

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 02, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

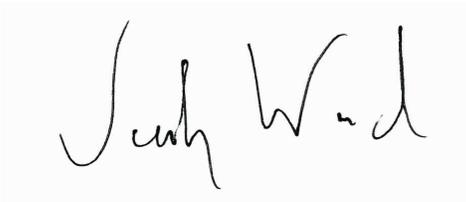
Broomfield, CO 80020

RE: Noble - Hanscome C28-29D Flowline

Work Order #2407399

Enclosed are the results of analyses for samples received by Summit Scientific on 07/31/24 17:43. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and a long, sweeping underline.

Jacob Wood For Paul Shrewsbury

President



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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

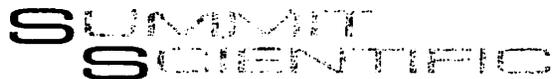
**Reported:**  
08/02/24 13:40

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FS01-FL01R-W@2'	2407399-01	Soil	07/31/24 10:52	07/31/24 17:43
SS01-FL01R-W@1'	2407399-02	Soil	07/31/24 10:54	07/31/24 17:43
SS02-FL01R-W@1'	2407399-03	Soil	07/31/24 10:56	07/31/24 17:43
SS03-FL01R-W@1'	2407399-04	Soil	07/31/24 10:58	07/31/24 17:43
SS04-FL01R-W@1'	2407399-05	Soil	07/31/24 11:00	07/31/24 17:43
FS01-FL01-01@2'	2407399-06	Soil	07/31/24 13:00	07/31/24 17:43
SS01-FL01-01@1'	2407399-07	Soil	07/31/24 13:02	07/31/24 17:43
SS02-FL01-01@1'	2407399-08	Soil	07/31/24 13:04	07/31/24 17:43
SS03-FL01-01@1'	2407399-09	Soil	07/31/24 13:06	07/31/24 17:43
SS04-FL01-01@1'	2407399-10	Soil	07/31/24 13:08	07/31/24 17:43
BKG02@1'	2407399-11	Soil	07/31/24 12:01	07/31/24 17:43
BKG02@2'	2407399-12	Soil	07/31/24 12:02	07/31/24 17:43
BKG03@1'	2407399-13	Soil	07/31/24 12:22	07/31/24 17:43
BKG03@2'	2407399-14	Soil	07/31/24 12:23	07/31/24 17:43
BKG04@1'	2407399-15	Soil	07/31/24 12:32	07/31/24 17:43
BKG04@2'	2407399-16	Soil	07/31/24 12:33	07/31/24 17:43
BKG05@1'	2407399-17	Soil	07/31/24 12:50	07/31/24 17:43
BKG05@2'	2407399-18	Soil	07/31/24 12:51	07/31/24 17:43

Summit Scientific

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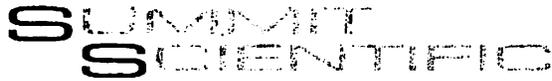
4653 Table Mountain Drive  
Golden, CO 80403  
303-277-9310

Lab ID 2407399-1 Page 1 of 2

Client: Noble/Tasman		Project Manager: Jake Whritenour		Company: Noble	
Address: 6855 W. 119th Ave.		E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location: <u>Hanscome C28-29D Flowline</u>	
City/State/Zip: Broomfield/CO/ 80020				AFE#:	
Phone: 937-554-5108		Project Name: <u>Hanscome C28-29D Flowline</u>		PO/Billing Codes:	
Sampler Name: <del>Molly Parks</del> <u>Sylvie Bousquet</u>		Project Number: <u>34734</u>		Contact: <u>Kieth McLean</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	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH		Boron - HWS	HOLD
1	FS01-FLO1R-W@2'	7-31-24	10:52	3			X			X			X	X	X	X	X	X		SAR, EC, pH by saturated paste
2	SS01-FLO1R-W@2'		10:54																	
3	SS02-FLO1R-W@1'		10:56																	
4	SS03-FLO1R-W@1'		10:58																	
5	SS04-FLO1R-W@1'		11:00																	
6	FS01-FLO1-O1@2'		13:00																	
7	SS01-FLO1-O1@1'		13:02																	
8	SS02-FLO1-O1@1'		13:04																	
9	SS03-FLO1-O1@1'		13:06																	
10	SS04-FLO1-O1@1'		13:08																	
11	BK602@1'		12:01																	
12	BK602@2'		12:02																	
13	BK603@1'		12:22																	
14	BK603@2'		12:23																	
15	BK604@1'		12:32																	

Relinquished by: <u>Sylvie B.</u>	Date/Time: <u>7-31-24 16:05</u>	Received by: <u>Tasman Lock Box</u>	Date/Time: <u>7-31-24 16:05</u>	TAT Business Days	Field DO	Notes:
				Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by: <u>Tasman Lock Box</u>	Date/Time: <u>7/31/24 1743</u>	Received by: <u>[Signature]</u>	Date/Time: <u>7/31/24 1743</u>	1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: <u>9.9</u>	Corrected Temperature: <u>0</u>	IR gun #: <u>1</u>	HNO3 lot #: _____			



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

Lab ID 2407399.2 Page 2 of 2

<b>Send Data To:</b>		<b>Send Invoice To:</b>
Client: Noble/Tasman	Project Manager: Jake Whritenour	Company: <u>Noble</u>
Address: 6855 W. 119th Ave.	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location: <u>Hanscome C28-29D Flowline</u>
City/State/Zip: Broomfield/CO/ 80020		AFE#:
Phone: 937-554-5108	Project Name: <u>Hanscome C28-29D Flowline</u>	PO/Billing Codes:
Sampler Name: <u>Molly Parks<sup>SB</sup> Sylvia Bousquet</u>	Project Number: <u>34734</u>	Contact: <u>Kieth Mclean</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	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH		Boron - HWS
1	BK60402'	7-31-24	12:33	3			X			X					X	X			SAR, EC, pH by saturated paste
2	BK60501'	+	12:50	1											X	X			
3	BK60502'	+	12:51	1											X	X			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: <u>Andrew S.</u>	Date/Time: <u>7-31-24 16:05</u>	Received by: <u>Tasman Lock Box</u>	Date/Time: <u>7-31-24 16:05</u>	TAT Business Days	Field DO	Notes:
Relinquished by: <u>Tasman Lock Box</u>	Date/Time: <u>7/31/24 1743</u>	Received by: <u>[Signature]</u>	Date/Time: <u>7/31/24 1743</u>	Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: <u>9.9</u>	Corrected Temperature: <u>0</u>	IR gun #: <u>1</u>	HNO3 lot #:			

S<sub>2</sub>

2/2  
Sample Receipt Checklist

S2 Work Order # 2407399

Client: Waldman Client Project ID: Hanscome C28290 Flanku

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"/>	ON ICE
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
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

7/31/24  
Date/Time



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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**FS01-FL01R-W@2'**  
**2407399-01 (Soil)**

Summit Scientific

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

Date Sampled: **07/31/24 10:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHG0940	07/31/24	07/31/24	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: **07/31/24 10:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0402	100 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0397	99.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0392	98.1 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/31/24 10:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHG0942	07/31/24	07/31/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/31/24 10:52**

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

**PAH by EPA Method 8270D SIM**

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Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**FS01-FL01R-W@2'**  
**2407399-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/31/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0003	08/01/24	08/01/24	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: **07/31/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0137	41.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0198	59.5 %	40-150		"	"	"	"	

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

Date Sampled: **07/31/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>2.02</b>	2.00	mg/L	1	BHH0008	08/01/24	08/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/31/24 10:52**

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 - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**FS01-FL01R-W@2'**  
**2407399-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.11	0.180	mg/kg dry	1	BHH0004	08/01/24	08/01/24	EPA 6020B
Barium	78.8	0.360	"	"	"	"	"	"
Cadmium	0.269	0.180	"	"	"	"	"	"
Copper	6.17	0.360	"	"	"	"	"	"
Lead	101	0.180	"	"	"	"	"	"
Nickel	4.42	0.360	"	"	"	"	"	"
Silver	0.0428	0.0180	"	"	"	"	"	"
Zinc	24.2	0.360	"	"	"	"	"	"
Selenium	ND	0.234	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/31/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0014	08/01/24	08/01/24	EPA 7196A	

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

Date Sampled: **07/31/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	306	0.0500	mg/L dry	1	BHG0937	07/31/24	08/02/24	EPA 6020B	
Magnesium	62.3	0.0500	"	"	"	"	"	"	
Sodium	77.3	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **07/31/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.05	0.00100	units	1	BHH0059	08/02/24	08/02/24	Calculation	

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

Date Sampled: **07/31/24 10:52**

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 - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**FS01-FL01R-W@2'**  
**2407399-01 (Soil)**

**Summit Scientific**

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

<b>% Solids</b>	<b>88.3</b>	%	1	BHH0002	08/01/24	08/01/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/31/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>1.08</b>	0.0100	mmhos/cm	1	BHG0938	07/31/24	08/01/24	EPA 120.1	

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

Date Sampled: **07/31/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.79</b>		pH Units	1	BHG0939	07/31/24	08/01/24	EPA 9045D	

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Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS01-FL01R-W@1'**  
**2407399-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/24 10:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHG0940	07/31/24	07/31/24	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: **07/31/24 10:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0408	102 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0394	98.5 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0380	94.9 %	50-150	"	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/31/24 10:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHG0942	07/31/24	07/31/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/31/24 10:54**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	8.10	64.8 %	30-150	"	"	"	"	"	

**PAH by EPA Method 8270D SIM**

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS01-FL01R-W@1'**  
**2407399-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/31/24 10:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0003	08/01/24	08/01/24	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: **07/31/24 10:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0195	58.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0254	76.1 %	40-150		"	"	"	"	

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

Date Sampled: **07/31/24 10:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0008	08/01/24	08/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/31/24 10:54**

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 - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS01-FL01R-W@1'**  
**2407399-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.94	0.200	mg/kg dry	1	BHH0004	08/01/24	08/01/24	EPA 6020B
Barium	98.6	0.400	"	"	"	"	"	"
Cadmium	0.258	0.200	"	"	"	"	"	"
Copper	6.34	0.400	"	"	"	"	"	"
Lead	192	0.200	"	"	"	"	"	"
Nickel	4.48	0.400	"	"	"	"	"	"
Silver	0.0515	0.0200	"	"	"	"	"	"
Zinc	26.2	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/31/24 10:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0014	08/01/24	08/01/24	EPA 7196A	

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

Date Sampled: **07/31/24 10:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	34.9	0.0500	mg/L dry	1	BHG0937	07/31/24	08/02/24	EPA 6020B	
Magnesium	7.38	0.0500	"	"	"	"	"	"	
Sodium	37.9	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **07/31/24 10:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.52	0.00100	units	1	BHH0059	08/02/24	08/02/24	Calculation	

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

Date Sampled: **07/31/24 10:54**

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 - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS01-FL01R-W@1'**  
**2407399-02 (Soil)**

**Summit Scientific**

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

% Solids	88.8	%	1	BHH0002	08/01/24	08/01/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/31/24 10:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.23	0.0100	mmhos/cm	1	BHG0938	07/31/24	08/01/24	EPA 120.1	

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

Date Sampled: **07/31/24 10:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.84		pH Units	1	BHG0939	07/31/24	08/01/24	EPA 9045D	

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS02-FL01R-W@1'**  
**2407399-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/24 10:56**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHG0940	07/31/24	07/31/24	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: **07/31/24 10:56**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0417	104 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0397	99.3 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0385	96.2 %	50-150	"	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/31/24 10:56**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHG0942	07/31/24	07/31/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/31/24 10:56**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	8.88	71.0 %	30-150	"	"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS02-FL01R-W@1'**  
**2407399-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/31/24 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0003	08/01/24	08/01/24	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: **07/31/24 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0163	48.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0202	60.5 %	40-150		"	"	"	"	

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

Date Sampled: **07/31/24 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0008	08/01/24	08/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/31/24 10:56**

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS02-FL01R-W@1'**  
**2407399-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.19	0.200	mg/kg dry	1	BHH0004	08/01/24	08/01/24	EPA 6020B
Barium	58.0	0.400	"	"	"	"	"	"
Cadmium	0.283	0.200	"	"	"	"	"	"
Copper	5.70	0.400	"	"	"	"	"	"
Lead	8.60	0.200	"	"	"	"	"	"
Nickel	4.40	0.400	"	"	"	"	"	"
Silver	0.0329	0.0200	"	"	"	"	"	"
Zinc	20.2	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/31/24 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0014	08/01/24	08/01/24	EPA 7196A	

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

Date Sampled: **07/31/24 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	131	0.0500	mg/L dry	1	BHG0937	07/31/24	08/02/24	EPA 6020B	
Magnesium	38.1	0.0500	"	"	"	"	"	"	
Sodium	30.2	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **07/31/24 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.597	0.00100	units	1	BHH0059	08/02/24	08/02/24	Calculation	

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

Date Sampled: **07/31/24 10:56**

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 - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS02-FL01R-W@1'**  
**2407399-03 (Soil)**

**Summit Scientific**

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

% Solids	90.4	%	1	BHH0002	08/01/24	08/01/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/31/24 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.02	0.0100	mmhos/cm	1	BHG0938	07/31/24	08/01/24	EPA 120.1	

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

Date Sampled: **07/31/24 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.58		pH Units	1	BHG0939	07/31/24	08/01/24	EPA 9045D	

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS03-FL01R-W@1'**  
**2407399-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/24 10:58**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHG0940	07/31/24	07/31/24	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: **07/31/24 10:58**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0434	109 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0408	102 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0385	96.2 %	50-150	"	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/31/24 10:58**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHG0942	07/31/24	07/31/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/31/24 10:58**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	7.14	57.1 %	30-150	"	"	"	"	"	

**PAH by EPA Method 8270D SIM**

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS03-FL01R-W@1'**  
**2407399-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/31/24 10:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0003	08/01/24	08/01/24	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: **07/31/24 10:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0163	49.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0176	52.9 %	40-150		"	"	"	"	

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

Date Sampled: **07/31/24 10:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0008	08/01/24	08/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/31/24 10:58**

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS03-FL01R-W@1'**  
**2407399-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.24	0.200	mg/kg dry	1	BHH0004	08/01/24	08/01/24	EPA 6020B
Barium	81.4	0.400	"	"	"	"	"	"
Cadmium	0.218	0.200	"	"	"	"	"	"
Copper	4.97	0.400	"	"	"	"	"	"
Lead	23.9	0.200	"	"	"	"	"	"
Nickel	4.40	0.400	"	"	"	"	"	"
Silver	0.0304	0.0200	"	"	"	"	"	"
Zinc	20.0	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/31/24 10:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0014	08/01/24	08/01/24	EPA 7196A	

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

Date Sampled: **07/31/24 10:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	628	0.0500	mg/L dry	1	BHG0937	07/31/24	08/02/24	EPA 6020B	
Magnesium	70.2	0.0500	"	"	"	"	"	"	
Sodium	38.7	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **07/31/24 10:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.391	0.00100	units	1	BHH0059	08/02/24	08/02/24	Calculation	

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

Date Sampled: **07/31/24 10:58**

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS03-FL01R-W@1'**  
**2407399-04 (Soil)**

**Summit Scientific**

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

% Solids	88.4	%	1	BHH0002	08/01/24	08/01/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/31/24 10:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.801	0.0100	mmhos/cm	1	BHG0938	07/31/24	08/01/24	EPA 120.1	

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

Date Sampled: **07/31/24 10:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.22		pH Units	1	BHG0939	07/31/24	08/01/24	EPA 9045D	

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS04-FL01R-W@1'**  
**2407399-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/24 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHG0940	07/31/24	07/31/24	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: **07/31/24 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0416	104 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0402	101 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0378	94.6 %	50-150	"	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/31/24 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHG0942	07/31/24	07/31/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/31/24 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	9.14	73.2 %	30-150	"	"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS04-FL01R-W@1'**  
**2407399-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/31/24 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0003	08/01/24	08/01/24	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: **07/31/24 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0144	43.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0149	44.6 %	40-150		"	"	"	"	

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

Date Sampled: **07/31/24 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0008	08/01/24	08/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/31/24 11:00**

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 - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS04-FL01R-W@1'**  
**2407399-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.30	0.200	mg/kg dry	1	BHH0004	08/01/24	08/01/24	EPA 6020B
Barium	59.9	0.400	"	"	"	"	"	"
Cadmium	0.295	0.200	"	"	"	"	"	"
Copper	5.82	0.400	"	"	"	"	"	"
Lead	9.13	0.200	"	"	"	"	"	"
Nickel	4.96	0.400	"	"	"	"	"	"
Silver	0.0471	0.0200	"	"	"	"	"	"
Zinc	22.6	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/31/24 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0014	08/01/24	08/01/24	EPA 7196A	

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

Date Sampled: **07/31/24 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	37.4	0.0500	mg/L dry	1	BHG0937	07/31/24	08/02/24	EPA 6020B	
Magnesium	15.2	0.0500	"	"	"	"	"	"	
Sodium	67.3	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **07/31/24 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.34	0.00100	units	1	BHH0059	08/02/24	08/02/24	Calculation	

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

Date Sampled: **07/31/24 11:00**

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS04-FL01R-W@1'**  
**2407399-05 (Soil)**

**Summit Scientific**

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

<b>% Solids</b>	<b>84.6</b>	%	1	BHH0002	08/01/24	08/01/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/31/24 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>2.46</b>	0.0100	mmhos/cm	1	BHG0938	07/31/24	08/01/24	EPA 120.1	

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

Date Sampled: **07/31/24 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>7.11</b>		pH Units	1	BHG0939	07/31/24	08/01/24	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**FS01-FL01-01@2'**  
**2407399-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/24 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHG0940	07/31/24	07/31/24	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: **07/31/24 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0422	105 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0391	97.6 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0395	98.8 %	50-150	"	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/31/24 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHG0942	07/31/24	07/31/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/31/24 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	9.48	75.9 %	30-150	"	"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**FS01-FL01-01@2'**  
**2407399-06 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/31/24 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Acenaphthene	ND	0.00500		mg/kg	1	BHH0003	08/01/24	08/01/24	EPA 8270D SIM	
<b>Anthracene</b>	<b>0.00861</b>	0.00500		"	"	"	"	"	"	
<b>Benzo (a) anthracene</b>	<b>0.0201</b>	0.00500		"	"	"	"	"	"	
<b>Benzo (a) pyrene</b>	<b>0.0130</b>	0.00500		"	"	"	"	"	"	
<b>Benzo (b) fluoranthene</b>	<b>0.0197</b>	0.00500		"	"	"	"	"	"	
<b>Benzo (k) fluoranthene</b>	<b>0.00783</b>	0.00500		"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.0212</b>	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.0477</b>	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
<b>Indeno (1,2,3-cd) pyrene</b>	<b>0.0114</b>	0.00500		"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.0414</b>	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **07/31/24 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 2-Methylnaphthalene-d10	0.0152	45.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0179	53.8 %		40-150		"	"	"	"	

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

Date Sampled: **07/31/24 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BHH0008	08/01/24	08/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/31/24 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**FS01-FL01-01@2'**  
**2407399-06 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.11	0.200	mg/kg dry	1	BHH0004	08/01/24	08/01/24	EPA 6020B
Barium	60.0	0.400	"	"	"	"	"	"
Cadmium	0.203	0.200	"	"	"	"	"	"
Copper	4.63	0.400	"	"	"	"	"	"
Lead	6.65	0.200	"	"	"	"	"	"
Nickel	4.36	0.400	"	"	"	"	"	"
Silver	0.0319	0.0200	"	"	"	"	"	"
Zinc	19.3	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/31/24 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0014	08/01/24	08/01/24	EPA 7196A	

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

Date Sampled: **07/31/24 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	23.1	0.0500	mg/L dry	1	BHG0937	07/31/24	08/02/24	EPA 6020B	
Magnesium	8.75	0.0500	"	"	"	"	"	"	
Sodium	76.2	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **07/31/24 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.43	0.00100	units	1	BHH0059	08/02/24	08/02/24	Calculation	

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

Date Sampled: **07/31/24 13:00**

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 - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**FS01-FL01-01@2'**  
**2407399-06 (Soil)**

**Summit Scientific**

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

% Solids	91.6	%	1	BHH0002	08/01/24	08/01/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/31/24 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.65	0.0100	mmhos/cm	1	BHG0938	07/31/24	08/01/24	EPA 120.1	

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

Date Sampled: **07/31/24 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.92		pH Units	1	BHG0939	07/31/24	08/01/24	EPA 9045D	

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS01-FL01-01@1'**  
**2407399-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/24 13:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHG0940	07/31/24	07/31/24	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: **07/31/24 13:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0407	102 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0398	99.5 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0383	95.7 %	50-150	"	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/31/24 13:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHG0942	07/31/24	07/31/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/31/24 13:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	9.42	75.3 %	30-150	"	"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS01-FL01-01@1'**  
**2407399-07 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/31/24 13:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0003	08/01/24	08/01/24	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: **07/31/24 13:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0168	50.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0226	67.7 %	40-150		"	"	"	"	

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

Date Sampled: **07/31/24 13:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0008	08/01/24	08/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/31/24 13:02**

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 - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS01-FL01-01@1'**  
**2407399-07 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.04	0.200	mg/kg dry	1	BHH0004	08/01/24	08/01/24	EPA 6020B
Barium	60.7	0.400	"	"	"	"	"	"
Cadmium	0.252	0.200	"	"	"	"	"	"
Copper	5.50	0.400	"	"	"	"	"	"
Lead	7.86	0.200	"	"	"	"	"	"
Nickel	4.09	0.400	"	"	"	"	"	"
Silver	0.0282	0.0200	"	"	"	"	"	"
Zinc	18.8	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/31/24 13:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0014	08/01/24	08/01/24	EPA 7196A	

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

Date Sampled: **07/31/24 13:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	29.4	0.0500	mg/L dry	1	BHG0937	07/31/24	08/02/24	EPA 6020B	
Magnesium	9.01	0.0500	"	"	"	"	"	"	
Sodium	30.3	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **07/31/24 13:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.25	0.00100	units	1	BHH0059	08/02/24	08/02/24	Calculation	

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

Date Sampled: **07/31/24 13:02**

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 - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS01-FL01-01@1'**  
**2407399-07 (Soil)**

**Summit Scientific**

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

% Solids	91.5	%	1	BHH0002	08/01/24	08/01/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/31/24 13:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.69	0.0100	mmhos/cm	1	BHG0938	07/31/24	08/01/24	EPA 120.1	

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

Date Sampled: **07/31/24 13:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.80		pH Units	1	BHG0939	07/31/24	08/01/24	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS02-FL01-01@1'**  
**2407399-08 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/24 13:04**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHG0940	07/31/24	07/31/24	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: **07/31/24 13:04**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0415	104 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0392	97.9 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0386	96.5 %	50-150	"	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/31/24 13:04**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHG0942	07/31/24	07/31/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/31/24 13:04**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	9.48	75.9 %	30-150	"	"	"	"	"	

**PAH by EPA Method 8270D SIM**

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS02-FL01-01@1'**  
**2407399-08 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/31/24 13:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0003	08/01/24	08/01/24	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: **07/31/24 13:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0164	49.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0237	71.0 %	40-150		"	"	"	"	

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

Date Sampled: **07/31/24 13:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0008	08/01/24	08/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/31/24 13:04**

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 - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS02-FL01-01@1'**  
**2407399-08 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.51	0.200	mg/kg dry	1	BHH0004	08/01/24	08/01/24	EPA 6020B
Barium	42.5	0.400	"	"	"	"	"	"
Cadmium	0.207	0.200	"	"	"	"	"	"
Copper	4.71	0.400	"	"	"	"	"	"
Lead	6.29	0.200	"	"	"	"	"	"
Nickel	3.39	0.400	"	"	"	"	"	"
Silver	0.0204	0.0200	"	"	"	"	"	"
Zinc	16.1	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/31/24 13:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0014	08/01/24	08/01/24	EPA 7196A	

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

Date Sampled: **07/31/24 13:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	62.7	0.0500	mg/L dry	1	BHG0937	07/31/24	08/02/24	EPA 6020B	
Magnesium	19.5	0.0500	"	"	"	"	"	"	
Sodium	11.1	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **07/31/24 13:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.314	0.00100	units	1	BHH0059	08/02/24	08/02/24	Calculation	

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

Date Sampled: **07/31/24 13:04**

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS02-FL01-01@1'**  
**2407399-08 (Soil)**

**Summit Scientific**

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

% Solids	92.5	%	1	BHH0002	08/01/24	08/01/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/31/24 13:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.24	0.0100	mmhos/cm	1	BHG0938	07/31/24	08/01/24	EPA 120.1	

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

Date Sampled: **07/31/24 13:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.31		pH Units	1	BHG0939	07/31/24	08/01/24	EPA 9045D	

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS03-FL01-01@1'**  
**2407399-09 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/24 13:06**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHG0940	07/31/24	07/31/24	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: **07/31/24 13:06**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0421	105 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0405	101 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0390	97.5 %	50-150	"	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/31/24 13:06**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHG0942	07/31/24	07/31/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/31/24 13:06**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	9.30	74.4 %	30-150	"	"	"	"	"	

**PAH by EPA Method 8270D SIM**

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS03-FL01-01@1'**  
**2407399-09 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/31/24 13:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0003	08/01/24	08/02/24	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: **07/31/24 13:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0143	43.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0223	67.0 %	40-150		"	"	"	"	

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

Date Sampled: **07/31/24 13:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0008	08/01/24	08/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/31/24 13:06**

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS03-FL01-01@1'**  
**2407399-09 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.21	0.200	mg/kg dry	1	BHH0004	08/01/24	08/01/24	EPA 6020B	
Barium	42.8	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.71	0.400	"	"	"	"	"	"	
Lead	6.22	0.200	"	"	"	"	"	"	
Nickel	3.36	0.400	"	"	"	"	"	"	
Silver	0.0232	0.0200	"	"	"	"	"	"	
Zinc	15.3	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/31/24 13:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0014	08/01/24	08/01/24	EPA 7196A	

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

Date Sampled: **07/31/24 13:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	25.9	0.0500	mg/L dry	1	BHG0937	07/31/24	08/02/24	EPA 6020B	
Magnesium	7.51	0.0500	"	"	"	"	"	"	
Sodium	23.8	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **07/31/24 13:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.06	0.00100	units	1	BHH0059	08/02/24	08/02/24	Calculation	

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

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6855 W. 119th Ave.  
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Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS03-FL01-01@1'**  
**2407399-09 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/24 13:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	92.6			%	1	BHH0002	08/01/24	08/01/24	Calculation	

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

Date Sampled: **07/31/24 13:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	1.31	0.0100		mmhos/cm	1	BHG0938	07/31/24	08/01/24	EPA 120.1	

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

Date Sampled: **07/31/24 13:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.89			pH Units	1	BHG0939	07/31/24	08/01/24	EPA 9045D	

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS04-FL01-01@1'**  
**2407399-10 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/24 13:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHG0940	07/31/24	08/01/24	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: **07/31/24 13:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0415	104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0392	98.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0404	101 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/31/24 13:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHG0942	07/31/24	08/01/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/31/24 13:08**

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

**PAH by EPA Method 8270D SIM**

Summit Scientific

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS04-FL01-01@1'**  
**2407399-10 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/31/24 13:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.120	0.00500	mg/kg	1	BHH0003	08/01/24	08/02/24	EPA 8270D SIM	
Anthracene	0.214	0.00500	"	"	"	"	"	"	E
Benzo (a) anthracene	0.171	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.113	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.149	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0606	0.00500	"	"	"	"	"	"	
Chrysene	0.175	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	0.0153	0.00500	"	"	"	"	"	"	
Fluoranthene	0.437	0.00500	"	"	"	"	"	"	E
Fluorene	0.187	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.105	0.00500	"	"	"	"	"	"	
Pyrene	0.379	0.00500	"	"	"	"	"	"	E
1-Methylnaphthalene	0.00985	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0293	0.00500	"	"	"	"	"	"	

Date Sampled: **07/31/24 13:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0126	37.9 %	40-150		"	"	"	"	S-02
Surrogate: Fluoranthene-d10	0.0205	61.5 %	40-150		"	"	"	"	

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

Date Sampled: **07/31/24 13:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0008	08/01/24	08/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/31/24 13:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.80	0.200	mg/kg dry	1	BHH0004	08/01/24	08/01/24	EPA 6020B	

Summit Scientific

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS04-FL01-01@1'**  
**2407399-10 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	54.2	0.400	mg/kg dry	1	BHH0004	08/01/24	08/01/24	EPA 6020B	
Cadmium	0.213	0.200	"	"	"	"	"	"	
Copper	5.05	0.400	"	"	"	"	"	"	
Lead	7.33	0.200	"	"	"	"	"	"	
Nickel	3.91	0.400	"	"	"	"	"	"	
Silver	0.0257	0.0200	"	"	"	"	"	"	
Zinc	19.7	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/31/24 13:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0014	08/01/24	08/01/24	EPA 7196A	

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

Date Sampled: **07/31/24 13:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	26.6	0.0500	mg/L dry	1	BHG0937	07/31/24	08/02/24	EPA 6020B	
Magnesium	9.11	0.0500	"	"	"	"	"	"	
Sodium	65.7	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **07/31/24 13:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.80	0.00100	units	1	BHH0059	08/02/24	08/02/24	Calculation	

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

Date Sampled: **07/31/24 13:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.1		%	1	BHH0002	08/01/24	08/01/24	Calculation	

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Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**SS04-FL01-01@1'**  
**2407399-10 (Soil)**

**Summit Scientific**

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

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

Date Sampled: **07/31/24 13:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.48	0.0100	mmhos/cm	1	BHG0938	07/31/24	08/01/24	EPA 120.1	

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

Date Sampled: **07/31/24 13:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.63		pH Units	1	BHG0939	07/31/24	08/01/24	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**BKG02@1'**  
**2407399-11 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/24 12:01**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHH0008	08/01/24	08/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/31/24 12:01**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	5.39	0.200	mg/kg dry	1	BHH0004	08/01/24	08/01/24	EPA 6020B	
Barium	86.6	0.400	"	"	"	"	"	"	
Cadmium	0.329	0.200	"	"	"	"	"	"	
Copper	6.50	0.400	"	"	"	"	"	"	
Lead	10.2	0.200	"	"	"	"	"	"	
Nickel	5.24	0.400	"	"	"	"	"	"	
Silver	0.0426	0.0200	"	"	"	"	"	"	
Zinc	23.0	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/31/24 12:01**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0014	08/01/24	08/01/24	EPA 7196A	

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

Date Sampled: **07/31/24 12:01**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	323	0.0500	mg/L dry	1	BHG0937	07/31/24	08/02/24	EPA 6020B	
Magnesium	60.8	0.0500	"	"	"	"	"	"	
Sodium	95.8	0.0500	"	"	"	"	"	"	

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Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**BKG02@1'**  
**2407399-11 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **07/31/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.28	0.00100	units	1	BHH0059	08/02/24	08/02/24	Calculation	

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

Date Sampled: **07/31/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.7		%	1	BHH0002	08/01/24	08/01/24	Calculation	

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

Date Sampled: **07/31/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.34	0.0100	mmhos/cm	1	BHG0938	07/31/24	08/01/24	EPA 120.1	

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

Date Sampled: **07/31/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.65		pH Units	1	BHG0939	07/31/24	08/01/24	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**BKG02@2'**  
**2407399-12 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/24 12:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHH0008	08/01/24	08/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/31/24 12:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Arsenic</b>	<b>2.99</b>	0.200	mg/kg dry	1	BHH0004	08/01/24	08/01/24	EPA 6020B	
<b>Barium</b>	<b>47.6</b>	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
<b>Copper</b>	<b>4.23</b>	0.400	"	"	"	"	"	"	
<b>Lead</b>	<b>5.15</b>	0.200	"	"	"	"	"	"	
<b>Nickel</b>	<b>3.62</b>	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
<b>Zinc</b>	<b>15.4</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/31/24 12:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0014	08/01/24	08/01/24	EPA 7196A	

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

Date Sampled: **07/31/24 12:02**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>125</b>	0.0500	mg/L dry	1	BHG0937	07/31/24	08/02/24	EPA 6020B	
<b>Magnesium</b>	<b>33.5</b>	0.0500	"	"	"	"	"	"	
<b>Sodium</b>	<b>63.0</b>	0.0500	"	"	"	"	"	"	

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**BKG02@2'**  
**2407399-12 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **07/31/24 12:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.29	0.00100	units	1	BHH0059	08/02/24	08/02/24	Calculation	

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

Date Sampled: **07/31/24 12:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.7		%	1	BHH0002	08/01/24	08/01/24	Calculation	

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

Date Sampled: **07/31/24 12:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.902	0.0100	mmhos/cm	1	BHG0938	07/31/24	08/01/24	EPA 120.1	

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

Date Sampled: **07/31/24 12:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.90		pH Units	1	BHG0939	07/31/24	08/01/24	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**BKG03@1'**  
**2407399-13 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/24 12:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHH0008	08/01/24	08/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/31/24 12:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.72	0.200	mg/kg dry	1	BHH0004	08/01/24	08/01/24	EPA 6020B	
Barium	50.3	0.400	"	"	"	"	"	"	
Cadmium	0.234	0.200	"	"	"	"	"	"	
Copper	5.10	0.400	"	"	"	"	"	"	
Lead	7.21	0.200	"	"	"	"	"	"	
Nickel	3.85	0.400	"	"	"	"	"	"	
Silver	0.0274	0.0200	"	"	"	"	"	"	
Zinc	18.7	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/31/24 12:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0014	08/01/24	08/01/24	EPA 7196A	

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

Date Sampled: **07/31/24 12:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	245	0.0500	mg/L dry	1	BHG0937	07/31/24	08/02/24	EPA 6020B	
Magnesium	57.0	0.0500	"	"	"	"	"	"	
Sodium	65.3	0.0500	"	"	"	"	"	"	

Summit Scientific

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Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**BKG03@1'**  
**2407399-13 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **07/31/24 12:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	<b>0.977</b>	0.00100	units	1	BHH0059	08/02/24	08/02/24	Calculation	

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

Date Sampled: **07/31/24 12:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>91.8</b>		%	1	BHH0002	08/01/24	08/01/24	Calculation	

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

Date Sampled: **07/31/24 12:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>1.27</b>	0.0100	mmhos/cm	1	BHG0938	07/31/24	08/01/24	EPA 120.1	

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

Date Sampled: **07/31/24 12:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	<b>8.35</b>		pH Units	1	BHG0939	07/31/24	08/01/24	EPA 9045D	

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**BKG03@2'**  
**2407399-14 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/24 12:23**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHH0008	08/01/24	08/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/31/24 12:23**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.95	0.200	mg/kg dry	1	BHH0004	08/01/24	08/01/24	EPA 6020B	
Barium	48.9	0.400	"	"	"	"	"	"	
Cadmium	0.205	0.200	"	"	"	"	"	"	
Copper	5.28	0.400	"	"	"	"	"	"	
Lead	6.00	0.200	"	"	"	"	"	"	
Nickel	3.60	0.400	"	"	"	"	"	"	
Silver	0.0222	0.0200	"	"	"	"	"	"	
Zinc	15.9	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/31/24 12:23**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0014	08/01/24	08/01/24	EPA 7196A	

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

Date Sampled: **07/31/24 12:23**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	124	0.0500	mg/L dry	1	BHG0937	07/31/24	08/02/24	EPA 6020B	
Magnesium	36.4	0.0500	"	"	"	"	"	"	
Sodium	56.4	0.0500	"	"	"	"	"	"	

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Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**BKG03@2'**  
**2407399-14 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **07/31/24 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.14	0.00100	units	1	BHH0059	08/02/24	08/02/24	Calculation	

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

Date Sampled: **07/31/24 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.9		%	1	BHH0002	08/01/24	08/01/24	Calculation	

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

Date Sampled: **07/31/24 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.32	0.0100	mmhos/cm	1	BHG0938	07/31/24	08/01/24	EPA 120.1	

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

Date Sampled: **07/31/24 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.12		pH Units	1	BHG0939	07/31/24	08/01/24	EPA 9045D	

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**BKG04@1'**  
**2407399-15 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/24 12:32**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHH0008	08/01/24	08/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/31/24 12:32**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.33	0.181	mg/kg dry	1	BHH0004	08/01/24	08/01/24	EPA 6020B	
Barium	48.1	0.362	"	"	"	"	"	"	
Cadmium	0.232	0.181	"	"	"	"	"	"	
Copper	5.92	0.362	"	"	"	"	"	"	
Lead	6.96	0.181	"	"	"	"	"	"	
Nickel	3.66	0.362	"	"	"	"	"	"	
Silver	0.0282	0.0181	"	"	"	"	"	"	
Zinc	22.2	0.362	"	"	"	"	"	"	
Selenium	ND	0.236	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/31/24 12:32**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0014	08/01/24	08/01/24	EPA 7196A	

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

Date Sampled: **07/31/24 12:32**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	171	0.0500	mg/L dry	1	BHG0937	07/31/24	08/02/24	EPA 6020B	
Magnesium	41.6	0.0500	"	"	"	"	"	"	
Sodium	53.9	0.0500	"	"	"	"	"	"	

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Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**BKG04@1'**  
**2407399-15 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **07/31/24 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	<b>0.959</b>	0.00100	units	1	BHH0059	08/02/24	08/02/24	Calculation	

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

Date Sampled: **07/31/24 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>92.6</b>		%	1	BHH0002	08/01/24	08/01/24	Calculation	

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

Date Sampled: **07/31/24 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>1.37</b>	0.0100	mmhos/cm	1	BHG0938	07/31/24	08/01/24	EPA 120.1	

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

Date Sampled: **07/31/24 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	<b>7.96</b>		pH Units	1	BHG0939	07/31/24	08/01/24	EPA 9045D	

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**BKG04@2'**  
**2407399-16 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/24 12:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHH0008	08/01/24	08/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/31/24 12:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	<b>3.05</b>	0.200	mg/kg dry	1	BHH0004	08/01/24	08/01/24	EPA 6020B	
Barium	<b>51.7</b>	0.400	"	"	"	"	"	"	
Cadmium	<b>0.211</b>	0.200	"	"	"	"	"	"	
Copper	<b>4.68</b>	0.400	"	"	"	"	"	"	
Lead	<b>6.44</b>	0.200	"	"	"	"	"	"	
Nickel	<b>3.66</b>	0.400	"	"	"	"	"	"	
Silver	<b>0.0205</b>	0.0200	"	"	"	"	"	"	
Zinc	<b>16.7</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/31/24 12:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0014	08/01/24	08/01/24	EPA 7196A	

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

Date Sampled: **07/31/24 12:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	<b>130</b>	0.0500	mg/L dry	1	BHG0937	07/31/24	08/02/24	EPA 6020B	
Magnesium	<b>42.2</b>	0.0500	"	"	"	"	"	"	
Sodium	<b>53.6</b>	0.0500	"	"	"	"	"	"	

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**BKG04@2'**  
**2407399-16 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **07/31/24 12:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.04	0.00100	units	1	BHH0059	08/02/24	08/02/24	Calculation	

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

Date Sampled: **07/31/24 12:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.1		%	1	BHH0002	08/01/24	08/01/24	Calculation	

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

Date Sampled: **07/31/24 12:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.26	0.0100	mmhos/cm	1	BHG0938	07/31/24	08/01/24	EPA 120.1	

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

Date Sampled: **07/31/24 12:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.34		pH Units	1	BHG0939	07/31/24	08/01/24	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**BKG05@1'**  
**2407399-17 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/24 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHH0008	08/01/24	08/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/31/24 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	<b>2.89</b>	0.200	mg/kg dry	1	BHH0004	08/01/24	08/01/24	EPA 6020B	
Barium	<b>47.7</b>	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	<b>4.50</b>	0.400	"	"	"	"	"	"	
Lead	<b>6.98</b>	0.200	"	"	"	"	"	"	
Nickel	<b>3.59</b>	0.400	"	"	"	"	"	"	
Silver	<b>0.0248</b>	0.0200	"	"	"	"	"	"	
Zinc	<b>17.2</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/31/24 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0014	08/01/24	08/01/24	EPA 7196A	

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

Date Sampled: **07/31/24 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	<b>64.8</b>	0.0500	mg/L dry	1	BHG0937	07/31/24	08/02/24	EPA 6020B	
Magnesium	<b>16.9</b>	0.0500	"	"	"	"	"	"	
Sodium	<b>46.3</b>	0.0500	"	"	"	"	"	"	

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Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**BKG05@1'**  
**2407399-17 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **07/31/24 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.32	0.00100	units	1	BHH0059	08/02/24	08/02/24	Calculation	

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

Date Sampled: **07/31/24 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.8		%	1	BHH0002	08/01/24	08/01/24	Calculation	

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

Date Sampled: **07/31/24 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.949	0.0100	mmhos/cm	1	BHG0938	07/31/24	08/01/24	EPA 120.1	

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

Date Sampled: **07/31/24 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.76		pH Units	1	BHG0939	07/31/24	08/01/24	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**BKG05@2'**  
**2407399-18 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/24 12:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHH0008	08/01/24	08/02/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/31/24 12:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Arsenic</b>	<b>3.19</b>	0.200	mg/kg dry	1	BHH0004	08/01/24	08/01/24	EPA 6020B	
<b>Barium</b>	<b>57.1</b>	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
<b>Copper</b>	<b>4.20</b>	0.400	"	"	"	"	"	"	
<b>Lead</b>	<b>5.89</b>	0.200	"	"	"	"	"	"	
<b>Nickel</b>	<b>3.91</b>	0.400	"	"	"	"	"	"	
<b>Silver</b>	<b>0.0220</b>	0.0200	"	"	"	"	"	"	
<b>Zinc</b>	<b>16.5</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/31/24 12:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0014	08/01/24	08/01/24	EPA 7196A	

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

Date Sampled: **07/31/24 12:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>79.0</b>	0.0500	mg/L dry	1	BHG0937	07/31/24	08/02/24	EPA 6020B	
<b>Magnesium</b>	<b>24.1</b>	0.0500	"	"	"	"	"	"	
<b>Sodium</b>	<b>65.8</b>	0.0500	"	"	"	"	"	"	

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**BKG05@2'**  
**2407399-18 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **07/31/24 12:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.66	0.00100	units	1	BHH0059	08/02/24	08/02/24	Calculation	

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

Date Sampled: **07/31/24 12:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.4		%	1	BHH0002	08/01/24	08/01/24	Calculation	

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

Date Sampled: **07/31/24 12:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.10	0.0100	mmhos/cm	1	BHG0938	07/31/24	08/01/24	EPA 120.1	

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

Date Sampled: **07/31/24 12:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.22		pH Units	1	BHG0939	07/31/24	08/01/24	EPA 9045D	

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Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

### 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 BHG0940 - EPA 5030 Soil MS

##### Blank (BHG0940-BLK1)

Prepared: 07/31/24 Analyzed: 08/01/24

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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0362		"	0.0400		90.6	50-150			
<i>Surrogate: Toluene-d8</i>	0.0400		"	0.0400		99.9	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0387		"	0.0400		96.8	50-150			

##### LCS (BHG0940-BS1)

Prepared: 07/31/24 Analyzed: 08/01/24

Benzene	0.0935	0.0020	mg/kg	0.100		93.5	70-130			
Toluene	0.0904	0.0050	"	0.100		90.4	70-130			
Ethylbenzene	0.0929	0.0050	"	0.100		92.9	70-130			
m,p-Xylene	0.176	0.010	"	0.200		88.0	70-130			
o-Xylene	0.0870	0.0050	"	0.100		87.0	70-130			
1,2,4-Trimethylbenzene	0.0844	0.0050	"	0.100		84.4	70-130			
1,3,5-Trimethylbenzene	0.0826	0.0050	"	0.100		82.6	70-130			
Naphthalene	0.0853	0.0038	"	0.100		85.3	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0373		"	0.0400		93.2	50-150			
<i>Surrogate: Toluene-d8</i>	0.0394		"	0.0400		98.4	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0386		"	0.0400		96.6	50-150			

##### Matrix Spike (BHG0940-MS1)

Source: 2407399-01

Prepared: 07/31/24 Analyzed: 08/01/24

Benzene	0.0806	0.0020	mg/kg	0.100	ND	80.6	70-130			
Toluene	0.0774	0.0050	"	0.100	ND	77.4	70-130			
Ethylbenzene	0.0783	0.0050	"	0.100	ND	78.3	70-130			
m,p-Xylene	0.146	0.010	"	0.200	ND	72.8	70-130			
o-Xylene	0.0743	0.0050	"	0.100	ND	74.3	70-130			
1,2,4-Trimethylbenzene	0.0689	0.0050	"	0.100	ND	68.9	70-130			QM-07
1,3,5-Trimethylbenzene	0.0680	0.0050	"	0.100	ND	68.0	70-130			QM-07
Naphthalene	0.0727	0.0038	"	0.100	ND	72.7	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0399		"	0.0400		99.8	50-150			
<i>Surrogate: Toluene-d8</i>	0.0395		"	0.0400		98.8	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0392		"	0.0400		98.0	50-150			

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Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

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

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

**Batch BHG0940 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (BHG0940-MSD1)</b>	<b>Source: 2407399-01</b>			<b>Prepared: 07/31/24 Analyzed: 08/01/24</b>						
Benzene	0.0828	0.0020	mg/kg	0.100	ND	82.8	70-130	2.75	30	
Toluene	0.0798	0.0050	"	0.100	ND	79.8	70-130	3.05	30	
Ethylbenzene	0.0803	0.0050	"	0.100	ND	80.3	70-130	2.53	30	
m,p-Xylene	0.151	0.010	"	0.200	ND	75.6	70-130	3.76	30	
o-Xylene	0.0761	0.0050	"	0.100	ND	76.1	70-130	2.31	30	
1,2,4-Trimethylbenzene	0.0694	0.0050	"	0.100	ND	69.4	70-130	0.737	30	QM-07
1,3,5-Trimethylbenzene	0.0690	0.0050	"	0.100	ND	69.0	70-130	1.40	30	QM-07
Naphthalene	0.0671	0.0038	"	0.100	ND	67.1	70-130	7.98	30	QM-07
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0390</i>		<i>"</i>	<i>0.0400</i>		<i>97.5</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0395</i>		<i>"</i>	<i>0.0400</i>		<i>98.8</i>	<i>50-150</i>			

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**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 BHG0942 - EPA 3550A**

**Blank (BHG0942-BLK1)**

Prepared: 07/31/24 Analyzed: 08/01/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	12.0		"	12.5		95.7	30-150				

**LCS (BHG0942-BS1)**

Prepared: 07/31/24 Analyzed: 08/01/24

C10-C28 (DRO)	467	50	mg/kg	500		93.5	70-130				
Surrogate: <i>o</i> -Terphenyl	11.9		"	12.5		95.0	30-150				

**Matrix Spike (BHG0942-MS1)**

Source: 2407399-01

Prepared: 07/31/24 Analyzed: 08/01/24

C10-C28 (DRO)	418	50	mg/kg	500	ND	83.6	70-130				
Surrogate: <i>o</i> -Terphenyl	9.74		"	12.5		77.9	30-150				

**Matrix Spike Dup (BHG0942-MSD1)**

Source: 2407399-01

Prepared: 07/31/24 Analyzed: 08/01/24

C10-C28 (DRO)	433	50	mg/kg	500	ND	86.7	70-130	3.58	20		
Surrogate: <i>o</i> -Terphenyl	7.90		"	12.5		63.2	30-150				

Summit Scientific

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**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 BHH0003 - EPA 5030 Soil MS**

**Blank (BHH0003-BLK1)**

Prepared & Analyzed: 08/01/24

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>0.0217</i>		"	<i>0.0333</i>		<i>65.1</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0257</i>		"	<i>0.0333</i>		<i>77.2</i>	<i>40-150</i>			

**LCS (BHH0003-BS1)**

Prepared & Analyzed: 08/01/24

Acenaphthene	0.0275	0.00500	mg/kg	0.0333		82.5	31-137			
Anthracene	0.0257	0.00500	"	0.0333		77.0	30-120			
Benzo (a) anthracene	0.0276	0.00500	"	0.0333		82.7	30-120			
Benzo (a) pyrene	0.0242	0.00500	"	0.0333		72.5	30-120			
Benzo (b) fluoranthene	0.0246	0.00500	"	0.0333		73.9	30-120			
Benzo (k) fluoranthene	0.0268	0.00500	"	0.0333		80.5	30-120			
Chrysene	0.0286	0.00500	"	0.0333		85.7	30-120			
Dibenz (a,h) anthracene	0.0235	0.00500	"	0.0333		70.5	30-120			
Fluoranthene	0.0274	0.00500	"	0.0333		82.1	30-120			
Fluorene	0.0326	0.00500	"	0.0333		97.8	30-120			
Indeno (1,2,3-cd) pyrene	0.0358	0.00500	"	0.0333		107	30-120			
Pyrene	0.0342	0.00500	"	0.0333		103	35-142			
1-Methylnaphthalene	0.0278	0.00500	"	0.0333		83.3	35-142			
2-Methylnaphthalene	0.0325	0.00500	"	0.0333		97.6	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0289</i>		"	<i>0.0333</i>		<i>86.6</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0283</i>		"	<i>0.0333</i>		<i>85.0</i>	<i>40-150</i>			

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**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 BHH0003 - EPA 5030 Soil MS**

**Matrix Spike (BHH0003-MS1)**

Source: 2407233-09

Prepared & Analyzed: 08/01/24

Acenaphthene	0.0237	0.00500	mg/kg	0.0333	ND	71.0	31-137			
Anthracene	0.0215	0.00500	"	0.0333	ND	64.6	30-120			
Benzo (a) anthracene	0.0246	0.00500	"	0.0333	ND	73.8	30-120			
Benzo (a) pyrene	0.0217	0.00500	"	0.0333	ND	65.2	30-120			
Benzo (b) fluoranthene	0.0224	0.00500	"	0.0333	ND	67.3	30-120			
Benzo (k) fluoranthene	0.0248	0.00500	"	0.0333	ND	74.3	30-120			
Chrysene	0.0258	0.00500	"	0.0333	ND	77.4	30-120			
Dibenz (a,h) anthracene	0.0214	0.00500	"	0.0333	ND	64.2	30-120			
Fluoranthene	0.0239	0.00500	"	0.0333	ND	71.6	30-120			
Fluorene	0.0256	0.00500	"	0.0333	ND	76.7	30-120			
Indeno (1,2,3-cd) pyrene	0.0310	0.00500	"	0.0333	ND	93.0	30-120			
Pyrene	0.0303	0.00500	"	0.0333	ND	91.0	35-142			
1-Methylnaphthalene	0.0196	0.00500	"	0.0333	ND	58.7	15-130			
2-Methylnaphthalene	0.0243	0.00500	"	0.0333	ND	72.8	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0196		"	0.0333		58.7	40-150			
Surrogate: Fluoranthene-d10	0.0244		"	0.0333		73.1	40-150			

**Matrix Spike Dup (BHH0003-MSD1)**

Source: 2407233-09

Prepared & Analyzed: 08/01/24

Acenaphthene	0.0234	0.00500	mg/kg	0.0333	ND	70.2	31-137	1.05	30	
Anthracene	0.0222	0.00500	"	0.0333	ND	66.7	30-120	3.10	30	
Benzo (a) anthracene	0.0248	0.00500	"	0.0333	ND	74.4	30-120	0.756	30	
Benzo (a) pyrene	0.0219	0.00500	"	0.0333	ND	65.8	30-120	0.849	30	
Benzo (b) fluoranthene	0.0220	0.00500	"	0.0333	ND	65.9	30-120	2.09	30	
Benzo (k) fluoranthene	0.0241	0.00500	"	0.0333	ND	72.2	30-120	2.77	30	
Chrysene	0.0257	0.00500	"	0.0333	ND	77.1	30-120	0.378	30	
Dibenz (a,h) anthracene	0.0243	0.00500	"	0.0333	ND	72.9	30-120	12.7	30	
Fluoranthene	0.0232	0.00500	"	0.0333	ND	69.6	30-120	2.92	30	
Fluorene	0.0256	0.00500	"	0.0333	ND	76.8	30-120	0.138	30	
Indeno (1,2,3-cd) pyrene	0.0353	0.00500	"	0.0333	ND	106	30-120	12.9	30	
Pyrene	0.0322	0.00500	"	0.0333	ND	96.7	35-142	6.12	30	
1-Methylnaphthalene	0.0169	0.00500	"	0.0333	ND	50.8	15-130	14.5	50	
2-Methylnaphthalene	0.0238	0.00500	"	0.0333	ND	71.5	15-130	1.80	50	
Surrogate: 2-Methylnaphthalene-d10	0.0195		"	0.0333		58.5	40-150			
Surrogate: Fluoranthene-d10	0.0240		"	0.0333		71.9	40-150			

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

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

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

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

**Batch BHH0008 - EPA 3050B**

<b>Blank (BHH0008-BLK1)</b>		Prepared: 08/01/24 Analyzed: 08/02/24								
Boron	ND	2.00	mg/L							
<b>LCS (BHH0008-BS1)</b>		Prepared: 08/01/24 Analyzed: 08/02/24								
Boron	4.31	2.00	mg/L	5.00		86.3	80-120			
<b>Duplicate (BHH0008-DUP1)</b>		<b>Source: 2407399-01</b>		Prepared: 08/01/24 Analyzed: 08/02/24						
Boron	2.07	2.00	mg/L		2.02			2.29	20	
<b>Matrix Spike (BHH0008-MS1)</b>		<b>Source: 2407399-01</b>		Prepared: 08/01/24 Analyzed: 08/02/24						
Boron	9.16	2.00	mg/L	5.04	2.02	142	75-125			QM-01
<b>Matrix Spike Dup (BHH0008-MSD1)</b>		<b>Source: 2407399-01</b>		Prepared: 08/01/24 Analyzed: 08/02/24						
Boron	9.43	2.00	mg/L	5.04	2.02	147	75-125	2.92	25	QM-01

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

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

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

**Batch BHH0004 - EPA 3050B**

**Blank (BHH0004-BLK1)**

Prepared & Analyzed: 08/01/24

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 (BHH0004-BS1)**

Prepared & Analyzed: 08/01/24

Arsenic	38.8	0.200	mg/kg wet	37.9	103	80-120
Barium	37.8	0.400	"	37.9	99.8	80-120
Cadmium	1.89	0.200	"	1.89	99.7	80-120
Copper	38.1	0.400	"	37.9	101	80-120
Lead	18.4	0.200	"	18.9	97.0	80-120
Nickel	38.4	0.400	"	37.9	101	80-120
Silver	1.89	0.0200	"	1.89	99.9	80-120
Zinc	38.4	0.400	"	37.9	101	80-120
Selenium	4.07	0.260	"	3.79	107	80-120

**Duplicate (BHH0004-DUP1)**

Source: 2407399-01

Prepared & Analyzed: 08/01/24

Arsenic	2.79	0.200	mg/kg dry	3.11	10.9	20	
Barium	67.5	0.400	"	78.8	15.4	20	
Cadmium	0.254	0.200	"	0.269	5.53	20	
Copper	5.74	0.400	"	6.17	7.16	20	
Lead	34.4	0.200	"	101	98.4	20	QR-02
Nickel	4.17	0.400	"	4.42	5.87	20	
Silver	0.0317	0.0200	"	0.0428	29.8	20	QR-01
Zinc	23.1	0.400	"	24.2	4.76	20	
Selenium	0.194	0.260	"	0.209	7.26	20	

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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**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 BHH0004 - EPA 3050B**

**Matrix Spike (BHH0004-MS1)**

Source: 2407399-01

Prepared & Analyzed: 08/01/24

Arsenic	43.7	0.200	mg/kg dry	42.9	3.11	94.7	75-125				
Barium	113	0.400	"	42.9	78.8	79.3	75-125				
Cadmium	2.31	0.200	"	2.14	0.269	95.4	75-125				
Copper	32.8	0.400	"	42.9	6.17	62.2	75-125				QM-05
Lead	62.1	0.200	"	21.4	101	NR	75-125				QM-05
Nickel	31.7	0.400	"	42.9	4.42	63.5	75-125				QM-05
Silver	2.05	0.0200	"	2.14	0.0428	93.7	75-125				
Zinc	51.0	0.400	"	42.9	24.2	62.4	75-125				QM-05
Selenium	4.29	0.260	"	4.29	0.209	95.3	75-125				

**Matrix Spike Dup (BHH0004-MSD1)**

Source: 2407399-01

Prepared & Analyzed: 08/01/24

Arsenic	41.7	0.200	mg/kg dry	44.9	3.11	85.9	75-125	4.73	25		
Barium	92.5	0.400	"	44.9	78.8	30.4	75-125	19.8	25		QM-07
Cadmium	2.19	0.200	"	2.25	0.269	85.6	75-125	5.48	25		
Copper	32.1	0.400	"	44.9	6.17	57.7	75-125	2.32	25		QM-05
Lead	33.7	0.200	"	22.5	101	NR	75-125	59.3	25		QM-05
Nickel	31.0	0.400	"	44.9	4.42	59.1	75-125	2.21	25		QM-05
Silver	1.95	0.0200	"	2.25	0.0428	85.1	75-125	4.97	25		
Zinc	49.1	0.400	"	44.9	24.2	55.5	75-125	3.64	25		QM-05
Selenium	4.18	0.260	"	4.49	0.209	88.4	75-125	2.67	25		

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline  
Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

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

**Summit Scientific**

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

**Batch BHH0014 - 3060A Mod**

<b>Blank (BHH0014-BLK1)</b>			Prepared & Analyzed: 08/01/24								
Chromium, Hexavalent	ND	0.30	mg/kg wet								
<b>LCS (BHH0014-BS1)</b>			Prepared & Analyzed: 08/01/24								
Chromium, Hexavalent	25.8	0.30	mg/kg wet	25.0	103	80-120					
<b>Duplicate (BHH0014-DUP1)</b>			<b>Source: 2407399-01</b>			Prepared & Analyzed: 08/01/24					
Chromium, Hexavalent	ND	0.30	mg/kg dry		ND					20	
<b>Matrix Spike (BHH0014-MS1)</b>			<b>Source: 2407399-01</b>			Prepared & Analyzed: 08/01/24					
Chromium, Hexavalent	30.3	0.30	mg/kg dry	28.3	ND	107	75-125				
<b>Matrix Spike Dup (BHH0014-MSD1)</b>			<b>Source: 2407399-01</b>			Prepared & Analyzed: 08/01/24					
Chromium, Hexavalent	30.8	0.30	mg/kg dry	28.3	ND	109	75-125	1.48		20	

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

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

**Summit Scientific**

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

**Batch BHG0937 - General Preparation**

**Blank (BHG0937-BLK1)**

Prepared: 07/31/24 Analyzed: 08/01/24

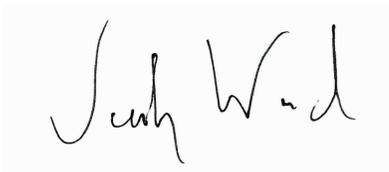
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

**LCS (BHG0937-BS1)**

Prepared: 07/31/24 Analyzed: 08/01/24

Calcium	5.29	0.0500	mg/L wet	5.00	106	70-130				
Magnesium	5.29	0.0500	"	5.00	106	70-130				
Sodium	5.47	0.0500	"	5.00	109	70-130				

Summit Scientific



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 6855 W. 119th Ave.  
 Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN 34734  
 Project Manager: Jacob Whritenour

**Reported:**  
 08/02/24 13:40

**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 BHH0002 - General Preparation**

**Duplicate (BHH0002-DUP1)**

**Source: 2407399-01**

Prepared & Analyzed: 08/01/24

% Solids	88.7		%		88.3			0.430	20	
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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**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 BHG0938 - General Preparation**

**Blank (BHG0938-BLK1)**

Prepared: 07/31/24 Analyzed: 08/01/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BHG0938-BS1)**

Prepared: 07/31/24 Analyzed: 08/01/24

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 103 95-105

**Duplicate (BHG0938-DUP1)**

Source: 2407399-01

Prepared: 07/31/24 Analyzed: 08/01/24

Specific Conductance (EC) 1.05 0.0100 mmhos/cm 1.08 3.10 20

Summit Scientific

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

Project: Noble - Hanscome C28-29D Flowline

Project Number: UWRWE-A3135-ABN 34734  
Project Manager: Jacob Whritenour

**Reported:**  
08/02/24 13:40

**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 BHG0939 - General Preparation**

**LCS (BHG0939-BS1)**

Prepared: 07/31/24 Analyzed: 08/01/24

pH	9.16	pH Units	9.18	99.8	95-105
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**Duplicate (BHG0939-DUP1)**

Source: 2407399-01

Prepared: 07/31/24 Analyzed: 08/01/24

pH	8.74	pH Units	8.79	0.570	20
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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.*



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### Notes and Definitions

- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- QR-01 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- 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.
- 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