

TABLE 1
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE 100322
WELLS RANCH AA21-02 FLOWLINE, WELD COUNTY, COLORADO
REM # 26837

Sample ID	Sample Date	Depth (ft)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)	1,2,4- Trimethyl- Benzene (mg/kg)	1,3,5- Trimethyl- Benzene (mg/kg)	Naphthalene (mg/kg)	TPH (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500	500**		
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	500**		
FL01-02@4'	11/04/2023	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50	<500
FLR01@4'	11/04/2023	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50	<500
SEP01-FL@4'	11/04/2023	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50	<500

3. * Indicates laboratory minimum detection limit in excess of SSL

4. ** Summation of GRO+DRO+ORO must be less than 500 mg/kg

NA - Not analyzed

= Source material characterization sample, excavated and transported off site for disposal.

= Material excavated and transported off site for disposal.

TABLE 2
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE 100322
WELLS RANCH AAZ1-02 FLOWLINE, WELD COUNTY, COLORADO
REM # 26837

Sample ID	Sample Date	Depth (ft)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Benzo (b) Fluoranthene (mg/kg)	Benzo (k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3- cd) Pyrene (mg/kg)	Pyrene (mg/kg)	1-Methyl - Naphthalene (mg/kg)	2-Methyl- Naphthalene (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
FL01-02@4'	11/04/2023	4'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00578	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FLR01@4'	11/04/2023	4'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP01-FL@4'	11/04/2023	4'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

1. Bold values exceed the ECMC Table 915-1 limit(s)

2. Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)

3. * Indicates laboratory minimum detection limit in excess of SSL

NA - Not analyzed

 = Source material characterization sample, excavated and transported off site for disposal.

 = Material excavated and transported off site for disposal.

TABLE 3
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE 100322
WELLS RANCH AA21-02 FLOWLINE, WELD COUNTY, COLORADO
REM # 26837

Sample ID	Sample Date	Depth (ft)	pH (Standard Units)	EC (mmhos/cm)	SAR (Standard Units)	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
FL01-02@4'	11/04/2023	4'	7.94	0.251	0.0929	<2.00
FLR01@4'	11/04/2023	4'	8.14	0.922	1.66	<2.00
SEP01-FL@4'	11/04/2023	4'	8.78	0.147	0.0411	<2.00
BKG01@4'	11/04/2023	4'	8.39	0.153	0.0915	<2.00
BKG02@4'	11/04/2023	4'	8.22	0.21	0.112	<2.00
Maximum Root Background Concentration (0 - 3 ft)			NA	NA	NA	NA
Average Root Background Concentration (0 - 3 ft)			NA	NA	NA	NA
Maximum Background Concentration			8.39	0.21	0.112	NA
Average Background Concentration			8.305	0.1815	0.10	NA

1. Bold faced values exceed the ECMC Table 915-1 limit(s)

2. Blue highlighted soil analytical values indicate a regulatory exceedance

NA - Not analyzed

= Source material characterization sample, excavated and transported off site for disposal.

= Material excavated and transported off site for disposal.

TABLE 4
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE 100322
WELLS RANCH AA21-02 FLOWLINE, WELD COUNTY, COLORADO
REM # 26837

Sample ID	Sample Date	Depth (ft)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			0.68	15000	71	0.3	3100	400	1500	390	390	23000
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FL01-02@4'	11/04/2023	4'	1.81	65.3	<0.200	<0.30	2.99	4.98	3.38	<0.260	<0.0200	13.2
FLR01@4'	11/04/2023	4'	2.08	79.2	<0.200	<0.30	3.79	11.5	3.44	<0.260	0.0231	14
SEP01-FL@4'	11/04/2023	4'	1.91	45.3	<0.200	<0.30	2.35	3.32	2.5	<0.260	<0.0200	9.19
BKG01@4'	11/04/2023	4'	1.33	44.5	<0.200	<0.30	2.61	3.77	2.87	<0.260	<0.0200	10.9
BKG02@4'	11/04/2023	4'	1.14	42.1	<0.200	<0.30	2.34	3.98	2.51	<0.260	<0.0200	9.59
Maximum Root Zone Background Concentration (0 - 3 ft)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
125% Average Root Zone Background Concentration (0 - 3 ft)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Maximum Background Concentration			1.33	44.5	NA	NA	2.61	3.98	2.87	NA	NA	10.9
125% Average Background Concentration			1.235	43.3	NA	NA	2.475	3.875	2.69	NA	NA	10.245

1. Bold values exceed the ECMC Table 915-1 limit(s)

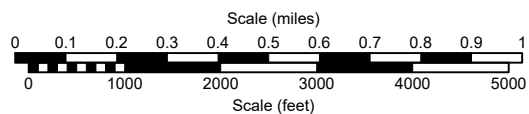
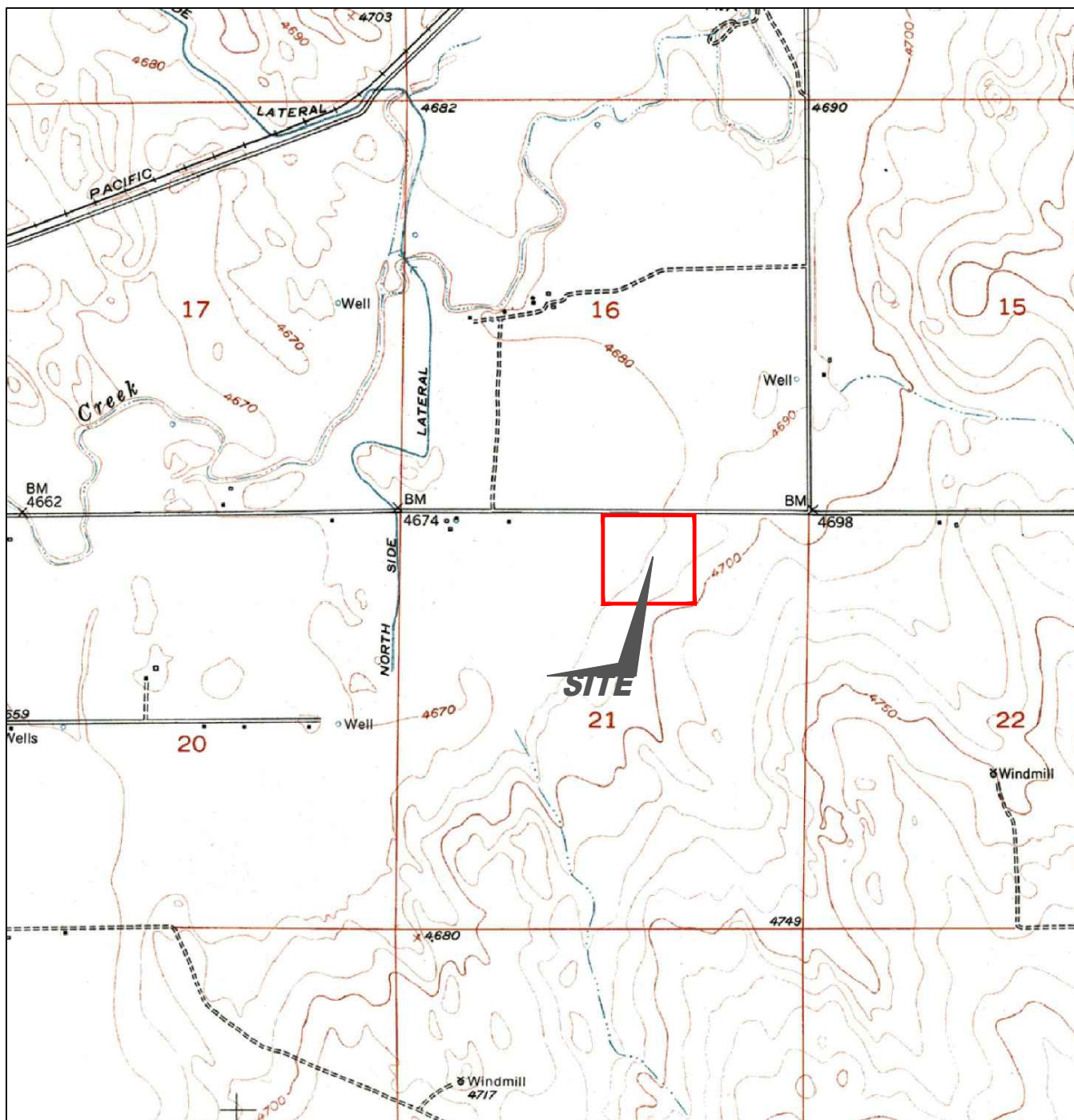
2. Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)

* Indicates laboratory minimum detection limit in excess of SSL

NA - Not analyzed

= Source material characterization sample, excavated and transported off site for disposal.

= Material excavated and transported off site for disposal.



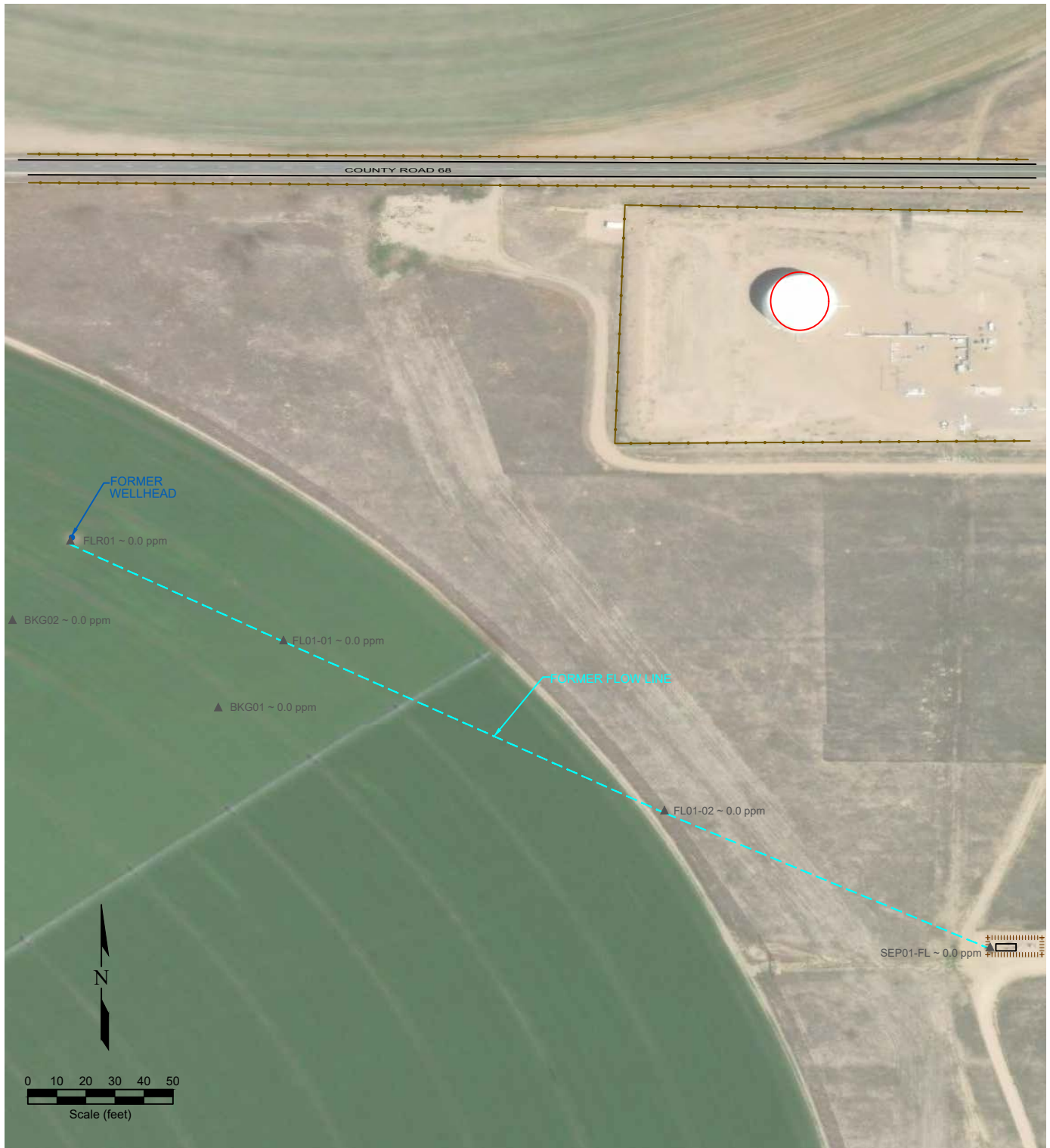
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

NOBLE ENERGY INC - WELLS RANCH AA 21-02
NWNE Sec. 21, T6N, R63W, 6th PM
Weld County, Colorado
40.477674°, -104.439623°

Project # CO23-064	API # 05-123-26818	Facility #
Date 8/9/24	Remediation # 26837	Filename 23064TFL





LEGEND

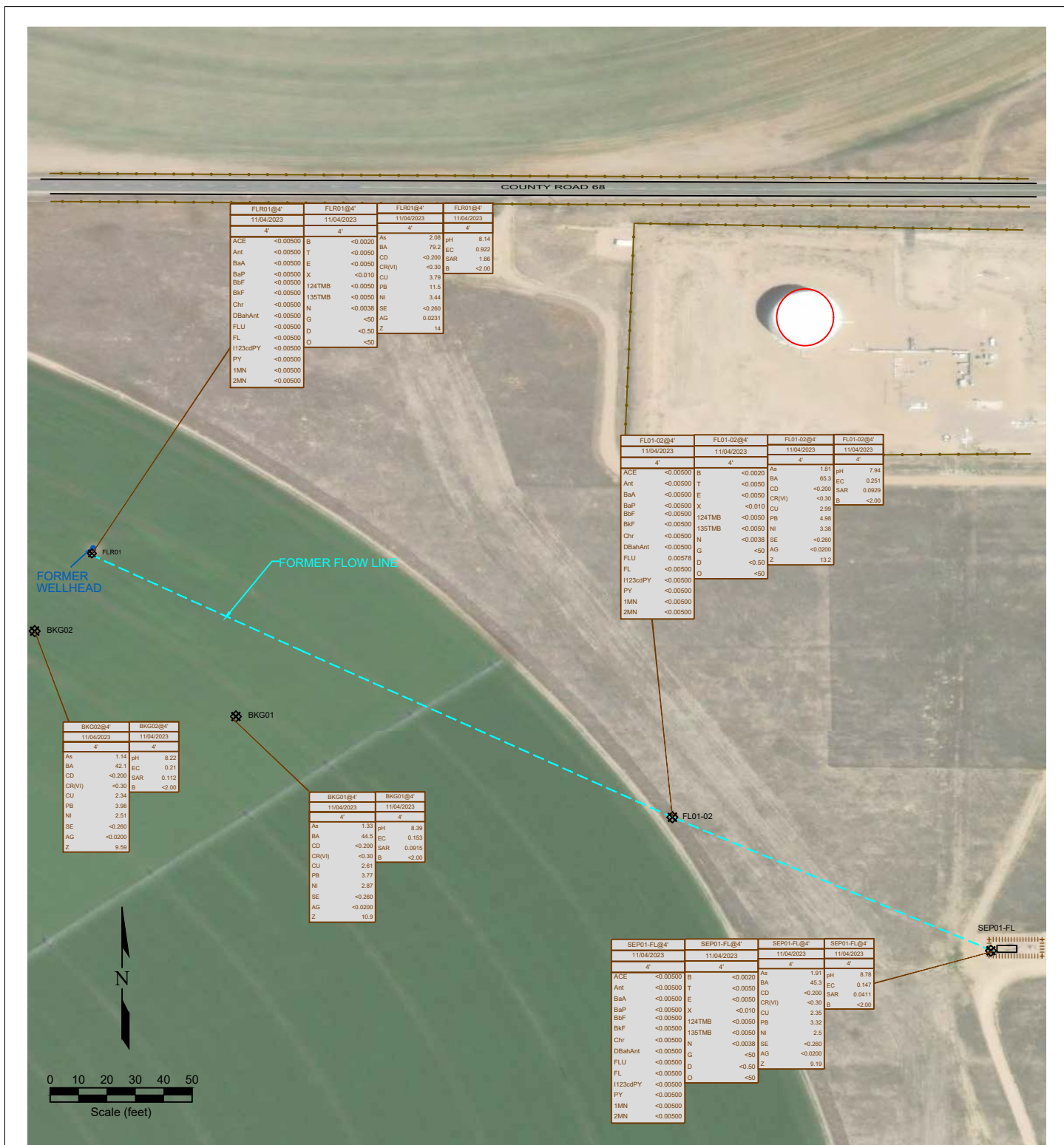
● WELL HEAD LOCATION	○ ABOVE GROUND STORAGE TANK	FORMER FACILITY	FORMER FLOW LINE
▲ PID READING LOCATION		FENCE LINE	
		CONTAINMENT BERM	
		CONTAINMENT WALL	

Figure 2
SITE MAP

NOBLE ENERGY INC - WELLS RANCH AA 21-02
 NWNE Sec. 21, T6N, R63W, 6th PM
 Weld County, Colorado
 40.477674°, -104.439623°

Project No. CO23-064	API # 05-123-26818	Facility #
Date 8/9/24	Remediation # 26837	Filename 23064QFL





LEGEND

● WELL HEAD LOCATION	○ ABOVE GROUND STORAGE TANK	FORMER FACILITY	FORMER FLOW LINE
⊗ SOIL SAMPLE LOCATION			FENCE LINE
			CONTAINMENT BERM
			CONTAINMENT WALL
NA			NOT ANALYZED

SAMPLE ID		SAMPLE ID		SAMPLE ID		SAMPLE ID		SAMPLE ID	
DATE SAMPLED		DATE SAMPLED		DATE SAMPLED		DATE SAMPLED		DATE SAMPLED	
DEPTH	DEPTH (ft)	DEPTH	DEPTH (ft)	DEPTH	DEPTH (ft)	DEPTH	DEPTH (ft)	DEPTH	DEPTH (ft)
ACE	<0.0005	ADENAPHTHENE (mg/kg)	<0.0005	As	<0.01	ARSENIC (mg/kg)	As	<0.01	ARSENIC (mg/kg)
Ant	<0.0005	ANTHRACENE (mg/kg)	7	BA	<0.01	BARIUM (mg/kg)	EC	7.0	EC (µmhos/cm)
BaA	<0.0005	BENZO (A) ANTHRACENE (mg/kg)	8	CD	<0.01	CADMIUM (mg/kg)	SAR	<0.01	SAR (units)
BaP	<0.0005	BENZO (A) PYRENE (mg/kg)	9	CR(VI)	<0.01	CHROMIUM (mg/kg)	B	0.6	BORON (mg/L)
BbF	<0.0005	BENZO (B) FLUORANTHENE (mg/kg)	124TMB	CU	<0.01	COPPER (mg/kg)			
BkF	<0.0005	BENZO (K) FLUORANTHENE (mg/kg)	135TMB	124TMB	<0.01	1,2,4-TRIMETHYLBENZENE (mg/kg)			
Chr	<0.0005	CHRYSENE (mg/kg)	135TMB	135TMB	<0.01	1,3,5-TRIMETHYLBENZENE (mg/kg)	NI	<0.01	NICKEL (mg/kg)
DBaHant	<0.0005	DBENZO (A,H) ANTHRACENE (mg/kg)	NI	<0.0008	1,4-TRIMETHYLBENZENE (mg/kg)	SE	<0.01	SELENIUM (mg/kg)	
FLU	<0.0005	FLUORANTHENE (mg/kg)	THDRO	<0.01	THDRO (mg/kg)	AG	<0.01	SILVER (mg/kg)	
FL	<0.0005	FLUORENE (mg/kg)	<0.01	THDRO (mg/kg)	<0.01	Z	<0.01	ZINC (mg/kg)	
1123cdPY	<0.0005	1,2,3-CD PYRENE (mg/kg)	<0.01	THDRO (mg/kg)	<0.01				
PY	<0.0005	PYRENE (mg/kg)							
1MN	<0.0005	1-METHYLNAPHTHALENE (mg/kg)							
2MN	<0.0005	2-METHYLNAPHTHALENE (mg/kg)							

Figure 3
SOIL CHEMISTRY MAP

NOBLE ENERGY INC - WELLS RANCH AA 21-02
NWNE Sec. 21, T6N, R63W, 6th PM
Weld County, Colorado
40.477674°, -104.439623°

Project No. CO23-064	API # 05-123-26818	Facility #	REMONT ENVIRONMENTAL
Date 8/9/24	Remediation # 26837	Filename 23064QFL	

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 20, 2023

Paul Henchan

Fremont Environmental

PO Box 1289

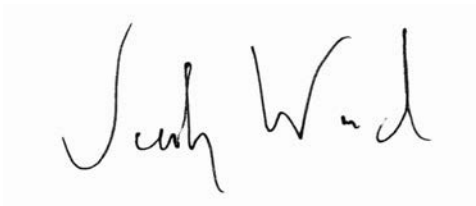
Wellington, CO 80549

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

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

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

SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
231152	

Send Data To:		Send Invoice To:
Client: Fremont Environmental	Project Manager: Paul Henehan	Company: Noble/Chevron
Address: 8305 9th 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

					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 - 915	TPH (C6-C36)	PAH	TMB's - 915	Metals (915-1)	SAR, EC, pH, Boron	TDS, Cl, SO4			
1	FLR01E4'	11/4/23	0945	2			X			X			X	X	X	X	X	X				
2	FL01-02E4'	—	0955	2			—			—			—	—	—	—	—	—				
3	SEPA-FL04'	—	1030	2			—			—			—	—	—	—	—	—				
4	BK601E4'	—	1100	1			—			—							X	X				
5	BK602E4'	—	1120	1			—			—							X	X				
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						

Relinquished by:	Date/Time:	Received by:	Date/Time:	TAT Business Days	Field DO	Notes:
<i>Aaron Otilar</i>	11/4/23 1116 1700	Summit North Office	11/4/23 1116 1700	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
5L	11/23 11030	<i>[Signature]</i>	11/23 11030	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

S₂

Sample Receipt Checklist

S2 Work Order# 231152Client: FremontClient Project ID: Wells Ranch AA21-02 FlowlineShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

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 $< 6^{\circ}\text{C}$? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OUTICE
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^{2+}), Hexavalent Chromium (Cr^{6+} , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H_2SO_4 , NaOH, HNO_3 , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the $\text{pH} \leq 2$? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Custodian Printed Name

Date/Time

AS

11/7/23



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 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 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 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 09:45**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

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

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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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

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)

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Volatile Organic Compounds by EPA Method 8260B

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

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 09:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	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 09:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	"	"	"	"	"	"	
Fluoranthene	0.00578	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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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

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

Summit Scientific

Total Metals by EPA 6020B

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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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

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

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Physical Parameters by APHA/ASTM/EPA Methods

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

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

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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

Volatile Organic Compounds by EPA Method 8260B

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

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 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
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	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 10:30**

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

PAH by EPA Method 8270D SIM

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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

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

Summit Scientific

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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		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	94.0			%	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		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.147	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		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.78			pH Units	1	BGK0589	11/16/23	11/17/23	EPA 9045D	

Summit Scientific

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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

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

Hexavalent Chromium by EPA Method 7196

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

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

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

Hexavalent Chromium by EPA Method 7196

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

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

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

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	"							
Surrogate: 1,2-Dichloroethane-d4	0.0429		"	0.0400		107	50-150			
Surrogate: Toluene-d8	0.0428		"	0.0400		107	50-150			
Surrogate: 4-Bromofluorobenzene	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			
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		102	50-150			
Surrogate: Toluene-d8	0.0421		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	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			
Surrogate: 1,2-Dichloroethane-d4	0.0415		"	0.0400		104	50-150			
Surrogate: Toluene-d8	0.0441		"	0.0400		110	50-150			
Surrogate: 4-Bromofluorobenzene	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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BGK0347 - EPA 5030 Soil MS

Matrix Spike Dup (BGK0347-MSD1)	Source: 2311149-01			Prepared & Analyzed: 11/09/23						
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	
Surrogate: 1,2-Dichloroethane-d4	0.0418		"	0.0400		104	50-150			
Surrogate: Toluene-d8	0.0433		"	0.0400		108	50-150			
Surrogate: 4-Bromofluorobenzene	0.0427		"	0.0400		107	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

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 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: o-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: o-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: o-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: o-Terphenyl	8.90		"	12.5		71.2	30-150			

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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

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

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

Reported:
11/20/23 08:36

PAH by EPA Method 8270D SIM - Quality Control

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

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

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

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

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

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 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	

Summit Scientific

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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

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 BGK0475 - 3060A Mod

Blank (BGK0475-BLK1)

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

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGK0475-BS1)

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

Chromium, Hexavalent 26.2 0.30 mg/kg wet 25.0 105 80-120

Duplicate (BGK0475-DUP1)

Source: 2311151-01

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

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGK0475-MS1)

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

Matrix Spike Dup (BGK0475-MSD1)

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

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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

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

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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Summit Scientific

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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

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

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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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