

# **FREMONT ENVIRONMENTAL INC.**

October 15, 2023

Mr. Daniel Peterson  
Noble Energy Inc.  
2115 117<sup>th</sup> Avenue  
Greeley, CO 80634

Subject:       **Facility Closure Data Submittal**  
Barton C 15-29  
SWSW Sec. 10, T4N, R64W  
Weld County, Colorado  
Fremont Project No. C023-263  
Facility # 413215, Remediation # 30384

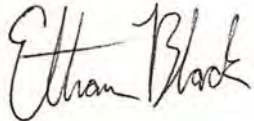
Dear Mr. Peterson:

As you requested, Fremont Environmental Inc. (Fremont) personnel conducted facility closure activities for the Noble Energy Inc. (Noble) Barton C 15-29. Impacted soil was not encountered during abandonment activities. Details of the Barton C 15-29 facility closure activities are documented in the attached Closure Report. Groundwater was not encountered during flowline abandonment activities.

Please contact me at (603) 477-6907 if you require any additional information. Fremont appreciates the opportunity to provide this service.

Sincerely,

**FREMONT ENVIRONMENTAL INC.**

A handwritten signature in black ink that reads "Ethan Black". The signature is written in a cursive, flowing style.

Ethan D. Black, PG  
Consultant

Attachments:

Facility Closure Checklist  
Tables  
Figures  
Photos  
Laboratory Report

# Tank Battery Closure Checklist

## COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form

Additional attachments (optional):	<input type="checkbox"/>	Pit Closure	<input type="checkbox"/>	Wellhead Closure	<input type="checkbox"/>	Flowline Closure	<input checked="" type="checkbox"/>	Partially Buried Vault Closure
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Site Name & COGCC Facility Number: <b>Barton C 15-29, 413215</b>	Date: <b>10/14/2023</b>	Remediation Project #: <b>30384</b>
Associated Wells: <b>Multiple</b>	Age of Site: <b>Years</b>	Number of Photos Attached: <b>7</b>
Location: (GPS coordinates of southeaster berm) <b>40.3198625, -104.5398769</b>		Estimated Facility Size (acres): <b>1.5</b>

General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.)

**Good condition**

USCS Soil Type: <b>SM to CH</b>	Estimated Depth to Groundwater: <b>~10'</b>
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Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)

**None observed**

Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)

**None observed**

Tanks									
Tank Contents	Crude Oil	Crude Oil							
Size (barrels)	300	300							
Age	years	years							
Construction Material	Steel	Steel							
Tank type (AST/DBT, etc.)	unknown	unknown							
Visual Integrity of Tank									
Condition of tank footprint	Good condition	Good condition							
PID Readings	0.3 ppm	0.4 ppm							
Soil impacts present at valves or hatches?	No	No							
PID Readings	0.0 ppm	0.0 ppm							
Sample taken? Location/ Sample ID#	Yes, see attached	Yes, see attached							
Photo Number(s)	<b>5-7</b>	<b>5-7</b>							

Other observations regarding tanks:

**ASTs removed prior to arrival**

Separators									
Separator size	8 bbl	8 bbl							
Vertical or Horizontal	horizontal	horizontal							
Age	unknown	unknown							
Soil impacts observed? If yes,	No	No							
PID Readings	1.6 ppm	0.7 ppm							
Sample taken? Location/ Sample ID#	Yes, see attached	Yes, see attached							
Photo Number(s)	3,4	3,4							

Other observations regarding separators

**Removed prior to arrival**

Third Party Equipment									
Type	Meter Skid								
Age	Unknown								

Third Party	Western Midstream													
Removal Date	Not removed													
Sample taken?	Yes, see attached													
PID Readings	0.0 ppm													
Photo Number(s)	7													
<b>Other Facility Equipment</b>														
Equipment type	ECD	ECD												
Equipment Condition	Unknown	Unknown												
Age	Unknown	Unknown												
Soil impacts observed during	No	No												
PID Readings	0.0 ppm	0.0 ppm												
Sample taken?	Yes, see attached	Yes, see attached												
Photo Number(s)	2	2												
Other observations regarding other facility or third party equipment:														
Removed prior to arrival														
<b>Summary</b>														
Was impacted soil identified? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes - less than 10 cubic yards <input type="checkbox"/> Yes - more than 10 cubic yards														
Total number of samples field screened: 10					Total number of samples collected: 10									
Highest PID Reading: 1.6 ppm					Total number of samples submitted to lab for analysis: 4									
If more than 10 cubic yards of impacted soil were observed:														
Vertical extent:					Estimated spill volume:									
Lateral extent:					Volume of soil removed:									
Is additional investigation required? No														
Was groundwater encountered during the investigation? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes - not impacted or in contact with impacted soils <input type="checkbox"/> Yes - groundwater impacted and/or in contact with impacted soils														
Measured depth to groundwater:					Was remedial groundwater removal conducted? <input type="checkbox"/> Yes <input type="checkbox"/> No									
Date Groundwater was encountered:					Commencement date of removal:									
Sheen on groundwater? <input type="checkbox"/> Yes <input type="checkbox"/> No					Volume of groundwater removed prior to sampling:									
Free product observed? <input type="checkbox"/> Yes <input type="checkbox"/> No					Volume of groundwater removed post sampling:									
Total number of samples collected:					Total Volume of groundwater removed:									
Total number of samples submitted to lab for analysis:														

## Buried or Partially Buried Vessel Closure Checklist

### COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form

Additional attachments (optional):		Pit Closure		Wellhead Closure		Flowline Closure		Tank Battery Closure
Site Name & COGCC Facility Number: <b>Barton C 15-29, 413215</b>		Date: <b>10/14/2023</b>						Remediation Project #: <b>30384</b>
Associated Wells: <b>Multiple</b>		Age of Site: <b>Years</b>						Number of Photos Attached: <b>7</b>
Location: (GPS coordinates of vault or southeastern tank berm for multiple) <b>40.319843, -104.540026</b>							Estimated Facility Size (acres): <b>1.5</b>	
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.) <b>Good condition</b>								
USCS Soil Type: <b>SM to CH</b>					Estimated Depth to Groundwater: <b>~10'</b>			
Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) <b>None observed</b>								
Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) <b>None observed</b>								
Buried or Partially Buried Vessels								
Tank Contents	Prod. H2O							
Size (barrels)	100							
Age	years							
Construction Material	Concrete							
Visual Integrity of Tank	unknown							
Condition of tank	good							
PID Readings	8.7 ppm highest							
Condition of dump line	Good condition							
PID Readings	17.9 ppm highest							
Sample taken? Location/Sample ID#	Yes, see attached							
Photo Number(s)	<b>1, 6, 7</b>							
Other observations regarding partially buried vessels: <b>PWV removed prior to arrival</b>								
Summary								
Was impacted soil identified? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes - less than 10 cubic yards <input type="checkbox"/> Yes - more than 10 cubic yards								
Total number of samples field screened: <b>7</b>					Total number of samples collected: <b>7</b>			
Highest PID Reading: <b>17.9 ppm</b>					Total number of samples submitted to lab for analysis: <b>3</b>			
If more than 10 cubic yards of impacted soil were observed:								
Vertical extent:					Estimated spill volume:			
Lateral extent:					Volume of soil removed:			
Is additional investigation required? <b>No</b>								
Was groundwater encountered during the investigation? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes - not impacted or in contact with impacted soils <input type="checkbox"/> Yes - groundwater impacted and/or in contact with impacted soils								
Measured depth to groundwater:					Was remedial groundwater removal conducted? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Date Groundwater was encountered:					Commencement date of removal:			
Sheen on groundwater? <input type="checkbox"/> Yes <input type="checkbox"/> No					Volume of groundwater removed prior to sampling:			
Free product observed? <input type="checkbox"/> Yes <input type="checkbox"/> No					Volume of groundwater removed post sampling:			
Total number of samples collected:					Total Volume of groundwater removed:			
Total number of samples submitted to lab for analysis:								

**TABLE 1**  
**FIELD DATA SUMMARY TABLE**  
**NOBLE 100322**  
**BARTON C15-29 FACILITY, WELD COUNTY, COLORADO**  
**REM # 30384**

Sample ID	Sample Date	Depth (ft)	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
AST E CEN. SURF.	10/14/2023	Surface	40.3198667	-104.5398779	-	0.4
EAST LOADOUT	10/14/2023	Surface	40.3198625	-104.5398769	-	0.0
AST W CEN. SURF.	10/14/2023	Surface	40.3198635	-104.5399286	-	0.3
WEST LOADOUT	10/14/2023	Surface	40.3198551	-104.5399285	-	0.0
N DUMP 2FT	10/14/2023	2.0FT	40.3198653	-104.5397018	-	17.9
N SEP RISER 3FT	10/14/2023	3.0FT	40.3198906	-104.5396357	-	1.6
PWV FLOOR 5FT	10/14/2023	5.0FT	40.319843	-104.540026	-	8.7
PWV N WALL 4FT	10/14/2023	4.0FT	40.3198599	-104.5400373	-	1.3
PWV S WALL 4FT	10/14/2023	4.0FT	40.3198255	-104.5400274	-	1.4
PWV E WALL 4FT	10/14/2023	4.0FT	40.3198431	-104.5400061	-	0.6
PWV W WALL 4FT	10/14/2023	4.0FT	40.3198438	-104.5400516	-	0.5
S DUMP 2FT	10/14/2023	2.0FT	40.3198372	-104.5396691	-	2.6
S SEP RISER 3FT	10/14/2023	3.0FT	40.3198463	-104.5396425	-	0.7
FLARE N SURF.	10/14/2023	Surface	40.3198927	-104.5395516	-	0.0
FLARE S SURF.	10/14/2023	Surface	40.3198478	-104.5395539	-	0.0
BKG01 0.5FT	10/31/2024	0.5FT	40.3200656	-104.5398521	0.7	0.0
BKG02 0.5FT	10/31/2024	0.5FT	40.3200316	-104.5394381	0.7	0.0
BKG03 0.5FT	10/31/2024	0.5FT	40.3197814	-104.5418501	0.8	0.0
BKG04 0.5FT	10/31/2024	0.5FT	40.3199935	-104.5420659	0.8	0.0
BKG05 0.5FT	10/31/2024	0.5FT	40.3197826	-104.5418517	0.8	0.0
BKG01 3.0FT	10/31/2024	3.0FT	40.3200656	-104.5398521	0.7	0.0
BKG02 3.0FT	10/31/2024	3.0FT	40.3200316	-104.5394381	0.7	0.0
BKG03 4.0FT	10/31/2024	4.0FT	40.3197814	-104.5418501	0.8	0.0

**TABLE 1**  
**FIELD DATA SUMMARY TABLE**  
**NOBLE 100322**  
**BARTON C15-29 FACILITY, WELD COUNTY, COLORADO**  
**REM # 30384**

Sample ID	Sample Date	Depth (ft)	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
BKG04 3.0FT	10/31/2024	3.0FT	40.3199935	-104.5420659	0.8	0.0
BKG05 5.0FT	10/31/2024	5.0FT	40.3197826	-104.5418517	0.8	0.0

1. Global Positioning System (GPS) data is provided in decimal degrees using North American Datum (NAD) 83 UTMZone 13 North.

2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).

PDOP = Position Dilution of Precision

ppm = Parts per million

in. = Inches

ft. = Feet

bgs = Below ground surface

TABLE 2  
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA  
NOBLE 100322  
BARTON C15-29 FACILITY, WELD COUNTY, COLORADO  
REM # 30384

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**		
AST E CEN. SURF.	10/14/2023	Surface	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
AST W CEN. SURF.	10/14/2023	Surface	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
N Dump 2FT	10/14/2023	2.0	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
N SEP RISER 3FT	10/14/2023	3.0	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV FLOOR 5FT	10/14/2023	5.0	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
S Dump 2FT	10/14/2023	2.0	<0.0020	0.013	<0.0050	0.015	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
S SEP RISER 3FT	10/14/2023	3.0	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50

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
  4. \*\* Summation of GRO+DRO+ORO must be less than 500 mg/kg
- (<) = Analytical result is less than the indicated laboratory reporting limit.  
TPH-GRO = Total petroleum hydrocarbons - gasoline range organics  
TPH-DRO = Total petroleum hydrocarbons - diesel range organics  
TPH-ORO = Total petroleum hydrocarbons - oil range organics  
mg/kg = Milligrams per kilogram  
ft. = Feet  
bgs = Below ground surface  
NA - Not analyzed

TABLE 3  
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA  
NOBLE 100322  
BARTON C15-29 FACILITY, WELD COUNTY, COLORADO  
REM # 30384

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
AST E CEN. SURF.	10/14/2023	Surface	<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
AST W CEN. SURF.	10/14/2023	Surface	<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
N Dump 2FT	10/14/2023	2.0	<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
N SEP RISER 3FT	10/14/2023	3.0	<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
PWV FLOOR 5FT	10/14/2023	5.0	<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
S Dump 2FT	10/14/2023	2.0	<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
S SEP RISER 3FT	10/14/2023	3.0	<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  
4. \*\* Summation of GRO+DRO+ORO must be less than 500 mg/kg  
(<) = Analytical result is less than the indicated laboratory reporting limit.  
TPH-GRO = Total petroleum hydrocarbons - gasoline range organics  
TPH-DRO = Total petroleum hydrocarbons - diesel range organics  
TPH-ORO = Total petroleum hydrocarbons - oil range organics  
mg/kg = Milligrams per kilogram  
ft. = Feet  
bgs = Below ground surface  
NA - Not analyzed



**TABLE 4**  
**SUMMARY OF SOIL SUITABILITY FOR RECLAMATION**  
**NOBLE 100322**  
**BARTON C15-29 FACILITY, WELD COUNTY, COLORADO**  
**REM # 30384**

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
AST E CEN. SURF.	10/14/2023	Surface	8.02	1.11	3.50	<2.00
AST W CEN. SURF.	10/14/2023	Surface	7.65	1.01	2.34	<2.00
N Dump 2FT	10/14/2023	2.0	7.79	2.95	2.55	<2.00
N SEP RISER 3FT	10/14/2023	3.0	7.87	1.51	2.31	<2.00
PWV FLOOR 5FT	10/14/2023	5.0	7.88	1.34	5.03	<2.00
S Dump 2FT	10/14/2023	2.0	7.93	1.84	4.36	<2.00
S SEP RISER 3FT	10/14/2023	3.0	7.91	0.546	0.521	<2.00

TABLE 4  
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION  
NOBLE 100322  
BARTON C15-29 FACILITY, WELD COUNTY, COLORADO  
REM # 30384

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
BKG01 0.5FT	10/31/2024	0.5FT	8.17	1.22	4.8	6.68
BKG02 0.5FT	10/31/2024	0.5FT	8.44	3.21	17.1	5.54
BKG03 0.5FT	10/31/2024	0.5FT	8.18	1.85	13.4	<2.00
BKG04 0.5FT	10/31/2024	0.5FT	8.57	1.23	5.71	2.68
BKG05 0.5FT	10/31/2024	0.5FT	8.6	2.94	16.5	2.82
BKG01 3.0FT	10/31/2024	3.0FT	8.01	1.22	3.73	<2.00
BKG02 3.0FT	10/31/2024	3.0FT	8.82	0.704	11.2	<2.00
BKG03 4.0FT	10/31/2024	4.0FT	8.13	2.71	9.73	<2.00
BKG04 3.0FT	10/31/2024	3.0FT	8.53	0.536	4.26	<2.00
BKG05 5.0FT	10/31/2024	5.0FT	8.79	0.615	5.27	<2.00
Maximum Background Concentration @ 0.5FT			8.60	3.21	17.1	6.68
Maximum Background Concentration @ 3.0FT			8.82	1.22	11.2	<2.00
Maximum Background Concentration @ 4.0FT			8.13	2.71	9.73	<2.00
Maximum Background Concentration @ 5.0FT			8.79	0.615	5.27	<2.00

1. **Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within background concentrations.

2. **Red** faced values exceed the ECMC Table 915-1 limit(s) and native background concentrations.

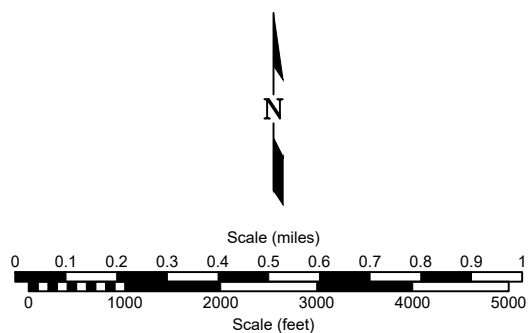
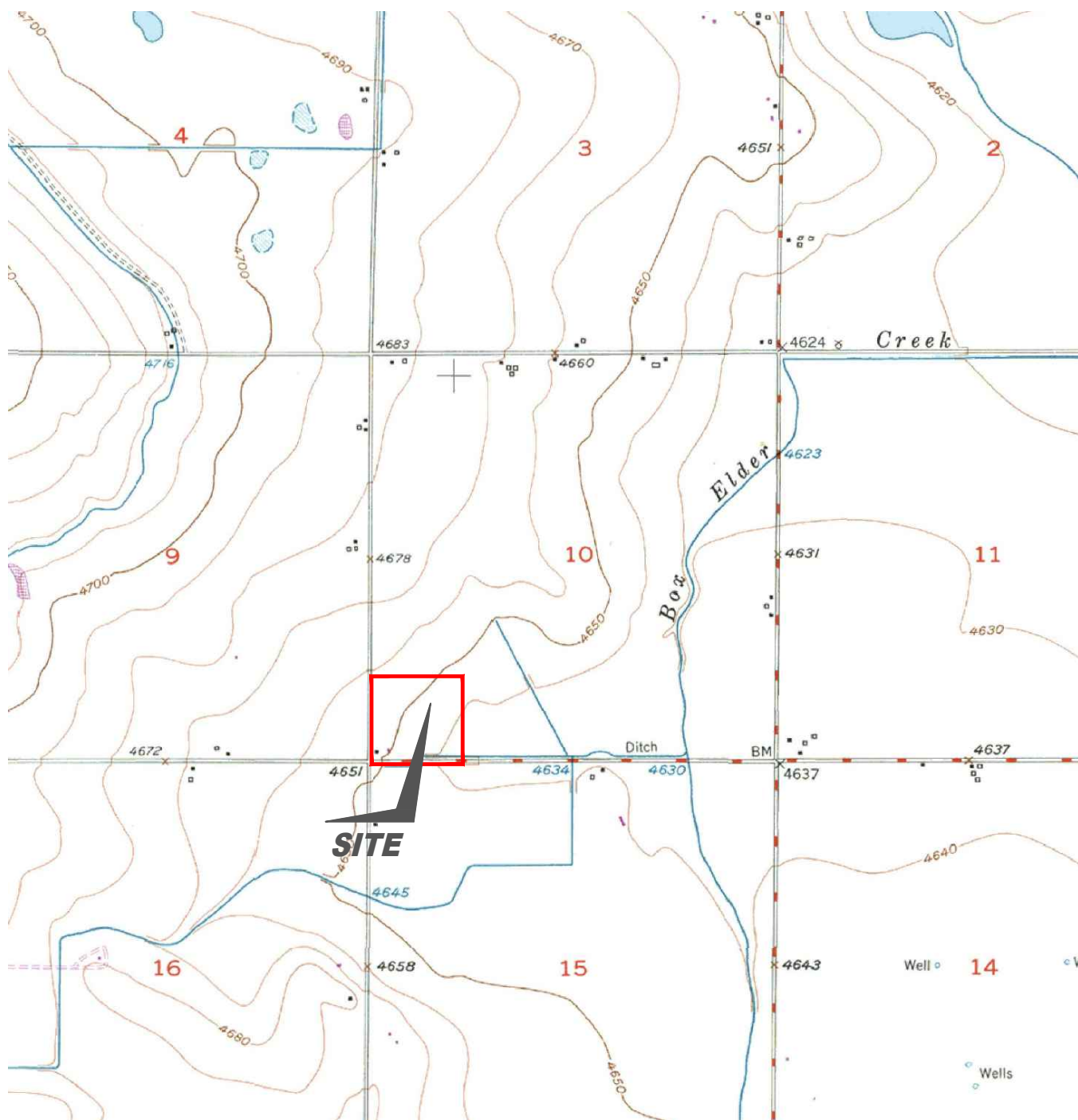
3. Brown highlighted soil analytical values indicate a regulatory exceedance.

NA - Not analyzed/Not applicable

TABLE 5  
SUMMARY OF METALS IN SOIL CHEMISTRY DATA  
NOBLE 100322  
BARTON C15-29 FACILITY, WELD COUNTY, COLORADO  
REM # 30384

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
AST E CEN. SURF.	10/14/2023	Surface	0.891	65.1	<0.200	<0.30	2.49	3.99	0.403	<0.260	0.0241	10.4
AST W CEN. SURF.	10/14/2023	Surface	0.622	6.97	<0.200	<0.30	1.22	0.867	<0.400	<0.260	<0.0200	5.04
N Dump 2FT	10/14/2023	2.0	1.25	82.3	<0.200	<0.30	3.11	4.54	0.592	0.477	0.0255	11.5
N SEP RISER 3FT	10/14/2023	3.0	0.989	33.8	<0.200	<0.30	1.84	2.53	<0.400	<0.260	<0.0200	8.38
PWV FLOOR 5FT	10/14/2023	5.0	1.50	156	0.238	<0.30	4.91	7.51	1.96	0.511	0.039	18.3
S Dump 2FT	10/14/2023	2.0	1.19	44.7	<0.200	<0.30	2.44	2.92	<0.400	<0.260	<0.0200	9.67
S SEP RISER 3FT	10/14/2023	3.0	1.08	43	<0.200	<0.30	2.37	3.12	0.401	0.266	0.0261	10.1
BKG01 0.5FT	10/31/2024	0.5FT	4.17	133	0.252	<0.30	14.8	10.3	2.42	0.458	0.0669	55.7
BKG02 0.5FT	10/31/2024	0.5FT	5.18	189	0.220	<0.30	20.1	11.9	2.72	0.532	0.0827	70.9
BKG03 0.5FT	10/31/2024	0.5FT	3.76	124	<0.200	<0.30	11.9	8.08	2.26	0.460	0.0562	46.6
BKG04 0.5FT	10/31/2024	0.5FT	4.73	112	0.228	<0.30	11.6	9.27	2.2	0.345	0.0501	43.1
BKG05 0.5FT	10/31/2024	0.5FT	3.75	121	0.254	<0.30	17.3	11.4	2.29	0.455	0.0714	58.0
BKG01 3.0FT	10/31/2024	3.0FT	4.85	110	0.232	<0.30	18.4	10.9	2.63	0.307	0.0748	64.0
BKG02 3.0FT	10/31/2024	3.0FT	2.81	79.8	<0.200	<0.30	8.94	6.72	1.94	<0.260	0.0448	35.7
BKG03 4.0FT	10/31/2024	4.0FT	4.16	123	0.247	<0.30	16.5	10.8	2.17	0.501	0.0694	57.8
BKG04 3.0FT	10/31/2024	3.0FT	2.7	63.8	<0.200	<0.30	6.16	5.16	1.83	<0.260	0.024	24.3
BKG05 5.0FT	10/31/2024	5.0FT	5.79	213	0.384	<0.30	17.5	11.8	3.18	0.359	0.0925	78.5
1.25x Maximum Background Concentration @ 0.5FT			6.48	236	0.318	<0.30	25.1	14.9	3.40	0.665	0.1034	88.6
1.25x Maximum Background Concentration @ 3.0FT			6.06	138	0.290	<0.30	23.0	13.6	3.29	0.384	0.0935	80.0
1.25x Maximum Background Concentration @ 4.0FT			5.20	154	0.309	<0.30	20.6	13.5	2.71	0.626	0.0868	72.3
1.25x Maximum Background Concentration @ 5.0FT			7.24	266	0.480	<0.30	21.9	14.8	3.98	0.449	0.1156	98.1

1. **Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
  2. **Red** faced values exceed the ECMC Table 915-1 limit(s) and native background concentrations.
  3. Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL).
  4. Non-detect background results accounted for in the highest background concentration by using the reporting limit.
- ECMC = Energy & Carbon Management Commission  
(<) = Analytical result is less than the indicated laboratory reporting limit.  
mg/kg = Milligrams per kilogram  
ft. = Feet  
bgs = Below ground surface  
\* Indicates laboratory minimum detection limit in excess of SSL  
NA - Not analyzed/Not applicable



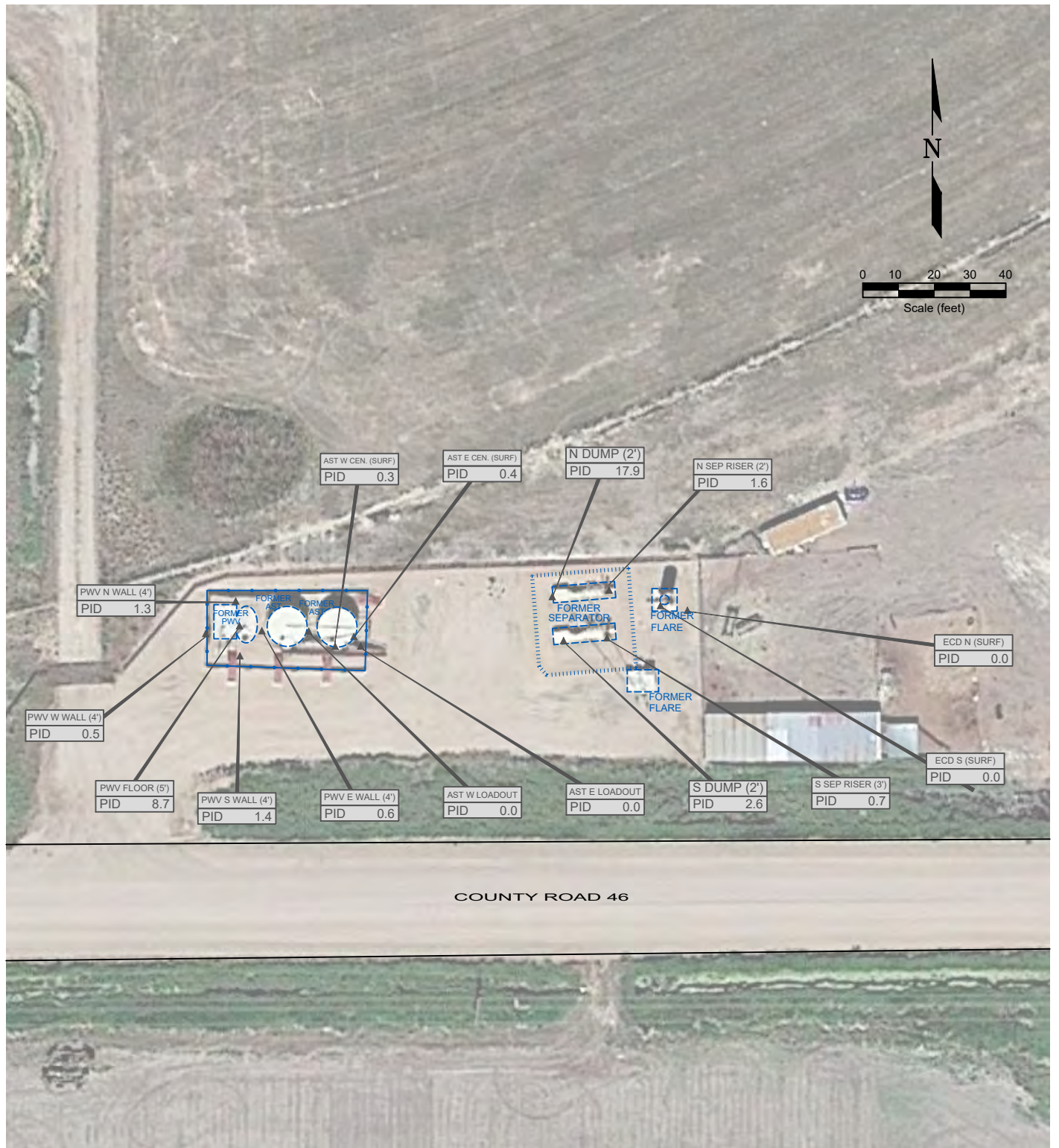
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1  
SITE LOCATION MAP

**NOBLE ENERGY INC - BARTON C 15-29**  
SWSW Sec. 10, T4N, R64W, 6th PM  
Weld County, Colorado  
40.319902°, -104.539647°

Project # <b>CO23-263</b>	API #	Facility # <b>413215</b>
Date <b>1/20/25</b>	Remediation # <b>30384</b>	Filename <b>23263T</b>






#### LEGEND

- WELLHEAD LOCATION
  - ▲ PID READING LOCATION
  - ABOVE GROUND STORAGE TANK
  - FORMER FORMER FACILITY
  - FLOW LINE
  - CONTAINMENT BERM
  - FENCE LINE
- FL01 PID READING LOCATION IDENTIFICATION  
PID 0.1 PHOTO IONIZATION DETECTION (ppm)

Figure 2  
SITE MAP

**NOBLE ENERGY INC - BARTON C 15-29**  
SWSW Sec. 10, T4N, R64W, 6th PM  
Weld County, Colorado  
40.319902°, -104.539647°

Project # <b>CO23-263</b>	API #	Facility # <b>413215</b>	
Date <b>1/20/25</b>	Remediation # <b>30384</b>	Filename <b>23263Q</b>	







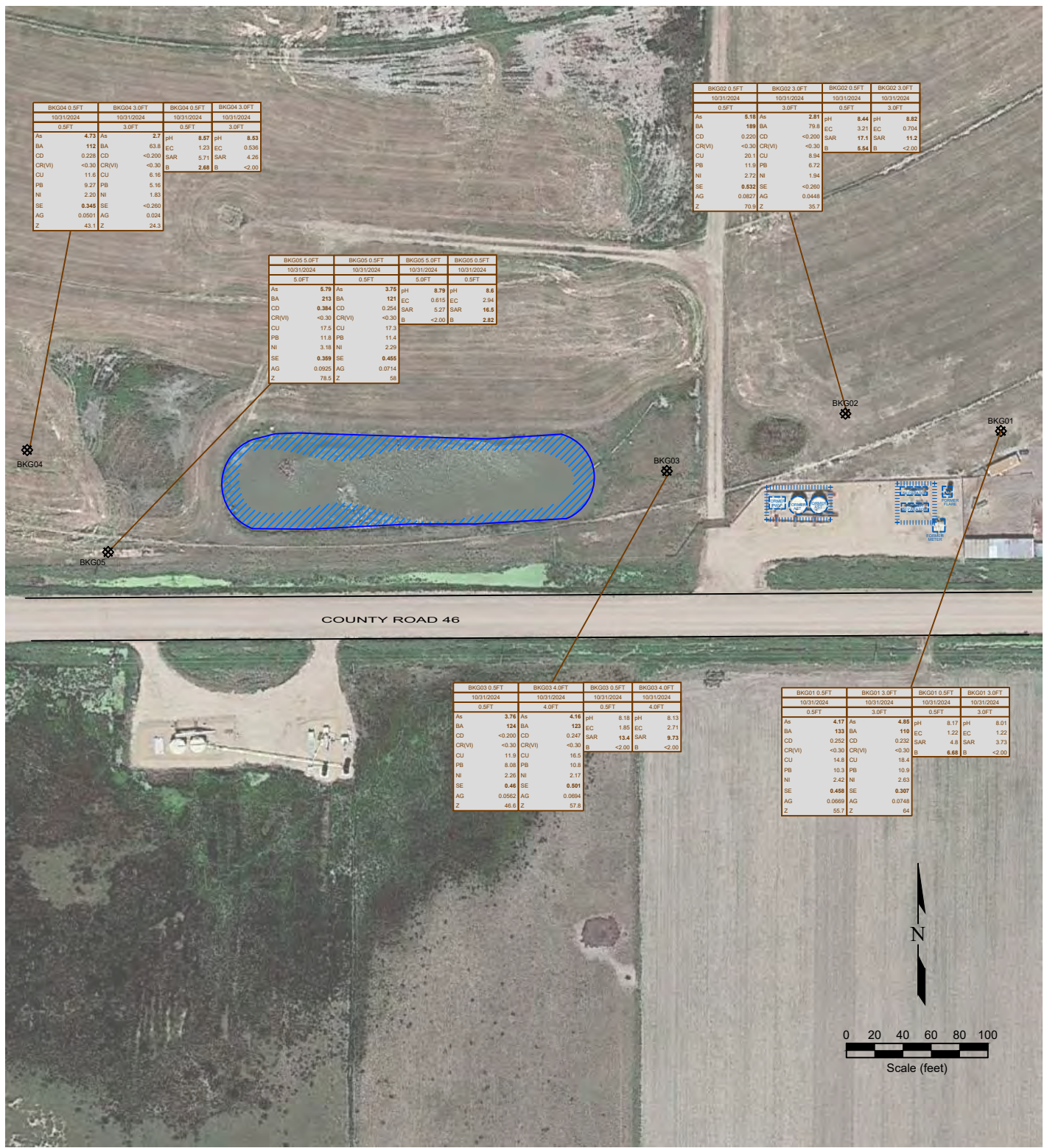


Figure 4  
BACKGROUND SAMPLE SOIL CHEMISTRY MAP

NOBLE ENERGY INC - BARTON C 15-29  
SWSW Sec. 10, T4N, R64W, 6th PM  
Weld County, Colorado  
40.319902°, -104.539647°

Project No. CO23-263	API #	Facility # 413215	<b>RE</b> REMONT ENVIRONMENTAL
Date 11/08/2023	Remediation # 30384	Filename 23263QFC1	

# Photo Log



***Description:***

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# Photo Log



***Description:***

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# Photo Log



***Description:***

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# Photo Log



***Description:***

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# Photo Log



***Description:***

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# Photo Log



***Description:***

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# Photo Log



***Description:***

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# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 26, 2023

Paul Henchan

Fremont Environmental

PO Box 1289

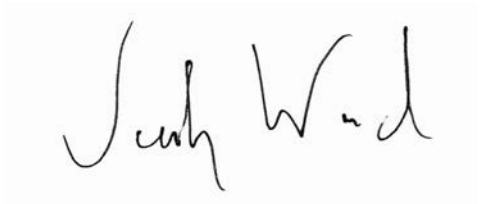
Wellington, CO 80549

RE: Noble - Barton C 15-19 Facility

Work Order #2310297

Enclosed are the results of analyses for samples received by Summit Scientific on 10/16/23 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 - Barton C 15-19 Facility  
Project Number: UWRWE-A2428-ABN  
Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PWV FLOOR 5FT	2310297-01	Soil	10/14/23 00:00	10/16/23 16:30
AST W CEN. SURF.	2310297-02	Soil	10/14/23 00:00	10/16/23 16:30
AST E CEN. SURF.	2310297-03	Soil	10/14/23 00:00	10/16/23 16:30
N Dump 2FT	2310297-04	Soil	10/14/23 00:00	10/16/23 16:30
S Dump 2FT	2310297-05	Soil	10/14/23 00:00	10/16/23 16:30
N SEP RISER 3FT	2310297-06	Soil	10/14/23 00:00	10/16/23 16:30
S SEP RISER 3FT	2310297-07	Soil	10/14/23 00:00	10/16/23 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
2310297	

Send Data To:		Send Invoice To:	
Client: Fremont Environmental, Inc.	Project Manager: Henehan	Company: Chevron	
Address: 8305 6th St.,	E-Mail: Fremont Distribution List	Project Name/Location:	
City/State/Zip: Wellington, CO, 80549		AFE#:	
Phone: 603-477-6907	Project Name: Noble - Barton C15-19 (Facility)	PO/Billing Codes: UWRWE - A2428 - ABN	
Sampler Name: Ethan Black	Project Number:	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	BTEX, Naphthalene, TMBs	TPH (C6-C36)	PAH	SAR, EC, pH, Boron	TDS, Chloride, Sulfate		Metals (915-1)
1	PWV Floor SFT	10/14/23		2			X			X			X	X	X	X		X	
2	AST W CEN. SURF.																		
3	AST E CEN. SURF.																		
4	N Dump 2FT																		
5	S Dump 2FT																		
6	N SEP Riser 3FT																		
7	S SEP Riser 3FT																		
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: <u>Ethan Black</u>	Date/Time: <u>10/16/23</u> 0630	Received by: <u>S2</u>	Date/Time: <u>10/16/23</u> 0630	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <u>SL</u>	Date/Time: <u>10/16/23</u> 1030	Received by: <u>[Signature]</u>	Date/Time: <u>10/16/23</u> 1030	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by: <u>[Signature]</u>	Date/Time: <u>10/16/23</u> 1030	Received by: <u>[Signature]</u>	Date/Time: <u>10/16/23</u> 1030	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: <u>10.9</u>	Corrected Temperature: <u>0</u>	IR gun #: <u>1</u>	HNO3 lot #:			

S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2310297Client: FremontClient Project ID: Noble-Barton CR-19 (Facility)Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐

Airbill #: \_\_\_\_\_

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

Matrix (Check all that apply)

Air ☐Solid/Solid ☒Water ☐Other ☐

Temp (°C)

10.9

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"/>	at JOE
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 checked="" type="checkbox"/>	<input type="checkbox"/>	no time stamps
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name

Date/Time

AS

10/10/23



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Barton C 15-19 Facility  
Project Number: UWRWE-A2428-ABN  
Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**PWV FLOOR 5FT**  
**2310297-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ0679	10/17/23	10/18/23	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: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0405	101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0426	107 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0512	128 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0678	10/17/23	10/19/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	9.89	79.1 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Barton C 15-19 Facility  
Project Number: UWRWE-A2428-ABN  
Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**PWV FLOOR 5FT**  
**2310297-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0661	10/17/23	10/18/23	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: **10/14/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0152	45.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0172	51.6 %	40-150		"	"	"	"	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGJ0839	10/20/23	10/24/23	EPA 6020B	

**Total Metals by EPA 6020B**

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Barton C 15-19 Facility  
Project Number: UWRWE-A2428-ABN  
Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**PWV FLOOR 5FT**  
**2310297-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.50	0.200	mg/kg dry	1	BGJ0924	10/24/23	10/25/23	EPA 6020B	
Barium	156	0.400	"	"	"	"	"	"	
Cadmium	0.238	0.200	"	"	"	"	"	"	
Copper	4.91	0.400	"	"	"	"	"	"	
Lead	7.51	0.200	"	"	"	"	"	"	
Nickel	1.96	0.400	"	"	"	"	"	"	
Silver	0.0390	0.0200	"	"	"	"	"	"	
Zinc	18.3	0.400	"	"	"	"	"	"	
Selenium	0.511	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0881	10/23/23	10/23/23	EPA 7196A	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	50.9	0.0500	mg/L dry	1	BGJ0842	10/20/23	10/24/23	EPA 6020B	
Magnesium	34.7	0.0500	"	"	"	"	"	"	
Sodium	190	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	5.03	0.00100	units	1	BGJ1015	10/25/23	10/25/23	Calculation	

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Barton C 15-19 Facility  
Project Number: UWRWE-A2428-ABN  
Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**PWV FLOOR 5FT**  
**2310297-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	84.1			%	1	BGJ0973	10/25/23	10/25/23	Calculation	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	1.34	0.0100		mmhos/cm	1	BGJ0894	10/23/23	10/23/23	EPA 120.1	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.88			pH Units	1	BGJ0895	10/23/23	10/23/23	EPA 9045D	

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Barton C 15-19 Facility  
Project Number: UWRWE-A2428-ABN  
Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**AST W CEN. SURF.**  
**2310297-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ0679	10/17/23	10/18/23	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: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0454	114 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0412	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0421	105 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0678	10/17/23	10/19/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	14.2	114 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Barton C 15-19 Facility  
Project Number: UWRWE-A2428-ABN  
Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**AST W CEN. SURF.**  
**2310297-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Acenaphthene	ND	0.00500		mg/kg	1	BGJ0661	10/17/23	10/18/23	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: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 2-Methylnaphthalene-d10	0.0151	45.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0234	70.2 %		40-150		"	"	"	"	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BGJ0839	10/20/23	10/24/23	EPA 6020B	

**Total Metals by EPA 6020B**

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Wellington CO, 80549

Project: Noble - Barton C 15-19 Facility  
Project Number: UWRWE-A2428-ABN  
Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**AST W CEN. SURF.**  
**2310297-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Arsenic</b>	<b>0.622</b>	0.200	mg/kg dry	1	BGJ0924	10/24/23	10/25/23	EPA 6020B	
<b>Barium</b>	<b>6.97</b>	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
<b>Copper</b>	<b>1.22</b>	0.400	"	"	"	"	"	"	
<b>Lead</b>	<b>0.867</b>	0.200	"	"	"	"	"	"	
Nickel	ND	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
<b>Zinc</b>	<b>5.04</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0881	10/23/23	10/23/23	EPA 7196A	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>62.5</b>	0.0500	mg/L dry	1	BGJ0842	10/20/23	10/24/23	EPA 6020B	
<b>Magnesium</b>	<b>21.0</b>	0.0500	"	"	"	"	"	"	
<b>Sodium</b>	<b>83.9</b>	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Sodium Adsorption Ratio</b>	<b>2.34</b>	0.00100	units	1	BGJ1015	10/25/23	10/25/23	Calculation	

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Wellington CO, 80549

Project: Noble - Barton C 15-19 Facility  
Project Number: UWRWE-A2428-ABN  
Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**AST W CEN. SURF.**  
**2310297-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	97.9			%	1	BGJ0973	10/25/23	10/25/23	Calculation	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	1.01	0.0100		mmhos/cm	1	BGJ0894	10/23/23	10/23/23	EPA 120.1	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.65			pH Units	1	BGJ0895	10/23/23	10/23/23	EPA 9045D	

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Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**AST E CEN. SURE.**  
**2310297-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ0679	10/17/23	10/18/23	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: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0486	121 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0411	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0388	96.9 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0678	10/17/23	10/19/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.90	71.2 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**AST E CEN. SURF.**  
**2310297-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0661	10/17/23	10/18/23	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: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0142	42.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0175	52.4 %	40-150		"	"	"	"	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0839	10/20/23	10/24/23	EPA 6020B	

**Total Metals by EPA 6020B**

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Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**AST E CEN. SURE.**  
**2310297-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Arsenic</b>	<b>0.891</b>	0.200	mg/kg dry	1	BGJ0924	10/24/23	10/25/23	EPA 6020B	
<b>Barium</b>	<b>65.1</b>	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
<b>Copper</b>	<b>2.49</b>	0.400	"	"	"	"	"	"	
<b>Lead</b>	<b>3.99</b>	0.200	"	"	"	"	"	"	
<b>Nickel</b>	<b>0.403</b>	0.400	"	"	"	"	"	"	
<b>Silver</b>	<b>0.0241</b>	0.0200	"	"	"	"	"	"	
<b>Zinc</b>	<b>10.4</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0881	10/23/23	10/23/23	EPA 7196A	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>62.9</b>	0.0500	mg/L dry	1	BGJ0842	10/20/23	10/24/23	EPA 6020B	
<b>Magnesium</b>	<b>25.2</b>	0.0500	"	"	"	"	"	"	
<b>Sodium</b>	<b>130</b>	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Sodium Adsorption Ratio</b>	<b>3.50</b>	0.00100	units	1	BGJ1015	10/25/23	10/25/23	Calculation	

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Project: Noble - Barton C 15-19 Facility  
Project Number: UWRWE-A2428-ABN  
Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**AST E CEN. SURE.**  
**2310297-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	86.4			%	1	BGJ0973	10/25/23	10/25/23	Calculation	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	1.11	0.0100		mmhos/cm	1	BGJ0894	10/23/23	10/23/23	EPA 120.1	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.02			pH Units	1	BGJ0895	10/23/23	10/23/23	EPA 9045D	

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Project: Noble - Barton C 15-19 Facility  
Project Number: UWRWE-A2428-ABN  
Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**N Dump 2FT**  
**2310297-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ0679	10/17/23	10/18/23	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: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0456	114 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0412	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0391	97.6 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0678	10/17/23	10/19/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	13.4	107 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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**Reported:**  
10/26/23 15:22

**N Dump 2FT**  
**2310297-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0661	10/17/23	10/18/23	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: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0145	43.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0156	46.7 %	40-150		"	"	"	"	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0839	10/20/23	10/24/23	EPA 6020B	

**Total Metals by EPA 6020B**

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**Reported:**  
10/26/23 15:22

**N Dump 2FT**  
**2310297-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.25	0.200	mg/kg dry	1	BGJ0924	10/24/23	10/25/23	EPA 6020B	
Barium	82.3	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.11	0.400	"	"	"	"	"	"	
Lead	4.54	0.200	"	"	"	"	"	"	
Nickel	0.592	0.400	"	"	"	"	"	"	
Silver	0.0255	0.0200	"	"	"	"	"	"	
Zinc	11.5	0.400	"	"	"	"	"	"	
Selenium	0.477	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0881	10/23/23	10/23/23	EPA 7196A	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	413	0.0500	mg/L dry	1	BGJ0842	10/20/23	10/24/23	EPA 6020B	
Magnesium	84.8	0.0500	"	"	"	"	"	"	
Sodium	218	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	2.55	0.00100	units	1	BGJ1015	10/25/23	10/25/23	Calculation	

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**Reported:**  
10/26/23 15:22

**N Dump 2FT**  
**2310297-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	86.2			%	1	BGJ0973	10/25/23	10/25/23	Calculation	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	2.95	0.0100		mmhos/cm	1	BGJ0894	10/23/23	10/23/23	EPA 120.1	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.79			pH Units	1	BGJ0895	10/23/23	10/23/23	EPA 9045D	

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Barton C 15-19 Facility  
Project Number: UWRWE-A2428-ABN  
Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**S Dump 2FT**  
**2310297-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ0679	10/17/23	10/18/23	EPA 8260B	
<b>Toluene</b>	<b>0.013</b>	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.015</b>	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: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0393	98.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0413	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0394	98.5 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0678	10/17/23	10/19/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	12.6	101 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - Barton C 15-19 Facility  
Project Number: UWRWE-A2428-ABN  
Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**S Dump 2FT**  
**2310297-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0661	10/17/23	10/18/23	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: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0137	41.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0162	48.6 %	40-150		"	"	"	"	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0839	10/20/23	10/24/23	EPA 6020B	

**Total Metals by EPA 6020B**

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Project: Noble - Barton C 15-19 Facility  
Project Number: UWRWE-A2428-ABN  
Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**S Dump 2FT**  
**2310297-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Arsenic</b>	<b>1.19</b>	0.200	mg/kg dry	1	BGJ0924	10/24/23	10/25/23	EPA 6020B	
<b>Barium</b>	<b>44.7</b>	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
<b>Copper</b>	<b>2.44</b>	0.400	"	"	"	"	"	"	
<b>Lead</b>	<b>2.92</b>	0.200	"	"	"	"	"	"	
Nickel	ND	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
<b>Zinc</b>	<b>9.67</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0881	10/23/23	10/23/23	EPA 7196A	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>150</b>	0.0500	mg/L dry	1	BGJ0842	10/20/23	10/24/23	EPA 6020B	
<b>Magnesium</b>	<b>45.0</b>	0.0500	"	"	"	"	"	"	
<b>Sodium</b>	<b>237</b>	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Sodium Adsorption Ratio</b>	<b>4.36</b>	0.00100	units	1	BGJ1015	10/25/23	10/25/23	Calculation	

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Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**S Dump 2FT**  
**2310297-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	83.6			%	1	BGJ0973	10/25/23	10/25/23	Calculation	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	1.84	0.0100		mmhos/cm	1	BGJ0894	10/23/23	10/23/23	EPA 120.1	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.93			pH Units	1	BGJ0895	10/23/23	10/23/23	EPA 9045D	

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Project Number: UWRWE-A2428-ABN  
Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**N SEP RISER 3FT**  
**2310297-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ0679	10/17/23	10/18/23	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: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0473	118 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0411	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0386	96.4 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0678	10/17/23	10/19/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	12.7	102 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project Number: UWRWE-A2428-ABN  
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**Reported:**  
10/26/23 15:22

**N SEP RISER 3FT**  
**2310297-06 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0661	10/17/23	10/18/23	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: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0184	55.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0198	59.5 %	40-150		"	"	"	"	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0839	10/20/23	10/24/23	EPA 6020B	

**Total Metals by EPA 6020B**

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Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**N SEP RISER 3FT**  
**2310297-06 (Soil)**

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**Total Metals by EPA 6020B**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Arsenic</b>	<b>0.989</b>	0.200	mg/kg dry	1	BGJ0924	10/24/23	10/25/23	EPA 6020B	
<b>Barium</b>	<b>33.8</b>	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
<b>Copper</b>	<b>1.84</b>	0.400	"	"	"	"	"	"	
<b>Lead</b>	<b>2.53</b>	0.200	"	"	"	"	"	"	
Nickel	ND	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
<b>Zinc</b>	<b>8.38</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0881	10/23/23	10/23/23	EPA 7196A	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>142</b>	0.0500	mg/L dry	1	BGJ0842	10/20/23	10/24/23	EPA 6020B	
<b>Magnesium</b>	<b>33.8</b>	0.0500	"	"	"	"	"	"	
<b>Sodium</b>	<b>118</b>	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Sodium Adsorption Ratio</b>	<b>2.31</b>	0.00100	units	1	BGJ1015	10/25/23	10/25/23	Calculation	

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Project Number: UWRWE-A2428-ABN  
Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**N SEP RISER 3FT**  
**2310297-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	94.3			%	1	BGJ0973	10/25/23	10/25/23	Calculation	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	1.51	0.0100		mmhos/cm	1	BGJ0894	10/23/23	10/23/23	EPA 120.1	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.87			pH Units	1	BGJ0895	10/23/23	10/23/23	EPA 9045D	

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Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**S SEP RISER 3FT**  
**2310297-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ0679	10/17/23	10/18/23	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: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0360	90.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0392	98.1 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0388	97.1 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0678	10/17/23	10/19/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.7	85.6 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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**Reported:**  
10/26/23 15:22

**S SEP RISER 3FT**  
**2310297-07 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0661	10/17/23	10/19/23	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: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 2-Methylnaphthalene-d10	0.0152	45.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0183	54.8 %	40-150		"	"	"	"	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGJ0839	10/20/23	10/24/23	EPA 6020B	

**Total Metals by EPA 6020B**

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Barton C 15-19 Facility  
Project Number: UWRWE-A2428-ABN  
Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**S SEP RISER 3FT**  
**2310297-07 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.08	0.200	mg/kg dry	1	BGJ0924	10/24/23	10/25/23	EPA 6020B	
Barium	43.0	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.37	0.400	"	"	"	"	"	"	
Lead	3.12	0.200	"	"	"	"	"	"	
Nickel	0.401	0.400	"	"	"	"	"	"	
Silver	0.0261	0.0200	"	"	"	"	"	"	
Zinc	10.1	0.400	"	"	"	"	"	"	
Selenium	0.266	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0881	10/23/23	10/23/23	EPA 7196A	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	68.9	0.0500	mg/L dry	1	BGJ0842	10/20/23	10/25/23	EPA 6020B	
Magnesium	10.6	0.0500	"	"	"	"	"	"	
Sodium	17.6	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.521	0.00100	units	1	BGJ1015	10/25/23	10/25/23	Calculation	

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**Reported:**  
10/26/23 15:22

**S SEP RISER 3FT**  
**2310297-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	93.5			%	1	BGJ0973	10/25/23	10/25/23	Calculation	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.546	0.0100		mmhos/cm	1	BGJ0894	10/23/23	10/23/23	EPA 120.1	

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

Date Sampled: **10/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.91			pH Units	1	BGJ0895	10/23/23	10/23/23	EPA 9045D	

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**Reported:**  
10/26/23 15:22

## 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 BGJ0679 - EPA 5030 Soil MS

##### Blank (BGJ0679-BLK1)

Prepared: 10/17/23 Analyzed: 10/18/23

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	0.0386		"	0.0400		96.4	50-150			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	50-150			

##### LCS (BGJ0679-BS1)

Prepared: 10/17/23 Analyzed: 10/18/23

Benzene	0.109	0.0020	mg/kg	0.100		109	70-130			
Toluene	0.108	0.0050	"	0.100		108	70-130			
Ethylbenzene	0.103	0.0050	"	0.100		103	70-130			
m,p-Xylene	0.204	0.010	"	0.200		102	70-130			
o-Xylene	0.101	0.0050	"	0.100		101	70-130			
1,2,4-Trimethylbenzene	0.0962	0.0050	"	0.100		96.2	70-130			
1,3,5-Trimethylbenzene	0.0975	0.0050	"	0.100		97.5	70-130			
Naphthalene	0.0862	0.0038	"	0.100		86.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0385		"	0.0400		96.2	50-150			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0379		"	0.0400		94.8	50-150			

##### Matrix Spike (BGJ0679-MS1)

Source: 2310291-01

Prepared: 10/17/23 Analyzed: 10/18/23

Benzene	0.0943	0.0020	mg/kg	0.100	ND	94.3	70-130			
Toluene	0.0846	0.0050	"	0.100	ND	84.6	70-130			
Ethylbenzene	0.0796	0.0050	"	0.100	ND	79.6	70-130			
m,p-Xylene	0.159	0.010	"	0.200	ND	79.3	70-130			
o-Xylene	0.0821	0.0050	"	0.100	ND	82.1	70-130			
1,2,4-Trimethylbenzene	0.0991	0.0050	"	0.100	ND	99.1	70-130			
1,3,5-Trimethylbenzene	0.0729	0.0050	"	0.100	ND	72.9	70-130			
Naphthalene	0.118	0.0038	"	0.100	ND	118	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0463		"	0.0400		116	50-150			
Surrogate: Toluene-d8	0.0401		"	0.0400		100	50-150			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.5	50-150			

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**Reported:**  
10/26/23 15:22

### 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 BGJ0679 - EPA 5030 Soil MS

##### Matrix Spike Dup (BGJ0679-MSD1)

Source: 2310291-01

Prepared: 10/17/23 Analyzed: 10/18/23

Benzene	0.0865	0.0020	mg/kg	0.100	ND	86.5	70-130	8.63	30	
Toluene	0.0752	0.0050	"	0.100	ND	75.2	70-130	11.8	30	
Ethylbenzene	0.0721	0.0050	"	0.100	ND	72.1	70-130	9.85	30	
m,p-Xylene	0.147	0.010	"	0.200	ND	73.5	70-130	7.58	30	
o-Xylene	0.0751	0.0050	"	0.100	ND	75.1	70-130	8.97	30	
1,2,4-Trimethylbenzene	0.0915	0.0050	"	0.100	ND	91.5	70-130	7.97	30	
1,3,5-Trimethylbenzene	0.0959	0.0050	"	0.100	ND	95.9	70-130	27.2	30	
Naphthalene	0.108	0.0038	"	0.100	ND	108	70-130	8.35	30	
Surrogate: 1,2-Dichloroethane-d4	0.0458		"	0.0400		114	50-150			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.8	50-150			

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**Reported:**  
10/26/23 15:22

**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 BGJ0678 - EPA 3550A**

**Blank (BGJ0678-BLK1)**

Prepared: 10/17/23 Analyzed: 10/18/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.4		"	12.5		99.2	30-150			

**LCS (BGJ0678-BS1)**

Prepared: 10/17/23 Analyzed: 10/18/23

C10-C28 (DRO)	553	50	mg/kg	500		111	70-130			
Surrogate: o-Terphenyl	12.3		"	12.5		98.2	30-150			

**Matrix Spike (BGJ0678-MS1)**

Source: 2310291-01

Prepared: 10/17/23 Analyzed: 10/18/23

C10-C28 (DRO)	418	50	mg/kg	500	16.1	80.4	70-130			
Surrogate: o-Terphenyl	9.60		"	12.5		76.8	30-150			

**Matrix Spike Dup (BGJ0678-MSD1)**

Source: 2310291-01

Prepared: 10/17/23 Analyzed: 10/19/23

C10-C28 (DRO)	450	50	mg/kg	500	16.1	86.8	70-130	7.31	20	
Surrogate: o-Terphenyl	11.7		"	12.5		93.5	30-150			

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**Reported:**  
10/26/23 15:22

### 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 BGJ0661 - EPA 5030 Soil MS

##### Blank (BGJ0661-BLK1)

Prepared: 10/17/23 Analyzed: 10/18/23

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	0.0324		"	0.0333		97.2	40-150			
Surrogate: Fluoranthene-d10	0.0360		"	0.0333		108	40-150			

##### LCS (BGJ0661-BS1)

Prepared: 10/17/23 Analyzed: 10/18/23

Acenaphthene	0.0337	0.00500	mg/kg	0.0333	101	31-137
Anthracene	0.0351	0.00500	"	0.0333	105	30-120
Benzo (a) anthracene	0.0339	0.00500	"	0.0333	102	30-120
Benzo (a) pyrene	0.0326	0.00500	"	0.0333	97.7	30-120
Benzo (b) fluoranthene	0.0333	0.00500	"	0.0333	99.9	30-120
Benzo (k) fluoranthene	0.0342	0.00500	"	0.0333	103	30-120
Chrysene	0.0356	0.00500	"	0.0333	107	30-120
Dibenz (a,h) anthracene	0.0306	0.00500	"	0.0333	91.9	30-120
Fluoranthene	0.0350	0.00500	"	0.0333	105	30-120
Fluorene	0.0337	0.00500	"	0.0333	101	30-120
Indeno (1,2,3-cd) pyrene	0.0302	0.00500	"	0.0333	90.6	30-120
Pyrene	0.0353	0.00500	"	0.0333	106	35-142
1-Methylnaphthalene	0.0332	0.00500	"	0.0333	99.7	35-142
2-Methylnaphthalene	0.0342	0.00500	"	0.0333	103	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0353		"	0.0333	106	40-150
Surrogate: Fluoranthene-d10	0.0350		"	0.0333	105	40-150

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Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

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

### Summit Scientific

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

#### Batch BGJ0661 - EPA 5030 Soil MS

##### Matrix Spike (BGJ0661-MS1)

Source: 2310269-05

Prepared: 10/17/23 Analyzed: 10/18/23

Acenaphthene	0.0229	0.00500	mg/kg	0.0333	ND	68.6	31-137		
Anthracene	0.0200	0.00500	"	0.0333	ND	60.0	30-120		
Benzo (a) anthracene	0.0214	0.00500	"	0.0333	ND	64.1	30-120		
Benzo (a) pyrene	0.0194	0.00500	"	0.0333	ND	58.3	30-120		
Benzo (b) fluoranthene	0.0197	0.00500	"	0.0333	ND	59.0	30-120		
Benzo (k) fluoranthene	0.0197	0.00500	"	0.0333	ND	59.1	30-120		
Chrysene	0.0216	0.00500	"	0.0333	ND	64.9	30-120		
Dibenz (a,h) anthracene	0.0160	0.00500	"	0.0333	ND	48.1	30-120		
Fluoranthene	0.0229	0.00500	"	0.0333	ND	68.7	30-120		
Fluorene	0.0199	0.00500	"	0.0333	ND	59.7	30-120		
Indeno (1,2,3-cd) pyrene	0.0178	0.00500	"	0.0333	ND	53.3	30-120		
Pyrene	0.0222	0.00500	"	0.0333	ND	66.7	35-142		
1-Methylnaphthalene	0.0192	0.00500	"	0.0333	ND	57.6	15-130		
2-Methylnaphthalene	0.0202	0.00500	"	0.0333	ND	60.6	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0197		"	0.0333		59.1	40-150		
Surrogate: Fluoranthene-d10	0.0207		"	0.0333		62.1	40-150		

##### Matrix Spike Dup (BGJ0661-MSD1)

Source: 2310269-05

Prepared: 10/17/23 Analyzed: 10/18/23

Acenaphthene	0.0238	0.00500	mg/kg	0.0333	ND	71.5	31-137	4.19	30
Anthracene	0.0259	0.00500	"	0.0333	ND	77.7	30-120	25.6	30
Benzo (a) anthracene	0.0276	0.00500	"	0.0333	ND	82.8	30-120	25.5	30
Benzo (a) pyrene	0.0244	0.00500	"	0.0333	ND	73.3	30-120	22.8	30
Benzo (b) fluoranthene	0.0247	0.00500	"	0.0333	ND	74.2	30-120	22.8	30
Benzo (k) fluoranthene	0.0249	0.00500	"	0.0333	ND	74.8	30-120	23.3	30
Chrysene	0.0274	0.00500	"	0.0333	ND	82.1	30-120	23.3	30
Dibenz (a,h) anthracene	0.0205	0.00500	"	0.0333	ND	61.5	30-120	24.3	30
Fluoranthene	0.0303	0.00500	"	0.0333	ND	91.0	30-120	27.9	30
Fluorene	0.0230	0.00500	"	0.0333	ND	69.0	30-120	14.4	30
Indeno (1,2,3-cd) pyrene	0.0215	0.00500	"	0.0333	ND	64.4	30-120	19.0	30
Pyrene	0.0288	0.00500	"	0.0333	ND	86.5	35-142	25.9	30
1-Methylnaphthalene	0.0238	0.00500	"	0.0333	ND	71.4	15-130	21.5	50
2-Methylnaphthalene	0.0247	0.00500	"	0.0333	ND	74.0	15-130	19.9	50
Surrogate: 2-Methylnaphthalene-d10	0.0247		"	0.0333		74.2	40-150		
Surrogate: Fluoranthene-d10	0.0273		"	0.0333		81.9	40-150		

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

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

**Batch BGJ0839 - EPA 3050B**

**Blank (BGJ0839-BLK1)**

Prepared: 10/20/23 Analyzed: 10/24/23

Boron ND 2.00 mg/L

**LCS (BGJ0839-BS1)**

Prepared: 10/20/23 Analyzed: 10/24/23

Boron 4.81 2.00 mg/L 5.00 96.1 80-120

**Duplicate (BGJ0839-DUP1)**

**Source: 2310295-01**

Prepared: 10/20/23 Analyzed: 10/24/23

Boron 0.477 2.00 mg/L 0.489 2.45 20

**Matrix Spike (BGJ0839-MS1)**

**Source: 2310295-01**

Prepared: 10/20/23 Analyzed: 10/24/23

Boron 4.26 2.00 mg/L 5.00 0.489 75.4 75-125

**Matrix Spike Dup (BGJ0839-MSD1)**

**Source: 2310295-01**

Prepared: 10/20/23 Analyzed: 10/24/23

Boron 4.24 2.00 mg/L 5.00 0.489 75.0 75-125 0.460 25

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

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

**Batch BGJ0924 - EPA 3050B**

**Blank (BGJ0924-BLK1)**

Prepared: 10/24/23 Analyzed: 10/25/23

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 (BGJ0924-BS1)**

Prepared: 10/24/23 Analyzed: 10/25/23

Arsenic	36.4	0.200	mg/kg wet	40.0	91.0	80-120
Barium	35.0	0.400	"	40.0	87.6	80-120
Cadmium	1.91	0.200	"	2.00	95.7	80-120
Copper	37.4	0.400	"	40.0	93.5	80-120
Lead	23.6	0.200	"	20.0	118	80-120
Nickel	37.7	0.400	"	40.0	94.1	80-120
Silver	1.93	0.0200	"	2.00	96.3	80-120
Zinc	37.7	0.400	"	40.0	94.3	80-120
Selenium	4.42	0.260	"	4.00	110	80-120

**Duplicate (BGJ0924-DUP1)**

Source: 2310190-01

Prepared: 10/24/23 Analyzed: 10/25/23

Arsenic	1.33	0.200	mg/kg dry	1.66	22.2	20	QR-01
Barium	36.7	0.400	"	39.8	8.18	20	
Cadmium	0.0586	0.200	"	0.0662	12.2	20	
Copper	1.54	0.400	"	1.74	11.8	20	
Lead	120	0.200	"	4.53	185	20	QR-01
Nickel	1.28	0.400	"	1.53	17.7	20	
Silver	0.0215	0.0200	"	0.00886	83.3	20	QR-01
Zinc	6.51	0.400	"	7.67	16.4	20	
Selenium	ND	0.260	"	ND		20	

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Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**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 BGJ0924 - EPA 3050B**

Matrix Spike (BGJ0924-MS1)			Source: 2310190-01		Prepared: 10/24/23		Analyzed: 10/25/23				
Arsenic	38.3	0.200	mg/kg dry	42.2	1.66	86.8	75-125				
Barium	67.9	0.400	"	42.2	39.8	66.5	75-125				QM-07
Cadmium	1.61	0.200	"	2.11	0.0662	73.4	75-125				QM-07
Copper	27.2	0.400	"	42.2	1.74	60.3	75-125				QM-07
Lead	19.3	0.200	"	21.1	4.53	69.8	75-125				QM-07
Nickel	27.8	0.400	"	42.2	1.53	62.2	75-125				QM-07
Silver	1.55	0.0200	"	2.11	0.00886	73.1	75-125				QM-07
Zinc	31.9	0.400	"	42.2	7.67	57.3	75-125				QM-07
Selenium	4.88	0.260	"	4.22	ND	116	75-125				

Matrix Spike Dup (BGJ0924-MSD1)			Source: 2310190-01		Prepared: 10/24/23		Analyzed: 10/25/23				
Arsenic	40.6	0.200	mg/kg dry	42.2	1.66	92.3	75-125	5.88	25		
Barium	68.5	0.400	"	42.2	39.8	68.0	75-125	0.933	25		QM-07
Cadmium	1.63	0.200	"	2.11	0.0662	74.0	75-125	0.781	25		QM-07
Copper	28.0	0.400	"	42.2	1.74	62.2	75-125	2.94	25		QM-07
Lead	19.6	0.200	"	21.1	4.53	71.6	75-125	1.92	25		QM-07
Nickel	28.5	0.400	"	42.2	1.53	64.0	75-125	2.72	25		QM-07
Silver	1.58	0.0200	"	2.11	0.00886	74.4	75-125	1.81	25		QM-07
Zinc	32.5	0.400	"	42.2	7.67	58.9	75-125	2.07	25		QM-07
Selenium	5.01	0.260	"	4.22	ND	119	75-125	2.50	25		

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Barton C 15-19 Facility  
Project Number: UWRWE-A2428-ABN  
Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**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 BGJ0881 - 3060A Mod**

**Blank (BGJ0881-BLK1)**

Prepared & Analyzed: 10/23/23

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BGJ0881-BS1)**

Prepared & Analyzed: 10/23/23

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

**Duplicate (BGJ0881-DUP1)**

**Source: 2310297-01**

Prepared & Analyzed: 10/23/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BGJ0881-MS1)**

**Source: 2310297-01**

Prepared & Analyzed: 10/23/23

Chromium, Hexavalent 29.6 0.30 mg/kg dry 29.7 ND 99.6 75-125

**Matrix Spike Dup (BGJ0881-MSD1)**

**Source: 2310297-01**

Prepared & Analyzed: 10/23/23

Chromium, Hexavalent 28.8 0.30 mg/kg dry 29.7 ND 97.0 75-125 2.64 20

Summit Scientific

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Project Number: UWRWE-A2428-ABN  
Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

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

**Summit Scientific**

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

**Batch BGJ0842 - General Preparation**

**Blank (BGJ0842-BLK1)**

Prepared: 10/20/23 Analyzed: 10/24/23

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

**LCS (BGJ0842-BS1)**

Prepared: 10/20/23 Analyzed: 10/24/23

Calcium	5.12	0.0500	mg/L wet	5.00	102	70-130
Magnesium	5.26	0.0500	"	5.00	105	70-130
Sodium	5.52	0.0500	"	5.00	110	70-130

Summit Scientific

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Project Number: UWRWE-A2428-ABN

Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

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

**Summit Scientific**

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

**Batch BGJ0973 - General Preparation**

**Duplicate (BGJ0973-DUP1)**

**Source: 2310292-04**

Prepared & Analyzed: 10/25/23

% Solids	94.1	%	94.0	0.0636	20
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Summit Scientific

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Barton C 15-19 Facility

Project Number: UWRWE-A2428-ABN

Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**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 BGJ0894 - General Preparation**

**Blank (BGJ0894-BLK1)**

Prepared & Analyzed: 10/23/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BGJ0894-BS1)**

Prepared & Analyzed: 10/23/23

Specific Conductance (EC) 0.151 0.0100 mmhos/cm 0.150 101 95-105

**Duplicate (BGJ0894-DUP1)**

**Source: 2310052-03**

Prepared & Analyzed: 10/23/23

Specific Conductance (EC) 1.99 0.0100 mmhos/cm 1.99 0.251 20

Summit Scientific

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Barton C 15-19 Facility

Project Number: UWRWE-A2428-ABN

Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

**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 BGJ0895 - General Preparation**

**LCS (BGJ0895-BS1)**

Prepared & Analyzed: 10/23/23

pH	9.15	pH Units	9.18	99.7	95-105
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**Duplicate (BGJ0895-DUP1)**

Source: 2310292-04

Prepared & Analyzed: 10/23/23

pH	5.99	pH Units	6.02	0.500	20
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Summit Scientific

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Wellington CO, 80549

Project: Noble - Barton C 15-19 Facility  
Project Number: UWRWE-A2428-ABN  
Project Manager: Paul Henchan

**Reported:**  
10/26/23 15:22

### Notes and Definitions

QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
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