

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 13, 2025

Mike Medina

Tasman Geosciences

4725 Independence St.

Wheat Ridge, CO 80033

RE: Noble - Erickson A4-12 Flowline

Work Order #2504057

Enclosed are the results of analyses for samples received by Summit Scientific on 04/02/25 17:47. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Amanda Stilwell', with a stylized, cursive script.

Amanda Stilwell For Paul Shrewsbury
President

Please Note - Out-of-Hold Results Included:

The 8260B GBTEXN 915 analyses were analyzed outside of allotted holding times due to delays at Summit Scientific.



Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01-01@4'	2504057-01	Soil	04/02/25 10:40	04/02/25 17:47
FL01-02@4'	2504057-02	Soil	04/02/25 10:50	04/02/25 17:47
FL01-03@4'	2504057-03	Soil	04/02/25 11:10	04/02/25 17:47
BKG02@2'	2504057-04	Soil	04/02/25 11:20	04/02/25 17:47
BKG02@3'	2504057-05	Soil	04/02/25 11:25	04/02/25 17:47
BKG02@4'	2504057-06	Soil	04/02/25 11:30	04/02/25 17:47
BKG03@2'	2504057-07	Soil	04/02/25 11:35	04/02/25 17:47
BKG03@3'	2504057-08	Soil	04/02/25 11:40	04/02/25 17:47
BKG03@4'	2504057-09	Soil	04/02/25 11:45	04/02/25 17:47

Case Narrative

The 8260B GBTEXN 915 analyses were completed outside of allotted holding times due to delays at Summit Scientific.

This report has been revised to include the proper hold-time qualifiers.

This is a revision of the report originally sent on 05/23/2025 at 11:20 MT.

Summit Scientific

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Client: <u>EN Noble / Tasman</u>		Send Data To: Project Manager: <u>Mike Medina</u>		Send Invoice To: Company: <u>Noble Energy</u>	
Address: <u>4725 N 6855 W 119th Ave In Homebase ST</u>		E-Mail: <u>jason.davidson@chevron.com; tas-chevron-2@tasman-geo.com; rbueuf27@chevron.com</u>		Project Name/Location: <u>Ericsson A04-12 Flowline</u>	
City/State/Zip: <u>What Cheer CO, 80020 CO, 80033</u>		Project Name: <u>Ericsson A04-12 Flowline</u>		AFE#:	
Phone: <u>303-487-1228 EN</u>		Project Number:		PO/Billing Codes:	
Sampler Name: <u>E. Gooding-Lord</u>				Contact: <u>Jason Davidson</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	BTEXN - 8260B	1,2,4 & 1,3,5-TMB	TDS, Cl, SO4	Full 915-1 Suite	pH, EC, SAR, boron	Table 915-1 Metals			
1	FL01-01 @4'	04/02/25	1040	2			X			X						X					
2	FL01-02 @4'		1050	1			X			X						X					
3	FL01-03 @4'		1110	1			X			X						X					
4	BK602 @2'		1120	1			X			X							X	X			
5	BK602 @3'		1125	1			X			X							X	X			
6	BK602 @4'		1130	1			X			X							X	X			
7	BK603 @2'		1135	1			X			X							X	X			
8	BK603 @3'		1140	1			X			X							X	X			
9	BK603 @4'		1145	1			X			X							X	X			
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: <u>Elise Gooding-Lord</u>	Date/Time: <u>04/02/25 1345</u>	Received by: <u>Tasman Locibox</u>	Date/Time: <u>04/02/25 1345</u>	TAT Business Days	Field DO	Notes:
Relinquished by: <u>Tasman Locibox</u>	Date/Time: <u>4225</u>	Received by: <u>[Signature]</u>	Date/Time: <u>4225</u>	Same Day	Field EC	
Relinquished by:	Date/Time: <u>1747</u>	Received by:	Date/Time: <u>1747</u>	1 Day	Field ORP	
Relinquished by:	Date/Time:	Received by:	Date/Time:	2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
Temperature Upon Receipt: <u>2.9</u>				Corrected Temperature: <u>C</u>	IR gun #: <u>1</u>	HNO3 lot #: <u>X</u>

S₂S2 Work Order# 2504057

Sample Receipt Checklist

Client: Noble Gasman Client Project ID: Erickson A04-12 FlowlineReceived Via: H.D. P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐Matrix (Circle all that apply) Air/Soil/Water/Other ☐ Temp (°C) 2.9 Thermometer # 1Bottle ware (Circle all that apply) Glass/Jar/Voa/Amber/Poly/Other ☐

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

Control Form #: SRC-001

AS
Custodian Printed Name

4/2/25
Date/Time



Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

FL01-01@4'
2504057-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/02/25 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BID0677	04/11/25	05/05/25	EPA 8260B	I-02
Toluene	ND	0.0050	"	"	"	"	"	"	I-02
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	I-02
Xylenes (total)	ND	0.010	"	"	"	"	"	"	I-02
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	I-02
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	I-02
Naphthalene	ND	0.0038	"	"	"	"	"	"	I-02
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	I-02

Date Sampled: **04/02/25 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0439	110 %	50-150		"	"	"	"	I-02
Surrogate: Toluene-d8	0.0390	97.5 %	50-150		"	"	"	"	I-02
Surrogate: 4-Bromofluorobenzene	0.0402	100 %	50-150		"	"	"	"	I-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/02/25 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BID0679	04/11/25	05/15/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/02/25 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.41	67.3 %	50-140		"	"	"	"	

PAH by EPA Method 8270E SIM

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PAH by EPA Method 8270E SIM

Date Sampled: **04/02/25 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Acenaphthene	0.129	0.00500	mg/kg	1	BID0571	04/10/25	05/10/25	EPA 8270E SIM	
Anthracene	0.158	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.180	0.00500	"	"	"	"	"	"	E
Benzo (a) pyrene	0.147	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.204	0.00500	"	"	"	"	"	"	E
Benzo (k) fluoranthene	0.0797	0.00500	"	"	"	"	"	"	
Chrysene	0.172	0.00500	"	"	"	"	"	"	E
Dibenz (a,h) anthracene	0.0263	0.00500	"	"	"	"	"	"	
Fluoranthene	0.272	0.00500	"	"	"	"	"	"	E
Fluorene	0.160	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.144	0.00500	"	"	"	"	"	"	
Pyrene	0.222	0.00500	"	"	"	"	"	"	E
1-Methylnaphthalene	0.0280	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0553	0.00500	"	"	"	"	"	"	

Date Sampled: **04/02/25 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 2-Methylnaphthalene-d10	0.0205	61.6 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0222	66.7 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/02/25 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L dry	1	BID0332	04/07/25	04/15/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/02/25 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.06	0.200	mg/kg dry	1	BID0425	04/08/25	05/16/25	EPA 6020B	

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FL01-01@4'
2504057-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Barium	59.7	0.400	mg/kg dry	1	BID0425	04/08/25	05/16/25	EPA 6020B
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	8.80	0.400	"	"	"	"	"	"
Lead	8.47	0.200	"	"	"	"	"	"
Nickel	4.10	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	22.2	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/02/25 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BID0516	04/09/25	04/11/25	EPA 7196A	

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

Date Sampled: **04/02/25 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	65.5	0.0500	mg/L dry	1	BID1436	04/28/25	05/11/25	EPA 6020B	
Magnesium	47.7	0.0500	"	"	"	"	"	"	
Sodium	97.0	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/02/25 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.22	0.00100	units	1	BIE0457	05/11/25	05/11/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/02/25 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Reported:
06/13/25 13:02

FL01-01@4'
2504057-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	78.1	%	1	BID0483	04/09/25	04/09/25	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/02/25 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.30	0.0100	mmhos/cm	1	BID1438	04/28/25	04/30/25	EPA 120.1	

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

Date Sampled: **04/02/25 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.23		pH Units	1	BID1441	04/28/25	04/30/25	EPA 9045D	

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FL01-02@4'
2504057-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/02/25 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BID0677	04/11/25	05/05/25	EPA 8260B	I-02
Toluene	ND	0.0050	"	"	"	"	"	"	I-02
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	I-02
Xylenes (total)	ND	0.010	"	"	"	"	"	"	I-02
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	I-02
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	I-02
Naphthalene	ND	0.0038	"	"	"	"	"	"	I-02
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	I-02

Date Sampled: **04/02/25 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0455	114 %	50-150		"	"	"	"	I-02
Surrogate: Toluene-d8	0.0392	97.9 %	50-150		"	"	"	"	I-02
Surrogate: 4-Bromofluorobenzene	0.0405	101 %	50-150		"	"	"	"	I-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/02/25 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BID0679	04/11/25	05/15/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/02/25 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.39	67.1 %	50-140		"	"	"	"	

PAH by EPA Method 8270E SIM

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FL01-02@4'
2504057-02 (Soil)

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PAH by EPA Method 8270E SIM

Date Sampled: **04/02/25 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BID0571	04/10/25	05/10/25	EPA 8270E 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	0.0100	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.00775	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/02/25 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0246	73.7 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0261	78.4 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/02/25 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L dry	1	BID0332	04/07/25	04/15/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/02/25 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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FL01-02@4'
2504057-02 (Soil)

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Total Metals by EPA 6020B

Arsenic	2.94	0.200	mg/kg dry	1	BID0425	04/08/25	05/16/25	EPA 6020B
Barium	111	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	4.77	0.400	"	"	"	"	"	"
Lead	8.53	0.200	"	"	"	"	"	"
Nickel	5.97	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	30.1	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/02/25 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BID0516	04/09/25	04/11/25	EPA 7196A	

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

Date Sampled: **04/02/25 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	153	0.0500	mg/L dry	1	BID1436	04/28/25	05/11/25	EPA 6020B	
Magnesium	70.0	0.0500	"	"	"	"	"	"	
Sodium	143	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/02/25 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.40	0.00100	units	1	BIE0457	05/11/25	05/11/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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FL01-02@4'
2504057-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/02/25 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.7		%	1	BID0483	04/09/25	04/09/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/02/25 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.94	0.0100	mmhos/cm	1	BID1438	04/28/25	04/30/25	EPA 120.1	

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

Date Sampled: **04/02/25 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.18		pH Units	1	BID1441	04/28/25	04/30/25	EPA 9045D	

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

FL01-03@4'
2504057-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/02/25 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BID0677	04/11/25	05/05/25	EPA 8260B	I-02
Toluene	ND	0.0050	"	"	"	"	"	"	I-02
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	I-02
Xylenes (total)	ND	0.010	"	"	"	"	"	"	I-02
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	I-02
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	I-02
Naphthalene	ND	0.0038	"	"	"	"	"	"	I-02
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	I-02

Date Sampled: **04/02/25 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0461	115 %	50-150		"	"	"	"	I-02
Surrogate: Toluene-d8	0.0390	97.6 %	50-150		"	"	"	"	I-02
Surrogate: 4-Bromofluorobenzene	0.0406	101 %	50-150		"	"	"	"	I-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/02/25 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BID0679	04/11/25	05/15/25	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/02/25 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.83	70.6 %	50-140		"	"	"	"	

PAH by EPA Method 8270E SIM

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

FL01-03@4'
2504057-03 (Soil)

Summit Scientific

PAH by EPA Method 8270E SIM

Date Sampled: **04/02/25 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.00798	0.00500	mg/kg	1	BID0571	04/10/25	05/10/25	EPA 8270E SIM	
Anthracene	0.0136	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.0150	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.00908	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0161	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	0.0142	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0352	0.00500	"	"	"	"	"	"	
Fluorene	0.0105	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.00616	0.00500	"	"	"	"	"	"	
Pyrene	0.0261	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/02/25 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0197	59.0 %	40-140		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0204	61.2 %	40-140		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/02/25 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L dry	1	BID0332	04/07/25	04/15/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/02/25 11:10**

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

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

FL01-03@4'
2504057-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.22	0.200	mg/kg dry	1	BID0425	04/08/25	05/16/25	EPA 6020B
Barium	74.7	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	4.36	0.400	"	"	"	"	"	"
Lead	8.87	0.200	"	"	"	"	"	"
Nickel	4.48	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	28.3	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/02/25 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BID0516	04/09/25	04/11/25	EPA 7196A	

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

Date Sampled: **04/02/25 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	87.4	0.0500	mg/L dry	1	BID1436	04/28/25	05/11/25	EPA 6020B	
Magnesium	60.8	0.0500	"	"	"	"	"	"	
Sodium	109	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/02/25 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.19	0.00100	units	1	BIE0457	05/11/25	05/11/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

FL01-03@4'
2504057-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/02/25 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.1		%	1	BID0483	04/09/25	04/09/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/02/25 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.55	0.0100	mmhos/cm	1	BID1438	04/28/25	04/30/25	EPA 120.1	

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

Date Sampled: **04/02/25 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.21		pH Units	1	BID1441	04/28/25	04/30/25	EPA 9045D	

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

BKG02@2'
2504057-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/02/25 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L dry	1	BID0332	04/07/25	04/15/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/02/25 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.54	0.200	mg/kg dry	1	BID0425	04/08/25	05/16/25	EPA 6020B	
Barium	126	0.400	"	"	"	"	"	"	
Cadmium	0.268	0.200	"	"	"	"	"	"	
Copper	8.71	0.400	"	"	"	"	"	"	
Lead	8.64	0.200	"	"	"	"	"	"	
Nickel	9.13	0.400	"	"	"	"	"	"	
Silver	0.0377	0.0200	"	"	"	"	"	"	
Zinc	32.5	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/02/25 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BID0516	04/09/25	04/11/25	EPA 7196A	

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

Date Sampled: **04/02/25 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	117	0.0500	mg/L dry	1	BID1436	04/28/25	05/11/25	EPA 6020B	
Magnesium	41.9	0.0500	"	"	"	"	"	"	
Sodium	98.4	0.0500	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

BKG02@2'
2504057-04 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **04/02/25 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.99	0.00100	units	1	BIE0457	05/11/25	05/11/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/02/25 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.7		%	1	BID0483	04/09/25	04/09/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/02/25 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.57	0.0100	mmhos/cm	1	BID1438	04/28/25	04/30/25	EPA 120.1	

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

Date Sampled: **04/02/25 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.19		pH Units	1	BID1441	04/28/25	04/30/25	EPA 9045D	

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

BKG02@3'
2504057-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/02/25 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L dry	1	BID0332	04/07/25	04/15/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/02/25 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.07	0.200	mg/kg dry	1	BID0425	04/08/25	05/16/25	EPA 6020B	
Barium	371	0.400	"	"	"	"	"	"	
Cadmium	0.362	0.200	"	"	"	"	"	"	
Copper	7.56	0.400	"	"	"	"	"	"	
Lead	7.90	0.200	"	"	"	"	"	"	
Nickel	7.83	0.400	"	"	"	"	"	"	
Silver	0.0282	0.0200	"	"	"	"	"	"	
Zinc	28.9	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/02/25 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BID0516	04/09/25	04/11/25	EPA 7196A	

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

Date Sampled: **04/02/25 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	52.8	0.0500	mg/L dry	1	BID1436	04/28/25	05/11/25	EPA 6020B	
Magnesium	20.2	0.0500	"	"	"	"	"	"	
Sodium	36.9	0.0500	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

BKG02@3'
2504057-05 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **04/02/25 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.10	0.00100	units	1	BIE0457	05/11/25	05/11/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/02/25 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	79.2		%	1	BID0483	04/09/25	04/09/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/02/25 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.688	0.0100	mmhos/cm	1	BID1438	04/28/25	04/30/25	EPA 120.1	

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

Date Sampled: **04/02/25 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.60		pH Units	1	BID1441	04/28/25	04/30/25	EPA 9045D	

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

BKG02@4'
2504057-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/02/25 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L dry	1	BID0332	04/07/25	04/15/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/02/25 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.13	0.200	mg/kg dry	1	BID0425	04/08/25	05/16/25	EPA 6020B	
Barium	322	0.400	"	"	"	"	"	"	
Cadmium	0.307	0.200	"	"	"	"	"	"	
Copper	6.66	0.400	"	"	"	"	"	"	
Lead	7.59	0.200	"	"	"	"	"	"	
Nickel	6.99	0.400	"	"	"	"	"	"	
Silver	0.0239	0.0200	"	"	"	"	"	"	
Zinc	26.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/02/25 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BID0516	04/09/25	04/11/25	EPA 7196A	

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

Date Sampled: **04/02/25 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	64.7	0.0500	mg/L dry	1	BID1436	04/28/25	05/11/25	EPA 6020B	
Magnesium	22.3	0.0500	"	"	"	"	"	"	
Sodium	36.2	0.0500	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

BKG02@4'
2504057-06 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **04/02/25 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.990	0.00100	units	1	BIE0457	05/11/25	05/11/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/02/25 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.8		%	1	BID0483	04/09/25	04/09/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/02/25 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.742	0.0100	mmhos/cm	1	BID1438	04/28/25	04/30/25	EPA 120.1	

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

Date Sampled: **04/02/25 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.54		pH Units	1	BID1441	04/28/25	04/30/25	EPA 9045D	

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

BKG03@2'
2504057-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/02/25 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L dry	1	BID0332	04/07/25	04/15/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/02/25 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.40	0.200	mg/kg dry	1	BID0425	04/08/25	05/16/25	EPA 6020B	
Barium	123	0.400	"	"	"	"	"	"	
Cadmium	0.212	0.200	"	"	"	"	"	"	
Copper	8.45	0.400	"	"	"	"	"	"	
Lead	10.5	0.200	"	"	"	"	"	"	
Nickel	8.69	0.400	"	"	"	"	"	"	
Silver	0.0305	0.0200	"	"	"	"	"	"	
Zinc	35.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/02/25 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BID0516	04/09/25	04/11/25	EPA 7196A	

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

Date Sampled: **04/02/25 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	34.0	0.0500	mg/L dry	1	BID1436	04/28/25	05/11/25	EPA 6020B	
Magnesium	11.9	0.0500	"	"	"	"	"	"	
Sodium	41.8	0.0500	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

BKG03@2'
2504057-07 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **04/02/25 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.57	0.00100	units	1	BIE0457	05/11/25	05/11/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/02/25 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.0		%	1	BID0483	04/09/25	04/09/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/02/25 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.576	0.0100	mmhos/cm	1	BID1438	04/28/25	04/30/25	EPA 120.1	

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

Date Sampled: **04/02/25 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.43		pH Units	1	BID1441	04/28/25	04/30/25	EPA 9045D	

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

BKG03@3'
2504057-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/02/25 11:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L dry	1	BID0332	04/07/25	04/15/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/02/25 11:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.03	0.200	mg/kg dry	1	BID0425	04/08/25	05/16/25	EPA 6020B	
Barium	85.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	5.75	0.400	"	"	"	"	"	"	
Lead	6.80	0.200	"	"	"	"	"	"	
Nickel	6.72	0.400	"	"	"	"	"	"	
Silver	0.0309	0.0200	"	"	"	"	"	"	
Zinc	23.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/02/25 11:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BID0516	04/09/25	04/11/25	EPA 7196A	

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

Date Sampled: **04/02/25 11:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	175	0.0500	mg/L dry	1	BID1436	04/28/25	05/11/25	EPA 6020B	
Magnesium	60.1	0.0500	"	"	"	"	"	"	
Sodium	130	0.0500	"	"	"	"	"	"	

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

BKG03@3'
2504057-08 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **04/02/25 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.16	0.00100	units	1	BIE0457	05/11/25	05/11/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/02/25 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.2		%	1	BID0483	04/09/25	04/09/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/02/25 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.01	0.0100	mmhos/cm	1	BID1438	04/28/25	04/30/25	EPA 120.1	

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

Date Sampled: **04/02/25 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.34		pH Units	1	BID1441	04/28/25	04/30/25	EPA 9045D	

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

BKG03@4'
2504057-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/02/25 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L dry	1	BID0332	04/07/25	04/15/25	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/02/25 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.16	0.200	mg/kg dry	1	BID0425	04/08/25	05/16/25	EPA 6020B	
Barium	92.6	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.63	0.400	"	"	"	"	"	"	
Lead	6.89	0.200	"	"	"	"	"	"	
Nickel	2.73	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	15.6	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/02/25 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BID0516	04/09/25	04/11/25	EPA 7196A	

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

Date Sampled: **04/02/25 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	104	0.0500	mg/L dry	1	BID1436	04/28/25	05/11/25	EPA 6020B	
Magnesium	62.0	0.0500	"	"	"	"	"	"	
Sodium	139	0.0500	"	"	"	"	"	"	

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

BKG03@4'
2504057-09 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **04/02/25 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.67	0.00100	units	1	BIE0457	05/11/25	05/11/25	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/02/25 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.9		%	1	BID0483	04/09/25	04/09/25	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/02/25 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.75	0.0100	mmhos/cm	1	BID1438	04/28/25	04/30/25	EPA 120.1	

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

Date Sampled: **04/02/25 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.42		pH Units	1	BID1441	04/28/25	04/30/25	EPA 9045D	

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

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 BID0677 - EPA 5030 Soil MS

Blank (BID0677-BLK1)

Prepared: 04/11/25 Analyzed: 05/05/25

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0450		"	0.0400		112	50-150			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	50-150			

LCS (BID0677-BS1)

Prepared: 04/11/25 Analyzed: 05/05/25

Benzene	0.0952	0.0020	mg/kg	0.100		95.2	70-130			
Toluene	0.0990	0.0050	"	0.100		99.0	70-130			
Ethylbenzene	0.0943	0.0050	"	0.100		94.3	70-130			
m,p-Xylene	0.192	0.010	"	0.200		96.0	70-130			
o-Xylene	0.0977	0.0050	"	0.100		97.7	70-130			
1,2,4-Trimethylbenzene	0.0974	0.0050	"	0.100		97.4	70-130			
1,3,5-Trimethylbenzene	0.0950	0.0050	"	0.100		95.0	70-130			
Naphthalene	0.0961	0.0038	"	0.100		96.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0460		"	0.0400		115	50-150			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.5	50-150			
Surrogate: 4-Bromofluorobenzene	0.0408		"	0.0400		102	50-150			

Matrix Spike (BID0677-MS1)

Source: 2504023-01

Prepared: 04/11/25 Analyzed: 05/05/25

Benzene	0.100	0.0020	mg/kg	0.100	ND	100	70-130			
Toluene	0.104	0.0050	"	0.100	ND	104	70-130			
Ethylbenzene	0.0992	0.0050	"	0.100	ND	99.2	70-130			
m,p-Xylene	0.201	0.010	"	0.200	ND	101	70-130			
o-Xylene	0.100	0.0050	"	0.100	ND	100	70-130			
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130			
1,3,5-Trimethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130			
Naphthalene	0.0854	0.0038	"	0.100	ND	85.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0445		"	0.0400		111	50-150			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.5	50-150			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	50-150			

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

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 BID0677 - EPA 5030 Soil MS

Matrix Spike Dup (BID0677-MSD1)		Source: 2504023-01			Prepared: 04/11/25 Analyzed: 05/05/25					
Benzene	0.0825	0.0020	mg/kg	0.100	ND	82.5	70-130	19.3	30	
Toluene	0.0849	0.0050	"	0.100	ND	84.9	70-130	19.9	30	
Ethylbenzene	0.0779	0.0050	"	0.100	ND	77.9	70-130	24.1	30	
m,p-Xylene	0.158	0.010	"	0.200	ND	79.0	70-130	24.1	30	
o-Xylene	0.0818	0.0050	"	0.100	ND	81.8	70-130	20.3	30	
1,2,4-Trimethylbenzene	0.0779	0.0050	"	0.100	ND	77.9	70-130	26.1	30	
1,3,5-Trimethylbenzene	0.0764	0.0050	"	0.100	ND	76.4	70-130	26.8	30	
Naphthalene	0.0705	0.0038	"	0.100	ND	70.5	70-130	19.2	30	
Surrogate: 1,2-Dichloroethane-d4		0.0447	"	0.0400		112	50-150			
Surrogate: Toluene-d8		0.0395	"	0.0400		98.8	50-150			
Surrogate: 4-Bromofluorobenzene		0.0401	"	0.0400		100	50-150			

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

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 BID0679 - EPA 3550A

Blank (BID0679-BLK1)

Prepared: 04/11/25 Analyzed: 05/15/25

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	13.7		"	12.5		109	50-140			

LCS (BID0679-BS1)

Prepared: 04/11/25 Analyzed: 05/15/25

C10-C28 (DRO)	556	50	mg/kg	500		111	50-140			
Surrogate: o-Terphenyl	12.2		"	12.5		97.3	50-140			

Matrix Spike (BID0679-MS1)

Source: 2504023-01

Prepared: 04/11/25 Analyzed: 05/15/25

C10-C28 (DRO)	533	50	mg/kg	500	ND	107	50-140			
Surrogate: o-Terphenyl	10.9		"	12.5		87.4	50-140			

Matrix Spike Dup (BID0679-MSD1)

Source: 2504023-01

Prepared: 04/11/25 Analyzed: 05/15/25

C10-C28 (DRO)	556	50	mg/kg	500	ND	111	50-140	4.17	20	
Surrogate: o-Terphenyl	10.6		"	12.5		84.7	50-140			

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

PAH by EPA Method 8270E SIM - Quality Control

Summit Scientific

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

Batch BID0571 - EPA 5030 Soil MS

Blank (BID0571-BLK1)

Prepared: 04/10/25 Analyzed: 05/09/25

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0304		"	0.0333		91.1	40-140			
Surrogate: Fluoranthene-d10	0.0301		"	0.0333		90.2	40-140			

LCS (BID0571-BS1)

Prepared: 04/10/25 Analyzed: 05/09/25

Acenaphthene	0.0261	0.00500	mg/kg	0.0333		78.3	40-140			
Anthracene	0.0280	0.00500	"	0.0333		83.9	40-140			
Benzo (a) anthracene	0.0292	0.00500	"	0.0333		87.5	40-140			
Benzo (a) pyrene	0.0292	0.00500	"	0.0333		87.6	40-140			
Benzo (b) fluoranthene	0.0305	0.00500	"	0.0333		91.6	40-140			
Benzo (k) fluoranthene	0.0306	0.00500	"	0.0333		91.8	40-140			
Chrysene	0.0284	0.00500	"	0.0333		85.1	40-140			
Dibenz (a,h) anthracene	0.0222	0.00500	"	0.0333		66.5	40-140			
Fluoranthene	0.0282	0.00500	"	0.0333		84.7	40-140			
Fluorene	0.0258	0.00500	"	0.0333		77.5	40-140			
Indeno (1,2,3-cd) pyrene	0.0142	0.00500	"	0.0333		42.5	40-140			
Pyrene	0.0270	0.00500	"	0.0333		81.0	40-140			
1-Methylnaphthalene	0.0285	0.00500	"	0.0333		85.6	40-140			
2-Methylnaphthalene	0.0285	0.00500	"	0.0333		85.4	40-140			
Surrogate: 2-Methylnaphthalene-d10	0.0314		"	0.0333		94.1	40-140			
Surrogate: Fluoranthene-d10	0.0309		"	0.0333		92.6	40-140			

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

PAH by EPA Method 8270E SIM - Quality Control

Summit Scientific

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

Batch BID0571 - EPA 5030 Soil MS

Matrix Spike (BID0571-MS1)

Source: 2504051-01

Prepared: 04/10/25 Analyzed: 05/09/25

Acenaphthene	0.0207	0.00500	mg/kg	0.0333	ND	62.0	40-140		
Anthracene	0.0222	0.00500	"	0.0333	ND	66.7	40-140		
Benzo (a) anthracene	0.0238	0.00500	"	0.0333	ND	71.5	40-140		
Benzo (a) pyrene	0.0226	0.00500	"	0.0333	ND	67.9	40-140		
Benzo (b) fluoranthene	0.0233	0.00500	"	0.0333	ND	70.0	40-140		
Benzo (k) fluoranthene	0.0233	0.00500	"	0.0333	ND	69.9	40-140		
Chrysene	0.0231	0.00500	"	0.0333	ND	69.2	40-140		
Dibenz (a,h) anthracene	0.0191	0.00500	"	0.0333	ND	57.3	40-140		
Fluoranthene	0.0232	0.00500	"	0.0333	ND	69.7	40-140		
Fluorene	0.0217	0.00500	"	0.0333	ND	65.1	40-140		
Indeno (1,2,3-cd) pyrene	0.0192	0.00500	"	0.0333	ND	57.5	40-140		
Pyrene	0.0218	0.00500	"	0.0333	ND	65.4	40-140		
1-Methylnaphthalene	0.0207	0.00500	"	0.0333	ND	62.0	40-140		
2-Methylnaphthalene	0.0204	0.00500	"	0.0333	ND	61.1	40-140		
Surrogate: 2-Methylnaphthalene-d10	0.0225		"	0.0333		67.4	40-140		
Surrogate: Fluoranthene-d10	0.0256		"	0.0333		76.8	40-140		

Matrix Spike Dup (BID0571-MSD1)

Source: 2504051-01

Prepared: 04/10/25 Analyzed: 05/09/25

Acenaphthene	0.0213	0.00500	mg/kg	0.0333	ND	63.8	40-140	2.92	30
Anthracene	0.0231	0.00500	"	0.0333	ND	69.4	40-140	3.90	30
Benzo (a) anthracene	0.0246	0.00500	"	0.0333	ND	73.8	40-140	3.18	30
Benzo (a) pyrene	0.0238	0.00500	"	0.0333	ND	71.4	40-140	5.03	30
Benzo (b) fluoranthene	0.0244	0.00500	"	0.0333	ND	73.1	40-140	4.39	30
Benzo (k) fluoranthene	0.0238	0.00500	"	0.0333	ND	71.5	40-140	2.28	30
Chrysene	0.0234	0.00500	"	0.0333	ND	70.1	40-140	1.35	30
Dibenz (a,h) anthracene	0.0216	0.00500	"	0.0333	ND	64.9	40-140	12.6	30
Fluoranthene	0.0238	0.00500	"	0.0333	ND	71.4	40-140	2.47	30
Fluorene	0.0226	0.00500	"	0.0333	ND	67.8	40-140	4.00	30
Indeno (1,2,3-cd) pyrene	0.0213	0.00500	"	0.0333	ND	64.0	40-140	10.8	30
Pyrene	0.0221	0.00500	"	0.0333	ND	66.4	40-140	1.54	30
1-Methylnaphthalene	0.0233	0.00500	"	0.0333	ND	69.9	40-140	12.0	30
2-Methylnaphthalene	0.0235	0.00500	"	0.0333	ND	70.6	40-140	14.5	30
Surrogate: 2-Methylnaphthalene-d10	0.0249		"	0.0333		74.7	40-140		
Surrogate: Fluoranthene-d10	0.0265		"	0.0333		79.5	40-140		

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

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 BID0332 - EPA 3050B

Blank (BID0332-BLK1)

Prepared: 04/07/25 Analyzed: 04/15/25

Boron ND 2.00 mg/L wet

LCS (BID0332-BS1)

Prepared: 04/07/25 Analyzed: 04/15/25

Boron 4.93 2.00 mg/L wet 5.00 98.6 80-120

Duplicate (BID0332-DUP1)

Source: 2504057-01

Prepared: 04/07/25 Analyzed: 04/15/25

Boron 0.558 2.00 mg/L dry 0.635 12.9 20

Matrix Spike (BID0332-MS1)

Source: 2504057-01

Prepared: 04/07/25 Analyzed: 04/15/25

Boron 7.12 2.00 mg/L dry 6.39 0.635 101 75-125

Matrix Spike Dup (BID0332-MSD1)

Source: 2504057-01

Prepared: 04/07/25 Analyzed: 04/15/25

Boron 7.11 2.00 mg/L dry 6.39 0.635 101 75-125 0.191 25

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

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 BID0425 - EPA 3050B

Blank (BID0425-BLK1)

Prepared: 04/08/25 Analyzed: 05/16/25

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

LCS (BID0425-BS1)

Prepared: 04/08/25 Analyzed: 05/16/25

Arsenic	44.9	0.200	mg/kg wet	41.0	110	80-120
Barium	43.8	0.400	"	41.0	107	80-120
Cadmium	2.19	0.200	"	2.05	107	80-120
Copper	46.9	0.400	"	41.0	114	80-120
Lead	21.3	0.200	"	20.5	104	80-120
Nickel	46.4	0.400	"	41.0	113	80-120
Silver	2.15	0.0200	"	2.05	105	80-120
Zinc	45.7	0.400	"	41.0	111	80-120
Selenium	4.23	0.260	"	4.10	103	80-120

Duplicate (BID0425-DUP1)

Source: 2504055-19

Prepared: 04/08/25 Analyzed: 05/16/25

Arsenic	0.555	0.200	mg/kg dry	0.524	5.86	20
Barium	37.6	0.400	"	37.1	1.27	20
Cadmium	0.0363	0.200	"	0.0382	5.25	20
Copper	1.86	0.400	"	2.05	9.73	20
Lead	2.50	0.200	"	4.36	54.2	20
Nickel	2.01	0.400	"	2.08	3.54	20
Silver	0.00906	0.0200	"	0.00872	3.84	20
Zinc	9.03	0.400	"	11.0	19.9	20
Selenium	ND	0.260	"	ND		20

QR-04

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

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 BID0425 - EPA 3050B

Matrix Spike (BID0425-MS1)		Source: 2504055-19			Prepared: 04/08/25 Analyzed: 05/16/25					
Arsenic	24.7	0.200	mg/kg dry	41.9	0.524	57.7	75-125			QM-05
Barium	86.4	0.400	"	41.9	37.1	118	75-125			
Cadmium	2.21	0.200	"	2.09	0.0382	104	75-125			
Copper	42.4	0.400	"	41.9	2.05	96.5	75-125			
Lead	23.9	0.200	"	20.9	4.36	93.5	75-125			
Nickel	42.1	0.400	"	41.9	2.08	95.5	75-125			
Silver	2.12	0.0200	"	2.09	0.00872	101	75-125			
Zinc	51.4	0.400	"	41.9	11.0	96.5	75-125			
Selenium	4.15	0.260	"	4.19	ND	99.1	75-125			

Matrix Spike Dup (BID0425-MSD1)		Source: 2504055-19			Prepared: 04/08/25 Analyzed: 05/16/25					
Arsenic	24.5	0.200	mg/kg dry	41.2	0.524	58.2	75-125	0.697	25	QM-05
Barium	80.4	0.400	"	41.2	37.1	105	75-125	7.15	25	
Cadmium	2.12	0.200	"	2.06	0.0382	101	75-125	4.33	25	
Copper	40.5	0.400	"	41.2	2.05	93.3	75-125	4.67	25	
Lead	23.3	0.200	"	20.6	4.36	91.9	75-125	2.70	25	
Nickel	40.0	0.400	"	41.2	2.08	92.0	75-125	5.14	25	
Silver	2.05	0.0200	"	2.06	0.00872	99.3	75-125	3.00	25	
Zinc	48.3	0.400	"	41.2	11.0	90.5	75-125	6.25	25	
Selenium	4.37	0.260	"	4.12	ND	106	75-125	5.02	25	

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

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 BID0516 - 3060A Mod

Blank (BID0516-BLK1)

Prepared: 04/09/25 Analyzed: 04/11/25

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BID0516-BS1)

Prepared: 04/09/25 Analyzed: 04/11/25

Chromium, Hexavalent 23.4 0.30 mg/kg wet 24.5 95.4 80-120

Duplicate (BID0516-DUP1)

Source: 2504057-01

Prepared: 04/09/25 Analyzed: 04/11/25

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BID0516-MS1)

Source: 2504057-01

Prepared: 04/09/25 Analyzed: 04/11/25

Chromium, Hexavalent 30.0 0.30 mg/kg dry 32.0 ND 93.8 75-125

Matrix Spike Dup (BID0516-MSD1)

Source: 2504057-01

Prepared: 04/09/25 Analyzed: 04/11/25

Chromium, Hexavalent 29.4 0.30 mg/kg dry 31.7 ND 92.8 75-125 2.07 20

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

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 BID1436 - General Preparation

Blank (BID1436-BLK1)

Prepared: 04/28/25 Analyzed: 05/11/25

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

LCS (BID1436-BS1)

Prepared: 04/28/25 Analyzed: 05/11/25

Calcium	4.52	0.0500	mg/L wet	5.00	90.5	70-130
Magnesium	4.88	0.0500	"	5.00	97.6	70-130
Sodium	4.63	0.0500	"	5.00	92.5	70-130

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

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

Summit Scientific

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

Batch BID0483 - General Preparation

Duplicate (BID0483-DUP1)

Source: 2504039-31

Prepared & Analyzed: 04/09/25

% Solids	85.2	%	85.5	0.399	20
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Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

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 BID1438 - General Preparation

Blank (BID1438-BLK1)

Prepared: 04/28/25 Analyzed: 04/30/25

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BID1438-BS1)

Prepared: 04/28/25 Analyzed: 04/30/25

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

Duplicate (BID1438-DUP1)

Source: 2504039-31

Prepared: 04/28/25 Analyzed: 04/30/25

Specific Conductance (EC) 1.26 0.0100 mmhos/cm 1.29 2.36 20

Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

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 BID1441 - General Preparation

LCS (BID1441-BS1)

Prepared: 04/28/25 Analyzed: 04/30/25

pH	9.09	pH Units	9.18	99.0	95-105
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Duplicate (BID1441-DUP1)

Source: 2504039-31

Prepared: 04/28/25 Analyzed: 04/30/25

pH	8.31	pH Units	8.32	0.120	20
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Summit Scientific

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Tasman Geosciences
4725 Independence St.
Wheat Ridge CO, 80033

Project: Noble - Erickson A4-12 Flowline
Project Number: UWRWE-A4034-ABN
Project Manager: Mike Medina

Reported:
06/13/25 13:02

Notes and Definitions

QR-04	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values. Only applies to source/DUP and MS/MSD pairs.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values.
I-02	Sample was prepared and/or analyzed outside of holding time.
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