

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 02, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

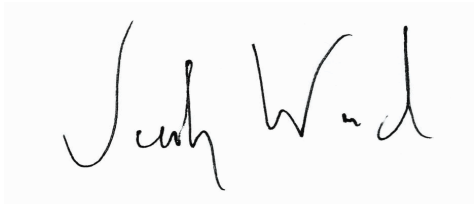
Broomfield, CO 80020

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, appearing to read "Jacob Wood". The signature is written in a cursive, flowing style.

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

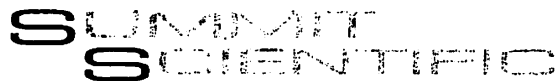
Reported:
08/02/24 13:40

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	Page 1 of 2
2407399-1	

				Send Data To:				Send Invoice To:													
Client: Noble/Tasman				Project Manager: Jake Whritenour				Company: Noble													
Address: 6855 W. 119th Ave.				E-Mail: Jwhritenour@tasman-geo.com				Project Name/Location: Hanscome C28-29D Flowline													
City/State/Zip: Broomfield/CO/ 80020								AFE#:													
Phone: 937-554-5108				Project Name: Hanscome C28-29D Flowline				PO/Billing Codes:													
Sampler Name: Molly Parks ³⁸ Sylvie Bousquet				Project Number: 34734				Contact: Keith McLean													
				Preservative				Matrix				Analysis Requested				Special Instructions					
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD		
1	FS01-FL01R-W@2'	7-31-24	10:52	3			X			X			X	X	X	X	X	X			SAR, EC, pH by saturated paste
2	SS01-FL01R-W@2'		10:54																		
3	SS02-FL01R-W@2'		10:56																		
4	SS03-FL01R-W@2'		10:58																		
5	SS04-FL01R-W@2'		11:00																		
6	FS01-FL01-O1@2'		13:00																		
7	SS01-FL01-O1@2'		13:02																		
8	SS02-FL01-O1@2'		13:04																		
9	SS03-FL01-O1@2'		13:06																		
10	SS04-FL01-O1@2'		13:08																		
11	BK602@2'		12:01																		
12	BK602@2'		12:02																		
13	BK603@2'		12:22																		
14	BK603@2'		12:23																		
15	BK604@2'		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 #: <u></u>

Send Data To:		Send Invoice To:
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</u> ^{JB} <u>Sylvia Bousquet</u>	Project Number: <u>34734</u>	Contact: <u>Kieth Mclean</u>

				Preservative				Matrix			Analysis Requested							Special Instructions			
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD		SAR, EC, pH by saturated paste
1	BK60402'	7-31-24	12:33	3			X			X			X				X	X			
2	BK60501'	7-31-24	12:50	1			X			X			X				X	X			
3	BK60502'	7-31-24	12:51	1			X			X			X				X	X			
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: <u>Amber 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:
Relinquished by: <u>Tasman Lock Box</u>	Date/Time: <u>7-31-24 1745</u>	Received by: <u>[Signature]</u>	Date/Time: <u>7-31-24 1745</u>	Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day <input type="checkbox"/>	Field ORP	
				2 Days <input type="checkbox"/>	Field pH	
				3 Days <input type="checkbox"/>	Field Temp.	
				Standard <input type="checkbox"/>	Field Turb.	
Temperature Upon Receipt: <u>9.9</u>	Corrected Temperature <u>0</u>	IR gun #: <u>1</u>	HNO3 lot #: _____			

S₂

Sample Receipt Checklist

S2 Work Order#

2407399

Client: Wattman

Client Project ID:

Hanscome C2829D Flankin

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

Airbill #:

	-			
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Matrix (Check all that apply)

Air

☐

Soil/Solid

☒

Water

☐

Other

☐

Temp (°C)

99

Thermometer #

1

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

Custodian Printed Name

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

Summit Scientific

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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	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	
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	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	2.02	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	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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

Summit Scientific

Total Metals by EPA 6020B

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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Reported:
08/02/24 13:40

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

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	88.3	%	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
Specific Conductance (EC)	1.08	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
pH	8.79		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	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 10:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	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 10:54**

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

PAH by EPA Method 8270D SIM

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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	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	
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	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	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 10:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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

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

Summit Scientific

Total Metals by EPA 6020B

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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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

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	

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

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	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 10:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	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 10:56**

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

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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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

Total Metals by EPA 6020B

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	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 10:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	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 10:58**

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

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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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

Total Metals by EPA 6020B

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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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

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	

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-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	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 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0416	104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0402	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	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 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.14	73.2 %	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-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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Summit Scientific

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



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

Project: Noble - 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

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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Summit Scientific

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



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

Project: Noble - 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

% Solids	84.6	%	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 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.46	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
pH	7.11		pH Units	1	BHG0939	07/31/24	08/01/24	EPA 9045D	

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

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	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 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	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 13:00**

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

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 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	0.00861	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.0201	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0130	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0197	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.00783	0.00500	"	"	"	"	"	"	
Chrysene	0.0212	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0477	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0114	0.00500	"	"	"	"	"	"	
Pyrene	0.0414	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

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

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

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 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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

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

Summit Scientific

Total Metals by EPA 6020B

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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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

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	

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

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	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 13:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	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 13:02**

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

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	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	
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	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	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 13:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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

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

Summit Scientific

Total Metals by EPA 6020B

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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Summit Scientific

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



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

Project: Noble - 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	

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

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	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 13:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	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 13:04**

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

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	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	
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	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	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 13:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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

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

Summit Scientific

Total Metals by EPA 6020B

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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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

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	

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

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	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 13:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0421	105 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0405	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	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 13:06**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - 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	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	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 13:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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

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

Summit Scientific

Total Metals by EPA 6020B

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

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

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

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

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
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		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
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		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 13:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
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

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	

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

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	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
pH	7.63		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

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		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 12:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
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		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
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		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
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		"	"	"	"	"	"	

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

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	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 12:02**

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

Hexavalent Chromium by EPA Method 7196

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

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

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

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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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

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	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 12:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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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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

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	0.977	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	91.8		%	1	BHH0002	08/01/24	08/01/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.27	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	8.35		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

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		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 12:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
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		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
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		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
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		"	"	"	"	"	"	

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

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	

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

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		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 12:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
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		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
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		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
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		"	"	"	"	"	"	

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

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	0.959	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	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 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.37	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	7.96		pH Units	1	BHG0939	07/31/24	08/01/24	EPA 9045D	

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

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		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 12:33**

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

Hexavalent Chromium by EPA Method 7196

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

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

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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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	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 12:50**

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

Hexavalent Chromium by EPA Method 7196

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

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

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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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

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

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 12:51**

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

Hexavalent Chromium by EPA Method 7196

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

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

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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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

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 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	"							
Surrogate: 1,2-Dichloroethane-d4	0.0362		"	0.0400		90.6	50-150			
Surrogate: Toluene-d8	0.0400		"	0.0400		99.9	50-150			
Surrogate: 4-Bromofluorobenzene	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			
Surrogate: 1,2-Dichloroethane-d4	0.0373		"	0.0400		93.2	50-150			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.4	50-150			
Surrogate: 4-Bromofluorobenzene	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			
Surrogate: 1,2-Dichloroethane-d4	0.0399		"	0.0400		99.8	50-150			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		98.0	50-150			

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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

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

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

Batch BHG0940 - EPA 5030 Soil MS

Matrix Spike Dup (BHG0940-MSD1)		Source: 2407399-01			Prepared: 07/31/24 Analyzed: 08/01/24					
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
Surrogate: 1,2-Dichloroethane-d4		0.0390	"	0.0400		97.5	50-150			
Surrogate: Toluene-d8		0.0400	"	0.0400		100	50-150			
Surrogate: 4-Bromofluorobenzene		0.0395	"	0.0400		98.8	50-150			

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

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 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: o-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: o-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: o-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: o-Terphenyl	7.90		"	12.5		63.2	30-150			

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

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch 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	"							
Surrogate: 2-Methylnaphthalene-d10	0.0217		"	0.0333		65.1	40-150			
Surrogate: Fluoranthene-d10	0.0257		"	0.0333		77.2	40-150			

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			
Surrogate: 2-Methylnaphthalene-d10	0.0289		"	0.0333		86.6	40-150			
Surrogate: Fluoranthene-d10	0.0283		"	0.0333		85.0	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

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

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

Batch BHH0008 - EPA 3050B

Blank (BHH0008-BLK1)

Prepared: 08/01/24 Analyzed: 08/02/24

Boron ND 2.00 mg/L

LCS (BHH0008-BS1)

Prepared: 08/01/24 Analyzed: 08/02/24

Boron 4.31 2.00 mg/L 5.00 86.3 80-120

Duplicate (BHH0008-DUP1)

Source: 2407399-01

Prepared: 08/01/24 Analyzed: 08/02/24

Boron 2.07 2.00 mg/L 2.02 2.29 20

Matrix Spike (BHH0008-MS1)

Source: 2407399-01

Prepared: 08/01/24 Analyzed: 08/02/24

Boron 9.16 2.00 mg/L 5.04 2.02 142 75-125 QM-01

Matrix Spike Dup (BHH0008-MSD1)

Source: 2407399-01

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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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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

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
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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

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch 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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Tasman Geosciences
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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

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHH0014 - 3060A Mod

Blank (BHH0014-BLK1)

Prepared & Analyzed: 08/01/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHH0014-BS1)

Prepared & Analyzed: 08/01/24

Chromium, Hexavalent 25.8 0.30 mg/kg wet 25.0 103 80-120

Duplicate (BHH0014-DUP1)

Source: 2407399-01

Prepared & Analyzed: 08/01/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHH0014-MS1)

Source: 2407399-01

Prepared & Analyzed: 08/01/24

Chromium, Hexavalent 30.3 0.30 mg/kg dry 28.3 ND 107 75-125

Matrix Spike Dup (BHH0014-MSD1)

Source: 2407399-01

Prepared & Analyzed: 08/01/24

Chromium, Hexavalent 30.8 0.30 mg/kg dry 28.3 ND 109 75-125 1.48 20

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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

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

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

Batch 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

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Tasman Geosciences
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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

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

Summit Scientific

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

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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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	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

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

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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 Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

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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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

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