

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 15, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Sater CC18-18 TB

Work Order #2404124

Enclosed are the results of analyses for samples received by Summit Scientific on 04/08/24 17:39. 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 written in a cursive, flowing style.

Natalie Tessier For Paul Shrewsbury

President



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

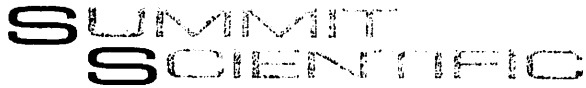
Project: Noble - Sater CC18-18 TB

Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST01@0.5'	2404124-01	Soil	04/08/24 11:39	04/08/24 17:39
AST02@0.5'	2404124-02	Soil	04/08/24 11:48	04/08/24 17:39
FS01@4'	2404124-03	Soil	04/08/24 13:40	04/08/24 17:39
SS02@3'	2404124-05	Soil	04/08/24 13:34	04/08/24 17:39



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

Lab ID	Page	of
2404124		

Send Data To:		Send Invoice To:
Client: Noble/Tasman	Project Manager: Jake Whritenour	Company: Noble
Address: 6855 W. 119th Ave.	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location: Sater CC 1B-1B TB
City/State/Zip: Broomfield/CO/ 80020		AFE#: UW/RWE-3547-ABN
Phone: 978-857-4408	Project Location: Sater CC 1B-1B TB	PO/Billing Codes:
Sampler Name: Matthew Wentzel <i>Kaitlin Steinfart</i>	Project Number:	Contact: <i>Miguel Barron</i>

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Analysis Requested							Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH		Boron - HWS	HOLD
1	AST01 @ 0.5'	04-08-24	1139	3			X			X										SAR, EC, pH by saturated paste
2	AST02 @ 0.5'		1148				X			X										
3	FS01 @ 4'		1347																	
4	SS01 @ 3'		1331																	
5	SS02 @ 3'		1334																	
6	SS03 @ 3'		1335																	
7	SS04 @ 3'		1337																	
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: <i>Kaitlin Steinfart</i>	Date/Time: 04-08-24 1537	Received by: Tasman Lock Box	Date/Time: 04-08-24 1537	TAT Business Days	Field DO	Notes:
Relinquished by: <i>Tasman Lock Box</i>	Date/Time: 4824 1739	Received by: <i>[Signature]</i>	Date/Time: 4824 1739	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
Relinquished by:	Date/Time:	Received by:	Date/Time:	2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
Temperature Upon Receipt: 8.7	Corrected Temperature: 8	IR gun #:	HNO3 lot #:	Standard	<input checked="" type="checkbox"/> Field Turb.	

S₂

Sample Receipt Checklist

S2 Work Order# 2404124

Client: Noble Gasman Client Project ID: Sater CC 18-18 TB

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

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

Temp (°C) 8.7 Thermometer # 1

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

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

AS
Custodian Printed Name

4/8/24
Date/Time



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

Project: Noble - Sater CC18-18 TB
Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

AST01@0.5'
2404124-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/08/24 11:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHD0310	04/10/24	04/13/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **04/08/24 11:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0336	84.1 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0345	86.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0373	93.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/08/24 11:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHD0314	04/10/24	04/11/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **04/08/24 11:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	7.54	60.3 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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2404124-01 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **04/08/24 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHD0265	04/09/24	04/10/24	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: **04/08/24 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0213	64.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0164	49.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/08/24 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHD0519	04/16/24	04/18/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/08/24 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Sater CC18-18 TB

Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

AST01@0.5'
2404124-01 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.17	0.200	mg/kg dry	1	BHD0833	04/23/24	04/26/24	EPA 6020B
Barium	79.9	0.400	"	"	"	"	"	"
Cadmium	0.358	0.200	"	"	"	"	"	"
Copper	5.48	0.400	"	"	"	"	"	"
Lead	10.6	0.200	"	"	"	"	"	"
Nickel	4.72	0.400	"	"	"	"	"	"
Silver	0.0559	0.0200	"	"	"	"	"	"
Zinc	18.0	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/08/24 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0567	04/17/24	04/18/24	EPA 7196A	

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

Date Sampled: **04/08/24 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	43.3	0.0500	mg/L dry	1	BHD0851	04/23/24	05/14/24	EPA 6020B	
Magnesium	9.11	0.0500	"	"	"	"	"	"	
Sodium	0.411	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/08/24 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0148	0.00100	units	1	BHE0470	05/15/24	05/15/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/08/24 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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05/15/24 11:00

AST01@0.5'
2404124-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	88.1	%	1	BHD0447	04/15/24	04/16/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/08/24 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0270	0.0100	mmhos/cm	1	BHD0853	04/23/24	04/25/24	EPA 120.1	

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

Date Sampled: **04/08/24 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.61		pH Units	1	BHD0852	04/23/24	04/25/24	EPA 9045D	

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Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

AST02@0.5'
2404124-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/08/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHD0310	04/10/24	04/13/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/08/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0310	77.5 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0342	85.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0361	90.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/08/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0314	04/10/24	04/11/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/08/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.84	62.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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05/15/24 11:00

AST02@0.5'
2404124-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/08/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHD0265	04/09/24	04/10/24	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: **04/08/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0220	66.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0163	49.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/08/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHD0519	04/16/24	04/18/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/08/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Sater CC18-18 TB

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Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

AST02@0.5'
2404124-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.38	0.200	mg/kg dry	1	BHD0833	04/23/24	04/26/24	EPA 6020B
Barium	45.9	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	4.06	0.400	"	"	"	"	"	"
Lead	6.71	0.200	"	"	"	"	"	"
Nickel	4.11	0.400	"	"	"	"	"	"
Silver	0.0376	0.0200	"	"	"	"	"	"
Zinc	15.0	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/08/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0567	04/17/24	04/18/24	EPA 7196A	

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

Date Sampled: **04/08/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	90.2	0.0500	mg/L dry	1	BHD0851	04/23/24	05/14/24	EPA 6020B	
Magnesium	8.33	0.0500	"	"	"	"	"	"	
Sodium	4.14	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/08/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.112	0.00100	units	1	BHE0470	05/15/24	05/15/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Sater CC18-18 TB

Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

AST02@0.5'
2404124-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/08/24 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	91.2			%	1	BHD0447	04/15/24	04/16/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/08/24 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.134	0.0100		mmhos/cm	1	BHD0853	04/23/24	04/25/24	EPA 120.1	

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

Date Sampled: **04/08/24 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.77			pH Units	1	BHD0852	04/23/24	04/25/24	EPA 9045D	

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

Project: Noble - Sater CC18-18 TB

Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

FS01@4'
2404124-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/08/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHD0310	04/10/24	04/13/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/08/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0317	79.3 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0347	86.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0363	90.7 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/08/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0314	04/10/24	04/11/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/08/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.82	62.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Sater CC18-18 TB
Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

FS01@4'
2404124-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/08/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHD0265	04/09/24	04/10/24	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: **04/08/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0281	84.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0170	51.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/08/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHD0519	04/16/24	04/18/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/08/24 13:40**

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

Project: Noble - Sater CC18-18 TB

Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

FS01@4'
2404124-03 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.82	0.200	mg/kg dry	1	BHD0833	04/23/24	04/26/24	EPA 6020B
Barium	56.7	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	3.98	0.400	"	"	"	"	"	"
Lead	5.01	0.200	"	"	"	"	"	"
Nickel	3.87	0.400	"	"	"	"	"	"
Silver	0.0408	0.0200	"	"	"	"	"	"
Zinc	14.7	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/08/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0567	04/17/24	04/18/24	EPA 7196A	

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

Date Sampled: **04/08/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	179	0.0500	mg/L dry	1	BHD0851	04/23/24	05/14/24	EPA 6020B	
Magnesium	17.6	0.0500	"	"	"	"	"	"	
Sodium	5.22	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/08/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0997	0.00100	units	1	BHE0470	05/15/24	05/15/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Sater CC18-18 TB
Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

FS01@4'
2404124-03 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/08/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.2		%	1	BHD0447	04/15/24	04/16/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/08/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0970	0.0100	mmhos/cm	1	BHD0853	04/23/24	04/25/24	EPA 120.1	

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

Date Sampled: **04/08/24 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.85		pH Units	1	BHD0852	04/23/24	04/25/24	EPA 9045D	

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Project: Noble - Sater CC18-18 TB
Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

SS02@3'
2404124-05 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/08/24 13:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHD0310	04/10/24	04/13/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/08/24 13:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0310	77.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0341	85.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0362	90.5 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/08/24 13:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0314	04/10/24	04/12/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/08/24 13:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.91	63.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Sater CC18-18 TB
Project Number: UWRWE-3547-ABN
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Reported:
05/15/24 11:00

SS02@3'
2404124-05 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **04/08/24 13:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHD0265	04/09/24	04/10/24	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: **04/08/24 13:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0242	72.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0178	53.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/08/24 13:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHD0519	04/16/24	04/18/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/08/24 13:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Sater CC18-18 TB

Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

SS02@3'
2404124-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.09	0.180	mg/kg dry	1	BHD0833	04/23/24	04/26/24	EPA 6020B	
Barium	67.2	0.360	"	"	"	"	"	"	
Cadmium	0.272	0.180	"	"	"	"	"	"	
Copper	5.45	0.360	"	"	"	"	"	"	
Lead	7.19	0.180	"	"	"	"	"	"	
Nickel	4.31	0.360	"	"	"	"	"	"	
Silver	0.0481	0.0180	"	"	"	"	"	"	
Zinc	17.5	0.360	"	"	"	"	"	"	
Selenium	ND	0.234	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/08/24 13:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0567	04/17/24	04/18/24	EPA 7196A	

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

Date Sampled: **04/08/24 13:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	76.7	0.0500	mg/L dry	1	BHD0851	04/23/24	05/14/24	EPA 6020B	
Magnesium	11.2	0.0500	"	"	"	"	"	"	
Sodium	1.01	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/08/24 13:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0285	0.00100	units	1	BHE0470	05/15/24	05/15/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/08/24 13:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

SS02@3'
2404124-05 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	88.3	%	1	BHD0447	04/15/24	04/16/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/08/24 13:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0650	0.0100	mmhos/cm	1	BHD0853	04/23/24	04/25/24	EPA 120.1	

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

Date Sampled: **04/08/24 13:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.05		pH Units	1	BHD0852	04/23/24	04/25/24	EPA 9045D	

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Project: Noble - Sater CC18-18 TB

Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHD0310 - EPA 5030 Soil MS

Blank (BHD0310-BLK1)

Prepared: 04/10/24 Analyzed: 04/12/24

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
Naphthalene	ND	0.0038	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0322		"	0.0400		80.4		50-150			
Surrogate: Toluene-d8	0.0342		"	0.0400		85.5		50-150			
Surrogate: 4-Bromofluorobenzene	0.0374		"	0.0400		93.4		50-150			

LCS (BHD0310-BS1)

Prepared: 04/10/24 Analyzed: 04/12/24

Benzene	0.0851	0.0020	mg/kg	0.100		85.1		70-130			
Toluene	0.0835	0.0050	"	0.100		83.5		70-130			
Ethylbenzene	0.120	0.0050	"	0.100		120		70-130			
m,p-Xylene	0.238	0.010	"	0.200		119		70-130			
o-Xylene	0.114	0.0050	"	0.100		114		70-130			
1,2,4-Trimethylbenzene	0.129	0.0050	"	0.100		129		70-130			
1,3,5-Trimethylbenzene	0.127	0.0050	"	0.100		127		70-130			
Naphthalene	0.112	0.0038	"	0.100		112		70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0336		"	0.0400		84.1		50-150			
Surrogate: Toluene-d8	0.0348		"	0.0400		87.0		50-150			
Surrogate: 4-Bromofluorobenzene	0.0363		"	0.0400		90.7		50-150			

Matrix Spike (BHD0310-MS1)

Source: 2404117-01

Prepared: 04/10/24 Analyzed: 04/12/24

Benzene	0.0869	0.0020	mg/kg	0.100	ND	86.9		70-130			
Toluene	0.0854	0.0050	"	0.100	ND	85.4		70-130			
Ethylbenzene	0.125	0.0050	"	0.100	ND	125		70-130			
m,p-Xylene	0.247	0.010	"	0.200	ND	124		70-130			
o-Xylene	0.117	0.0050	"	0.100	ND	117		70-130			
1,2,4-Trimethylbenzene	0.103	0.0050	"	0.100	ND	103		70-130			
1,3,5-Trimethylbenzene	0.130	0.0050	"	0.100	ND	130		70-130			
Naphthalene	0.109	0.0038	"	0.100	ND	109		70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0342		"	0.0400		85.4		50-150			
Surrogate: Toluene-d8	0.0351		"	0.0400		87.7		50-150			
Surrogate: 4-Bromofluorobenzene	0.0369		"	0.0400		92.2		50-150			

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Project: Noble - Sater CC18-18 TB

Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

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 BHD0310 - EPA 5030 Soil MS

Matrix Spike Dup (BHD0310-MSD1)	Source: 2404117-01			Prepared: 04/10/24 Analyzed: 04/12/24						
Benzene	0.0881	0.0020	mg/kg	0.100	ND	88.1	70-130	1.44	30	
Toluene	0.0873	0.0050	"	0.100	ND	87.3	70-130	2.12	30	
Ethylbenzene	0.124	0.0050	"	0.100	ND	124	70-130	0.915	30	
m,p-Xylene	0.245	0.010	"	0.200	ND	122	70-130	1.17	30	
o-Xylene	0.114	0.0050	"	0.100	ND	114	70-130	2.44	30	
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130	1.76	30	
1,3,5-Trimethylbenzene	0.130	0.0050	"	0.100	ND	130	70-130	0.138	30	
Naphthalene	0.104	0.0038	"	0.100	ND	104	70-130	5.04	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0345</i>		<i>"</i>	<i>0.0400</i>		<i>86.2</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0350</i>		<i>"</i>	<i>0.0400</i>		<i>87.4</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0363</i>		<i>"</i>	<i>0.0400</i>		<i>90.8</i>	<i>50-150</i>			

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Broomfield CO, 80020

Project: Noble - Sater CC18-18 TB
Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BHD0314 - EPA 3550A

Blank (BHD0314-BLK1)

Prepared: 04/10/24 Analyzed: 04/11/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	10.7		"	12.5		86.0		30-150			

LCS (BHD0314-BS1)

Prepared: 04/10/24 Analyzed: 04/11/24

C10-C28 (DRO)	449	50	mg/kg	500		89.9		70-130			
Surrogate: <i>o</i> -Terphenyl	10.0		"	12.5		80.2		30-150			

Matrix Spike (BHD0314-MS1)

Source: 2404117-01

Prepared: 04/10/24 Analyzed: 04/11/24

C10-C28 (DRO)	432	50	mg/kg	500	17.2	83.0		70-130			
Surrogate: <i>o</i> -Terphenyl	7.02		"	12.5		56.2		30-150			

Matrix Spike Dup (BHD0314-MSD1)

Source: 2404117-01

Prepared: 04/10/24 Analyzed: 04/11/24

C10-C28 (DRO)	406	50	mg/kg	500	17.2	77.7		70-130	6.24	20	
Surrogate: <i>o</i> -Terphenyl	8.08		"	12.5		64.6		30-150			

Summit Scientific

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

Project: Noble - Sater CC18-18 TB
Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

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 BHD0265 - EPA 5030 Soil MS

Blank (BHD0265-BLK1)

Prepared: 04/09/24 Analyzed: 04/10/24

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	0.0441		"	0.0333		132	40-150			
Surrogate: Fluoranthene-d10	0.0283		"	0.0333		84.8	40-150			

LCS (BHD0265-BS1)

Prepared: 04/09/24 Analyzed: 04/10/24

Acenaphthene	0.0294	0.00500	mg/kg	0.0333		88.2	31-137			
Anthracene	0.0263	0.00500	"	0.0333		78.9	30-120			
Benzo (a) anthracene	0.0293	0.00500	"	0.0333		87.9	30-120			
Benzo (a) pyrene	0.0266	0.00500	"	0.0333		79.8	30-120			
Benzo (b) fluoranthene	0.0296	0.00500	"	0.0333		88.8	30-120			
Benzo (k) fluoranthene	0.0319	0.00500	"	0.0333		95.6	30-120			
Chrysene	0.0299	0.00500	"	0.0333		89.8	30-120			
Dibenz (a,h) anthracene	0.0198	0.00500	"	0.0333		59.5	30-120			
Fluoranthene	0.0280	0.00500	"	0.0333		84.1	30-120			
Fluorene	0.0291	0.00500	"	0.0333		87.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0200	0.00500	"	0.0333		60.1	30-120			
Pyrene	0.0333	0.00500	"	0.0333		100	35-142			
1-Methylnaphthalene	0.0319	0.00500	"	0.0333		95.7	35-142			
2-Methylnaphthalene	0.0308	0.00500	"	0.0333		92.5	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0383		"	0.0333		115	40-150			
Surrogate: Fluoranthene-d10	0.0282		"	0.0333		84.5	40-150			

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

Project: Noble - Sater CC18-18 TB

Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

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 BHD0265 - EPA 5030 Soil MS

Matrix Spike (BHD0265-MS1)

Source: 2404103-01

Prepared: 04/09/24 Analyzed: 04/10/24

Acenaphthene	0.0221	0.00500	mg/kg	0.0333	ND	66.3	31-137			
Anthracene	0.0198	0.00500	"	0.0333	ND	59.3	30-120			
Benzo (a) anthracene	0.0241	0.00500	"	0.0333	ND	72.2	30-120			
Benzo (a) pyrene	0.0223	0.00500	"	0.0333	ND	66.9	30-120			
Benzo (b) fluoranthene	0.0218	0.00500	"	0.0333	ND	65.3	30-120			
Benzo (k) fluoranthene	0.0215	0.00500	"	0.0333	ND	64.6	30-120			
Chrysene	0.0231	0.00500	"	0.0333	ND	69.3	30-120			
Dibenz (a,h) anthracene	0.0218	0.00500	"	0.0333	ND	65.4	30-120			
Fluoranthene	0.0205	0.00500	"	0.0333	ND	61.6	30-120			
Fluorene	0.0218	0.00500	"	0.0333	ND	65.5	30-120			
Indeno (1,2,3-cd) pyrene	0.0215	0.00500	"	0.0333	ND	64.6	30-120			
Pyrene	0.0256	0.00500	"	0.0333	ND	76.7	35-142			
1-Methylnaphthalene	0.0224	0.00500	"	0.0333	ND	67.2	15-130			
2-Methylnaphthalene	0.0218	0.00500	"	0.0333	ND	65.3	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0250		"	0.0333		75.1	40-150			
Surrogate: Fluoranthene-d10	0.0213		"	0.0333		63.9	40-150			

Matrix Spike Dup (BHD0265-MSD1)

Source: 2404103-01

Prepared: 04/09/24 Analyzed: 04/10/24

Acenaphthene	0.0186	0.00500	mg/kg	0.0333	ND	55.8	31-137	17.2	30	
Anthracene	0.0175	0.00500	"	0.0333	ND	52.5	30-120	12.1	30	
Benzo (a) anthracene	0.0215	0.00500	"	0.0333	ND	64.4	30-120	11.4	30	
Benzo (a) pyrene	0.0203	0.00500	"	0.0333	ND	60.9	30-120	9.39	30	
Benzo (b) fluoranthene	0.0198	0.00500	"	0.0333	ND	59.4	30-120	9.54	30	
Benzo (k) fluoranthene	0.0188	0.00500	"	0.0333	ND	56.5	30-120	13.4	30	
Chrysene	0.0202	0.00500	"	0.0333	ND	60.5	30-120	13.5	30	
Dibenz (a,h) anthracene	0.0206	0.00500	"	0.0333	ND	61.7	30-120	5.81	30	
Fluoranthene	0.0176	0.00500	"	0.0333	ND	52.7	30-120	15.5	30	
Fluorene	0.0189	0.00500	"	0.0333	ND	56.8	30-120	14.2	30	
Indeno (1,2,3-cd) pyrene	0.0201	0.00500	"	0.0333	ND	60.3	30-120	6.87	30	
Pyrene	0.0222	0.00500	"	0.0333	ND	66.5	35-142	14.3	30	
1-Methylnaphthalene	0.0213	0.00500	"	0.0333	ND	63.9	15-130	4.98	50	
2-Methylnaphthalene	0.0210	0.00500	"	0.0333	ND	62.9	15-130	3.78	50	
Surrogate: 2-Methylnaphthalene-d10	0.0228		"	0.0333		68.5	40-150			
Surrogate: Fluoranthene-d10	0.0185		"	0.0333		55.6	40-150			

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

Project: Noble - Sater CC18-18 TB
Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

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

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

Batch BHD0519 - EPA 3050B

Blank (BHD0519-BLK1)

Prepared: 04/16/24 Analyzed: 04/18/24

Boron ND 2.00 mg/L

LCS (BHD0519-BS1)

Prepared: 04/16/24 Analyzed: 04/18/24

Boron 5.12 2.00 mg/L 5.00 102 80-120

Duplicate (BHD0519-DUP1)

Source: 2404116-01

Prepared: 04/16/24 Analyzed: 04/18/24

Boron 0.206 2.00 mg/L 0.268 26.0 20 QR-01

Matrix Spike (BHD0519-MS1)

Source: 2404116-01

Prepared: 04/16/24 Analyzed: 04/18/24

Boron 5.85 2.00 mg/L 5.04 0.268 111 75-125

Matrix Spike Dup (BHD0519-MSD1)

Source: 2404116-01

Prepared: 04/16/24 Analyzed: 04/18/24

Boron 6.08 2.00 mg/L 5.04 0.268 115 75-125 3.71 25

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

Project: Noble - Sater CC18-18 TB

Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

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 BHD0833 - EPA 3050B

Blank (BHD0833-BLK1)

Prepared: 04/23/24 Analyzed: 04/26/24

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

LCS (BHD0833-BS1)

Prepared: 04/23/24 Analyzed: 04/26/24

Arsenic	37.5	0.200	mg/kg wet	40.0		93.8	80-120
Barium	39.1	0.400	"	40.0		97.7	80-120
Cadmium	1.89	0.200	"	2.00		94.4	80-120
Copper	39.8	0.400	"	40.0		99.5	80-120
Lead	18.8	0.200	"	20.0		94.1	80-120
Nickel	39.8	0.400	"	40.0		99.6	80-120
Silver	1.93	0.0200	"	2.00		96.4	80-120
Zinc	38.8	0.400	"	40.0		96.9	80-120
Selenium	4.08	0.260	"	4.00		102	80-120

Duplicate (BHD0833-DUP1)

Source: 2404124-01

Prepared: 04/23/24 Analyzed: 04/26/24

Arsenic	2.29	0.200	mg/kg dry	2.17		5.10	20
Barium	84.9	0.400	"	79.9		6.02	20
Cadmium	0.372	0.200	"	0.358		3.69	20
Copper	5.96	0.400	"	5.48		8.35	20
Lead	11.5	0.200	"	10.6		7.86	20
Nickel	4.92	0.400	"	4.72		4.10	20
Silver	0.0572	0.0200	"	0.0559		2.25	20
Zinc	19.7	0.400	"	18.0		8.95	20
Selenium	ND	0.260	"	ND			20

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

Project: Noble - Sater CC18-18 TB

Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

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 BHD0833 - EPA 3050B

Matrix Spike (BHD0833-MS1)

Source: 2404124-01

Prepared: 04/23/24 Analyzed: 04/26/24

Arsenic	47.3	0.200	mg/kg dry	45.0	2.17	100	75-125				
Barium	129	0.400	"	45.0	79.9	108	75-125				
Cadmium	2.66	0.200	"	2.25	0.358	102	75-125				
Copper	32.6	0.400	"	45.0	5.48	60.2	75-125				QM-05
Lead	33.6	0.200	"	22.5	10.6	102	75-125				
Nickel	31.7	0.400	"	45.0	4.72	60.0	75-125				QM-05
Silver	2.28	0.0200	"	2.25	0.0559	98.7	75-125				
Zinc	47.0	0.400	"	45.0	18.0	64.3	75-125				QM-05
Selenium	3.88	0.260	"	4.50	ND	86.2	75-125				

Matrix Spike Dup (BHD0833-MSD1)

Source: 2404124-01

Prepared: 04/23/24 Analyzed: 04/26/24

Arsenic	46.0	0.200	mg/kg dry	45.0	2.17	97.3	75-125	2.83	25		
Barium	126	0.400	"	45.0	79.9	103	75-125	1.97	25		
Cadmium	2.62	0.200	"	2.25	0.358	100	75-125	1.47	25		
Copper	31.8	0.400	"	45.0	5.48	58.3	75-125	2.55	25		QM-05
Lead	33.3	0.200	"	22.5	10.6	101	75-125	1.03	25		
Nickel	31.3	0.400	"	45.0	4.72	58.9	75-125	1.52	25		QM-05
Silver	2.22	0.0200	"	2.25	0.0559	95.9	75-125	2.81	25		
Zinc	45.8	0.400	"	45.0	18.0	61.6	75-125	2.63	25		QM-05
Selenium	3.86	0.260	"	4.50	ND	85.8	75-125	0.535	25		

Post Spike (BHD0833-PS1)

Source: 2404124-01

Prepared: 04/23/24 Analyzed: 04/26/24

Arsenic	110		ug/l	100	4.79	105	75-125				
Barium	284		"	100	176	108	75-125				
Cadmium	5.78		"	5.00	0.790	99.7	75-125				
Copper	78.6		"	100	12.1	66.5	75-125				QM-01
Lead	74.1		"	50.0	23.4	101	75-125				
Nickel	75.7		"	100	10.4	65.3	75-125				QM-01
Silver	5.16		"	5.00	0.123	101	75-125				
Zinc	109		"	100	39.7	69.7	75-125				QM-01
Selenium	10.0		"	10.0	0.312	97.1	75-125				

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

Project: Noble - Sater CC18-18 TB
Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHD0567 - 3060A Mod

Blank (BHD0567-BLK1)

Prepared: 04/17/24 Analyzed: 04/18/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHD0567-BS1)

Prepared: 04/17/24 Analyzed: 04/18/24

Chromium, Hexavalent 25.4 0.30 mg/kg wet 25.0 102 80-120

Duplicate (BHD0567-DUP1)

Source: 2404116-01

Prepared: 04/17/24 Analyzed: 04/18/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHD0567-MS1)

Source: 2404116-01

Prepared: 04/17/24 Analyzed: 04/18/24

Chromium, Hexavalent 28.1 0.30 mg/kg dry 29.2 ND 96.2 75-125

Matrix Spike Dup (BHD0567-MSD1)

Source: 2404116-01

Prepared: 04/17/24 Analyzed: 04/18/24

Chromium, Hexavalent 28.1 0.30 mg/kg dry 29.2 ND 96.4 75-125 0.208 20

Summit Scientific

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

Project: Noble - Sater CC18-18 TB

Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

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

Summit Scientific

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

Batch BHD0851 - General Preparation

Blank (BHD0851-BLK1)

Prepared: 04/23/24 Analyzed: 05/14/24

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

LCS (BHD0851-BS1)

Prepared: 04/23/24 Analyzed: 05/14/24

Calcium	5.05	0.0500	mg/L wet	5.00		101	70-130			
Magnesium	5.35	0.0500	"	5.00		107	70-130			
Sodium	5.33	0.0500	"	5.00		107	70-130			

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

Project: Noble - Sater CC18-18 TB

Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

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

Summit Scientific

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

Batch BHD0447 - General Preparation

Duplicate (BHD0447-DUP1)	Source: 2404117-01		Prepared: 04/15/24 Analyzed: 04/16/24			
% Solids	93.0	%		94.0	1.13	20

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

Project: Noble - Sater CC18-18 TB

Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

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

Summit Scientific

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

Batch BHD0853 - General Preparation

Blank (BHD0853-BLK1)

Prepared: 04/23/24 Analyzed: 04/25/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHD0853-BS1)

Prepared: 04/23/24 Analyzed: 04/25/24

Specific Conductance (EC) 0.156 0.0100 mmhos/cm 0.150 104 95-105

Duplicate (BHD0853-DUP1)

Source: 2404117-01

Prepared: 04/23/24 Analyzed: 04/25/24

Specific Conductance (EC) 0.103 0.0100 mmhos/cm 0.103 0.00 20

Summit Scientific

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

Project: Noble - Sater CC18-18 TB

Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

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 BHD0852 - General Preparation

LCS (BHD0852-BS1)

Prepared: 04/23/24 Analyzed: 04/25/24

pH	9.18	pH Units	9.18	100	95-105
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Duplicate (BHD0852-DUP1)

Source: 2404117-01

Prepared: 04/23/24 Analyzed: 04/25/24

pH	9.03	pH Units	9.11	0.882	20
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Sater CC18-18 TB

Project Number: UWRWE-3547-ABN
Project Manager: Jacob Whritenour

Reported:
05/15/24 11:00

Notes and Definitions

- QR-01 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
- QM-01 The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
- 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