

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 12, 2025

Andy Sagen

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Wiedeman 4-5 FL

Work Order #2501463

Enclosed are the results of analyses for samples received by Summit Scientific on 01/30/25 18:16. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and a distinct "W".

Jacob Wood For Paul Shrewsbury

President



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

Project: Noble - Wiedeman 4-5 FL

Project Number: UWRWE-A3550-ABN

Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL02R-W@4'	2501463-01	Soil	01/29/25 14:25	01/30/25 18:16
FL03R-W@4'	2501463-02	Soil	01/29/25 14:30	01/30/25 18:16
FL04R-W@4'	2501463-03	Soil	01/29/25 14:35	01/30/25 18:16
FL05R-W@4'	2501463-04	Soil	01/29/25 14:40	01/30/25 18:16
FL06R-W@4'	2501463-05	Soil	01/29/25 15:30	01/30/25 18:16
GW01	2501463-06	Water	01/29/25 15:10	01/30/25 18:16

Summit Scientific

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	<b>Send Data To:</b>	<b>Send Invoice To:</b>
Client: Chevron	Project Manager: Andy Sagen	Company: Chevron
Address: 6855 W. 119th Ave.	E-Mail: tas-chevron-1@tasman-geo.com	Project Name/Location: Wiedeman 4-S Flowline
City/State/Zip: Broomfield/CO/ 80020	REVEUF27@chevron.com, jason.davidson@chevron.com	AFE#:
Phone:	Project Name: Wiedeman 4-S Flowline	PO/Billing Codes:
Sampler Name: M. Dilger	Project Number:	Contact: Dan Peterson

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Air-Canister #	Other	Analysis Requested							Special Instructions	
					HCl	HNO3	None	Other	Water	Soil			Metals - 915	VOC-915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	MD HOLD BTEXW/TMS		Full 915 Suite
1	FLO2R-W@4'	1/24/25	1425	2			X			X										X	SAR, EC, pH by saturated paste
2	FLO3R-W@4'	↓	1430	↓																	
3	FLO4R-W@4'	↓	1435	↓																	
4	FLO5R-W@4'	↓	1440	↓																	
5	FLO6R-W@4'	↓	1530	↓																	
6	GWol	↓	1510	4	3		1		X				X							X	
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: <i>M. Dilger</i>	Date/Time: 1/29/25 1715	Received by: Tasman Lock Box	Date/Time: 1/29/25 1715	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <i>Tasman Lock Box</i>	Date/Time: 1/30/25 1810	Received by: <i>[Signature]</i>	Date/Time: 1/30/25 1810	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb. <input checked="" type="checkbox"/>	
Temperature Upon Receipt: 4.0	Corrected Temperature: 0	IR gun #: 1	HNO3 lot #:			

# S<sub>2</sub>

S2 Work Order# 2501463

### Sample Receipt Checklist

Client: Channon / Pasman Client Project ID: Wiedeman 4-5 Flow NewReceived Via: H.D./P.U./FedEx/UPS/USPS/Other  Airbill #: \_\_\_\_\_Matrix (Circle all that apply) Air/~~Soil~~/Water/Other  Temp (°C) 4.0 Thermometer # 1Bottle ware (Circle all that apply) Glass/~~Jar~~/~~Vial~~/Amber/~~Poly~~/Other 

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

Control Form #: SRC-001

AS  
Custodian Printed Name1/30/25  
Date/Time



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

Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**FL02R-W@4'**  
**2501463-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **01/29/25 14:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BIB0489	02/10/25	02/15/25	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: **01/29/25 14:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0412	103 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0402	100 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0425	106 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/29/25 14:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BIB0495	02/10/25	02/12/25	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/29/25 14:25**

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**

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**Reported:**  
03/12/25 14:14

**FL02R-W@4'**  
**2501463-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **01/29/25 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIB0311	02/06/25	02/14/25	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/29/25 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0229	68.7 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0232	69.5 %	40-140		"	"	"	"	

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

Date Sampled: **01/29/25 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB1651	02/28/25	03/10/25	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **01/29/25 14:25**

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 - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**FL02R-W@4'**  
**2501463-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.89	0.200	mg/kg dry	1	BIA1470	01/31/25	02/01/25	EPA 6020B	
Barium	89.6	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.67	0.400	"	"	"	"	"	"	
Lead	4.10	0.200	"	"	"	"	"	"	
Nickel	4.38	0.400	"	"	"	"	"	"	
Silver	0.0230	0.0200	"	"	"	"	"	"	
Zinc	17.7	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **01/29/25 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIB0492	02/10/25	02/11/25	EPA 7196A	

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

Date Sampled: **01/29/25 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	283	0.0500	mg/L dry	1	BIB1161	02/20/25	02/28/25	EPA 6020B	
Magnesium	25.4	0.0500	"	"	"	"	"	"	
Sodium	48.4	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **01/29/25 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.739	0.00100	units	1	BIC0002	03/01/25	03/01/25	Calculation	

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

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Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**FL02R-W@4'**  
**2501463-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **01/29/25 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.8		%	1	BIA1466	01/31/25	01/31/25	Calculation	

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

Date Sampled: **01/29/25 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.307	0.0100	mmhos/cm	1	BIB1163	02/20/25	02/24/25	EPA 120.1	

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

Date Sampled: **01/29/25 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.02		pH Units	1	BIB1162	02/20/25	02/24/25	EPA 9045D	

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Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**FL03R-W@4'**  
**2501463-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **01/29/25 14:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BIB0489	02/10/25	02/15/25	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: **01/29/25 14:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0416	104 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0411	103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0439	110 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/29/25 14:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BIB0495	02/10/25	02/12/25	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/29/25 14:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	7.80	62.4 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - Wiedeman 4-5 FL

Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**FL03R-W@4'**  
**2501463-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **01/29/25 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIB0311	02/06/25	02/11/25	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/29/25 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0141	42.4 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0149	44.7 %	40-140		"	"	"	"	

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

Date Sampled: **01/29/25 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB1651	02/28/25	03/10/25	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **01/29/25 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.  
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Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**FL03R-W@4'**  
**2501463-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.56	0.200	mg/kg dry	1	BIA1470	01/31/25	02/01/25	EPA 6020B	
Barium	104	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.94	0.400	"	"	"	"	"	"	
Lead	3.81	0.200	"	"	"	"	"	"	
Nickel	4.28	0.400	"	"	"	"	"	"	
Silver	0.0207	0.0200	"	"	"	"	"	"	
Zinc	16.5	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **01/29/25 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIB0492	02/10/25	02/11/25	EPA 7196A	

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

Date Sampled: **01/29/25 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	96.3	0.0500	mg/L dry	1	BIB1161	02/20/25	03/01/25	EPA 6020B	
Magnesium	9.26	0.0500	"	"	"	"	"	"	
Sodium	24.7	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **01/29/25 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.644	0.00100	units	1	BIC0002	03/01/25	03/01/25	Calculation	

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

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6855 W. 119th Ave.  
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Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**FL03R-W@4'**  
**2501463-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **01/29/25 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.8		%	1	BIA1466	01/31/25	01/31/25	Calculation	

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

Date Sampled: **01/29/25 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.278	0.0100	mmhos/cm	1	BIB1163	02/20/25	02/24/25	EPA 120.1	

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

Date Sampled: **01/29/25 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.54		pH Units	1	BIB1162	02/20/25	02/24/25	EPA 9045D	

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

Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**FL04R-W@4'**  
**2501463-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **01/29/25 14:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BIB0489	02/10/25	02/15/25	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: **01/29/25 14:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0418	104 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0404	101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0426	106 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/29/25 14:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>C10-C28 (DRO)</b>	<b>360</b>	50		mg/kg	1	BIB0495	02/10/25	02/12/25	EPA 8015M	
<b>C28-C36 (ORO)</b>	<b>280</b>	50		"	"	"	"	"	"	

Date Sampled: **01/29/25 14:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.54	68.4 %		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 - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**FL04R-W@4'**  
**2501463-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **01/29/25 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIB0311	02/06/25	02/11/25	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/29/25 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0177	53.2 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0193	58.0 %	40-140		"	"	"	"	

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

Date Sampled: **01/29/25 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB1651	02/28/25	03/10/25	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **01/29/25 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences  
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Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**FL04R-W@4'**  
**2501463-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.70	0.200	mg/kg dry	1	BIA1470	01/31/25	02/01/25	EPA 6020B	
Barium	598	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.63	0.400	"	"	"	"	"	"	
Lead	4.28	0.200	"	"	"	"	"	"	
Nickel	4.25	0.400	"	"	"	"	"	"	
Silver	0.0226	0.0200	"	"	"	"	"	"	
Zinc	19.6	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **01/29/25 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIB0492	02/10/25	02/11/25	EPA 7196A	

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

Date Sampled: **01/29/25 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	97.1	0.0500	mg/L dry	1	BIB1161	02/20/25	03/01/25	EPA 6020B	
Magnesium	9.19	0.0500	"	"	"	"	"	"	
Sodium	25.2	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **01/29/25 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.655	0.00100	units	1	BIC0002	03/01/25	03/01/25	Calculation	

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

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Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**FL04R-W@4'**  
**2501463-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **01/29/25 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.4		%	1	BIA1466	01/31/25	01/31/25	Calculation	

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

Date Sampled: **01/29/25 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.349	0.0100	mmhos/cm	1	BIB1163	02/20/25	02/24/25	EPA 120.1	

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

Date Sampled: **01/29/25 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.54		pH Units	1	BIB1162	02/20/25	02/24/25	EPA 9045D	

Summit Scientific

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Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**FL05R-W@4'**  
**2501463-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **01/29/25 14:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BIB0489	02/10/25	02/15/25	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: **01/29/25 14:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0416	104 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0408	102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0415	104 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/29/25 14:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BIB0495	02/10/25	02/12/25	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/29/25 14:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	7.57	60.6 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**FL05R-W@4'**  
**2501463-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **01/29/25 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIB0311	02/06/25	02/11/25	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/29/25 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0179	53.7 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0178	53.5 %	40-140		"	"	"	"	

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

Date Sampled: **01/29/25 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB1651	02/28/25	03/10/25	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **01/29/25 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**FL05R-W@4'**  
**2501463-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.27	0.200	mg/kg dry	1	BIA1470	01/31/25	02/01/25	EPA 6020B
Barium	123	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	5.23	0.400	"	"	"	"	"	"
Lead	5.42	0.200	"	"	"	"	"	"
Nickel	4.36	0.400	"	"	"	"	"	"
Silver	0.0326	0.0200	"	"	"	"	"	"
Zinc	22.5	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **01/29/25 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIB0492	02/10/25	02/11/25	EPA 7196A	

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

Date Sampled: **01/29/25 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	64.6	0.0500	mg/L dry	1	BIB1161	02/20/25	03/01/25	EPA 6020B	
Magnesium	10.4	0.0500	"	"	"	"	"	"	
Sodium	37.4	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **01/29/25 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.14	0.00100	units	1	BIC0002	03/01/25	03/01/25	Calculation	

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

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Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**FL05R-W@4'**  
**2501463-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **01/29/25 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.1		%	1	BIA1466	01/31/25	01/31/25	Calculation	

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

Date Sampled: **01/29/25 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.538	0.0100	mmhos/cm	1	BIB1163	02/20/25	02/24/25	EPA 120.1	

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

Date Sampled: **01/29/25 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.20		pH Units	1	BIB1162	02/20/25	02/24/25	EPA 9045D	

Summit Scientific

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Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**FL06R-W@4'**  
**2501463-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **01/29/25 15:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BIB0489	02/10/25	02/15/25	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: **01/29/25 15:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0418	105 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0403	101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0417	104 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/29/25 15:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BIB0495	02/10/25	02/12/25	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/29/25 15:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.67	69.4 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**FL06R-W@4'**  
**2501463-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **01/29/25 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BIB0311	02/06/25	02/11/25	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/29/25 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0211	63.4 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0210	62.9 %	40-140		"	"	"	"	

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

Date Sampled: **01/29/25 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BIB1651	02/28/25	03/10/25	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **01/29/25 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**FL06R-W@4'**  
**2501463-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.84	0.200	mg/kg dry	1	BIA1470	01/31/25	02/03/25	EPA 6020B
Barium	75.3	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	4.75	0.400	"	"	"	"	"	"
Lead	5.10	0.200	"	"	"	"	"	"
Nickel	5.24	0.400	"	"	"	"	"	"
Silver	0.0274	0.0200	"	"	"	"	"	"
Zinc	21.4	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **01/29/25 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BIB0492	02/10/25	02/11/25	EPA 7196A	

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

Date Sampled: **01/29/25 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	43.2	0.0500	mg/L dry	1	BIB1161	02/20/25	03/01/25	EPA 6020B	
Magnesium	7.12	0.0500	"	"	"	"	"	"	
Sodium	25.2	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **01/29/25 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.936	0.00100	units	1	BIC0002	03/01/25	03/01/25	Calculation	

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

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

Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**FL06R-W@4'**  
**2501463-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **01/29/25 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.0		%	1	BIA1466	01/31/25	01/31/25	Calculation	

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

Date Sampled: **01/29/25 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.191	0.0100	mmhos/cm	1	BIB1163	02/20/25	02/24/25	EPA 120.1	

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

Date Sampled: **01/29/25 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.84		pH Units	1	BIB1162	02/20/25	02/24/25	EPA 9045D	

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Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**GW01**  
**2501463-06 (Water)**

**Summit Scientific**

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

Date Sampled: **01/29/25 15:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BIA1525	01/31/25	02/01/25	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **01/29/25 15:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	14.0	105 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.3	99.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.7	103 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **01/29/25 15:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>210</b>	0.0600		mg/L	50	BIB0329	02/07/25	03/04/25	EPA 300.0	
Sulfate	<b>1640</b>	0.300		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **01/29/25 15:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>2040</b>	10.0		mg/L	1	BIA1491	01/31/25	02/05/25	SM2540C	JAN

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6855 W. 119th Ave.  
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Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

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

#### Summit Scientific

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

#### Batch BIA1525 - EPA 5030 Water MS

##### Blank (BIA1525-BLK1)

Prepared: 01/31/25 Analyzed: 02/01/25

Benzene	ND	1.0	ug/l								
Toluene	ND	1.0	"								
Ethylbenzene	ND	1.0	"								
Xylenes (total)	ND	2.0	"								
Naphthalene	ND	1.0	"								
1,2,4-Trimethylbenzene	ND	1.0	"								
1,3,5-Trimethylbenzene	ND	1.0	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	13.7		"	13.3		103		23-173			
<i>Surrogate: Toluene-d8</i>	13.2		"	13.3		99.3		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.2		"	13.3		98.7		21-167			

##### LCS (BIA1525-BS1)

Prepared: 01/31/25 Analyzed: 02/01/25

Benzene	34.8	1.0	ug/l	33.3		104		51-132			
Toluene	33.6	1.0	"	33.3		101		51-138			
Ethylbenzene	35.8	1.0	"	33.3		107		58-146			
m,p-Xylene	69.1	2.0	"	66.7		104		57-144			
o-Xylene	33.9	1.0	"	33.3		102		53-146			
Naphthalene	34.5	1.0	"	33.3		104		70-130			
1,2,4-Trimethylbenzene	34.4	1.0	"	33.3		103		70-130			
1,3,5-Trimethylbenzene	34.4	1.0	"	33.3		103		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	13.8		"	13.3		103		23-173			
<i>Surrogate: Toluene-d8</i>	13.3		"	13.3		99.9		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.2		"	13.3		98.9		21-167			

##### LCS Dup (BIA1525-BSD1)

Prepared: 01/31/25 Analyzed: 02/01/25

Benzene	35.1	1.0	ug/l	33.3		105		51-132	1.00	20	
Toluene	34.4	1.0	"	33.3		103		51-138	2.50	20	
Ethylbenzene	36.6	1.0	"	33.3		110		58-146	2.07	20	
m,p-Xylene	70.8	2.0	"	66.7		106		57-144	2.42	20	
o-Xylene	34.5	1.0	"	33.3		103		53-146	1.67	20	
Naphthalene	35.5	1.0	"	33.3		107		70-130	2.89	20	
1,2,4-Trimethylbenzene	35.3	1.0	"	33.3		106		70-130	2.58	20	
1,3,5-Trimethylbenzene	35.3	1.0	"	33.3		106		70-130	2.41	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	13.6		"	13.3		102		23-173			
<i>Surrogate: Toluene-d8</i>	13.4		"	13.3		101		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.3		"	13.3		100		21-167			

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Broomfield CO, 80020

Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

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

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

**Batch BIB0489 - EPA 5030 Soil MS**

**Blank (BIB0489-BLK1)**

Prepared: 02/10/25 Analyzed: 02/15/25

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0422</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0428</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>50-150</i>			

**LCS (BIB0489-BS1)**

Prepared: 02/10/25 Analyzed: 02/15/25

Benzene	0.101	0.0020	mg/kg	0.100		101	70-130			
Toluene	0.0996	0.0050	"	0.100		99.6	70-130			
Ethylbenzene	0.105	0.0050	"	0.100		105	70-130			
m,p-Xylene	0.202	0.010	"	0.200		101	70-130			
o-Xylene	0.105	0.0050	"	0.100		105	70-130			
1,2,4-Trimethylbenzene	0.0991	0.0050	"	0.100		99.1	70-130			
1,3,5-Trimethylbenzene	0.107	0.0050	"	0.100		107	70-130			
Naphthalene	0.0880	0.0038	"	0.100		88.0	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0410</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0415</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0416</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>50-150</i>			

**Matrix Spike (BIB0489-MS1)**

Source: 2501463-01

Prepared: 02/10/25 Analyzed: 02/15/25

Benzene	0.0595	0.0020	mg/kg	0.100	ND	59.5	70-130			QM-05
Toluene	0.0651	0.0050	"	0.100	ND	65.1	70-130			QM-05
Ethylbenzene	0.0869	0.0050	"	0.100	ND	86.9	70-130			
m,p-Xylene	0.169	0.010	"	0.200	ND	84.5	70-130			
o-Xylene	0.0828	0.0050	"	0.100	ND	82.8	70-130			
1,2,4-Trimethylbenzene	0.0705	0.0050	"	0.100	ND	70.5	70-130			
1,3,5-Trimethylbenzene	0.0889	0.0050	"	0.100	ND	88.9	70-130			
Naphthalene	0.0477	0.0038	"	0.100	ND	47.7	70-130			QM-05
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0438</i>		<i>"</i>	<i>0.0400</i>		<i>110</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0425</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0411</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>50-150</i>			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

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

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

**Batch BIB0489 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (BIB0489-MSD1)</b>	<b>Source: 2501463-01</b>			<b>Prepared: 02/10/25 Analyzed: 02/15/25</b>						
Benzene	0.0635	0.0020	mg/kg	0.100	ND	63.5	70-130	6.58	30	QM-05
Toluene	0.0652	0.0050	"	0.100	ND	65.2	70-130	0.138	30	QM-05
Ethylbenzene	0.0938	0.0050	"	0.100	ND	93.8	70-130	7.60	30	
m,p-Xylene	0.172	0.010	"	0.200	ND	86.0	70-130	1.85	30	
o-Xylene	0.0852	0.0050	"	0.100	ND	85.2	70-130	2.93	30	
1,2,4-Trimethylbenzene	0.0715	0.0050	"	0.100	ND	71.5	70-130	1.48	30	
1,3,5-Trimethylbenzene	0.0930	0.0050	"	0.100	ND	93.0	70-130	4.55	30	
Naphthalene	0.0400	0.0038	"	0.100	ND	40.0	70-130	17.7	30	QM-05
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0410</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0409</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0411</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>50-150</i>			

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Broomfield CO, 80020

Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BIB0495 - EPA 3550A**

**Blank (BIB0495-BLK1)**

Prepared: 02/10/25 Analyzed: 02/12/25

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: <i>o</i> -Terphenyl	13.0		"	12.5		104	30-150			

**LCS (BIB0495-BS1)**

Prepared: 02/10/25 Analyzed: 02/12/25

C10-C28 (DRO)	399	50	mg/kg	500		79.8	70-130			
Surrogate: <i>o</i> -Terphenyl	13.3		"	12.5		106	30-150			

**Matrix Spike (BIB0495-MS1)**

Source: 2501463-01

Prepared: 02/10/25 Analyzed: 02/12/25

C10-C28 (DRO)	420	50	mg/kg	500	ND	84.0	70-130			
Surrogate: <i>o</i> -Terphenyl	7.50		"	12.5		60.0	30-150			

**Matrix Spike Dup (BIB0495-MSD1)**

Source: 2501463-01

Prepared: 02/10/25 Analyzed: 02/12/25

C10-C28 (DRO)	403	50	mg/kg	500	ND	80.7	70-130	4.00	20	
Surrogate: <i>o</i> -Terphenyl	6.81		"	12.5		54.5	30-150			

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Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

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

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

**Batch BIB0311 - EPA 5030 Soil MS**

**Blank (BIB0311-BLK1)**

Prepared: 02/06/25 Analyzed: 02/11/25

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0229		"	0.0333		68.8	40-140			
Surrogate: Fluoranthene-d10	0.0238		"	0.0333		71.4	40-140			

**LCS (BIB0311-BS1)**

Prepared: 02/06/25 Analyzed: 02/11/25

Acenaphthene	0.0256	0.00500	mg/kg	0.0333		76.9	40-140			
Anthracene	0.0244	0.00500	"	0.0333		73.1	40-140			
Benzo (a) anthracene	0.0268	0.00500	"	0.0333		80.4	40-140			
Benzo (a) pyrene	0.0254	0.00500	"	0.0333		76.3	40-140			
Benzo (b) fluoranthene	0.0255	0.00500	"	0.0333		76.5	40-140			
Benzo (k) fluoranthene	0.0247	0.00500	"	0.0333		74.0	40-140			
Chrysene	0.0251	0.00500	"	0.0333		75.4	40-140			
Dibenz (a,h) anthracene	0.0255	0.00500	"	0.0333		76.5	40-140			
Fluoranthene	0.0256	0.00500	"	0.0333		76.7	40-140			
Fluorene	0.0260	0.00500	"	0.0333		78.1	40-140			
Indeno (1,2,3-cd) pyrene	0.0247	0.00500	"	0.0333		74.0	40-140			
Pyrene	0.0240	0.00500	"	0.0333		72.0	40-140			
1-Methylnaphthalene	0.0248	0.00500	"	0.0333		74.5	40-140			
2-Methylnaphthalene	0.0251	0.00500	"	0.0333		75.2	40-140			
Surrogate: 2-Methylnaphthalene-d10	0.0246		"	0.0333		73.7	40-140			
Surrogate: Fluoranthene-d10	0.0252		"	0.0333		75.6	40-140			

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Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

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

**Summit Scientific**

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

**Batch BIB0311 - EPA 5030 Soil MS**

<b>Matrix Spike (BIB0311-MS1)</b>		<b>Source: 2501463-01</b>			Prepared: 02/06/25		Analyzed: 02/11/25	
Acenaphthene	0.0144	0.00500	mg/kg	0.0333	ND	43.1	40-140	
Anthracene	0.0146	0.00500	"	0.0333	ND	43.7	40-140	
Benzo (a) anthracene	0.0164	0.00500	"	0.0333	ND	49.1	40-140	
Benzo (a) pyrene	0.0153	0.00500	"	0.0333	ND	45.8	40-140	
Benzo (b) fluoranthene	0.0145	0.00500	"	0.0333	ND	43.6	40-140	
Benzo (k) fluoranthene	0.0144	0.00500	"	0.0333	ND	43.1	40-140	
Chrysene	0.0144	0.00500	"	0.0333	ND	43.1	40-140	
Dibenz (a,h) anthracene	0.0150	0.00500	"	0.0333	ND	45.1	40-140	
Fluoranthene	0.0150	0.00500	"	0.0333	ND	44.9	40-140	
Fluorene	0.0154	0.00500	"	0.0333	ND	46.3	40-140	
Indeno (1,2,3-cd) pyrene	0.0143	0.00500	"	0.0333	ND	43.0	40-140	
Pyrene	0.0163	0.00500	"	0.0333	ND	48.9	40-140	
1-Methylnaphthalene	0.0153	0.00500	"	0.0333	ND	45.8	40-140	
2-Methylnaphthalene	0.0153	0.00500	"	0.0333	ND	46.0	40-140	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0149</i>		<i>"</i>	<i>0.0333</i>		<i>44.6</i>	<i>40-140</i>	
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0145</i>		<i>"</i>	<i>0.0333</i>		<i>43.6</i>	<i>40-140</i>	

<b>Matrix Spike Dup (BIB0311-MSD1)</b>		<b>Source: 2501463-01</b>			Prepared: 02/06/25		Analyzed: 02/11/25	
Acenaphthene	0.0183	0.00500	mg/kg	0.0333	ND	55.0	40-140	24.1 30
Anthracene	0.0181	0.00500	"	0.0333	ND	54.4	40-140	21.9 30
Benzo (a) anthracene	0.0204	0.00500	"	0.0333	ND	61.1	40-140	21.7 30
Benzo (a) pyrene	0.0187	0.00500	"	0.0333	ND	56.0	40-140	20.0 30
Benzo (b) fluoranthene	0.0177	0.00500	"	0.0333	ND	53.2	40-140	19.8 30
Benzo (k) fluoranthene	0.0176	0.00500	"	0.0333	ND	52.9	40-140	20.4 30
Chrysene	0.0182	0.00500	"	0.0333	ND	54.5	40-140	23.3 30
Dibenz (a,h) anthracene	0.0190	0.00500	"	0.0333	ND	57.0	40-140	23.3 30
Fluoranthene	0.0192	0.00500	"	0.0333	ND	57.6	40-140	24.7 30
Fluorene	0.0191	0.00500	"	0.0333	ND	57.4	40-140	21.5 30
Indeno (1,2,3-cd) pyrene	0.0172	0.00500	"	0.0333	ND	51.5	40-140	17.9 30
Pyrene	0.0174	0.00500	"	0.0333	ND	52.3	40-140	6.58 30
1-Methylnaphthalene	0.0183	0.00500	"	0.0333	ND	55.0	40-140	18.1 30
2-Methylnaphthalene	0.0182	0.00500	"	0.0333	ND	54.6	40-140	17.2 30
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0176</i>		<i>"</i>	<i>0.0333</i>		<i>52.9</i>	<i>40-140</i>	
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0187</i>		<i>"</i>	<i>0.0333</i>		<i>56.2</i>	<i>40-140</i>	

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

Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

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

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

**Batch BIB1651 - EPA 3050B**

**Blank (BIB1651-BLK1)**

Prepared: 02/28/25 Analyzed: 03/10/25

Boron ND 2.00 mg/L

**LCS (BIB1651-BS1)**

Prepared: 02/28/25 Analyzed: 03/10/25

Boron 4.89 2.00 mg/L 5.00 97.8 80-120

**Duplicate (BIB1651-DUP1)**

**Source: 2501458-03**

Prepared: 02/28/25 Analyzed: 03/10/25

Boron 1.44 2.00 mg/L 1.36 6.09 20

**Matrix Spike (BIB1651-MS1)**

**Source: 2501458-03**

Prepared: 02/28/25 Analyzed: 03/10/25

Boron 6.31 2.00 mg/L 4.98 1.36 99.5 75-125

**Matrix Spike Dup (BIB1651-MSD1)**

**Source: 2501458-03**

Prepared: 02/28/25 Analyzed: 03/10/25

Boron 6.52 2.00 mg/L 4.98 1.36 104 75-125 3.20 25

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

Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

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

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

**Batch BIA1470 - EPA 3050B**

**Blank (BIA1470-BLK1)**

Prepared: 01/31/25 Analyzed: 02/01/25

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

**LCS (BIA1470-BS1)**

Prepared: 01/31/25 Analyzed: 02/01/25

Arsenic	35.7	0.200	mg/kg wet	40.0	89.3	80-120				
Barium	37.0	0.400	"	40.0	92.4	80-120				
Cadmium	1.84	0.200	"	2.00	92.0	80-120				
Copper	38.2	0.400	"	40.0	95.5	80-120				
Lead	18.2	0.200	"	20.0	90.9	80-120				
Nickel	37.5	0.400	"	40.0	93.8	80-120				
Silver	1.83	0.0200	"	2.00	91.4	80-120				
Zinc	37.5	0.400	"	40.0	93.7	80-120				
Selenium	3.76	0.260	"	4.00	94.1	80-120				

**Duplicate (BIA1470-DUP1)**

Source: 2501459-03

Prepared: 01/31/25 Analyzed: 02/01/25

Arsenic	4.06	0.200	mg/kg dry	4.13	1.82	20				
Barium	161	0.400	"	102	44.8	20				QR-04
Cadmium	0.249	0.200	"	0.263	5.37	20				
Copper	5.87	0.400	"	5.31	9.89	20				
Lead	8.20	0.200	"	7.72	6.07	20				
Nickel	5.68	0.400	"	5.10	10.8	20				
Silver	0.0398	0.0200	"	0.0378	5.06	20				
Zinc	24.5	0.400	"	26.1	6.35	20				
Selenium	0.220	0.260	"	0.215	2.03	20				

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

Project: Noble - Wiedeman 4-5 FL

Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

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

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

**Batch BIA1470 - EPA 3050B**

**Matrix Spike (BIA1470-MS1)**

Source: 2501459-03

Prepared: 01/31/25 Analyzed: 02/01/25

Arsenic	47.2	0.200	mg/kg dry	48.7	4.13	88.4	75-125				
Barium	132	0.400	"	48.7	102	62.1	75-125				QM-05
Cadmium	2.52	0.200	"	2.44	0.263	92.7	75-125				
Copper	37.1	0.400	"	48.7	5.31	65.2	75-125				QM-05
Lead	29.3	0.200	"	24.4	7.72	88.8	75-125				
Nickel	36.8	0.400	"	48.7	5.10	65.1	75-125				QM-05
Silver	2.26	0.0200	"	2.44	0.0378	91.0	75-125				
Zinc	56.2	0.400	"	48.7	26.1	61.6	75-125				QM-05
Selenium	3.76	0.260	"	4.87	0.215	72.7	75-125				QM-05

**Matrix Spike Dup (BIA1470-MSD1)**

Source: 2501459-03

Prepared: 01/31/25 Analyzed: 02/03/25

Arsenic	52.5	0.200	mg/kg dry	47.6	4.13	102	75-125	10.6	25		
Barium	98.1	0.400	"	47.6	102	NR	75-125	29.6	25		QM-05
Cadmium	2.73	0.200	"	2.38	0.263	104	75-125	7.95	25		
Copper	45.0	0.400	"	47.6	5.31	83.4	75-125	19.2	25		
Lead	28.8	0.200	"	23.8	7.72	88.7	75-125	1.84	25		
Nickel	44.0	0.400	"	47.6	5.10	81.7	75-125	17.7	25		
Silver	2.48	0.0200	"	2.38	0.0378	102	75-125	9.27	25		
Zinc	61.4	0.400	"	47.6	26.1	74.1	75-125	8.90	25		QM-05
Selenium	3.96	0.260	"	4.76	0.215	78.8	75-125	5.29	25		

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

Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

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

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

**Batch BIB0492 - 3060A Mod**

**Blank (BIB0492-BLK1)**

Prepared: 02/10/25 Analyzed: 02/11/25

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BIB0492-BS1)**

Prepared: 02/10/25 Analyzed: 02/11/25

Chromium, Hexavalent 24.4 0.30 mg/kg wet 23.8 102 80-120

**Duplicate (BIB0492-DUP1)**

**Source: 2501463-01**

Prepared: 02/10/25 Analyzed: 02/11/25

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BIB0492-MS1)**

**Source: 2501463-01**

Prepared: 02/10/25 Analyzed: 02/11/25

Chromium, Hexavalent 29.6 0.30 mg/kg dry 29.7 ND 99.6 75-125

**Matrix Spike Dup (BIB0492-MSD1)**

**Source: 2501463-01**

Prepared: 02/10/25 Analyzed: 02/11/25

Chromium, Hexavalent 28.5 0.30 mg/kg dry 27.4 ND 104 75-125 3.79 20

Summit Scientific

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

Project: Noble - Wiedeman 4-5 FL

Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

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

**Summit Scientific**

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

**Batch BIB1161 - General Preparation**

**Blank (BIB1161-BLK1)**

Prepared: 02/20/25 Analyzed: 02/28/25

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

**LCS (BIB1161-BS1)**

Prepared: 02/20/25 Analyzed: 02/28/25

Calcium	5.45	0.0500	mg/L wet	5.00	109	70-130
Magnesium	4.60	0.0500	"	5.00	92.0	70-130
Sodium	4.46	0.0500	"	5.00	89.2	70-130

Summit Scientific

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

Project: Noble - Wiedeman 4-5 FL  
Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**Anions by EPA Method 300.0 - Quality Control**  
**Summit Scientific**

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

**Batch BIB0329 - General Preparation**

**Blank (BIB0329-BLK1)**

Prepared: 02/07/25 Analyzed: 03/04/25

Chloride	ND	0.0600	mg/L						
Sulfate	ND	0.300	"						

**LCS (BIB0329-BS1)**

Prepared: 02/07/25 Analyzed: 03/04/25

Chloride	2.83	0.0600	mg/L	3.00	94.4	90-110		
Sulfate	14.7	0.300	"	15.0	97.9	90-110		

**Duplicate (BIB0329-DUP1)**

Source: 2501463-06

Prepared: 02/07/25 Analyzed: 03/04/25

Chloride	212	0.0600	mg/L	210			1.10	20
Sulfate	1630	0.300	"	1640			0.926	20

**Matrix Spike (BIB0329-MS1)**

Source: 2501463-06

Prepared: 02/07/25 Analyzed: 03/04/25

Chloride	355	0.0600	mg/L	150	210	97.0	80-120	
Sulfate	2400	0.300	"	750	1640	101	80-120	

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 6855 W. 119th Ave.  
 Broomfield CO, 80020

Project: Noble - Wiedeman 4-5 FL  
 Project Number: UWRWE-A3550-ABN  
 Project Manager: Andy Sagen

**Reported:**  
 03/12/25 14:14

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

**Summit Scientific**

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

**Batch BIA1466 - General Preparation**

Duplicate (BIA1466-DUP1)	Source: 2501452-02			Prepared & Analyzed: 01/31/25					
% Solids	81.5	%		80.9			0.685	20	

Summit Scientific

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

Project: Noble - Wiedeman 4-5 FL

Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

**Total Dissolved Solids by SM2540C - Quality Control**  
**Summit Scientific**

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

**Batch BIA1491 - General Preparation**

**Blank (BIA1491-BLK1)**

Prepared: 01/31/25 Analyzed: 02/05/25

Total Dissolved Solids ND 10.0 mg/L

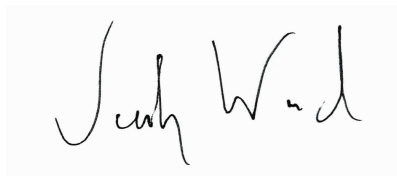
**Duplicate (BIA1491-DUP1)**

Source: 2501460-01

Prepared: 01/31/25 Analyzed: 02/05/25

Total Dissolved Solids 1130 10.0 mg/L 1100 2.69 20

Summit Scientific



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

Project: Noble - Wiedeman 4-5 FL

Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

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

**Summit Scientific**

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

**Batch BIB1163 - General Preparation**

**Blank (BIB1163-BLK1)**

Prepared: 02/20/25 Analyzed: 02/24/25

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BIB1163-BS1)**

Prepared: 02/20/25 Analyzed: 02/24/25

Specific Conductance (EC) 1.43 0.0100 mmhos/cm 1.41 102 95-105

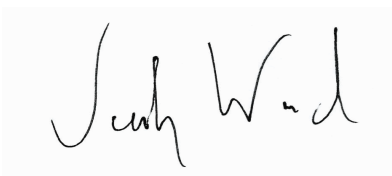
**Duplicate (BIB1163-DUP1)**

Source: 2501463-01

Prepared: 02/20/25 Analyzed: 02/24/25

Specific Conductance (EC) 0.308 0.0100 mmhos/cm 0.307 0.333 20

Summit Scientific



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

Project: Noble - Wiedeman 4-5 FL

Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

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

**Summit Scientific**

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

**Batch BIB1162 - General Preparation**

**LCS (BIB1162-BS1)**

Prepared: 02/20/25 Analyzed: 02/24/25

pH	9.23	pH Units	9.18	101	95-105
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**Duplicate (BIB1162-DUP1)**

Source: 2501463-01

Prepared: 02/20/25 Analyzed: 02/24/25

pH	8.99	pH Units	9.02	0.301	20
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Summit Scientific



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

Project: Noble - Wiedeman 4-5 FL

Project Number: UWRWE-A3550-ABN  
Project Manager: Andy Sagen

**Reported:**  
03/12/25 14:14

### Notes and Definitions

- QR-04 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values.
- 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.
- JAN The reported TDS concentration is a qualitative estimate based on Total Anion Value + 10%. This has been adjusted to account for the sum of major anions as measured by ion chromatography.
- 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