

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 07, 2024

AJ Engelhardt

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - SH Farms C17-19

Work Order #2410467

Enclosed are the results of analyses for samples received by Summit Scientific on 10/24/24 18:45. 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 - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01R-W@3'	2410467-01	Soil	10/24/24 10:30	10/24/24 18:45
FL01-04@3'	2410467-02	Soil	10/24/24 11:06	10/24/24 18:45
FL01-06@3'	2410467-03	Soil	10/24/24 12:23	10/24/24 18:45
FL01-07@3'	2410467-04	Soil	10/24/24 12:20	10/24/24 18:45
BKG01@0-6"	2410467-05	Soil	10/24/24 13:28	10/24/24 18:45
BKG01@3'	2410467-06	Soil	10/24/24 13:29	10/24/24 18:45
BKG01@4'	2410467-07	Soil	10/24/24 13:30	10/24/24 18:45

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Client: Chevron/Tasman		Project Manager: AJ Engelhardt		Company: Chevron	
Address: 6855 W. 119th Avenue		E-Mail: tas-chevron-3@tasman-geo.com		Project Name/Location: <u>SH Farms C17-19</u>	
City/State/Zip: Broomfield, CO 80020				AFE#:	
Phone: <u>978-857-4408</u>		Project Name: <u>SH Farms C17-19</u>		PO/Billing Codes:	
Sampler Name: <u>Matthew Wentzel</u>		Project Number:		Contact: <u>Miguel Barron</u>	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested						Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	915-VOC	915-PAH	915-TPH	pH, EC, SAR	Boron		915-Metals
1	<u>FLOIR-W @ 3'</u>	<u>10-29-29</u>	<u>1030</u>	<u>2</u>			<u>X</u>			<u>X</u>			<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	
2	<u>FLOI-04 @ 3'</u>	<u> </u>	<u>1106</u>	<u> </u>			<u> </u>			<u> </u>			<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
3	<u>FLOI-06 @ 3'</u>	<u> </u>	<u>1223</u>	<u> </u>			<u> </u>			<u> </u>			<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
4	<u>FLOI-07 @ 3'</u>	<u> </u>	<u>1228</u>	<u> </u>			<u> </u>			<u> </u>			<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
5	<u>BKG01 @ 0-6"</u>	<u> </u>	<u>1328</u>	<u> </u>			<u> </u>			<u> </u>			<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
6	<u>BKG01 @ 3'</u>	<u> </u>	<u>1329</u>	<u> </u>			<u> </u>			<u> </u>			<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
7	<u>BKG01 @ 4'</u>	<u> </u>	<u>1330</u>	<u> </u>			<u> </u>			<u> </u>			<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: <u>[Signature]</u>	Date/Time: <u>10-29-29 1515</u>	Received by: <u>Tasman Loadbox</u>	Date/Time: <u>10-29-29 1515</u>	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <u>Tasman Loadbox</u>	Date/Time: <u>10-29-29 1845</u>	Received by: <u>[Signature]</u>	Date/Time: <u>10-29-29 1845</u>	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	<u>X</u> Field Turb.	
Temperature Upon Receipt: <u>7.1</u>	Corrected Temperature: <u>8</u>	IR gun #:	<u>1</u>	HNO3 lot #:		

S<sub>2</sub>

Sample Receipt Checklist

S2 Work Order# 2410467

Client: Chevron/Tasman Client Project ID: SH Farms C17-19

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

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

Temp (°C)  Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? <sup>(1)</sup> NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>CMJ CE</u>
If custody seals are present, are they intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

AS  
Custodian Printed Name

10/24/24  
Date/Time



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

Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**FL01R-W@3'**  
**2410467-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/24/24 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHJ1262	10/29/24	10/31/24	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: **10/24/24 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0433	108 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0404	101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0396	99.0 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/24/24 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	<b>420</b>	50		mg/kg	1	BHJ1265	10/29/24	10/30/24	EPA 8015M	
C28-C36 (ORO)	<b>140</b>	50		"	"	"	"	"	"	

Date Sampled: **10/24/24 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	13.2	105 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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6855 W. 119th Ave.  
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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**FL01R-W@3'**  
**2410467-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/24/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0225	0.00500	mg/kg	1	BHJ1244	10/29/24	10/30/24	EPA 8270D SIM	
Anthracene	0.100	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.164	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.113	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.157	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0524	0.00500	"	"	"	"	"	"	
Chrysene	0.157	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	0.0197	0.00500	"	"	"	"	"	"	
Fluoranthene	0.479	0.00500	"	"	"	"	"	"	E
Fluorene	0.0401	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0908	0.00500	"	"	"	"	"	"	
Pyrene	0.314	0.00500	"	"	"	"	"	"	E
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/24/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0205	61.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0221	66.4 %	40-150		"	"	"	"	

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

Date Sampled: **10/24/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ1411	10/31/24	11/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/24/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.26	0.200	mg/kg dry	1	BHK0007	11/01/24	11/01/24	EPA 6020B	

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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**FL01R-W@3'**  
**2410467-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	85.9	0.400	mg/kg dry	1	BHK0007	11/01/24	11/01/24	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	6.13	0.400	"	"	"	"	"	"	
Lead	7.91	0.200	"	"	"	"	"	"	
Nickel	3.93	0.400	"	"	"	"	"	"	
Silver	0.0279	0.0200	"	"	"	"	"	"	
Zinc	62.0	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/24/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHK0131	11/04/24	11/06/24	EPA 7196A	

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

Date Sampled: **10/24/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	54.6	0.0500	mg/L dry	1	BHJ1303	10/29/24	10/31/24	EPA 6020B	
Magnesium	18.4	0.0500	"	"	"	"	"	"	
Sodium	62.6	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/24/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.87	0.00100	units	1	BHK0034	11/01/24	11/01/24	Calculation	

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

Date Sampled: **10/24/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**FL01R-W@3'**  
**2410467-01 (Soil)**

**Summit Scientific**

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

% Solids	93.9	%	1	BHJ1428	10/31/24	11/01/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **10/24/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.04	0.0100	mmhos/cm	1	BHJ1305	10/29/24	10/30/24	EPA 120.1	

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

Date Sampled: **10/24/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.89		pH Units	1	BHJ1304	10/29/24	10/30/24	EPA 9045D	

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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**FL01-04@3'**  
**2410467-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/24/24 11:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHJ1262	10/29/24	10/31/24	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: **10/24/24 11:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0428	107 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0408	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0395	98.7 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/24/24 11:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHJ1265	10/29/24	10/30/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/24/24 11:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	16.3	130 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**FL01-04@3'**  
**2410467-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/24/24 11:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ1244	10/29/24	10/30/24	EPA 8270D SIM	
<b>Anthracene</b>	<b>0.00705</b>	0.00500	"	"	"	"	"	"	
<b>Benzo (a) anthracene</b>	<b>0.00877</b>	0.00500	"	"	"	"	"	"	
<b>Benzo (a) pyrene</b>	<b>0.00709</b>	0.00500	"	"	"	"	"	"	
<b>Benzo (b) fluoranthene</b>	<b>0.0102</b>	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.00863</b>	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.0259</b>	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
<b>Indeno (1,2,3-cd) pyrene</b>	<b>0.00675</b>	0.00500	"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.0189</b>	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/24/24 11:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0208	62.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0216	64.8 %	40-150		"	"	"	"	

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

Date Sampled: **10/24/24 11:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ1411	10/31/24	11/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/24/24 11:06**

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 - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**FL01-04@3'**  
**2410467-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.96	0.200	mg/kg dry	1	BHK0007	11/01/24	11/01/24	EPA 6020B
Barium	63.7	0.400	"	"	"	"	"	"
Cadmium	0.290	0.200	"	"	"	"	"	"
Copper	16.7	0.400	"	"	"	"	"	"
Lead	16.5	0.200	"	"	"	"	"	"
Nickel	4.81	0.400	"	"	"	"	"	"
Silver	0.0276	0.0200	"	"	"	"	"	"
Zinc	72.8	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 10/24/24 11:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHK0131	11/04/24	11/06/24	EPA 7196A	

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

Date Sampled: 10/24/24 11:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	63.3	0.0500	mg/L dry	1	BHJ1303	10/29/24	10/31/24	EPA 6020B	
Magnesium	25.2	0.0500	"	"	"	"	"	"	
Sodium	151	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 10/24/24 11:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.06	0.00100	units	1	BHK0034	11/01/24	11/01/24	Calculation	

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

Date Sampled: 10/24/24 11:06

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 - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**FL01-04@3'**  
**2410467-02 (Soil)**

**Summit Scientific**

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

% Solids	92.8	%	1	BHJ1428	10/31/24	11/01/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **10/24/24 11:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.01	0.0100	mmhos/cm	1	BHJ1305	10/29/24	10/30/24	EPA 120.1	

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

Date Sampled: **10/24/24 11:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.76		pH Units	1	BHJ1304	10/29/24	10/30/24	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**FL01-06@3'**  
**2410467-03 (Soil)**

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

Date Sampled: **10/24/24 12:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHJ1262	10/29/24	10/31/24	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		"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.010</b>	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **10/24/24 12:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0421	105 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0404	101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0402	100 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/24/24 12:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHJ1265	10/29/24	10/30/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/24/24 12:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	12.0	95.9 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**FL01-06@3'**  
**2410467-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/24/24 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0192	0.00500	mg/kg	1	BHJ1244	10/29/24	10/30/24	EPA 8270D SIM	
Anthracene	0.0249	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.0292	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0192	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0284	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.00971	0.00500	"	"	"	"	"	"	
Chrysene	0.0280	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0940	0.00500	"	"	"	"	"	"	
Fluorene	0.0196	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0147	0.00500	"	"	"	"	"	"	
Pyrene	0.0632	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/24/24 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0226	67.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0238	71.5 %	40-150		"	"	"	"	

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

Date Sampled: **10/24/24 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ1411	10/31/24	11/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/24/24 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.97	0.200	mg/kg dry	1	BHK0007	11/01/24	11/01/24	EPA 6020B	

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6855 W. 119th Ave.  
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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**FL01-06@3'**  
**2410467-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	65.6	0.400	mg/kg dry	1	BHK0007	11/01/24	11/01/24	EPA 6020B	
Cadmium	0.295	0.200	"	"	"	"	"	"	
Copper	14.0	0.400	"	"	"	"	"	"	
Lead	12.1	0.200	"	"	"	"	"	"	
Nickel	4.54	0.400	"	"	"	"	"	"	
Silver	0.0282	0.0200	"	"	"	"	"	"	
Zinc	58.7	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/24/24 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHK0131	11/04/24	11/06/24	EPA 7196A	

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

Date Sampled: **10/24/24 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	113	0.0500	mg/L dry	1	BHJ1303	10/29/24	10/31/24	EPA 6020B	
Magnesium	83.6	0.0500	"	"	"	"	"	"	
Sodium	230	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/24/24 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.00	0.00100	units	1	BHK0034	11/01/24	11/01/24	Calculation	

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

Date Sampled: **10/24/24 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.4		%	1	BHJ1428	10/31/24	11/01/24	Calculation	

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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**FL01-06@3'**  
**2410467-03 (Soil)**

**Summit Scientific**

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

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

Date Sampled: **10/24/24 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>1.83</b>	0.0100	mmhos/cm	1	BHJ1305	10/29/24	10/30/24	EPA 120.1	

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

Date Sampled: **10/24/24 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.27</b>		pH Units	1	BHJ1304	10/29/24	10/30/24	EPA 9045D	

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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**FL01-07@3'**  
**2410467-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/24/24 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHJ1262	10/29/24	10/31/24	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: **10/24/24 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0420	105 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0404	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0403	101 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/24/24 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHJ1265	10/29/24	10/30/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/24/24 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	13.1	105 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**FL01-07@3'**  
**2410467-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/24/24 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0606	0.00500	mg/kg	1	BHJ1244	10/29/24	10/30/24	EPA 8270D SIM	
Anthracene	0.145	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.355	0.00500	"	"	"	"	"	"	E
Benzo (a) pyrene	0.266	0.00500	"	"	"	"	"	"	E
Benzo (b) fluoranthene	0.383	0.00500	"	"	"	"	"	"	E
Benzo (k) fluoranthene	0.125	0.00500	"	"	"	"	"	"	
Chrysene	0.365	0.00500	"	"	"	"	"	"	E
Dibenz (a,h) anthracene	0.0384	0.00500	"	"	"	"	"	"	
Fluoranthene	0.956	0.00500	"	"	"	"	"	"	E
Fluorene	0.0723	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.189	0.00500	"	"	"	"	"	"	
Pyrene	0.709	0.00500	"	"	"	"	"	"	E
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/24/24 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0199	59.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0221	66.4 %	40-150		"	"	"	"	

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

Date Sampled: **10/24/24 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ1411	10/31/24	11/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/24/24 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.53	0.200	mg/kg dry	1	BHK0007	11/01/24	11/01/24	EPA 6020B	

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6855 W. 119th Ave.  
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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**FL01-07@3'**  
**2410467-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	83.7	0.400	mg/kg dry	1	BHK0007	11/01/24	11/01/24	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	5.90	0.400	"	"	"	"	"	"	
Lead	4.85	0.200	"	"	"	"	"	"	
Nickel	4.22	0.400	"	"	"	"	"	"	
Silver	0.0227	0.0200	"	"	"	"	"	"	
Zinc	18.4	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/24/24 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHK0131	11/04/24	11/06/24	EPA 7196A	

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

Date Sampled: **10/24/24 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	89.2	0.0500	mg/L dry	1	BHJ1303	10/29/24	10/31/24	EPA 6020B	
Magnesium	35.8	0.0500	"	"	"	"	"	"	
Sodium	91.1	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/24/24 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.06	0.00100	units	1	BHK0034	11/01/24	11/01/24	Calculation	

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

Date Sampled: **10/24/24 12:20**

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 - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**FL01-07@3'**  
**2410467-04 (Soil)**

**Summit Scientific**

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

% Solids	94.0	%	1	BHJ1428	10/31/24	11/01/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **10/24/24 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.774	0.0100	mmhos/cm	1	BHJ1305	10/29/24	10/30/24	EPA 120.1	

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

Date Sampled: **10/24/24 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.24		pH Units	1	BHJ1304	10/29/24	10/30/24	EPA 9045D	

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6855 W. 119th Ave.  
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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**BKG01@0-6''**  
**2410467-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/24/24 13:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHJ1262	10/29/24	10/31/24	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: **10/24/24 13:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0403	101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0394	98.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0388	97.0 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/24/24 13:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHJ1265	10/29/24	10/30/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/24/24 13:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	11.5	92.0 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**BKG01@0-6''**  
**2410467-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/24/24 13:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ1244	10/29/24	10/30/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/24/24 13:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0201	60.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0202	60.6 %	40-150		"	"	"	"	

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

Date Sampled: **10/24/24 13:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ1411	10/31/24	11/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/24/24 13:28**

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 - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**BKG01@0-6''**  
**2410467-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.93	0.200	mg/kg dry	1	BHK0007	11/01/24	11/01/24	EPA 6020B	
Barium	99.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	15.2	0.400	"	"	"	"	"	"	
Lead	5.58	0.200	"	"	"	"	"	"	
Nickel	4.02	0.400	"	"	"	"	"	"	
Silver	0.0217	0.0200	"	"	"	"	"	"	
Zinc	26.3	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/24/24 13:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHK0131	11/04/24	11/06/24	EPA 7196A	

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

Date Sampled: **10/24/24 13:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	51.6	0.0500	mg/L dry	1	BHJ1303	10/29/24	10/31/24	EPA 6020B	
Magnesium	11.7	0.0500	"	"	"	"	"	"	
Sodium	39.2	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/24/24 13:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.28	0.00100	units	1	BHK0034	11/01/24	11/01/24	Calculation	

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

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6855 W. 119th Ave.  
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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**BKG01@0-6''**  
**2410467-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/24/24 13:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	95.3			%	1	BHJ1428	10/31/24	11/01/24	Calculation	

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

Date Sampled: **10/24/24 13:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	2.06	0.0100		mmhos/cm	1	BHJ1305	10/29/24	10/30/24	EPA 120.1	

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

Date Sampled: **10/24/24 13:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.83			pH Units	1	BHJ1304	10/29/24	10/30/24	EPA 9045D	

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6855 W. 119th Ave.  
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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**BKG01@3'**  
**2410467-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/24/24 13:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHJ1262	10/29/24	10/31/24	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: **10/24/24 13:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0420	105 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0404	101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0410	102 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/24/24 13:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHJ1265	10/29/24	10/30/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/24/24 13:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.2	89.7 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**BKG01@3'**  
**2410467-06 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/24/24 13:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ1244	10/29/24	10/30/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/24/24 13:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0244	73.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0229	68.6 %	40-150		"	"	"	"	

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

Date Sampled: **10/24/24 13:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ1411	10/31/24	11/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/24/24 13:29**

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 - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**BKG01@3'**  
**2410467-06 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.07	0.200	mg/kg dry	1	BHK0007	11/01/24	11/01/24	EPA 6020B
Barium	81.0	0.400	"	"	"	"	"	"
Cadmium	0.226	0.200	"	"	"	"	"	"
Copper	6.29	0.400	"	"	"	"	"	"
Lead	8.22	0.200	"	"	"	"	"	"
Nickel	5.36	0.400	"	"	"	"	"	"
Silver	0.0331	0.0200	"	"	"	"	"	"
Zinc	20.6	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/24/24 13:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHK0131	11/04/24	11/06/24	EPA 7196A	

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

Date Sampled: **10/24/24 13:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	184	0.0500	mg/L dry	1	BHJ1303	10/29/24	10/31/24	EPA 6020B	
Magnesium	47.5	0.0500	"	"	"	"	"	"	
Sodium	149	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/24/24 13:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.53	0.00100	units	1	BHK0034	11/01/24	11/01/24	Calculation	

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

Date Sampled: **10/24/24 13:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**BKG01@3'**  
**2410467-06 (Soil)**

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

% Solids	92.9	%	1	BHJ1428	10/31/24	11/01/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **10/24/24 13:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.44	0.0100	mmhos/cm	1	BHJ1305	10/29/24	10/30/24	EPA 120.1	

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

Date Sampled: **10/24/24 13:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.94		pH Units	1	BHJ1304	10/29/24	10/30/24	EPA 9045D	

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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**BKG01@4'**  
**2410467-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/24/24 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHJ1262	10/29/24	10/31/24	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: **10/24/24 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0434	108 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0404	101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0401	100 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/24/24 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHJ1265	10/29/24	10/30/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/24/24 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	12.2	97.6 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**BKG01@4'**  
**2410467-07 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/24/24 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ1244	10/29/24	10/30/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **10/24/24 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0221	66.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0212	63.6 %	40-150		"	"	"	"	

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

Date Sampled: **10/24/24 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ1411	10/31/24	11/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/24/24 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**BKG01@4'**  
**2410467-07 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.48	0.200	mg/kg dry	1	BHK0007	11/01/24	11/01/24	EPA 6020B	
Barium	81.7	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.60	0.400	"	"	"	"	"	"	
Lead	6.63	0.200	"	"	"	"	"	"	
Nickel	5.75	0.400	"	"	"	"	"	"	
Silver	0.0410	0.0200	"	"	"	"	"	"	
Zinc	19.5	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/24/24 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHK0131	11/04/24	11/06/24	EPA 7196A	

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

Date Sampled: **10/24/24 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	133	0.0500	mg/L dry	1	BHJ1303	10/29/24	10/31/24	EPA 6020B	
Magnesium	36.3	0.0500	"	"	"	"	"	"	
Sodium	141	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/24/24 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.80	0.00100	units	1	BHK0034	11/01/24	11/01/24	Calculation	

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

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Tasman Geosciences  
6855 W. 119th Ave.  
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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**BKG01@4'**  
**2410467-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/24/24 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	91.4			%	1	BHJ1428	10/31/24	11/01/24	Calculation	

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

Date Sampled: **10/24/24 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	1.85	0.0100		mmhos/cm	1	BHJ1305	10/29/24	10/30/24	EPA 120.1	

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

Date Sampled: **10/24/24 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.14			pH Units	1	BHJ1304	10/29/24	10/30/24	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

### 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 BHJ1262 - EPA 5030 Soil MS

##### Blank (BHJ1262-BLK1)

Prepared: 10/29/24 Analyzed: 10/30/24

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	0.0423		"	0.0400		106	50-150				
Surrogate: Toluene-d8	0.0404		"	0.0400		101	50-150				
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.4	50-150				

##### LCS (BHJ1262-BS1)

Prepared: 10/29/24 Analyzed: 10/30/24

Benzene	0.0990	0.0020	mg/kg	0.100		99.0	70-130				
Toluene	0.108	0.0050	"	0.100		108	70-130				
Ethylbenzene	0.0979	0.0050	"	0.100		97.9	70-130				
m,p-Xylene	0.202	0.010	"	0.200		101	70-130				
o-Xylene	0.0979	0.0050	"	0.100		97.9	70-130				
1,2,4-Trimethylbenzene	0.0974	0.0050	"	0.100		97.4	70-130				
1,3,5-Trimethylbenzene	0.0940	0.0050	"	0.100		94.0	70-130				
Naphthalene	0.104	0.0038	"	0.100		104	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0410		"	0.0400		102	50-150				
Surrogate: Toluene-d8	0.0399		"	0.0400		99.7	50-150				
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	50-150				

##### Matrix Spike (BHJ1262-MS1)

Source: 2410459-01

Prepared: 10/29/24 Analyzed: 10/30/24

Benzene	0.0971	0.0020	mg/kg	0.100	ND	97.1	70-130				
Toluene	0.0965	0.0050	"	0.100	ND	96.5	70-130				
Ethylbenzene	0.0943	0.0050	"	0.100	ND	94.3	70-130				
m,p-Xylene	0.191	0.010	"	0.200	ND	95.4	70-130				
o-Xylene	0.0945	0.0050	"	0.100	ND	94.5	70-130				
1,2,4-Trimethylbenzene	0.0906	0.0050	"	0.100	ND	90.6	70-130				
1,3,5-Trimethylbenzene	0.0900	0.0050	"	0.100	ND	90.0	70-130				
Naphthalene	0.0958	0.0038	"	0.100	ND	95.8	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0421		"	0.0400		105	50-150				
Surrogate: Toluene-d8	0.0399		"	0.0400		99.8	50-150				
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.8	50-150				

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6855 W. 119th Ave.  
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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**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 BHJ1262 - EPA 5030 Soil MS**

Matrix Spike Dup (BHJ1262-MSD1)	Source: 2410459-01			Prepared: 10/29/24 Analyzed: 10/30/24						
Benzene	0.0947	0.0020	mg/kg	0.100	ND	94.7	70-130	2.53	30	
Toluene	0.0936	0.0050	"	0.100	ND	93.6	70-130	3.06	30	
Ethylbenzene	0.0916	0.0050	"	0.100	ND	91.6	70-130	2.97	30	
m,p-Xylene	0.182	0.010	"	0.200	ND	91.1	70-130	4.61	30	
o-Xylene	0.0909	0.0050	"	0.100	ND	90.9	70-130	3.88	30	
1,2,4-Trimethylbenzene	0.0882	0.0050	"	0.100	ND	88.2	70-130	2.65	30	
1,3,5-Trimethylbenzene	0.0868	0.0050	"	0.100	ND	86.8	70-130	3.63	30	
Naphthalene	0.0935	0.0038	"	0.100	ND	93.5	70-130	2.44	30	
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		102	50-150			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		98.0	50-150			

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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

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

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

**Batch BHJ1265 - EPA 3550A**

**Blank (BHJ1265-BLK1)**

Prepared: 10/29/24 Analyzed: 10/30/24

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: <i>o</i> -Terphenyl	13.2		"	12.5		106		30-150		

**LCS (BHJ1265-BS1)**

Prepared: 10/29/24 Analyzed: 10/30/24

C10-C28 (DRO)	401	50	mg/kg	500		80.2		70-130		
Surrogate: <i>o</i> -Terphenyl	12.3		"	12.5		98.3		30-150		

**Matrix Spike (BHJ1265-MS1)**

Source: 2410459-01

Prepared: 10/29/24 Analyzed: 10/30/24

C10-C28 (DRO)	401	50	mg/kg	500	ND	80.2		70-130		
Surrogate: <i>o</i> -Terphenyl	10.9		"	12.5		87.0		30-150		

**Matrix Spike Dup (BHJ1265-MSD1)**

Source: 2410459-01

Prepared: 10/29/24 Analyzed: 10/30/24

C10-C28 (DRO)	450	50	mg/kg	500	ND	89.9		70-130	11.4	20
Surrogate: <i>o</i> -Terphenyl	11.6		"	12.5		92.6		30-150		

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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**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 BHJ1244 - EPA 5030 Soil MS**

**Blank (BHJ1244-BLK1)**

Prepared & Analyzed: 10/29/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0212</i>		<i>"</i>	<i>0.0333</i>		<i>63.7</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0243</i>		<i>"</i>	<i>0.0333</i>		<i>72.8</i>	<i>40-150</i>			

**LCS (BHJ1244-BS1)**

Prepared & Analyzed: 10/29/24

Acenaphthene	0.0240	0.00500	mg/kg	0.0333		72.1	31-137			
Anthracene	0.0239	0.00500	"	0.0333		71.8	30-120			
Benzo (a) anthracene	0.0251	0.00500	"	0.0333		75.2	30-120			
Benzo (a) pyrene	0.0228	0.00500	"	0.0333		68.4	30-120			
Benzo (b) fluoranthene	0.0243	0.00500	"	0.0333		73.0	30-120			
Benzo (k) fluoranthene	0.0245	0.00500	"	0.0333		73.5	30-120			
Chrysene	0.0238	0.00500	"	0.0333		71.5	30-120			
Dibenz (a,h) anthracene	0.0195	0.00500	"	0.0333		58.4	30-120			
Fluoranthene	0.0250	0.00500	"	0.0333		75.1	30-120			
Fluorene	0.0246	0.00500	"	0.0333		73.8	30-120			
Indeno (1,2,3-cd) pyrene	0.0143	0.00500	"	0.0333		43.0	30-120			
Pyrene	0.0242	0.00500	"	0.0333		72.5	35-142			
1-Methylnaphthalene	0.0233	0.00500	"	0.0333		69.9	35-142			
2-Methylnaphthalene	0.0232	0.00500	"	0.0333		69.7	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0235</i>		<i>"</i>	<i>0.0333</i>		<i>70.4</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0255</i>		<i>"</i>	<i>0.0333</i>		<i>76.6</i>	<i>40-150</i>			

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6855 W. 119th Ave.  
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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**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 BHJ1244 - EPA 5030 Soil MS**

<b>Matrix Spike (BHJ1244-MS1)</b>	<b>Source: 2410447-01</b>			<b>Prepared &amp; Analyzed: 10/29/24</b>						
Acenaphthene	0.0180	0.00500	mg/kg	0.0333	ND	54.0	31-137			
Anthracene	0.0173	0.00500	"	0.0333	ND	51.8	30-120			
Benzo (a) anthracene	0.0174	0.00500	"	0.0333	ND	52.3	30-120			
Benzo (a) pyrene	0.0164	0.00500	"	0.0333	ND	49.3	30-120			
Benzo (b) fluoranthene	0.0165	0.00500	"	0.0333	ND	49.5	30-120			
Benzo (k) fluoranthene	0.0168	0.00500	"	0.0333	ND	50.5	30-120			
Chrysene	0.0172	0.00500	"	0.0333	ND	51.6	30-120			
Dibenz (a,h) anthracene	0.0140	0.00500	"	0.0333	ND	42.1	30-120			
Fluoranthene	0.0169	0.00500	"	0.0333	ND	50.7	30-120			
Fluorene	0.0186	0.00500	"	0.0333	ND	55.7	30-120			
Indeno (1,2,3-cd) pyrene	0.0135	0.00500	"	0.0333	ND	40.5	30-120			
Pyrene	0.0173	0.00500	"	0.0333	ND	52.0	35-142			
1-Methylnaphthalene	0.0186	0.00500	"	0.0333	ND	55.9	15-130			
2-Methylnaphthalene	0.0184	0.00500	"	0.0333	ND	55.3	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0187</i>		<i>"</i>	<i>0.0333</i>		<i>56.2</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0175</i>		<i>"</i>	<i>0.0333</i>		<i>52.6</i>	<i>40-150</i>			

<b>Matrix Spike Dup (BHJ1244-MSD1)</b>	<b>Source: 2410447-01</b>			<b>Prepared &amp; Analyzed: 10/29/24</b>						
Acenaphthene	0.0222	0.00500	mg/kg	0.0333	ND	66.6	31-137	20.9	30	
Anthracene	0.0215	0.00500	"	0.0333	ND	64.5	30-120	21.8	30	
Benzo (a) anthracene	0.0221	0.00500	"	0.0333	ND	66.4	30-120	23.7	30	
Benzo (a) pyrene	0.0204	0.00500	"	0.0333	ND	61.1	30-120	21.3	30	
Benzo (b) fluoranthene	0.0207	0.00500	"	0.0333	ND	62.1	30-120	22.7	30	
Benzo (k) fluoranthene	0.0206	0.00500	"	0.0333	ND	61.7	30-120	20.0	30	
Chrysene	0.0213	0.00500	"	0.0333	ND	64.0	30-120	21.4	30	
Dibenz (a,h) anthracene	0.0187	0.00500	"	0.0333	ND	56.1	30-120	28.5	30	
Fluoranthene	0.0226	0.00500	"	0.0333	ND	67.8	30-120	28.9	30	
Fluorene	0.0227	0.00500	"	0.0333	ND	68.0	30-120	19.8	30	
Indeno (1,2,3-cd) pyrene	0.0137	0.00500	"	0.0333	ND	41.0	30-120	1.15	30	
Pyrene	0.0217	0.00500	"	0.0333	ND	65.0	35-142	22.2	30	
1-Methylnaphthalene	0.0224	0.00500	"	0.0333	ND	67.1	15-130	18.3	50	
2-Methylnaphthalene	0.0223	0.00500	"	0.0333	ND	66.9	15-130	18.9	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0226</i>		<i>"</i>	<i>0.0333</i>		<i>67.7</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0229</i>		<i>"</i>	<i>0.0333</i>		<i>68.7</i>	<i>40-150</i>			

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

Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

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

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

**Batch BHJ1411 - EPA 3050B**

**Blank (BHJ1411-BLK1)**

Prepared: 10/31/24 Analyzed: 11/02/24

Boron ND 2.00 mg/L

**LCS (BHJ1411-BS1)**

Prepared: 10/31/24 Analyzed: 11/02/24

Boron 5.08 2.00 mg/L 5.00 102 80-120

**Duplicate (BHJ1411-DUP1)**

Source: 2410465-21

Prepared: 10/31/24 Analyzed: 11/02/24

Boron 0.430 2.00 mg/L 0.390 9.66 20

**Matrix Spike (BHJ1411-MS1)**

Source: 2410465-21

Prepared: 10/31/24 Analyzed: 11/02/24

Boron 5.36 2.00 mg/L 5.03 0.390 98.9 75-125

**Matrix Spike Dup (BHJ1411-MSD1)**

Source: 2410465-21

Prepared: 10/31/24 Analyzed: 11/02/24

Boron 5.37 2.00 mg/L 5.03 0.390 99.0 75-125 0.120 25

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

Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

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

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

**Batch BHK0007 - EPA 3050B**

**Blank (BHK0007-BLK1)**

Prepared & Analyzed: 11/01/24

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 (BHK0007-BS1)**

Prepared & Analyzed: 11/01/24

Arsenic	35.7	0.200	mg/kg wet	40.7	87.8	80-120
Barium	36.7	0.400	"	40.7	90.3	80-120
Cadmium	1.85	0.200	"	2.03	91.0	80-120
Copper	39.1	0.400	"	40.7	96.2	80-120
Lead	18.3	0.200	"	20.3	89.8	80-120
Nickel	38.6	0.400	"	40.7	95.0	80-120
Silver	1.85	0.0200	"	2.03	90.9	80-120
Zinc	38.8	0.400	"	40.7	95.5	80-120
Selenium	3.75	0.260	"	4.07	92.3	80-120

**Duplicate (BHK0007-DUP1)**

Source: 2410467-01

Prepared & Analyzed: 11/01/24

Arsenic	2.24	0.200	mg/kg dry	2.26	0.755	20
Barium	90.4	0.400	"	85.9	5.08	20
Cadmium	0.173	0.200	"	0.188	7.98	20
Copper	6.76	0.400	"	6.13	9.88	20
Lead	9.02	0.200	"	7.91	13.1	20
Nickel	4.05	0.400	"	3.93	3.13	20
Silver	0.0253	0.0200	"	0.0279	9.84	20
Zinc	67.8	0.400	"	62.0	8.88	20
Selenium	ND	0.260	"	ND		20

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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**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 BHK0007 - EPA 3050B**

<b>Matrix Spike (BHK0007-MS1)</b>	<b>Source: 2410467-01</b>			<b>Prepared &amp; Analyzed: 11/01/24</b>								
Arsenic	39.2	0.200	mg/kg dry	44.4	2.26	83.3	75-125					
Barium	123	0.400	"	44.4	85.9	82.8	75-125					
Cadmium	2.20	0.200	"	2.22	0.188	90.8	75-125					
Copper	34.4	0.400	"	44.4	6.13	63.7	75-125					QM-05
Lead	26.2	0.200	"	22.2	7.91	82.7	75-125					
Nickel	32.0	0.400	"	44.4	3.93	63.4	75-125					QM-05
Silver	2.00	0.0200	"	2.22	0.0279	89.0	75-125					
Zinc	109	0.400	"	44.4	62.0	105	75-125					
Selenium	3.45	0.260	"	4.44	ND	77.8	75-125					

<b>Matrix Spike Dup (BHK0007-MSD1)</b>	<b>Source: 2410467-01</b>			<b>Prepared &amp; Analyzed: 11/01/24</b>								
Arsenic	40.6	0.200	mg/kg dry	44.0	2.26	87.1	75-125	3.48	25			
Barium	124	0.400	"	44.0	85.9	87.2	75-125	1.32	25			
Cadmium	2.21	0.200	"	2.20	0.188	91.9	75-125	0.352	25			
Copper	32.4	0.400	"	44.0	6.13	59.8	75-125	5.82	25			QM-05
Lead	26.7	0.200	"	22.0	7.91	85.3	75-125	1.61	25			
Nickel	30.1	0.400	"	44.0	3.93	59.5	75-125	6.19	25			QM-05
Silver	1.98	0.0200	"	2.20	0.0279	88.8	75-125	1.05	25			
Zinc	76.3	0.400	"	44.0	62.0	32.4	75-125	35.1	25			QM-05
Selenium	3.41	0.260	"	4.40	ND	77.5	75-125	1.20	25			

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Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

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

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

**Batch BHK0131 - 3060A Mod**

**Blank (BHK0131-BLK1)**

Prepared: 11/04/24 Analyzed: 11/06/24

Chromium, Hexavalent      ND      0.30 mg/kg wet

**LCS (BHK0131-BS1)**

Prepared: 11/04/24 Analyzed: 11/06/24

Chromium, Hexavalent      26.6      0.30 mg/kg wet      25.0      106      80-120

**Duplicate (BHK0131-DUP1)**

**Source: 2410467-01**

Prepared: 11/04/24 Analyzed: 11/06/24

Chromium, Hexavalent      ND      0.30 mg/kg dry      ND      20

**Matrix Spike (BHK0131-MS1)**

**Source: 2410467-01**

Prepared: 11/04/24 Analyzed: 11/06/24

Chromium, Hexavalent      27.6      0.30 mg/kg dry      26.6      ND      104      75-125

**Matrix Spike Dup (BHK0131-MSD1)**

**Source: 2410467-01**

Prepared: 11/04/24 Analyzed: 11/06/24

Chromium, Hexavalent      27.5      0.30 mg/kg dry      26.6      ND      103      75-125      0.193      20

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



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

Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**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 BHJ1303 - General Preparation**

**Blank (BHJ1303-BLK1)**

Prepared: 10/29/24 Analyzed: 10/31/24

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

**LCS (BHJ1303-BS1)**

Prepared: 10/29/24 Analyzed: 10/31/24

Calcium	5.04	0.0500	mg/L wet	5.00		101	70-130			
Magnesium	5.42	0.0500	"	5.00		108	70-130			
Sodium	5.26	0.0500	"	5.00		105	70-130			

Summit Scientific

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

Project: Noble - SH Farms C17-19

Project Number: [none]  
 Project Manager: AJ Engelhardt

**Reported:**  
 11/07/24 09:58

**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 BHJ1428 - General Preparation**

Duplicate (BHJ1428-DUP1)	Source: 2410405-01	Prepared: 10/31/24	Analyzed: 11/01/24		
% Solids	94.7	%	93.8	0.988	20

Summit Scientific

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

Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

**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 BHJ1305 - General Preparation**

**Blank (BHJ1305-BLK1)**

Prepared: 10/29/24 Analyzed: 10/30/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BHJ1305-BS1)**

Prepared: 10/29/24 Analyzed: 10/30/24

Specific Conductance (EC) 0.157 0.0100 mmhos/cm 0.150 105 95-105

**Duplicate (BHJ1305-DUP1)**

**Source: 2410406-01**

Prepared: 10/29/24 Analyzed: 10/30/24

Specific Conductance (EC) 0.206 0.0100 mmhos/cm 0.206 0.0972 20

Summit Scientific

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

Project: Noble - SH Farms C17-19

Project Number: [none]  
 Project Manager: AJ Engelhardt

**Reported:**  
 11/07/24 09:58

**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 BHJ1304 - General Preparation**

**LCS (BHJ1304-BS1)**

Prepared: 10/29/24 Analyzed: 10/30/24

pH 9.18 pH Units 9.18 100 95-105

**Duplicate (BHJ1304-DUP1)**

Source: 2410406-01

Prepared: 10/29/24 Analyzed: 10/30/24

pH 5.78 pH Units 5.72 1.04 20

Summit Scientific

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

Project: Noble - SH Farms C17-19

Project Number: [none]  
Project Manager: AJ Engelhardt

**Reported:**  
11/07/24 09:58

### Notes and Definitions

- 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.
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
- 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