

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 20, 2023

Paul Henchan

Fremont Environmental

PO Box 1289

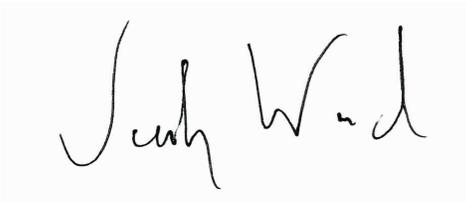
Wellington, CO 80549

RE: Noble - Wells Ranch AA 21-02 Flowline

Work Order #2311152

Enclosed are the results of analyses for samples received by Summit Scientific on 11/07/23 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial 'J' and a distinct 'W'.

Jacob Wood For Paul Shrewsbury

President



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02 Flowline

Project Number: UWRWE-A2964-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/20/23 08:36

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FLR01@4'	2311152-01	Soil	11/04/23 09:45	11/07/23 16:30
FL01-02@4'	2311152-02	Soil	11/04/23 09:55	11/07/23 16:30
SEP01-FL@4'	2311152-03	Soil	11/04/23 10:30	11/07/23 16:30
BKG01@4'	2311152-04	Soil	11/04/23 11:00	11/07/23 16:30
BKG02@4'	2311152-05	Soil	11/04/23 11:20	11/07/23 16:30

Summit Scientific

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# SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
231152	

<b>Send Data To:</b>		<b>Send Invoice To:</b>
Client: Fremont Environmental	Project Manager: Paul Henehan	Company: Noble/Chevron
Address: 8305 <del>th</del> Street	E-Mail: Fremont Distribution List	Project Name/Location: Wells Ranch AA 21-02 Flowline
City/State/Zip: Wellington, CO, 80549		AFE#: UWRWE-2964-ABN
Phone: 603-477-6907	Project Name: Wells Ranch AA 21-02 Flowline	PO/Billing Codes:
Sampler Name: Aaron Otilar	Project Number: C023-278	Contact: Mike Montoya

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested							Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 915	TPH (C6-C36)	PAH	TMB's - 915	Metals (915-1)	SAR, EC, pH, Boron	
1	FLR014'	11/4/23	0945	2			X			X			X	X	X	X	X		
2	FL01-0204'		0955	2															
3	SEPA-FL04'		1030	2															
4	BK6014'		1100	1												X	X		
5	BK60204'		1120	1												X	X		
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: <i>Aaron Otilar</i>	Date/Time: 11/4/23 1116 1700	Received by: Summit North Office	Date/Time: 11/4/23 1116 1700	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: JL	Date/Time: 11/23 1030	Received by: <i>[Signature]</i>	Date/Time: 11/23 1030	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: 12.0 9.1	Corrected Temperature: 8	IR gun #: 1	HNO3 lot #:			

PC4

S<sub>2</sub>

Sample Receipt Checklist

S2 Work Order# 231152

Client: Fremont

Client Project ID: Wells Ranch AA21-02 Flowline

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

Airbill #:

Matrix (Check all that apply)

Air

Soil/Solid

Water

Other

Temp (°C)

9.1

Thermometer #

1

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

AS

Custodian Printed Name

11/7/23

Date/Time

4 4 2



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02 Flowline

Project Number: UWRWE-A2964-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/20/23 08:36

**FLR01@4'**  
**2311152-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/04/23 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGK0347	11/09/23	11/10/23	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: **11/04/23 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0396	99.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0438	110 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0426	106 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/04/23 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGK0350	11/09/23	11/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **11/04/23 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	10.4	83.5 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project Manager: Paul Henchan

**Reported:**  
11/20/23 08:36

**FLR01@4'**  
**2311152-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **11/04/23 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGK0374	11/10/23	11/11/23	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: **11/04/23 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0157	47.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0155	46.5 %	40-150		"	"	"	"	

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

Date Sampled: **11/04/23 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0449	11/13/23	11/14/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **11/04/23 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02 Flowline  
Project Number: UWRWE-A2964-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/20/23 08:36

**FLR01@4'**  
**2311152-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.08	0.200	mg/kg dry	1	BGK0620	11/16/23	11/17/23	EPA 6020B	
Barium	79.2	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.79	0.400	"	"	"	"	"	"	
Lead	11.5	0.200	"	"	"	"	"	"	
Nickel	3.44	0.400	"	"	"	"	"	"	
Silver	0.0231	0.0200	"	"	"	"	"	"	
Zinc	14.0	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 11/04/23 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGK0475	11/13/23	11/14/23	EPA 7196A	

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

Date Sampled: 11/04/23 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	89.7	0.0500	mg/L dry	1	BGK0562	11/15/23	11/17/23	EPA 6020B	
Magnesium	14.9	0.0500	"	"	"	"	"	"	
Sodium	64.3	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 11/04/23 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.66	0.00100	units	1	BGK0667	11/17/23	11/17/23	Calculation	

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

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 Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02 Flowline

Project Number: UWRWE-A2964-ABN  
 Project Manager: Paul Henchan

**Reported:**  
 11/20/23 08:36

**FLR01@4'**  
**2311152-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/04/23 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	86.8			%	1	BGK0356	11/09/23	11/09/23	Calculation	

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

Date Sampled: **11/04/23 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.922	0.0100		mmhos/cm	1	BGK0590	11/16/23	11/17/23	EPA 120.1	

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

Date Sampled: **11/04/23 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.14			pH Units	1	BGK0589	11/16/23	11/17/23	EPA 9045D	

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Project: Noble - Wells Ranch AA 21-02 Flowline  
Project Number: UWRWE-A2964-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/20/23 08:36

**FL01-02@4'**  
**2311152-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/04/23 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGK0347	11/09/23	11/10/23	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: **11/04/23 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0391	97.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0429	107 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0438	109 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/04/23 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGK0350	11/09/23	11/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/04/23 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	15.2	121 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - Wells Ranch AA 21-02 Flowline  
Project Number: UWRWE-A2964-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/20/23 08:36

**FL01-02@4'**  
**2311152-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **11/04/23 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGK0374	11/10/23	11/11/23	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	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.00578</b>	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: **11/04/23 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0179	53.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0183	54.8 %	40-150		"	"	"	"	

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

Date Sampled: **11/04/23 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0449	11/13/23	11/14/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **11/04/23 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Wells Ranch AA 21-02 Flowline  
Project Number: UWRWE-A2964-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/20/23 08:36

**FL01-02@4'**  
**2311152-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.81	0.200	mg/kg dry	1	BGK0620	11/16/23	11/17/23	EPA 6020B	
Barium	65.3	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.99	0.400	"	"	"	"	"	"	
Lead	4.98	0.200	"	"	"	"	"	"	
Nickel	3.38	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	13.2	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 11/04/23 09:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGK0475	11/13/23	11/14/23	EPA 7196A	

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

Date Sampled: 11/04/23 09:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	38.0	0.0500	mg/L dry	1	BGK0562	11/15/23	11/17/23	EPA 6020B	
Magnesium	3.67	0.0500	"	"	"	"	"	"	
Sodium	2.24	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 11/04/23 09:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0929	0.00100	units	1	BGK0667	11/17/23	11/17/23	Calculation	

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

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Project: Noble - Wells Ranch AA 21-02 Flowline  
 Project Number: UWRWE-A2964-ABN  
 Project Manager: Paul Henchan

**Reported:**  
 11/20/23 08:36

**FL01-02@4'**  
**2311152-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/04/23 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.5		%	1	BGK0356	11/09/23	11/09/23	Calculation	

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

Date Sampled: **11/04/23 09:55**

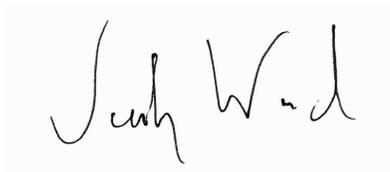
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.251	0.0100	mmhos/cm	1	BGK0590	11/16/23	11/17/23	EPA 120.1	

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

Date Sampled: **11/04/23 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.94		pH Units	1	BGK0589	11/16/23	11/17/23	EPA 9045D	

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02 Flowline

Project Number: UWRWE-A2964-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/20/23 08:36

**SEP01-FL@4'**  
**2311152-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/04/23 10:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BGK0347	11/09/23	11/10/23	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: **11/04/23 10:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0397	99.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0445	111 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0443	111 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/04/23 10:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BGK0350	11/09/23	11/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/04/23 10:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	16.9	135 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project Number: UWRWE-A2964-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/20/23 08:36

**SEP01-FL@4'**  
**2311152-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **11/04/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGK0374	11/10/23	11/11/23	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: **11/04/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0159	47.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0176	52.7 %	40-150		"	"	"	"	

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

Date Sampled: **11/04/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0449	11/13/23	11/14/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **11/04/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02 Flowline  
Project Number: UWRWE-A2964-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/20/23 08:36

**SEP01-FL@4'**  
**2311152-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.91	0.200	mg/kg dry	1	BGK0620	11/16/23	11/17/23	EPA 6020B	
Barium	45.3	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.35	0.400	"	"	"	"	"	"	
Lead	3.32	0.200	"	"	"	"	"	"	
Nickel	2.50	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	9.19	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **11/04/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGK0475	11/13/23	11/14/23	EPA 7196A	

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

Date Sampled: **11/04/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	96.1	0.0500	mg/L dry	1	BGK0562	11/15/23	11/17/23	EPA 6020B	
Magnesium	3.94	0.0500	"	"	"	"	"	"	
Sodium	1.51	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **11/04/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0411	0.00100	units	1	BGK0667	11/17/23	11/17/23	Calculation	

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

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Project: Noble - Wells Ranch AA 21-02 Flowline  
 Project Number: UWRWE-A2964-ABN  
 Project Manager: Paul Henchan

**Reported:**  
 11/20/23 08:36

**SEP01-FL@4'**  
**2311152-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/04/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>94.0</b>		%	1	BGK0356	11/09/23	11/09/23	Calculation	

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

Date Sampled: **11/04/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>0.147</b>	0.0100	mmhos/cm	1	BGK0590	11/16/23	11/17/23	EPA 120.1	

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

Date Sampled: **11/04/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	<b>8.78</b>		pH Units	1	BGK0589	11/16/23	11/17/23	EPA 9045D	

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02 Flowline

Project Number: UWRWE-A2964-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/20/23 08:36

**BKG01@4'**  
**2311152-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/04/23 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGK0449	11/13/23	11/14/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **11/04/23 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Arsenic</b>	<b>1.33</b>	0.200	mg/kg dry	1	BGK0620	11/16/23	11/17/23	EPA 6020B	
<b>Barium</b>	<b>44.5</b>	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
<b>Copper</b>	<b>2.61</b>	0.400	"	"	"	"	"	"	
<b>Lead</b>	<b>3.77</b>	0.200	"	"	"	"	"	"	
<b>Nickel</b>	<b>2.87</b>	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
<b>Zinc</b>	<b>10.9</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **11/04/23 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGK0475	11/13/23	11/14/23	EPA 7196A	

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

Date Sampled: **11/04/23 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>26.3</b>	0.0500	mg/L dry	1	BGK0562	11/15/23	11/17/23	EPA 6020B	
<b>Magnesium</b>	<b>2.43</b>	0.0500	"	"	"	"	"	"	
<b>Sodium</b>	<b>1.83</b>	0.0500	"	"	"	"	"	"	

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Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02 Flowline  
Project Number: UWRWE-A2964-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/20/23 08:36

**BKG01@4'**  
**2311152-04 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **11/04/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0915	0.00100	units	1	BGK0667	11/17/23	11/17/23	Calculation	

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

Date Sampled: **11/04/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.9		%	1	BGK0356	11/09/23	11/09/23	Calculation	

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

Date Sampled: **11/04/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.153	0.0100	mmhos/cm	1	BGK0590	11/16/23	11/17/23	EPA 120.1	

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

Date Sampled: **11/04/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.39		pH Units	1	BGK0589	11/16/23	11/17/23	EPA 9045D	

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Project: Noble - Wells Ranch AA 21-02 Flowline

Project Number: UWRWE-A2964-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/20/23 08:36

**BKG02@4'**  
**2311152-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/04/23 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGK0449	11/13/23	11/14/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **11/04/23 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Arsenic</b>	<b>1.14</b>	0.200	mg/kg dry	1	BGK0620	11/16/23	11/17/23	EPA 6020B	
<b>Barium</b>	<b>42.1</b>	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
<b>Copper</b>	<b>2.34</b>	0.400	"	"	"	"	"	"	
<b>Lead</b>	<b>3.98</b>	0.200	"	"	"	"	"	"	
<b>Nickel</b>	<b>2.51</b>	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
<b>Zinc</b>	<b>9.59</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **11/04/23 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGK0475	11/13/23	11/14/23	EPA 7196A	

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

Date Sampled: **11/04/23 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>31.6</b>	0.0500	mg/L dry	1	BGK0562	11/15/23	11/17/23	EPA 6020B	
<b>Magnesium</b>	<b>2.84</b>	0.0500	"	"	"	"	"	"	
<b>Sodium</b>	<b>2.44</b>	0.0500	"	"	"	"	"	"	

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Project: Noble - Wells Ranch AA 21-02 Flowline  
 Project Number: UWRWE-A2964-ABN  
 Project Manager: Paul Henchan

**Reported:**  
 11/20/23 08:36

**BKG02@4'**  
**2311152-05 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **11/04/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.112	0.00100	units	1	BGK0667	11/17/23	11/17/23	Calculation	

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

Date Sampled: **11/04/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.3		%	1	BGK0356	11/09/23	11/09/23	Calculation	

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

Date Sampled: **11/04/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.210	0.0100	mmhos/cm	1	BGK0590	11/16/23	11/17/23	EPA 120.1	

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

Date Sampled: **11/04/23 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.22		pH Units	1	BGK0589	11/16/23	11/17/23	EPA 9045D	

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Project: Noble - Wells Ranch AA 21-02 Flowline

Project Number: UWRWE-A2964-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/20/23 08:36

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### Summit Scientific

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

#### Batch BGK0347 - EPA 5030 Soil MS

##### Blank (BGK0347-BLK1)

Prepared & Analyzed: 11/09/23

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
Naphthalene	ND	0.0038	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0429		"	0.0400		107	50-150				
<i>Surrogate: Toluene-d8</i>	0.0428		"	0.0400		107	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0429		"	0.0400		107	50-150				

##### LCS (BGK0347-BS1)

Prepared & Analyzed: 11/09/23

Benzene	0.138	0.0020	mg/kg	0.100		138	70-130			QLCS-01
Toluene	0.138	0.0050	"	0.100		138	70-130			QLCS-01
Ethylbenzene	0.105	0.0050	"	0.100		105	70-130			
m,p-Xylene	0.210	0.010	"	0.200		105	70-130			
o-Xylene	0.0986	0.0050	"	0.100		98.6	70-130			
1,2,4-Trimethylbenzene	0.106	0.0050	"	0.100		106	70-130			
1,3,5-Trimethylbenzene	0.108	0.0050	"	0.100		108	70-130			
Naphthalene	0.116	0.0038	"	0.100		116	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0406		"	0.0400		102	50-150			
<i>Surrogate: Toluene-d8</i>	0.0421		"	0.0400		105	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0423		"	0.0400		106	50-150			

##### Matrix Spike (BGK0347-MS1)

Source: 2311149-01

Prepared & Analyzed: 11/09/23

Benzene	0.127	0.0020	mg/kg	0.100	ND	127	70-130			
Toluene	0.130	0.0050	"	0.100	ND	130	70-130			
Ethylbenzene	0.0947	0.0050	"	0.100	ND	94.7	70-130			
m,p-Xylene	0.191	0.010	"	0.200	ND	95.4	70-130			
o-Xylene	0.0891	0.0050	"	0.100	ND	89.1	70-130			
1,2,4-Trimethylbenzene	0.0912	0.0050	"	0.100	ND	91.2	70-130			
1,3,5-Trimethylbenzene	0.0934	0.0050	"	0.100	ND	93.4	70-130			
Naphthalene	0.0904	0.0038	"	0.100	ND	90.4	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0415		"	0.0400		104	50-150			
<i>Surrogate: Toluene-d8</i>	0.0441		"	0.0400		110	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0415		"	0.0400		104	50-150			

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Project: Noble - Wells Ranch AA 21-02 Flowline

Project Number: UWRWE-A2964-ABN  
 Project Manager: Paul Henchan

**Reported:**  
 11/20/23 08:36

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

**Summit Scientific**

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

**Batch BGK0347 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (BGK0347-MSD1)</b>	<b>Source: 2311149-01</b>			<b>Prepared &amp; Analyzed: 11/09/23</b>						
Benzene	0.120	0.0020	mg/kg	0.100	ND	120	70-130	6.16	30	
Toluene	0.118	0.0050	"	0.100	ND	118	70-130	9.28	30	
Ethylbenzene	0.0852	0.0050	"	0.100	ND	85.2	70-130	10.6	30	
m,p-Xylene	0.172	0.010	"	0.200	ND	85.8	70-130	10.6	30	
o-Xylene	0.0827	0.0050	"	0.100	ND	82.7	70-130	7.47	30	
1,2,4-Trimethylbenzene	0.0845	0.0050	"	0.100	ND	84.5	70-130	7.65	30	
1,3,5-Trimethylbenzene	0.0850	0.0050	"	0.100	ND	85.0	70-130	9.42	30	
Naphthalene	0.0930	0.0038	"	0.100	ND	93.0	70-130	2.75	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0418</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0433</i>		<i>"</i>	<i>0.0400</i>		<i>108</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0427</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>50-150</i>			

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02 Flowline  
 Project Number: UWRWE-A2964-ABN  
 Project Manager: Paul Henchan

**Reported:**  
 11/20/23 08:36

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

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

**Batch BGK0350 - EPA 3550A**

**Blank (BGK0350-BLK1)**

Prepared: 11/09/23 Analyzed: 11/11/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	13.6		"	12.5	108	30-150					

**LCS (BGK0350-BS1)**

Prepared: 11/09/23 Analyzed: 11/11/23

C10-C28 (DRO)	444	50	mg/kg	500	88.8	70-130					
Surrogate: <i>o</i> -Terphenyl	10.8		"	12.5	86.6	30-150					

**Matrix Spike (BGK0350-MS1)**

Source: 2311149-01

Prepared: 11/09/23 Analyzed: 11/11/23

C10-C28 (DRO)	449	50	mg/kg	500	31.3	83.5	70-130				
Surrogate: <i>o</i> -Terphenyl	9.71		"	12.5	77.7	30-150					

**Matrix Spike Dup (BGK0350-MSD1)**

Source: 2311149-01

Prepared: 11/09/23 Analyzed: 11/11/23

C10-C28 (DRO)	470	50	mg/kg	500	31.3	87.6	70-130	4.53	20		
Surrogate: <i>o</i> -Terphenyl	8.90		"	12.5	71.2	30-150					

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Fremont Environmental  
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Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02 Flowline

Project Number: UWRWE-A2964-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/20/23 08:36

**PAH by EPA Method 8270D SIM - Quality Control**

**Summit Scientific**

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

**Batch BGK0374 - EPA 5030 Soil MS**

**Blank (BGK0374-BLK1)**

Prepared: 11/10/23 Analyzed: 11/11/23

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	0.0277		"	0.0333		83.2	40-150			
Surrogate: Fluoranthene-d10	0.0290		"	0.0333		87.0	40-150			

**LCS (BGK0374-BS1)**

Prepared: 11/10/23 Analyzed: 11/11/23

Acenaphthene	0.0229	0.00500	mg/kg	0.0333		68.7	31-137			
Anthracene	0.0247	0.00500	"	0.0333		74.0	30-120			
Benzo (a) anthracene	0.0254	0.00500	"	0.0333		76.3	30-120			
Benzo (a) pyrene	0.0234	0.00500	"	0.0333		70.1	30-120			
Benzo (b) fluoranthene	0.0235	0.00500	"	0.0333		70.6	30-120			
Benzo (k) fluoranthene	0.0215	0.00500	"	0.0333		64.6	30-120			
Chrysene	0.0234	0.00500	"	0.0333		70.1	30-120			
Dibenz (a,h) anthracene	0.0236	0.00500	"	0.0333		70.8	30-120			
Fluoranthene	0.0244	0.00500	"	0.0333		73.1	30-120			
Fluorene	0.0228	0.00500	"	0.0333		68.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0187	0.00500	"	0.0333		56.1	30-120			
Pyrene	0.0254	0.00500	"	0.0333		76.2	35-142			
1-Methylnaphthalene	0.0241	0.00500	"	0.0333		72.3	35-142			
2-Methylnaphthalene	0.0242	0.00500	"	0.0333		72.7	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0253		"	0.0333		75.8	40-150			
Surrogate: Fluoranthene-d10	0.0246		"	0.0333		73.8	40-150			

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Project: Noble - Wells Ranch AA 21-02 Flowline  
Project Number: UWRWE-A2964-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/20/23 08:36

**PAH by EPA Method 8270D SIM - Quality Control**

**Summit Scientific**

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

**Batch BGK0374 - EPA 5030 Soil MS**

**Matrix Spike (BGK0374-MS1)**

Source: 2311149-01

Prepared: 11/10/23 Analyzed: 11/11/23

Acenaphthene	0.0163	0.00500	mg/kg	0.0333	ND	48.9	31-137			
Anthracene	0.0171	0.00500	"	0.0333	ND	51.4	30-120			
Benzo (a) anthracene	0.0170	0.00500	"	0.0333	ND	50.9	30-120			
Benzo (a) pyrene	0.0144	0.00500	"	0.0333	ND	43.1	30-120			
Benzo (b) fluoranthene	0.0151	0.00500	"	0.0333	ND	45.4	30-120			
Benzo (k) fluoranthene	0.0148	0.00500	"	0.0333	ND	44.5	30-120			
Chrysene	0.0172	0.00500	"	0.0333	ND	51.7	30-120			
Dibenz (a,h) anthracene	0.0140	0.00500	"	0.0333	ND	41.9	30-120			
Fluoranthene	0.0176	0.00500	"	0.0333	ND	52.9	30-120			
Fluorene	0.0166	0.00500	"	0.0333	ND	49.8	30-120			
Indeno (1,2,3-cd) pyrene	0.0154	0.00500	"	0.0333	ND	46.3	30-120			
Pyrene	0.0176	0.00500	"	0.0333	ND	52.8	35-142			
1-Methylnaphthalene	0.0173	0.00500	"	0.0333	ND	52.0	15-130			
2-Methylnaphthalene	0.0175	0.00500	"	0.0333	ND	52.6	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0174		"	0.0333		52.2	40-150			
Surrogate: Fluoranthene-d10	0.0173		"	0.0333		51.8	40-150			

**Matrix Spike Dup (BGK0374-MSD1)**

Source: 2311149-01

Prepared: 11/10/23 Analyzed: 11/11/23

Acenaphthene	0.0167	0.00500	mg/kg	0.0333	ND	50.0	31-137	2.33	30
Anthracene	0.0143	0.00500	"	0.0333	ND	42.9	30-120	18.1	30
Benzo (a) anthracene	0.0157	0.00500	"	0.0333	ND	47.0	30-120	7.98	30
Benzo (a) pyrene	0.0149	0.00500	"	0.0333	ND	44.7	30-120	3.57	30
Benzo (b) fluoranthene	0.0141	0.00500	"	0.0333	ND	42.3	30-120	7.03	30
Benzo (k) fluoranthene	0.0150	0.00500	"	0.0333	ND	45.1	30-120	1.50	30
Chrysene	0.0135	0.00500	"	0.0333	ND	40.5	30-120	24.2	30
Dibenz (a,h) anthracene	0.0136	0.00500	"	0.0333	ND	40.9	30-120	2.27	30
Fluoranthene	0.0145	0.00500	"	0.0333	ND	43.4	30-120	19.8	30
Fluorene	0.0160	0.00500	"	0.0333	ND	48.0	30-120	3.69	30
Indeno (1,2,3-cd) pyrene	0.0150	0.00500	"	0.0333	ND	45.1	30-120	2.52	30
Pyrene	0.0140	0.00500	"	0.0333	ND	41.9	35-142	23.1	30
1-Methylnaphthalene	0.0148	0.00500	"	0.0333	ND	44.3	15-130	16.1	50
2-Methylnaphthalene	0.0140	0.00500	"	0.0333	ND	41.9	15-130	22.5	50
Surrogate: 2-Methylnaphthalene-d10	0.0138		"	0.0333		41.3	40-150		
Surrogate: Fluoranthene-d10	0.0136		"	0.0333		40.9	40-150		

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02 Flowline

Project Number: UWRWE-A2964-ABN  
 Project Manager: Paul Henchan

**Reported:**  
 11/20/23 08:36

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

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

**Batch BGK0449 - EPA 3050B**

**Blank (BGK0449-BLK1)**

Prepared: 11/13/23 Analyzed: 11/14/23

Boron ND 2.00 mg/L

**LCS (BGK0449-BS1)**

Prepared: 11/13/23 Analyzed: 11/14/23

Boron 5.12 2.00 mg/L 5.00 102 80-120

**Duplicate (BGK0449-DUP1)**

Source: 2311148-01

Prepared: 11/13/23 Analyzed: 11/14/23

Boron 0.147 2.00 mg/L 0.166 12.2 20

**Matrix Spike (BGK0449-MS1)**

Source: 2311148-01

Prepared: 11/13/23 Analyzed: 11/14/23

Boron 5.32 2.00 mg/L 5.00 0.166 103 75-125

**Matrix Spike Dup (BGK0449-MSD1)**

Source: 2311148-01

Prepared: 11/13/23 Analyzed: 11/14/23

Boron 5.48 2.00 mg/L 5.00 0.166 106 75-125 2.98 25

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Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02 Flowline

Project Number: UWRWE-A2964-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/20/23 08:36

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

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

**Batch BGK0620 - EPA 3050B**

**Blank (BGK0620-BLK1)**

Prepared: 11/16/23 Analyzed: 11/17/23

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 (BGK0620-BS1)**

Prepared: 11/16/23 Analyzed: 11/17/23

Arsenic	38.3	0.200	mg/kg wet	40.0	95.7	80-120
Barium	38.3	0.400	"	40.0	95.7	80-120
Cadmium	1.91	0.200	"	2.00	95.5	80-120
Copper	32.6	0.400	"	40.0	81.5	80-120
Lead	23.0	0.200	"	20.0	115	80-120
Nickel	32.1	0.400	"	40.0	80.2	80-120
Silver	1.93	0.0200	"	2.00	96.7	80-120
Zinc	32.2	0.400	"	40.0	80.5	80-120
Selenium	3.38	0.260	"	4.00	84.4	80-120

**Duplicate (BGK0620-DUP1)**

Source: 2311152-01

Prepared: 11/16/23 Analyzed: 11/17/23

Arsenic	2.07	0.200	mg/kg dry	2.08	0.688	20
Barium	76.6	0.400	"	79.2	3.33	20
Cadmium	0.184	0.200	"	0.176	4.87	20
Copper	4.21	0.400	"	3.79	10.6	20
Lead	13.2	0.200	"	11.5	13.6	20
Nickel	3.67	0.400	"	3.44	6.40	20
Silver	0.0235	0.0200	"	0.0231	1.98	20
Zinc	14.7	0.400	"	14.0	5.37	20
Selenium	ND	0.260	"	ND		20

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Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02 Flowline

Project Number: UWRWE-A2964-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/20/23 08:36

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

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

**Batch BGK0620 - EPA 3050B**

**Matrix Spike (BGK0620-MS1)**

Source: 2311152-01

Prepared: 11/16/23 Analyzed: 11/17/23

Arsenic	34.3	0.200	mg/kg dry	46.1	2.08	69.8	75-125				QM-07
Barium	115	0.400	"	46.1	79.2	77.2	75-125				
Cadmium	1.84	0.200	"	2.31	0.176	72.3	75-125				QM-07
Copper	29.0	0.400	"	46.1	3.79	54.6	75-125				QM-07
Lead	30.1	0.200	"	23.1	11.5	80.7	75-125				
Nickel	28.4	0.400	"	46.1	3.44	54.2	75-125				QM-07
Silver	1.65	0.0200	"	2.31	0.0231	70.8	75-125				QM-07
Zinc	41.6	0.400	"	46.1	14.0	59.9	75-125				QM-07
Selenium	3.59	0.260	"	4.61	ND	77.9	75-125				

**Matrix Spike Dup (BGK0620-MSD1)**

Source: 2311152-01

Prepared: 11/16/23 Analyzed: 11/17/23

Arsenic	38.4	0.200	mg/kg dry	46.1	2.08	78.7	75-125	11.2	25		
Barium	119	0.400	"	46.1	79.2	85.7	75-125	3.33	25		
Cadmium	2.10	0.200	"	2.31	0.176	83.6	75-125	13.2	25		
Copper	31.2	0.400	"	46.1	3.79	59.4	75-125	7.42	25		QM-07
Lead	45.7	0.200	"	23.1	11.5	149	75-125	41.2	25		QM-07
Nickel	30.9	0.400	"	46.1	3.44	59.5	75-125	8.21	25		QM-07
Silver	1.85	0.0200	"	2.31	0.0231	79.2	75-125	11.1	25		
Zinc	43.9	0.400	"	46.1	14.0	64.9	75-125	5.31	25		QM-07
Selenium	4.24	0.260	"	4.61	ND	91.9	75-125	16.5	25		

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 Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02 Flowline  
 Project Number: UWRWE-A2964-ABN  
 Project Manager: Paul Henchan

**Reported:**  
 11/20/23 08:36

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

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

**Batch BGK0475 - 3060A Mod**

<b>Blank (BGK0475-BLK1)</b>											
											Prepared: 11/13/23 Analyzed: 11/14/23
Chromium, Hexavalent	ND	0.30	mg/kg wet								
<b>LCS (BGK0475-BS1)</b>											
											Prepared: 11/13/23 Analyzed: 11/14/23
Chromium, Hexavalent	26.2	0.30	mg/kg wet	25.0		105	80-120				
<b>Duplicate (BGK0475-DUP1)</b>											
											Source: 2311151-01 Prepared: 11/13/23 Analyzed: 11/14/23
Chromium, Hexavalent	ND	0.30	mg/kg dry		ND					20	
<b>Matrix Spike (BGK0475-MS1)</b>											
											Source: 2311151-01 Prepared: 11/13/23 Analyzed: 11/14/23
Chromium, Hexavalent	34.5	0.30	mg/kg dry	31.8	ND	109	75-125				
<b>Matrix Spike Dup (BGK0475-MSD1)</b>											
											Source: 2311151-01 Prepared: 11/13/23 Analyzed: 11/14/23
Chromium, Hexavalent	34.4	0.30	mg/kg dry	31.8	ND	108	75-125	0.369		20	

Summit Scientific

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 Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02 Flowline

Project Number: UWRWE-A2964-ABN  
 Project Manager: Paul Henchan

**Reported:**  
 11/20/23 08:36

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

**Summit Scientific**

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

**Batch BGK0562 - General Preparation**

**Blank (BGK0562-BLK1)**

Prepared: 11/15/23 Analyzed: 11/17/23

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

**LCS (BGK0562-BS1)**

Prepared: 11/15/23 Analyzed: 11/17/23

Calcium	5.33	0.0500	mg/L wet	5.00		107	70-130			
Magnesium	4.98	0.0500	"	5.00		99.5	70-130			
Sodium	4.93	0.0500	"	5.00		98.5	70-130			

Summit Scientific

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 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02 Flowline

Project Number: UWRWE-A2964-ABN  
 Project Manager: Paul Henchan

**Reported:**  
 11/20/23 08:36

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

**Summit Scientific**

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

**Batch BGK0356 - General Preparation**

**Duplicate (BGK0356-DUP1)**

**Source: 2311151-06**

Prepared & Analyzed: 11/09/23

% Solids	76.1		%		77.3			1.54	20	
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 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02 Flowline  
 Project Number: UWRWE-A2964-ABN  
 Project Manager: Paul Henchan

**Reported:**  
 11/20/23 08:36

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

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

**Batch BGK0590 - General Preparation**

**Blank (BGK0590-BLK1)**

Prepared: 11/16/23 Analyzed: 11/17/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BGK0590-BS1)**

Prepared: 11/16/23 Analyzed: 11/17/23

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

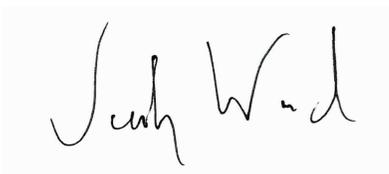
**Duplicate (BGK0590-DUP1)**

**Source: 2311151-01**

Prepared: 11/16/23 Analyzed: 11/17/23

Specific Conductance (EC) 0.382 0.0100 mmhos/cm 0.383 0.105 20

Summit Scientific



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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02 Flowline

Project Number: UWRWE-A2964-ABN  
 Project Manager: Paul Henchan

**Reported:**  
 11/20/23 08:36

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

**Summit Scientific**

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

**Batch BGK0589 - General Preparation**

**LCS (BGK0589-BS1)**

Prepared: 11/16/23 Analyzed: 11/17/23

pH	9.11	pH Units	9.18	99.2	95-105
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**Duplicate (BGK0589-DUP1)**

Source: 2311151-01

Prepared: 11/16/23 Analyzed: 11/17/23

pH	9.87	pH Units	9.87	0.00	20
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Summit Scientific

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02 Flowline

Project Number: UWRWE-A2964-ABN  
Project Manager: Paul Henchan

**Reported:**  
11/20/23 08:36

### Notes and Definitions

- 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.
- QLCS-01 The spike recovery was outside acceptance limits for this analyte indicating a potential high bias. The corresponding samples did not exhibit concentrations above reporting level for this analyte. Data quality is not affected.
- 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