narrative

This revised report has been reissued per client request on 9/6/24.

This is a revision of the report originally sent on 9/3/24 at 12:10 MT.

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, Inc.	Project Manager: Jake Whritenour	Company: Noble
Address: 6855 W. 119th Ave.	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location: Walker AB 1208 Multi
City/State/Zip: Broomfield / CO/ 80020		AFE#: UWRWE-A2141-ABN
Phone: 719-937-1898	Project Name: Walker AB 1208 Multi	PO/Billing Codes:
Sampler Name: Josh Adams	Project Number: N/A	Contact: Mike Montoya

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD		
1	ASTOL @ 0-6"	8/27/24	1032	3			X			X			X	X	X	X	X	X			SAR, EC, pH by saturated paste
2	ASTOL @ 0-6"		1037				X			X			X	X	X	X	X	X			
3	SEPO1 - FL @ 2'		1004				X			X			X	X	X	X	X	X			
4	SEPO1 - DL @ 2'		1009				X			X			X	X	X	X	X	X			
5	PWU01 - S @ 2'		1045				X			X			X	X	X	X	X	X			
6	PWU01 - B @ 4'		1053				X			X			X	X	X	X	X	X			
7	PWU02 - E @ 2'		1058				X			X			X	X	X	X	X	X			
8	PWU02 - B @ 4'		1104				X			X			X	X	X	X	X	X			
9	BKGO1 @ 0-6"		1121				X			X			X				X	X			
10	BKGO1 @ 0-6"		1122				X			X			X				X	X			
11	BKGO1 @ 0-6"		1123				X			X			X				X	X			
12	PWU01 - W @ 2'		1048				X			X			X	X	X	X	X	X	X		
13	PWU01 - N @ 2'		1056				X			X			X	X	X	X	X	X	X		
14	PWU02 - S @ 2'		1101				X			X			X	X	X	X	X	X	X		
15	PWU02 - N @ 2'		1101				X			X			X	X	X	X	X	X	X		

Relinquished by: Josh Adams	Date/Time: 8/27/24 1437	Received by: [Signature]	Date/Time: 8/27/24 1437	TAT Business Days	Field DO	Notes:
Relinquished by: Tasman/Geo	Date/Time: 8/27/24 1740	Received by: [Signature]	Date/Time: 8/27/24 1740	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 7.4	Corrected Temperature: 6	IR gun #: 1	HNO3 lot #:			

S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2408340Client Metastaran Client Project ID: Walcker AB 12-08 multiShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☐ Other ☐Temp (°C) 7.4Thermometer # 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"/>	on site
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 Name

8/27/24  
Date/Time



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

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Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**AST01@0-6"**  
**2408340-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/27/24 10:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHH0878	08/28/24	08/29/24	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: **08/27/24 10:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0421	105 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0403	101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0382	95.5 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/27/24 10:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHH0880	08/28/24	08/29/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **08/27/24 10:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.55	76.4 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**AST01@0-6"**  
**2408340-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **08/27/24 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0852	08/28/24	08/30/24	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: **08/27/24 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0161	48.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0204	61.1 %	40-150		"	"	"	"	

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

Date Sampled: **08/27/24 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0864	08/28/24	08/30/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **08/27/24 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**AST01@0-6"**  
**2408340-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	3.22	0.200	mg/kg dry	1	BHH0873	08/28/24	08/30/24	EPA 6020B
Barium	42.2	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	4.55	0.400	"	"	"	"	"	"
Lead	4.05	0.200	"	"	"	"	"	"
Nickel	3.46	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	13.5	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **08/27/24 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0858	08/28/24	08/29/24	EPA 7196A	

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

Date Sampled: **08/27/24 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	28.8	0.0500	mg/L dry	1	BHH0937	08/29/24	08/30/24	EPA 6020B	
Magnesium	8.08	0.0500	"	"	"	"	"	"	
Sodium	3.62	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **08/27/24 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.154	0.00100	units	1	BH10025	09/03/24	09/03/24	Calculation	

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

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**Reported:**  
09/06/24 07:44

**AST01@0-6"**  
**2408340-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/27/24 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.8		%	1	BHH0870	08/28/24	08/29/24	Calculation	

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

Date Sampled: **08/27/24 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.323	0.0100	mmhos/cm	1	BHH0939	08/29/24	08/30/24	EPA 120.1	

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

Date Sampled: **08/27/24 10:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.89		pH Units	1	BHH0938	08/29/24	08/30/24	EPA 9045D	

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**Reported:**  
09/06/24 07:44

**AST02@0-6"**  
**2408340-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/27/24 10:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHH0878	08/28/24	08/29/24	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: **08/27/24 10:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0421	105 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0394	98.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0378	94.5 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/27/24 10:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHH0880	08/28/24	08/29/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/27/24 10:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.19	73.6 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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09/06/24 07:44

**AST02@0-6"**  
**2408340-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **08/27/24 10:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHH0852	08/28/24	08/30/24	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	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.00795</b>	0.00500	"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.00751</b>	0.00500	"	"	"	"	"	"	

Date Sampled: **08/27/24 10:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0154	46.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0194	58.3 %	40-150		"	"	"	"	

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

Date Sampled: **08/27/24 10:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHH0864	08/28/24	08/30/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **08/27/24 10:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**AST02@0-6"**  
**2408340-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	3.00	0.200	mg/kg dry	1	BHH0873	08/28/24	08/30/24	EPA 6020B
Barium	40.7	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	3.78	0.400	"	"	"	"	"	"
Lead	3.29	0.200	"	"	"	"	"	"
Nickel	3.03	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	11.5	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **08/27/24 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0858	08/28/24	08/29/24	EPA 7196A	

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

Date Sampled: **08/27/24 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	28.8	0.0500	mg/L dry	1	BHH0937	08/29/24	08/30/24	EPA 6020B	
Magnesium	5.64	0.0500	"	"	"	"	"	"	
Sodium	4.95	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **08/27/24 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.221	0.00100	units	1	BH10025	09/03/24	09/03/24	Calculation	

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

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

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**AST02@0-6"**  
**2408340-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/27/24 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.7		%	1	BHH0870	08/28/24	08/29/24	Calculation	

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

Date Sampled: **08/27/24 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.276	0.0100	mmhos/cm	1	BHH0939	08/29/24	08/30/24	EPA 120.1	

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

Date Sampled: **08/27/24 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.05		pH Units	1	BHH0938	08/29/24	08/30/24	EPA 9045D	

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**SEP01-FL@2'**  
**2408340-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/27/24 10:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHH0878	08/28/24	08/29/24	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: **08/27/24 10:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0465	116 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0379	94.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0394	98.6 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/27/24 10:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHH0880	08/28/24	08/29/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/27/24 10:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.83	78.6 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**SEP01-FL@2'**  
**2408340-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **08/27/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0852	08/28/24	08/30/24	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: **08/27/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0152	45.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0192	57.6 %	40-150		"	"	"	"	

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

Date Sampled: **08/27/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0864	08/28/24	08/30/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **08/27/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**SEP01-FL@2'**  
**2408340-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	2.76	0.200	mg/kg dry	1	BHH0873	08/28/24	08/30/24	EPA 6020B
Barium	43.2	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	3.91	0.400	"	"	"	"	"	"
Lead	3.24	0.200	"	"	"	"	"	"
Nickel	3.18	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	10.9	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **08/27/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0858	08/28/24	08/29/24	EPA 7196A	

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

Date Sampled: **08/27/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	18.4	0.0500	mg/L dry	1	BHH0937	08/29/24	08/30/24	EPA 6020B	
Magnesium	4.15	0.0500	"	"	"	"	"	"	
Sodium	3.39	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **08/27/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.186	0.00100	units	1	BH10025	09/03/24	09/03/24	Calculation	

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

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**SEP01-FL@2'**  
**2408340-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/27/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.0		%	1	BHH0870	08/28/24	08/29/24	Calculation	

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

Date Sampled: **08/27/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.152	0.0100	mmhos/cm	1	BHH0939	08/29/24	08/30/24	EPA 120.1	

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

Date Sampled: **08/27/24 10:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.41		pH Units	1	BHH0938	08/29/24	08/30/24	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**SEP01-DL@2'**  
**2408340-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/27/24 10:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHH0878	08/28/24	08/29/24	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: **08/27/24 10:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0458	114 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0391	97.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0394	98.5 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/27/24 10:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHH0880	08/28/24	08/29/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/27/24 10:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.58	68.6 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**SEP01-DL@2'**  
**2408340-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **08/27/24 10:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0852	08/28/24	08/30/24	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: **08/27/24 10:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0140	42.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0143	42.8 %	40-150		"	"	"	"	

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

Date Sampled: **08/27/24 10:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0864	08/28/24	08/30/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **08/27/24 10:09**

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 - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**SEP01-DL@2'**  
**2408340-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	2.98	0.200	mg/kg dry	1	BHH0873	08/28/24	08/30/24	EPA 6020B
Barium	61.3	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	3.81	0.400	"	"	"	"	"	"
Lead	5.37	0.200	"	"	"	"	"	"
Nickel	4.09	0.400	"	"	"	"	"	"
Silver	0.0261	0.0200	"	"	"	"	"	"
Zinc	14.7	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **08/27/24 10:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0858	08/28/24	08/29/24	EPA 7196A	

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

Date Sampled: **08/27/24 10:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	50.5	0.0500	mg/L dry	1	BHH0937	08/29/24	08/31/24	EPA 6020B	
Magnesium	12.5	0.0500	"	"	"	"	"	"	
Sodium	6.20	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **08/27/24 10:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.202	0.00100	units	1	BHI0025	09/03/24	09/03/24	Calculation	

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

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**SEP01-DL@2'**  
**2408340-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/27/24 10:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	92.1			%	1	BHH0870	08/28/24	08/29/24	Calculation	

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

Date Sampled: **08/27/24 10:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.443	0.0100		mmhos/cm	1	BHH0939	08/29/24	08/30/24	EPA 120.1	

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

Date Sampled: **08/27/24 10:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.12			pH Units	1	BHH0938	08/29/24	08/30/24	EPA 9045D	

Summit Scientific

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6855 W. 119th Ave.  
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Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**PWV01-S@2'**  
**2408340-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/27/24 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHH0878	08/28/24	08/29/24	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: **08/27/24 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0426	106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0394	98.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0374	93.4 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/27/24 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHH0880	08/28/24	08/29/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/27/24 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.79	62.4 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**PWV01-S@2'**  
**2408340-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **08/27/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0852	08/28/24	08/30/24	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: **08/27/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0147	44.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0185	55.6 %	40-150		"	"	"	"	

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

Date Sampled: **08/27/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0864	08/28/24	08/30/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **08/27/24 10:45**

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 - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**PWV01-S@2'**  
**2408340-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	3.15	0.200	mg/kg dry	1	BHH0873	08/28/24	08/30/24	EPA 6020B
Barium	60.9	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	3.77	0.400	"	"	"	"	"	"
Lead	5.65	0.200	"	"	"	"	"	"
Nickel	4.52	0.400	"	"	"	"	"	"
Silver	0.0370	0.0200	"	"	"	"	"	"
Zinc	14.8	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **08/27/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0858	08/28/24	08/29/24	EPA 7196A	

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

Date Sampled: **08/27/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	39.5	0.0500	mg/L dry	1	BHH0937	08/29/24	08/31/24	EPA 6020B	
Magnesium	8.42	0.0500	"	"	"	"	"	"	
Sodium	0.770	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **08/27/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0290	0.00100	units	1	BHI0025	09/03/24	09/03/24	Calculation	

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

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

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**PWV01-S@2'**  
**2408340-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/27/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.9		%	1	BHH0870	08/28/24	08/29/24	Calculation	

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

Date Sampled: **08/27/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.194	0.0100	mmhos/cm	1	BHH0939	08/29/24	08/30/24	EPA 120.1	

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

Date Sampled: **08/27/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.26		pH Units	1	BHH0938	08/29/24	08/30/24	EPA 9045D	

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**PWV01-B@4'**  
**2408340-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/27/24 10:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHH0878	08/28/24	08/29/24	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: **08/27/24 10:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0422	106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0399	99.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0390	97.4 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/27/24 10:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHH0880	08/28/24	08/29/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/27/24 10:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	6.68	53.4 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Tasman Geosciences  
6855 W. 119th Ave.  
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Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**PWV01-B@4'**  
**2408340-06 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **08/27/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0852	08/28/24	08/30/24	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: **08/27/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0137	41.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0166	49.7 %	40-150		"	"	"	"	

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

Date Sampled: **08/27/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0864	08/28/24	08/30/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **08/27/24 10:53**

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 - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**PWV01-B@4'**  
**2408340-06 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	2.60	0.200	mg/kg dry	1	BHH0873	08/28/24	08/30/24	EPA 6020B
Barium	92.0	0.400	"	"	"	"	"	"
Cadmium	0.223	0.200	"	"	"	"	"	"
Copper	4.73	0.400	"	"	"	"	"	"
Lead	6.79	0.200	"	"	"	"	"	"
Nickel	4.36	0.400	"	"	"	"	"	"
Silver	0.0430	0.0200	"	"	"	"	"	"
Zinc	20.9	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **08/27/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0858	08/28/24	08/29/24	EPA 7196A	

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

Date Sampled: **08/27/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	206	0.0500	mg/L dry	1	BHH0937	08/29/24	08/31/24	EPA 6020B	
Magnesium	26.6	0.0500	"	"	"	"	"	"	
Sodium	1.70	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **08/27/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0296	0.00100	units	1	BHI0025	09/03/24	09/03/24	Calculation	

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

Date Sampled: **08/27/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Broomfield CO, 80020

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**PWV01-B@4'**  
**2408340-06 (Soil)**

**Summit Scientific**

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

% Solids	86.8	%	1	BHH0870	08/28/24	08/29/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **08/27/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.26	0.0100	mmhos/cm	1	BHH0939	08/29/24	08/30/24	EPA 120.1	

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

Date Sampled: **08/27/24 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.84		pH Units	1	BHH0938	08/29/24	08/30/24	EPA 9045D	

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

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**PWV02-E@2'**  
**2408340-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/27/24 10:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHH0878	08/28/24	08/29/24	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: **08/27/24 10:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0403	101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0381	95.3 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/27/24 10:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHH0880	08/28/24	08/29/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/27/24 10:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.62	77.0 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**PWV02-E@2'**  
**2408340-07 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **08/27/24 10:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0852	08/28/24	08/30/24	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: **08/27/24 10:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0145	43.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0183	54.8 %	40-150		"	"	"	"	

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

Date Sampled: **08/27/24 10:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0864	08/28/24	08/30/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **08/27/24 10:58**

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

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**PWV02-E@2'**  
**2408340-07 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	3.31	0.181	mg/kg dry	1	BHH0873	08/28/24	08/30/24	EPA 6020B
Barium	78.9	0.362	"	"	"	"	"	"
Cadmium	0.203	0.181	"	"	"	"	"	"
Copper	4.36	0.362	"	"	"	"	"	"
Lead	6.51	0.181	"	"	"	"	"	"
Nickel	4.39	0.362	"	"	"	"	"	"
Silver	0.0377	0.0181	"	"	"	"	"	"
Zinc	17.1	0.362	"	"	"	"	"	"
Selenium	ND	0.236	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **08/27/24 10:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0858	08/28/24	08/29/24	EPA 7196A	

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

Date Sampled: **08/27/24 10:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	277	0.0500	mg/L dry	1	BHH0937	08/29/24	08/31/24	EPA 6020B	
Magnesium	29.2	0.0500	"	"	"	"	"	"	
Sodium	1.69	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **08/27/24 10:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0258	0.00100	units	1	BHI0025	09/03/24	09/03/24	Calculation	

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

Date Sampled: **08/27/24 10:58**

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

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**PWV02-E@2'**  
**2408340-07 (Soil)**

**Summit Scientific**

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

% Solids	87.4	%	1	BHH0870	08/28/24	08/29/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **08/27/24 10:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.59	0.0100	mmhos/cm	1	BHH0939	08/29/24	08/30/24	EPA 120.1	

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

Date Sampled: **08/27/24 10:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.81		pH Units	1	BHH0938	08/29/24	08/30/24	EPA 9045D	

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**PWV02-B@4'**  
**2408340-08 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/27/24 11:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHH0878	08/28/24	08/29/24	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: **08/27/24 11:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0455	114 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0411	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0382	95.4 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/27/24 11:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHH0880	08/28/24	08/29/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/27/24 11:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.69	61.5 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**PWV02-B@4'**  
**2408340-08 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **08/27/24 11:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHH0852	08/28/24	08/30/24	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: **08/27/24 11:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0136	40.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0170	51.0 %	40-150		"	"	"	"	

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

Date Sampled: **08/27/24 11:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHH0864	08/28/24	08/30/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **08/27/24 11:04**

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 - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**PWV02-B@4'**  
**2408340-08 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	5.08	0.200	mg/kg dry	1	BHH0873	08/28/24	08/30/24	EPA 6020B
Barium	64.3	0.400	"	"	"	"	"	"
Cadmium	0.223	0.200	"	"	"	"	"	"
Copper	4.31	0.400	"	"	"	"	"	"
Lead	6.55	0.200	"	"	"	"	"	"
Nickel	4.73	0.400	"	"	"	"	"	"
Silver	0.0329	0.0200	"	"	"	"	"	"
Zinc	16.1	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **08/27/24 11:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0858	08/28/24	08/29/24	EPA 7196A	

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

Date Sampled: **08/27/24 11:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	46.9	0.0500	mg/L dry	1	BHH0937	08/29/24	08/31/24	EPA 6020B	
Magnesium	9.26	0.0500	"	"	"	"	"	"	
Sodium	4.56	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **08/27/24 11:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.159	0.00100	units	1	BHI0025	09/03/24	09/03/24	Calculation	

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

Date Sampled: **08/27/24 11:04**

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

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**PWV02-B@4'**  
**2408340-08 (Soil)**

**Summit Scientific**

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

% Solids	87.3	%	1	BHH0870	08/28/24	08/29/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **08/27/24 11:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.354	0.0100	mmhos/cm	1	BHH0939	08/29/24	08/30/24	EPA 120.1	

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

Date Sampled: **08/27/24 11:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.20		pH Units	1	BHH0938	08/29/24	08/30/24	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**BKG01@0-6"**  
**2408340-09 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/27/24 11:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHH0864	08/28/24	08/30/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **08/27/24 11:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.23	0.200	mg/kg dry	1	BHH0873	08/28/24	08/30/24	EPA 6020B	
Barium	52.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.82	0.400	"	"	"	"	"	"	
Lead	6.41	0.200	"	"	"	"	"	"	
Nickel	3.86	0.400	"	"	"	"	"	"	
Silver	0.0283	0.0200	"	"	"	"	"	"	
Zinc	15.0	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **08/27/24 11:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0858	08/28/24	08/29/24	EPA 7196A	

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

Date Sampled: **08/27/24 11:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	45.3	0.0500	mg/L dry	1	BHH0937	08/29/24	08/31/24	EPA 6020B	
Magnesium	10.1	0.0500	"	"	"	"	"	"	
Sodium	0.518	0.0500	"	"	"	"	"	"	

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**BKG01@0-6"**  
**2408340-09 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **08/27/24 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0181	0.00100	units	1	BHI0025	09/03/24	09/03/24	Calculation	

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

Date Sampled: **08/27/24 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.0		%	1	BHH0870	08/28/24	08/29/24	Calculation	

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

Date Sampled: **08/27/24 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.377	0.0100	mmhos/cm	1	BHH0939	08/29/24	08/30/24	EPA 120.1	

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

Date Sampled: **08/27/24 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.29		pH Units	1	BHH0938	08/29/24	08/30/24	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**BKG01@2'**  
**2408340-10 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/27/24 11:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHH0864	08/28/24	08/30/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **08/27/24 11:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	3.47	0.181	mg/kg dry	1	BHH0873	08/28/24	08/30/24	EPA 6020B	
Barium	55.7	0.362	"	"	"	"	"	"	
Cadmium	0.185	0.181	"	"	"	"	"	"	
Copper	3.74	0.362	"	"	"	"	"	"	
Lead	6.52	0.181	"	"	"	"	"	"	
Nickel	4.12	0.362	"	"	"	"	"	"	
Silver	0.0301	0.0181	"	"	"	"	"	"	
Zinc	14.6	0.362	"	"	"	"	"	"	
Selenium	ND	0.236	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **08/27/24 11:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0858	08/28/24	08/29/24	EPA 7196A	

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

Date Sampled: **08/27/24 11:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	43.7	0.0500	mg/L dry	1	BHH0937	08/29/24	08/31/24	EPA 6020B	
Magnesium	9.78	0.0500	"	"	"	"	"	"	
Sodium	1.38	0.0500	"	"	"	"	"	"	

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**BKG01@2'**  
**2408340-10 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **08/27/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0491	0.00100	units	1	BHI0025	09/03/24	09/03/24	Calculation	

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

Date Sampled: **08/27/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.1		%	1	BHH0870	08/28/24	08/29/24	Calculation	

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

Date Sampled: **08/27/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.315	0.0100	mmhos/cm	1	BHH0939	08/29/24	08/30/24	EPA 120.1	

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

Date Sampled: **08/27/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.62		pH Units	1	BHH0938	08/29/24	08/30/24	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**BKG01@4'**  
**2408340-11 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/27/24 11:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHH0864	08/28/24	08/30/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **08/27/24 11:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	3.18	0.200	mg/kg dry	1	BHH0873	08/28/24	08/30/24	EPA 6020B	
Barium	58.5	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.89	0.400	"	"	"	"	"	"	
Lead	7.11	0.200	"	"	"	"	"	"	
Nickel	5.76	0.400	"	"	"	"	"	"	
Silver	0.0296	0.0200	"	"	"	"	"	"	
Zinc	15.3	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **08/27/24 11:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0858	08/28/24	08/29/24	EPA 7196A	

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

Date Sampled: **08/27/24 11:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	43.0	0.0500	mg/L dry	1	BHH0937	08/29/24	08/31/24	EPA 6020B	
Magnesium	8.84	0.0500	"	"	"	"	"	"	
Sodium	3.25	0.0500	"	"	"	"	"	"	

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Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**BKG01@4'**  
**2408340-11 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **08/27/24 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.118	0.00100	units	1	BHI0025	09/03/24	09/03/24	Calculation	

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

Date Sampled: **08/27/24 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.7		%	1	BHH0870	08/28/24	08/29/24	Calculation	

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

Date Sampled: **08/27/24 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.255	0.0100	mmhos/cm	1	BHH0939	08/29/24	08/30/24	EPA 120.1	

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

Date Sampled: **08/27/24 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.97		pH Units	1	BHH0938	08/29/24	08/30/24	EPA 9045D	

Summit Scientific

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Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

## 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 BHH0878 - EPA 5030 Soil MS

##### Blank (BHH0878-BLK1)

Prepared & Analyzed: 08/28/24

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	0.0425		"	0.0400		106	50-150			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	50-150			

##### LCS (BHH0878-BS1)

Prepared & Analyzed: 08/28/24

Benzene	0.112	0.0020	mg/kg	0.100		112	70-130			
Toluene	0.110	0.0050	"	0.100		110	70-130			
Ethylbenzene	0.119	0.0050	"	0.100		119	70-130			
m,p-Xylene	0.233	0.010	"	0.200		116	70-130			
o-Xylene	0.112	0.0050	"	0.100		112	70-130			
1,2,4-Trimethylbenzene	0.110	0.0050	"	0.100		110	70-130			
1,3,5-Trimethylbenzene	0.112	0.0050	"	0.100		112	70-130			
Naphthalene	0.107	0.0038	"	0.100		107	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0441		"	0.0400		110	50-150			
Surrogate: Toluene-d8	0.0396		"	0.0400		99.1	50-150			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	50-150			

##### Matrix Spike (BHH0878-MS1)

Source: 2408323-01

Prepared & Analyzed: 08/28/24

Benzene	0.112	0.0020	mg/kg	0.100	ND	112	70-130			
Toluene	0.113	0.0050	"	0.100	ND	113	70-130			
Ethylbenzene	0.112	0.0050	"	0.100	ND	112	70-130			
m,p-Xylene	0.219	0.010	"	0.200	ND	110	70-130			
o-Xylene	0.106	0.0050	"	0.100	ND	106	70-130			
1,2,4-Trimethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130			
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130			
Naphthalene	0.0950	0.0038	"	0.100	ND	95.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0462		"	0.0400		116	50-150			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	50-150			

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

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**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 BHH0878 - EPA 5030 Soil MS**

Matrix Spike Dup (BHH0878-MSD1)	Source: 2408323-01			Prepared & Analyzed: 08/28/24						
Benzene	0.107	0.0020	mg/kg	0.100	ND	107	70-130	4.11	30	
Toluene	0.104	0.0050	"	0.100	ND	104	70-130	8.01	30	
Ethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130	8.12	30	
m,p-Xylene	0.204	0.010	"	0.200	ND	102	70-130	7.14	30	
o-Xylene	0.0960	0.0050	"	0.100	ND	96.0	70-130	10.1	30	
1,2,4-Trimethylbenzene	0.0916	0.0050	"	0.100	ND	91.6	70-130	11.2	30	
1,3,5-Trimethylbenzene	0.0931	0.0050	"	0.100	ND	93.1	70-130	10.6	30	
Naphthalene	0.0832	0.0038	"	0.100	ND	83.2	70-130	13.3	30	
Surrogate: 1,2-Dichloroethane-d4	0.0474		"	0.0400		118	50-150			
Surrogate: Toluene-d8	0.0399		"	0.0400		99.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.5	50-150			

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Broomfield CO, 80020

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**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 BHH0880 - EPA 3550A**

**Blank (BHH0880-BLK1)**

Prepared: 08/28/24 Analyzed: 08/29/24

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	10.3		"	12.5		82.7	30-150			

**LCS (BHH0880-BS1)**

Prepared: 08/28/24 Analyzed: 08/29/24

C10-C28 (DRO)	493	50	mg/kg	500		98.6	70-130			
Surrogate: o-Terphenyl	10.2		"	12.5		81.3	30-150			

**Matrix Spike (BHH0880-MS1)**

Source: 2408323-01

Prepared: 08/28/24 Analyzed: 08/29/24

C10-C28 (DRO)	505	50	mg/kg	500	12.9	98.5	70-130			
Surrogate: o-Terphenyl	9.48		"	12.5		75.9	30-150			

**Matrix Spike Dup (BHH0880-MSD1)**

Source: 2408323-01

Prepared: 08/28/24 Analyzed: 08/29/24

C10-C28 (DRO)	384	50	mg/kg	500	12.9	74.3	70-130	27.2	20	QR-02
Surrogate: o-Terphenyl	8.98		"	12.5		71.8	30-150			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

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

### Summit Scientific

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

#### Batch BHH0852 - EPA 5030 Soil MS

##### Blank (BHH0852-BLK1)

Prepared: 08/28/24 Analyzed: 08/29/24

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	0.0160		"	0.0333		48.1	40-150			
Surrogate: Fluoranthene-d10	0.0229		"	0.0333		68.7	40-150			

##### LCS (BHH0852-BS1)

Prepared: 08/28/24 Analyzed: 08/29/24

Acenaphthene	0.0192	0.00500	mg/kg	0.0333		57.7	31-137			
Anthracene	0.0190	0.00500	"	0.0333		57.0	30-120			
Benzo (a) anthracene	0.0161	0.00500	"	0.0333		48.4	30-120			
Benzo (a) pyrene	0.0180	0.00500	"	0.0333		54.0	30-120			
Benzo (b) fluoranthene	0.0198	0.00500	"	0.0333		59.5	30-120			
Benzo (k) fluoranthene	0.0198	0.00500	"	0.0333		59.4	30-120			
Chrysene	0.0169	0.00500	"	0.0333		50.6	30-120			
Dibenz (a,h) anthracene	0.0154	0.00500	"	0.0333		46.1	30-120			
Fluoranthene	0.0192	0.00500	"	0.0333		57.6	30-120			
Fluorene	0.0192	0.00500	"	0.0333		57.6	30-120			
Indeno (1,2,3-cd) pyrene	0.0221	0.00500	"	0.0333		66.3	30-120			
Pyrene	0.0195	0.00500	"	0.0333		58.4	35-142			
1-Methylnaphthalene	0.0153	0.00500	"	0.0333		45.9	35-142			
2-Methylnaphthalene	0.0150	0.00500	"	0.0333		45.0	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0157		"	0.0333		47.1	40-150			
Surrogate: Fluoranthene-d10	0.0206		"	0.0333		61.9	40-150			

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Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

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

### Summit Scientific

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

#### Batch BHH0852 - EPA 5030 Soil MS

##### Matrix Spike (BHH0852-MS1)

Source: 2408335-01

Prepared: 08/28/24 Analyzed: 08/29/24

Acenaphthene	0.0137	0.00500	mg/kg	0.0333	ND	41.2	31-137		
Anthracene	0.0153	0.00500	"	0.0333	ND	45.9	30-120		
Benzo (a) anthracene	0.0195	0.00500	"	0.0333	ND	58.4	30-120		
Benzo (a) pyrene	0.0143	0.00500	"	0.0333	ND	43.0	30-120		
Benzo (b) fluoranthene	0.0150	0.00500	"	0.0333	ND	45.1	30-120		
Benzo (k) fluoranthene	0.0152	0.00500	"	0.0333	ND	45.7	30-120		
Chrysene	0.0169	0.00500	"	0.0333	ND	50.8	30-120		
Dibenz (a,h) anthracene	0.0187	0.00500	"	0.0333	ND	56.2	30-120		
Fluoranthene	0.0152	0.00500	"	0.0333	ND	45.7	30-120		
Fluorene	0.0138	0.00500	"	0.0333	ND	41.4	30-120		
Indeno (1,2,3-cd) pyrene	0.0153	0.00500	"	0.0333	ND	45.9	30-120		
Pyrene	0.0136	0.00500	"	0.0333	ND	40.7	35-142		
1-Methylnaphthalene	0.0141	0.00500	"	0.0333	ND	42.4	15-130		
2-Methylnaphthalene	0.0145	0.00500	"	0.0333	ND	43.6	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0147		"	0.0333		44.0	40-150		
Surrogate: Fluoranthene-d10	0.0165		"	0.0333		49.5	40-150		

##### Matrix Spike Dup (BHH0852-MSD1)

Source: 2408335-01

Prepared: 08/28/24 Analyzed: 08/29/24

Acenaphthene	0.0146	0.00500	mg/kg	0.0333	ND	43.7	31-137	5.86	30
Anthracene	0.0154	0.00500	"	0.0333	ND	46.2	30-120	0.567	30
Benzo (a) anthracene	0.0152	0.00500	"	0.0333	ND	45.6	30-120	24.8	30
Benzo (a) pyrene	0.0144	0.00500	"	0.0333	ND	43.2	30-120	0.531	30
Benzo (b) fluoranthene	0.0160	0.00500	"	0.0333	ND	48.0	30-120	6.30	30
Benzo (k) fluoranthene	0.0165	0.00500	"	0.0333	ND	49.4	30-120	7.79	30
Chrysene	0.0136	0.00500	"	0.0333	ND	40.8	30-120	21.8	30
Dibenz (a,h) anthracene	0.0170	0.00500	"	0.0333	ND	50.9	30-120	9.80	30
Fluoranthene	0.0159	0.00500	"	0.0333	ND	47.7	30-120	4.29	30
Fluorene	0.0146	0.00500	"	0.0333	ND	43.9	30-120	5.78	30
Indeno (1,2,3-cd) pyrene	0.0135	0.00500	"	0.0333	ND	40.5	30-120	12.5	30
Pyrene	0.0137	0.00500	"	0.0333	ND	41.0	35-142	0.847	30
1-Methylnaphthalene	0.0137	0.00500	"	0.0333	ND	41.2	15-130	2.90	50
2-Methylnaphthalene	0.0134	0.00500	"	0.0333	ND	40.3	15-130	7.84	50
Surrogate: 2-Methylnaphthalene-d10	0.0142		"	0.0333		42.6	40-150		
Surrogate: Fluoranthene-d10	0.0175		"	0.0333		52.4	40-150		

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

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

### 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 BHI0052 - EPA 5030 Soil MS

##### Blank (BHI0052-BLK1)

Prepared & Analyzed: 09/04/24

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	0.0208		"	0.0333		62.3	40-150			
Surrogate: Fluoranthene-d10	0.0215		"	0.0333		64.5	40-150			

##### LCS (BHI0052-BS1)

Prepared & Analyzed: 09/04/24

Acenaphthene	0.0249	0.00500	mg/kg	0.0333		74.7	31-137			
Anthracene	0.0256	0.00500	"	0.0333		76.8	30-120			
Benzo (a) anthracene	0.0275	0.00500	"	0.0333		82.6	30-120			
Benzo (a) pyrene	0.0262	0.00500	"	0.0333		78.6	30-120			
Benzo (b) fluoranthene	0.0253	0.00500	"	0.0333		75.8	30-120			
Benzo (k) fluoranthene	0.0242	0.00500	"	0.0333		72.6	30-120			
Chrysene	0.0258	0.00500	"	0.0333		77.3	30-120			
Dibenz (a,h) anthracene	0.0254	0.00500	"	0.0333		76.1	30-120			
Fluoranthene	0.0278	0.00500	"	0.0333		83.5	30-120			
Fluorene	0.0232	0.00500	"	0.0333		69.7	30-120			
Indeno (1,2,3-cd) pyrene	0.0267	0.00500	"	0.0333		80.1	30-120			
Pyrene	0.0258	0.00500	"	0.0333		77.3	35-142			
1-Methylnaphthalene	0.0239	0.00500	"	0.0333		71.6	35-142			
2-Methylnaphthalene	0.0208	0.00500	"	0.0333		62.5	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0233		"	0.0333		69.9	40-150			
Surrogate: Fluoranthene-d10	0.0292		"	0.0333		87.6	40-150			

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Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

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

### Summit Scientific

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

#### Batch BHI0052 - EPA 5030 Soil MS

##### Matrix Spike (BHI0052-MS1)

Source: 2409002-01

Prepared & Analyzed: 09/04/24

Acenaphthene	0.0189	0.00500	mg/kg	0.0333	ND	56.7	31-137		
Anthracene	0.0195	0.00500	"	0.0333	ND	58.5	30-120		
Benzo (a) anthracene	0.0199	0.00500	"	0.0333	ND	59.6	30-120		
Benzo (a) pyrene	0.0184	0.00500	"	0.0333	ND	55.1	30-120		
Benzo (b) fluoranthene	0.0165	0.00500	"	0.0333	ND	49.5	30-120		
Benzo (k) fluoranthene	0.0163	0.00500	"	0.0333	ND	48.8	30-120		
Chrysene	0.0184	0.00500	"	0.0333	ND	55.1	30-120		
Dibenz (a,h) anthracene	0.0179	0.00500	"	0.0333	ND	53.7	30-120		
Fluoranthene	0.0198	0.00500	"	0.0333	ND	59.3	30-120		
Fluorene	0.0153	0.00500	"	0.0333	ND	45.9	30-120		
Indeno (1,2,3-cd) pyrene	0.0176	0.00500	"	0.0333	ND	52.7	30-120		
Pyrene	0.0187	0.00500	"	0.0333	ND	56.1	35-142		
1-Methylnaphthalene	0.0185	0.00500	"	0.0333	ND	55.4	15-130		
2-Methylnaphthalene	0.0136	0.00500	"	0.0333	ND	40.8	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0179		"	0.0333		53.6	40-150		
Surrogate: Fluoranthene-d10	0.0208		"	0.0333		62.4	40-150		

##### Matrix Spike Dup (BHI0052-MSD1)

Source: 2409002-01

Prepared & Analyzed: 09/04/24

Acenaphthene	0.0199	0.00500	mg/kg	0.0333	ND	59.6	31-137	4.91	30
Anthracene	0.0210	0.00500	"	0.0333	ND	63.1	30-120	7.43	30
Benzo (a) anthracene	0.0224	0.00500	"	0.0333	ND	67.3	30-120	12.2	30
Benzo (a) pyrene	0.0209	0.00500	"	0.0333	ND	62.6	30-120	12.8	30
Benzo (b) fluoranthene	0.0194	0.00500	"	0.0333	ND	58.1	30-120	16.0	30
Benzo (k) fluoranthene	0.0184	0.00500	"	0.0333	ND	55.1	30-120	12.2	30
Chrysene	0.0207	0.00500	"	0.0333	ND	62.2	30-120	12.1	30
Dibenz (a,h) anthracene	0.0205	0.00500	"	0.0333	ND	61.6	30-120	13.5	30
Fluoranthene	0.0216	0.00500	"	0.0333	ND	64.9	30-120	8.88	30
Fluorene	0.0188	0.00500	"	0.0333	ND	56.5	30-120	20.7	30
Indeno (1,2,3-cd) pyrene	0.0199	0.00500	"	0.0333	ND	59.7	30-120	12.5	30
Pyrene	0.0211	0.00500	"	0.0333	ND	63.4	35-142	12.2	30
1-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.4	15-130	9.31	50
2-Methylnaphthalene	0.0140	0.00500	"	0.0333	ND	42.0	15-130	3.00	50
Surrogate: 2-Methylnaphthalene-d10	0.0159		"	0.0333		47.6	40-150		
Surrogate: Fluoranthene-d10	0.0229		"	0.0333		68.7	40-150		

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Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**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 BHH0864 - EPA 3050B**

**Blank (BHH0864-BLK1)**

Prepared: 08/28/24 Analyzed: 08/29/24

Boron ND 2.00 mg/L

**LCS (BHH0864-BS1)**

Prepared: 08/28/24 Analyzed: 08/29/24

Boron 4.67 2.00 mg/L 5.00 93.4 80-120

**Duplicate (BHH0864-DUP1)**

Source: 2408335-01

Prepared: 08/28/24 Analyzed: 08/30/24

Boron 0.341 2.00 mg/L 0.325 4.78 20

**Matrix Spike (BHH0864-MS1)**

Source: 2408335-01

Prepared: 08/28/24 Analyzed: 08/30/24

Boron 4.73 2.00 mg/L 5.00 0.325 88.2 75-125

**Matrix Spike Dup (BHH0864-MSD1)**

Source: 2408335-01

Prepared: 08/28/24 Analyzed: 08/30/24

Boron 4.69 2.00 mg/L 5.00 0.325 87.4 75-125 0.832 25

Summit Scientific

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Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**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 BHH0873 - EPA 3050B**

**Blank (BHH0873-BLK1)**

Prepared: 08/28/24 Analyzed: 08/30/24

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 (BHH0873-BS1)**

Prepared: 08/28/24 Analyzed: 08/30/24

Arsenic	33.3	0.200	mg/kg wet	36.8	90.7	80-120
Barium	33.5	0.400	"	36.8	91.2	80-120
Cadmium	1.65	0.200	"	1.84	89.6	80-120
Copper	36.2	0.400	"	36.8	98.5	80-120
Lead	17.2	0.200	"	18.4	93.8	80-120
Nickel	36.1	0.400	"	36.8	98.1	80-120
Silver	1.69	0.0200	"	1.84	91.9	80-120
Zinc	35.8	0.400	"	36.8	97.4	80-120
Selenium	3.41	0.260	"	3.68	92.7	80-120

**Duplicate (BHH0873-DUP1)**

Source: 2408340-01

Prepared: 08/28/24 Analyzed: 08/30/24

Arsenic	2.17	0.200	mg/kg dry	3.22	39.0	20	QR-02
Barium	38.3	0.400	"	42.2	9.55	20	
Cadmium	0.111	0.200	"	0.152	31.3	20	QR-01
Copper	3.57	0.400	"	4.55	24.1	20	QR-01
Lead	3.45	0.200	"	4.05	16.1	20	
Nickel	2.71	0.400	"	3.46	24.2	20	QR-01
Silver	0.0105	0.0200	"	0.0133	23.7	20	QR-01
Zinc	10.3	0.400	"	13.5	27.6	20	QR-01
Selenium	ND	0.260	"	ND		20	

Summit Scientific

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

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**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 BHH0873 - EPA 3050B**

Matrix Spike (BHH0873-MS1)		Source: 2408340-01			Prepared: 08/28/24 Analyzed: 08/30/24					
Arsenic	37.8	0.200	mg/kg dry	40.3	3.22	85.8	75-125			
Barium	69.5	0.400	"	40.3	42.2	67.6	75-125			QM-05
Cadmium	1.92	0.200	"	2.02	0.152	87.7	75-125			
Copper	30.1	0.400	"	40.3	4.55	63.4	75-125			QM-05
Lead	20.2	0.200	"	20.2	4.05	80.1	75-125			
Nickel	29.1	0.400	"	40.3	3.46	63.6	75-125			QM-05
Silver	1.72	0.0200	"	2.02	0.0133	84.6	75-125			
Zinc	37.4	0.400	"	40.3	13.5	59.1	75-125			QM-05
Selenium	3.17	0.260	"	4.03	ND	78.4	75-125			

Matrix Spike Dup (BHH0873-MSD1)		Source: 2408340-01			Prepared: 08/28/24 Analyzed: 08/30/24					
Arsenic	37.8	0.200	mg/kg dry	40.3	3.22	85.8	75-125	0.0224	25	
Barium	74.2	0.400	"	40.3	42.2	79.2	75-125	6.53	25	
Cadmium	1.96	0.200	"	2.02	0.152	89.7	75-125	2.10	25	
Copper	30.4	0.400	"	40.3	4.55	64.0	75-125	0.742	25	QM-05
Lead	20.8	0.200	"	20.2	4.05	82.9	75-125	2.80	25	
Nickel	29.3	0.400	"	40.3	3.46	64.2	75-125	0.770	25	QM-05
Silver	1.76	0.0200	"	2.02	0.0133	86.7	75-125	2.43	25	
Zinc	38.1	0.400	"	40.3	13.5	60.9	75-125	1.88	25	QM-05
Selenium	3.17	0.260	"	4.03	ND	78.6	75-125	0.153	25	

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**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 BHH0858 - 3060A Mod**

**Blank (BHH0858-BLK1)**

Prepared: 08/28/24 Analyzed: 08/29/24

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BHH0858-BS1)**

Prepared: 08/28/24 Analyzed: 08/29/24

Chromium, Hexavalent 23.8 0.30 mg/kg wet 25.0 95.0 80-120

**Duplicate (BHH0858-DUP1)**

**Source: 2408340-01**

Prepared: 08/28/24 Analyzed: 08/29/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BHH0858-MS1)**

**Source: 2408340-01**

Prepared: 08/28/24 Analyzed: 08/29/24

Chromium, Hexavalent 24.8 0.30 mg/kg dry 25.8 ND 96.0 75-125

**Matrix Spike Dup (BHH0858-MSD1)**

**Source: 2408340-01**

Prepared: 08/28/24 Analyzed: 08/29/24

Chromium, Hexavalent 23.5 0.30 mg/kg dry 25.8 ND 91.0 75-125 5.35 20

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**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 BHH0937 - General Preparation**

**Blank (BHH0937-BLK1)**

Prepared: 08/29/24 Analyzed: 08/30/24

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

**LCS (BHH0937-BS1)**

Prepared: 08/29/24 Analyzed: 08/30/24

Calcium	4.89	0.0500	mg/L wet	5.00	97.7	70-130
Magnesium	4.80	0.0500	"	5.00	96.1	70-130
Sodium	5.08	0.0500	"	5.00	102	70-130

Summit Scientific

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Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**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 BHH0870 - General Preparation**

**Duplicate (BHH0870-DUP1)**

**Source: 2408335-01**

Prepared: 08/28/24 Analyzed: 08/29/24

% Solids	82.1	%		81.2		1.03	20
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Summit Scientific

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

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

**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 BHH0939 - General Preparation**

**Blank (BHH0939-BLK1)**

Prepared: 08/29/24 Analyzed: 08/30/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BHH0939-BS1)**

Prepared: 08/29/24 Analyzed: 08/30/24

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

**Duplicate (BHH0939-DUP1)**

**Source: 2408318-01**

Prepared: 08/29/24 Analyzed: 08/30/24

Specific Conductance (EC) 0.510 0.0100 mmhos/cm 0.532 4.16 20

Summit Scientific

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

Project: Noble - Walcker AB 12-08 Multi

Project Number: UWRWE-A2141-ABN

Project Manager: Jacob Whritenour

**Reported:**

09/06/24 07:44

**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 BHH0938 - General Preparation**

**LCS (BHH0938-BS1)**

Prepared: 08/29/24 Analyzed: 08/30/24

pH	9.05	pH Units	9.18	98.6	95-105
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**Duplicate (BHH0938-DUP1)**

**Source: 2408318-01**

Prepared: 08/29/24 Analyzed: 08/30/24

pH	8.70	pH Units	8.70	0.00	20
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Summit Scientific

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

Project: Noble - Walcker AB 12-08 Multi  
Project Number: UWRWE-A2141-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
09/06/24 07:44

### 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.
QR-01	Analyses are not controlled on RPD values from sample concentrations below the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
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