

FREMONT ENVIRONMENTAL INC.

March 14, 2024

Mr. Daniel Peterson
Noble Energy Inc.
2115 117th Avenue
Greeley, CO 80634

Subject: **Facility Closure Data Submittal**
ARENS G 22-22D
SENE Sec. 22, T4N, R65W
Weld County, Colorado
Fremont Project No. C023-271
Facility # 322598, Remediation # 30388

Dear Mr. Peterson:

As you requested, Fremont Environmental Inc. (Fremont) personnel conducted facility closure activities for the Noble Energy Inc. (Noble) Arens G 22-22D. Impacted soil was not encountered during abandonment activities. Details of the Arens G 22-22D facility closure activities are documented in the attached Closure Report. Groundwater was not encountered during facility abandonment activities.

Please contact me at (336) 541-3048 if you require any additional information. Fremont appreciates the opportunity to provide this service.

Sincerely,

FREMONT ENVIRONMENTAL INC.



Aaron Otillar
Consultant

Attachments:

- Facility Closure Checklist
- Tables
- Figures
- Photos
- Laboratory Report

<i>Third Party Owner</i>									
<i>Removal Date</i>									
<i>Sample taken? Location/Sample</i>									
<i>PID Readings</i>									
<i>Photo Number(s)</i>									

Other Facility Equipment

<i>Equipment type</i>					
<i>Equipment Condition Age</i>					
<i>Soil impacts</i>					
<i>PID Readings</i>					
<i>Sample taken? Location/Sample</i>					
<i>Photo Number(s)</i>					

Other observations regarding other facility or third party equipment:

Summary

<i>Was impacted soil identified?</i>	
No	Yes - less than 10 cubic yards
Yes - more than 10 cubic yards	
<i>Total number of samples field screened:</i>	<i>Total number of samples collected:</i>
<i>Highest PID Reading:</i>	<i>Total number of samples submitted to lab for analysis:</i>
<i>If more than 10 cubic yards of impacted soil were observed:</i>	
<i>Vertical extent:</i>	<i>Estimated spill volume:</i>
<i>Lateral extent:</i>	<i>Volume of soil removed:</i>
<i>Is additional investigation required?</i>	
<i>Was groundwater encountered during the investigation?</i>	
No	Yes - not impacted or in contact with impacted soils
Yes - groundwater impacted and/or in contact with impacted soils	
<i>Measured depth to groundwater:</i>	<i>Was remedial groundwater removal conducted? Yes No</i>
<i>Date Groundwater was encountered:</i>	<i>Commencement date of removal:</i>
<i>Sheen on groundwater? Yes No</i>	<i>Volume of groundwater removed prior to sampling:</i>
<i>Free product observed? Yes No</i>	<i>Volume of groundwater removed post sampling:</i>
<i>Total number of samples collected:</i>	<i>Total Volume of groundwater removed:</i>
<i>Total number of samples submitted to lab for analysis:</i>	

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:		Date:						Remediation Project #:	
Associated Wells:		Age of Site:						Number of Photos Attached:	
Location: (GPS coordinates of vault or southeastern tank berm for multiple)							Estimated Facility Size (acres):		
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.)									
USCS Soil Type:				Estimated Depth to Groundwater:					
Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)									
Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)									
Buried or Partially Buried Vessels									
Tank Contents									
Size (barrels)									
Age									
Construction Material									
Visual Integrity of Tank									
Condition of tank Foundation									
PID Readings									
Condition of Jumbo Line									
PID Readings									
Sample taken? Location/Sample ID#									
Photo Number(s)									
Other observations regarding partially buried vessels:									
Summary									
Was impacted soil identified?									
No			Yes - less than 10 cubic yards			Yes - more than 10 cubic yards			
Total number of samples field screened:				Total number of samples collected:					
Highest PID Reading:				Total number of samples submitted to lab for analysis:					
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?									
Was groundwater encountered during the investigation?									
No			Yes - not impacted or in contact with impacted soils			Yes - groundwater impacted and/or in contact with impacted soils			
Measured depth to groundwater:				Was remedial groundwater removal conducted? Yes No					
Date Groundwater was encountered:				Commencement date of removal:					
Sheen on groundwater? Yes No			Volume of groundwater removed prior to sampling:						
Free product observed? Yes 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
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
GRANT ARENS 02 FACILITY, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-271

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 GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)
COGCC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500**		
COGCC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500**		
AST01@0.5'	10/23/2023	0.5'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
AST02@0.5'	10/23/2023	0.5'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
PWV01-B@5'	10/23/2023	5'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
PWV01-E@4'	10/23/2023	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
SEP01-DL@4'	10/23/2023	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
SEP02-DL@4'	10/23/2023	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50

Bold faced values exceed the COGCC Table 915-1 concentrations

Red & blue highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

* Indicates laboratory minimum detection limit in excess of SSL

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

NA - Not analyzed

TABLE 2
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
GRANT ARENS 02 FACILITY, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-271

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)
COGCC 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
COGCC 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
AST01@0.5'	10/23/2023	0.5'	<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
AST02@0.5'	10/23/2023	0.5'	<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
PWV01-B@5'	10/23/2023	5'	<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
PWV01-E@4'	10/23/2023	4'	<0.00500	<0.00500	0.00744	0.0126	0.0123	0.00746	0.00894	<0.00500	0.0122	<0.00500	0.00671	0.0189	<0.00500	<0.00500
SEP01-DL@4'	10/23/2023	4'	<0.00500	<0.00500	<0.00500	0.00793	0.00576	<0.00500	<0.00500	<0.00500	0.00667	<0.00500	<0.00500	0.00791	<0.00500	<0.00500
SEP02-DL@4'	10/23/2023	4'	<0.00500	<0.00500	<0.00500	0.00808	0.00529	0.00506	<0.00500	<0.00500	0.0072	<0.00500	<0.00500	0.0106	<0.00500	<0.00500

Bold faced values exceed the COGCC Table 915-1 concentrations

Red & blue highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

* Indicates laboratory minimum detection limit in excess of SSL

NA - Not analyzed

TABLE 3
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE ENERGY INC.
GRANT ARENS 02 FACILITY, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-271

Sample ID	Sample Date	Depth (ft)	pH	EC (mmhos/cm)	SAR	Boron (mg/L)
COGCC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
AST01@0.5'	10/23/2023	0.5'	6.73	0.025	0.237	<2.00
AST02@0.5'	10/23/2023	0.5'	5.91	0.012	0.0889	<2.00
PWV01-B@5'	10/23/2023	5'	8.61	0.268	0.281	<2.00
PWV01-E@4'	10/23/2023	4'	7.67	0.13	0.0792	<2.00
SEP01-DL@4'	10/23/2023	4'	8.02	0.178	0.0743	<2.00
SEP02-DL@4'	10/23/2023	4'	8.2	0.133	0.0322	<2.00
BKG01@0.5'	10/23/2023	0.5'	7.76	0.428	1.76	<2.00
BKG01@4'	10/23/2023	4'	8.08	0.431	1.19	<2.00
BKG01@5'	10/23/2023	5'	7.88	0.554	2.34	<2.00
BKG02@0.5'	10/23/2023	0.5'	8.03	0.522	1.9	<2.00
BKG02@4'	10/23/2023	4'	7.97	0.4	1.27	<2.00
BKG02@5'	10/23/2023	5'	7.69	0.536	2.34	<2.00
BKG03@0.5'	10/23/2023	0.5'	7.69	0.582	1.67	<2.00
BKG03@4'	10/23/2023	4'	7.68	0.393	1.09	<2.00
BKG03@5'	10/23/2023	5'	7.63	0.457	1.86	<2.00
BKG04@0.5'	10/23/2023	0.5'	8.02	0.349	1.81	<2.00
BKG04@4'	10/23/2023	4'	8.11	0.166	0.893	<2.00
BKG04@5'	10/23/2023	5'	7.69	0.549	2.4	<2.00
BKG05@0.5'	10/23/2023	0.5'	7.72	0.36	1.94	<2.00
BKG05@4'	10/23/2023	4'	8.27	0.28	1.08	<2.00
BKG05@5'	10/23/2023	5'	7.59	0.482	2.3	<2.00

Bold faced values exceed the COGCC Table 915-1 concentrations

Yellow highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

NA - Not analyzed

TABLE 4
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
GRANT ARENS 02 FACILITY, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-271

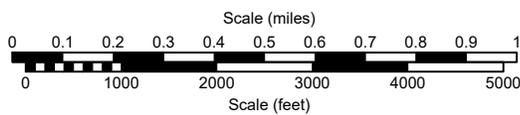
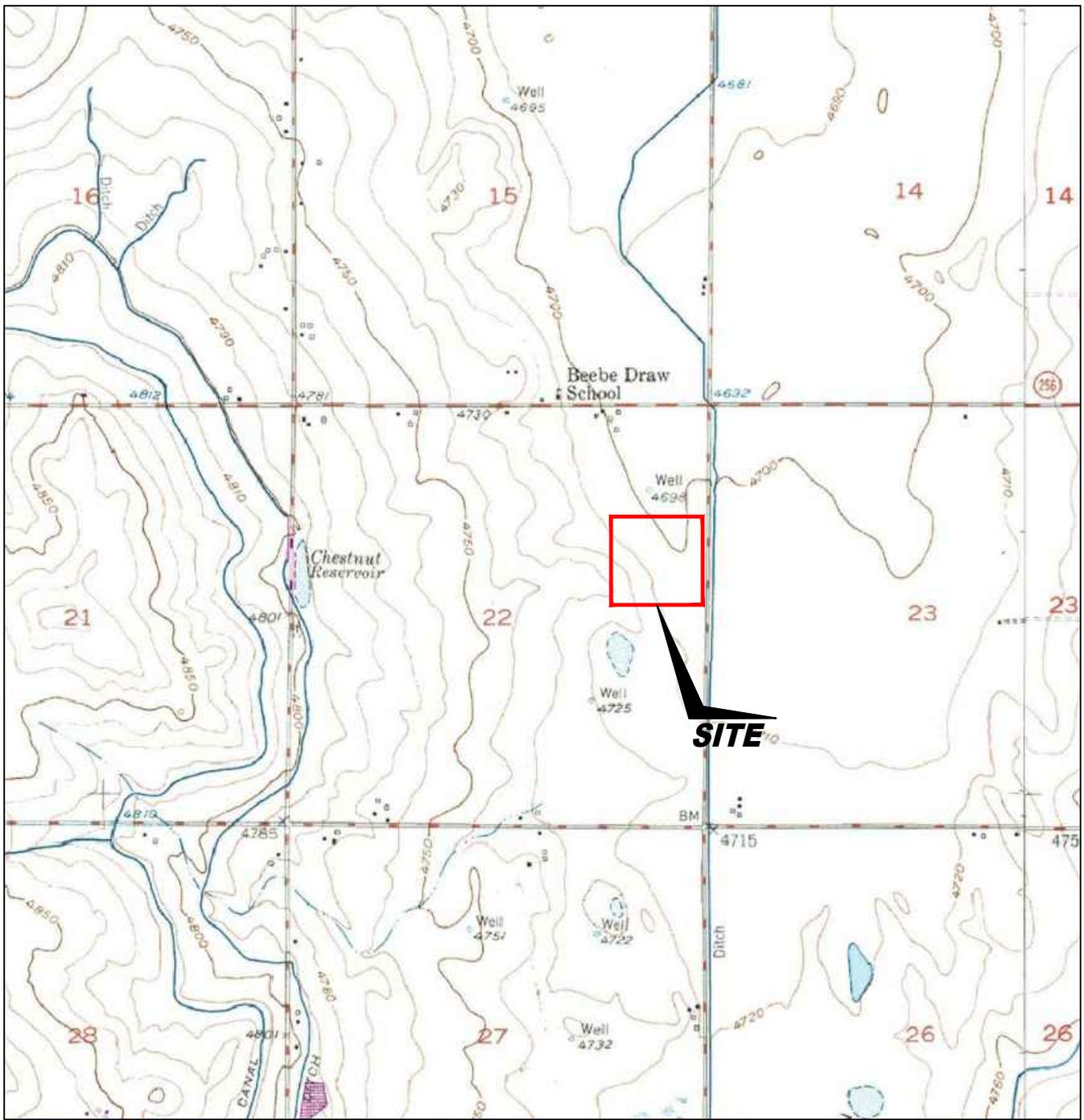
Sample ID	Sample Date	Depth (ft)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
COGCC Table 915-1 Limits (Residential SSL)			0.68	15000	71	0.3	3100	400	1500	390	390	23000
COGCC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
AST01@0.5'	10/23/2023	0.5'	0.667	7.03	<0.200	<0.30	15.4	1.68	5.62	<0.260	<0.0200	2.74
AST02@0.5'	10/23/2023	0.5'	0.334	5.43	<0.200	<0.30	0.523	1.27	<0.400	<0.260	<0.0200	2.18
PWV01-B@5'	10/23/2023	5'	1.69	102	0.26	<0.30	2.44	6.55	2.82	<0.260	0.0323	10
PWV01-E@4'	10/23/2023	4'	1.54	67.7	0.618	<0.30	6.87	31.8	2.42	0.286	0.322	58.5
SEP01-DL@4'	10/23/2023	4'	1.3	69.5	0.594	<0.30	6.29	21.6	2.27	<0.260	0.308	31.9
SEP02-DL@4'	10/23/2023	4'	1.08	62	0.524	<0.30	5.07	16.3	2	<0.260	0.198	20.3
BKG01@0.5'	10/23/2023	0.5'	1.11	59.8	0.542	<0.30	5.49	18	2.23	0.354	0.272	23.3
BKG01@4'	10/23/2023	4'	1.03	55.3	0.432	<0.30	4.81	14.6	2.1	0.268	0.197	18.5
BKG01@5'	10/23/2023	5'	0.926	65.3	0.343	<0.30	3.63	10.6	2.33	<0.260	0.0886	12.2
BKG02@0.5'	10/23/2023	0.5'	1.12	47.3	0.453	<0.30	5.61	14.8	2.22	0.265	0.223	22.6
BKG02@4'	10/23/2023	4'	0.981	60.1	0.518	<0.30	4.71	17.7	1.88	<0.260	0.256	18.2
BKG02@5'	10/23/2023	5'	0.981	98.5	0.303	<0.30	3.15	9.91	2.57	<0.260	0.064	10.6
BKG03@0.5'	10/23/2023	0.5'	1.11	59.6	0.567	<0.30	5.45	18.7	2.23	0.286	0.287	22.9
BKG03@4'	10/23/2023	4'	0.962	55.9	0.463	<0.30	4.53	14.5	2.14	<0.260	0.159	16.5
BKG03@5'	10/23/2023	5'	1.03	109	0.282	<0.30	2.94	8.6	2.94	<0.260	0.0514	10.7
BKG04@0.5'	10/23/2023	0.5'	1.12	65.1	0.609	<0.30	5.57	20.6	2.28	0.322	0.317	24.2
BKG04@4'	10/23/2023	4'	0.969	61.3	0.511	<0.30	4.72	16.7	2.03	<0.260	0.214	17.8
BKG04@5'	10/23/2023	5'	0.96	81.5	0.436	<0.30	3.7	12	2.49	<0.260	0.105	12.6
BKG05@0.5'	10/23/2023	0.5'	1.12	61.2	0.563	<0.30	5.38	19.1	2.23	0.418	0.287	23
BKG05@4'	10/23/2023	4'	1.05	47.7	0.437	<0.30	5.28	14.9	1.99	<0.260	0.203	19.4
BKG05@5'	10/23/2023	5'	1.02	70.9	0.283	<0.30	3.49	9.27	2.66	0.261	0.0754	12

Bold faced values exceed the COGCC Table 915-1 concentrations

Red & blue highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

* Indicates laboratory minimum detection limit in excess of SSL

NA - Not analyzed



USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP
NOBLE ENERGY INC ~ ARENS 02

SESE Sec. 22, T4N, R65W, 6th PM
 Weld County, Colorado
 40.299750°, -104.642230°

Project # C023-271	API #	Facility # 322598	
Date 5/22/24	Remediation # 30388	Filename 23271T	



LEGEND

- ▲ PID READING LOCATION
- ▲ AST ABOVE GROUND STORAGE TANK
- FORMER FLOWLINE
- FENCE LINE
- CONTAINMENT BERM
- CONTAINMENT WALL
- FORMER FACILITY

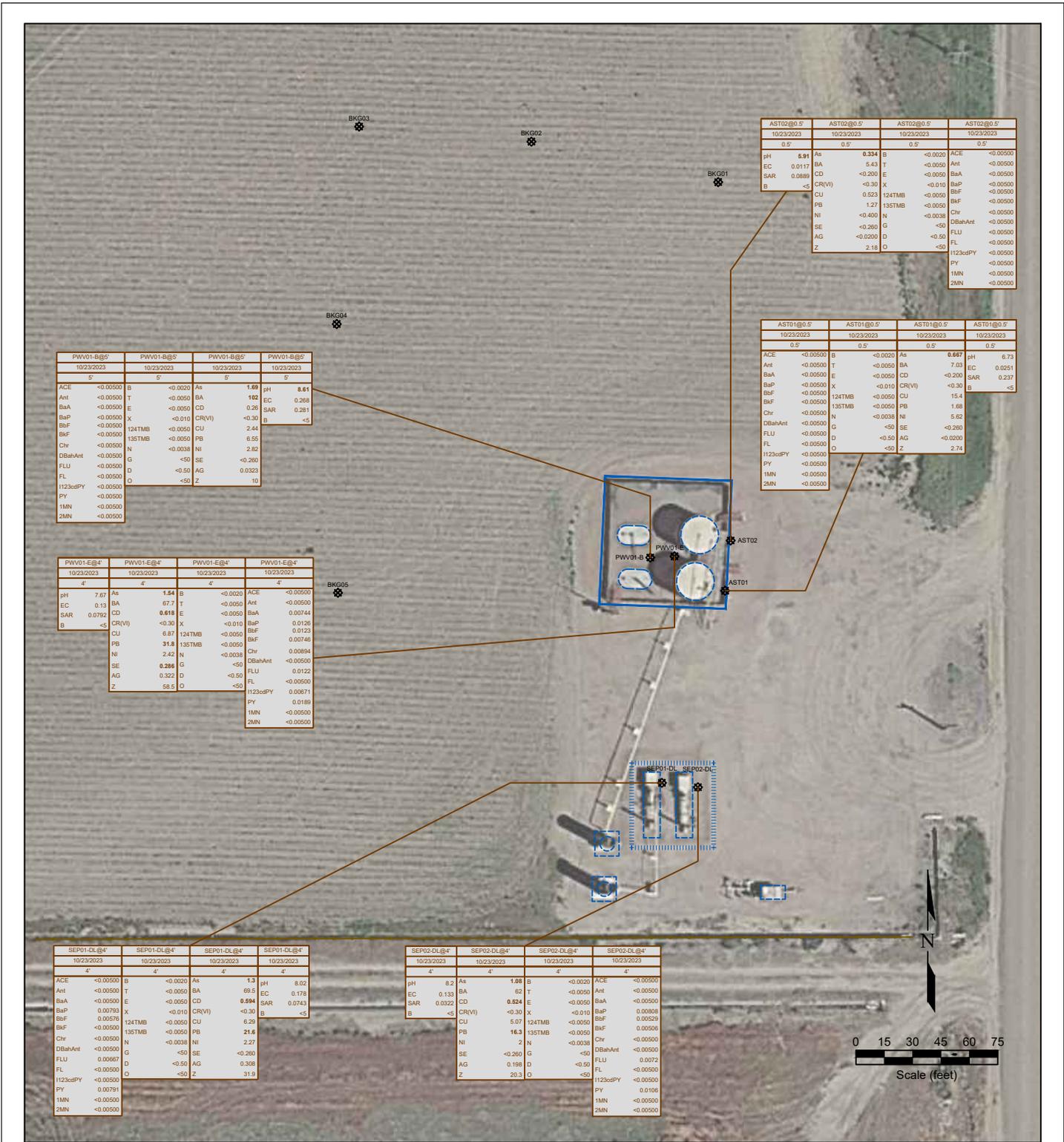
**Figure 2
SITE MAP**

NOBLE ENERGY INC ~ ARENS 02

SESE Sec. 22, T4N, R65W, 6th PM
Weld County, Colorado
40.299750°, -104.642230°

Project No. C023-271	API #	Facility # 322598
Date 5/22/24	Remediation # 30388	Filename 23271Q





LEGEND

- SOIL SAMPLE LOCATION (AST)
- ABOVE GROUND STORAGE TANK
- FORMER FACILITY
- FORMER FLOWLINE
- FENCE LINE
- CONTAINMENT BERM
- CONTAINMENT WALL
- NOT ANALYZED

SAMPLE ID	SAMPLE ID	SAMPLE ID	SAMPLE ID
DATE	DATE	DATE	DATE
DEPTH	DEPTH	DEPTH	DEPTH
ACE	ACENAPHTHENE (mg/kg)	As	ARSENIC (mg/kg)
Ant	ANTHRACENE (mg/kg)	BA	BARIUM (mg/kg)
BaA	BENZO (A) ANTHRACENE (mg/kg)	CD	CADMIUM (mg/kg)
BaP	BENZO (B) FLUORANTHENE (mg/kg)	CR(VI)	CHROMIUM (mg/kg)
BaF	BENZO (K) FLUORANTHENE (mg/kg)	CU	COPPER (mg/kg)
BKF	BENZO (I) FLUORANTHENE (mg/kg)	EC	EC (mmhos/cm)
Chr	CHRYSENE (mg/kg)	EC	EC (pH units)
DBahAnt	DIBENZ (A,H) ANTHRACENE (mg/kg)	EC	EC (mmhos/cm)
FLU	FLUORANTHENE (mg/kg)	EC	EC (pH units)
FL	FLUORENE (mg/kg)	EC	EC (mmhos/cm)
H123cdPY	INSENE (1,2,3-CD) PYRENE (mg/kg)	EC	EC (pH units)
PY	PYRENE (mg/kg)	EC	EC (mmhos/cm)
1MN	1-METHYLNAPHTHALENE (mg/kg)	EC	EC (pH units)
2MN	2-METHYLNAPHTHALENE (mg/kg)	EC	EC (mmhos/cm)

Figure 3
SOIL CHEMISTRY MAP
NOBLE ENERGY INC ~ ARENS 02

SESE Sec. 22, T4N, R65W, 6th PM
 Weld County, Colorado
 40.299750°, -104.642230°

Project No. C023-271	API #	Facility # 322598
Date 5/22/24	Remediation # 30388	Filename 23271Q

REMONT ENVIRONMENTAL



Description:

#1 Arens G22-22D Facility: Meter House and Site Sign

Photo Log



Description:

#2 Arens G22-22D Facility: Separator 01 Flowline Riser

Photo Log



Description:

#3 Arens G22-22D Facility: AST 01 and AST02



Description:

#4 Arens G22-22D Facility: Separator 02 Flowline Riser

Photo Log



Description:

#5 Arens G22-22D Facility: PWV Excavation

Photo Log



Description:

#6 Arens G22-22D Facility: PWV Excavation



Description:

#7 Arens G22-22D Facility: PWV Excavation

Photo Log



Description:

#8 Arens G22-22D Facility: Separator Dump Lines



Description:

#9 Arens G22-22D Facility: Flares



Description:

#10 Arens G22-22D Facility: Flares

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

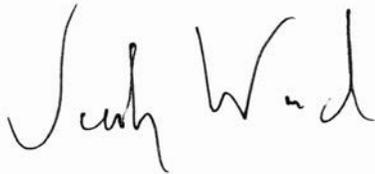
November 06, 2023

Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - Grant Arens 02 Facility
Work Order #2310444

Enclosed are the results of analyses for samples received by Summit Scientific on 10/23/23 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and a long, sweeping underline.

Jacob Wood For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST01@0.5'	2310444-01	Soil	10/23/23 00:00	10/23/23 16:30
AST02@0.5'	2310444-02	Soil	10/23/23 00:00	10/23/23 16:30
SEP01-DL@4'	2310444-03	Soil	10/23/23 00:00	10/23/23 16:30
SEP02-DL@4'	2310444-04	Soil	10/23/23 00:00	10/23/23 16:30
PWV01-B@5'	2310444-05	Soil	10/23/23 00:00	10/23/23 16:30
PWV01-E@4'	2310444-06	Soil	10/23/23 00:00	10/23/23 16:30
BKG01@0.5'	2310444-07	Soil	10/23/23 00:00	10/23/23 16:30
BKG01@4'	2310444-08	Soil	10/23/23 00:00	10/23/23 16:30
BKG01@5'	2310444-09	Soil	10/23/23 00:00	10/23/23 16:30
BKG02@0.5'	2310444-10	Soil	10/23/23 00:00	10/23/23 16:30
BKG02@4'	2310444-11	Soil	10/23/23 00:00	10/23/23 16:30
BKG02@5'	2310444-12	Soil	10/23/23 00:00	10/23/23 16:30
BKG03@0.5'	2310444-13	Soil	10/23/23 00:00	10/23/23 16:30
BKG03@4'	2310444-14	Soil	10/23/23 00:00	10/23/23 16:30
BKG03@5'	2310444-15	Soil	10/23/23 00:00	10/23/23 16:30
BKG04@0.5'	2310444-16	Soil	10/23/23 00:00	10/23/23 16:30
BKG04@4'	2310444-17	Soil	10/23/23 00:00	10/23/23 16:30
BKG04@5'	2310444-18	Soil	10/23/23 00:00	10/23/23 16:30
BKG05@0.5'	2310444-19	Soil	10/23/23 00:00	10/23/23 16:30
BKG05@4'	2310444-20	Soil	10/23/23 00:00	10/23/23 16:30
BKG05@5'	2310444-21	Soil	10/23/23 00:00	10/23/23 16:30

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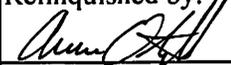
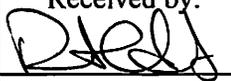
SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 2
231044.1	

Send Data To:		Send Invoice To:
Client: Fremont Environmental	Project Manager: Paul Henehan	Company: Noble/Chevron
Address: 8305 6th Street	E-Mail: Fremont Distribution List	Project Name/Location: Grant Areas O2 Facility
City/State/Zip: Wellington, CO, 80549		AFE#: UWRWE- A2090-ABN
Phone: 603-477-6907	Project Name: Grant Areas O2 Facility	PO/Billing Codes:
Sampler Name: Aaron Otilar	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	BTEXN - 915	TPH (C6-C36)	PAH	SAR, EC, pH, Boron	Metals (915-1)	TDS, Cl, SO4	
1	AST01@0.5'	10/23/23		2			X			X			X	X	X	X	X	X	
2	AST02@0.5'																		
3	SEP01-DL@4'																		
4	SEP02-DL@4'																		
5	PW01@0.5'																		
6	PW02@0.5'																		
7	BK01@0.5'			1											X	X			
8	BK01@4'																		
9	BK01@5'																		
10	BK02@0.5'																		
11	BK02@4'																		
12	BK02@5'																		
13	BK03@0.5'																		
14	BK03@4'																		
15	BK03@5'																		

Relinquished by: 	Date/Time: 10/23/23 1615	Received by: Summit North Office	Date/Time: 10/23/23 1615	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: SZ	Date/Time: 10/23/23 1630	Received by: 	Date/Time: 10/23/23 1630	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: 19.1	Corrected Temperature: 0	IR gun #: 1	HNO3 lot #:			

SUMMIT SCIENTIFIC

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

Lab ID	Page 2 of 2
2310444.2	

Client: Fremont Environmental		Project Manager: Paul Henehan		Company: Noble / Chevron	
Address: 8305 6th Street		E-Mail: Fremont Distribution List		Project Name/Location: Grant Acres O2 Facility	
City/State/Zip: Wellington, CO, 80549		Project Name: Grant Acres O2 Facility		AFE#: UWRWE-A2090-ABN	
Phone: 603-477-6907		Project Number:		PO/Billing Codes:	
Sampler Name: Aaron Otilar				Contact: Mike Montoya	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Analysis Requested							Special Instructions			
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 915	TPH (C6-C36)	PAH	SAR, EC, pH, Boron	Metals (915-1)		TDS, Cl, SO4	TMB's - 915	HOLD
1	BK604e 0.5'	10/23/23		1			X			X					X	X					
2	BK604e 4'																				
3	BK604e 5'																				
4	BK605e 0.5'																				
5	BK605e 4'																				
6	BK605e 5'																				
7	PW601-Ney.			2																	X
8	PW601-SE4'																				
9	PW601-Wey'																				
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: <i>Aaron Otilar</i>	Date/Time: 10/23/23 1615	Received by: Summit North Office	Date/Time: 10/23/23 1615	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: 52	Date/Time: 10/23/23 1630	Received by: <i>[Signature]</i>	Date/Time: 10/23/23 1630	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: 19.1	Corrected Temperature: 19.1	IR gun #: 1	HNO3 lot #:			

S₂

2/4

Sample Receipt Checklist

S2 Work Order# 2310444

Client: Fremont Client Project ID: Grant Arens O2 Facility

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

Matrix (Check all that apply) Air Soil/Solid Water Other

Temp (°C) 19.1 Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>at ZCE</u>
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<u>no time stamps</u>
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water - is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column - HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

FB
Custodian Printed Name

10/23/23
Date/Time

3203



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

AST01@0.5'
2310444-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGJ0948	10/24/23	10/25/23	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: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0416	104 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0381	95.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0370	92.4 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGJ0953	10/24/23	10/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	13.8	110 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

AST01@0.5'
2310444-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0925	10/24/23	10/24/23	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: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0248	74.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0237	71.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

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

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility
Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

AST01@0.5'
2310444-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	0.667	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B
Barium	7.03	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	15.4	0.400	"	"	"	"	"	"
Lead	1.68	0.200	"	"	"	"	"	"
Nickel	5.62	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	2.74	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	5.36	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/01/23	EPA 6020B	
Magnesium	1.72	0.0500	"	"	"	"	"	"	
Sodium	2.46	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.237	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
 Project Manager: Paul Henchan

Reported:
 11/06/23 09:05

AST01@0.5'
2310444-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.6		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0251	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.73		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

AST02@0.5'
2310444-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ0948	10/24/23	10/25/23	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: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0446	112 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0381	95.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0366	91.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0953	10/24/23	10/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	12.4	99.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

AST02@0.5'
2310444-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0925	10/24/23	10/24/23	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: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0249	74.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0230	69.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

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

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

AST02@0.5'
2310444-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	0.334	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B
Barium	5.43	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	0.523	0.400	"	"	"	"	"	"
Lead	1.27	0.200	"	"	"	"	"	"
Nickel	ND	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	2.18	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2.87	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/01/23	EPA 6020B	
Magnesium	0.690	0.0500	"	"	"	"	"	"	
Sodium	0.646	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0889	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
 Project Manager: Paul Henchan

Reported:
 11/06/23 09:05

AST02@0.5'
2310444-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.4		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0117	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	5.91		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

SEP01-DL@4'
2310444-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ0948	10/24/23	10/25/23	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: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0455	114 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	96.9 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0378	94.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0953	10/24/23	10/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.84	62.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

SEP01-DL@4'
2310444-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0925	10/24/23	10/24/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.00793	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.00576	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.00667	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.00791	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0240	72.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0216	64.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental
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Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

SEP01-DL@4'
2310444-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.30	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B
Barium	69.5	0.400	"	"	"	"	"	"
Cadmium	0.594	0.200	"	"	"	"	"	"
Copper	6.29	0.400	"	"	"	"	"	"
Lead	21.6	0.200	"	"	"	"	"	"
Nickel	2.27	0.400	"	"	"	"	"	"
Silver	0.308	0.0200	"	"	"	"	"	"
Zinc	31.9	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	233	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/01/23	EPA 6020B	
Magnesium	31.2	0.0500	"	"	"	"	"	"	
Sodium	4.55	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0743	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental
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Project: Noble - Grant Arens 02 Facility
 Project Number: UWRWE-A2090-ABN
 Project Manager: Paul Henchan

Reported:
 11/06/23 09:05

SEP01-DL@4'
2310444-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	85.9	%	1	BGJ1203	10/30/23	10/31/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.178	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.02		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

SEP02-DL@4'
2310444-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ0948	10/24/23	10/25/23	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: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0328	81.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0405	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0342	85.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0953	10/24/23	10/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	11.3	90.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Grant Arens 02 Facility
Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

SEP02-DL@4'
2310444-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0925	10/24/23	10/24/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.00808	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.00529	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.00506	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.00720	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.0106	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0156	46.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0153	45.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

SEP02-DL@4'
2310444-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.08	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B
Barium	62.0	0.400	"	"	"	"	"	"
Cadmium	0.524	0.200	"	"	"	"	"	"
Copper	5.07	0.400	"	"	"	"	"	"
Lead	16.3	0.200	"	"	"	"	"	"
Nickel	2.00	0.400	"	"	"	"	"	"
Silver	0.198	0.0200	"	"	"	"	"	"
Zinc	20.3	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	196	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/01/23	EPA 6020B	
Magnesium	29.6	0.0500	"	"	"	"	"	"	
Sodium	1.83	0.0500	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0322	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Project Number: UWRWE-A2090-ABN
 Project Manager: Paul Henchan

Reported:
 11/06/23 09:05

SEP02-DL@4'
2310444-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	90.1	%	1	BGJ1203	10/30/23	10/31/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.133	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.20		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project: Noble - Grant Arens 02 Facility
Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

PWV01-B@5'
2310444-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ0948	10/24/23	10/25/23	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: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0434	109 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0375	93.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0369	92.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0953	10/24/23	10/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	9.44	75.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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11/06/23 09:05

PWV01-B@5'
2310444-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0925	10/24/23	10/24/23	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: **10/23/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0136	40.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0141	42.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

PWV01-B@5'
2310444-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.69	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B
Barium	102	0.400	"	"	"	"	"	"
Cadmium	0.260	0.200	"	"	"	"	"	"
Copper	2.44	0.400	"	"	"	"	"	"
Lead	6.55	0.200	"	"	"	"	"	"
Nickel	2.82	0.400	"	"	"	"	"	"
Silver	0.0323	0.0200	"	"	"	"	"	"
Zinc	10.0	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	841	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	44.4	0.0500	"	"	"	"	"	"	
Sodium	30.8	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.281	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/23/23 00:00

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 - Grant Arens 02 Facility
 Project Number: UWRWE-A2090-ABN
 Project Manager: Paul Henchan

Reported:
 11/06/23 09:05

PWV01-B@5'
2310444-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	82.9	%	1	BGJ1203	10/30/23	10/31/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.268	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.61		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

PWV01-E@4'
2310444-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGJ0948	10/24/23	10/25/23	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: **10/23/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0449	112 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0361	90.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGJ0953	10/24/23	10/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.02	72.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

PWV01-E@4'
2310444-06 (Soil)

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PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0925	10/24/23	10/25/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.00744	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0126	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0123	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.00746	0.00500	"	"	"	"	"	"	
Chrysene	0.00894	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0122	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.00671	0.00500	"	"	"	"	"	"	
Pyrene	0.0189	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0165	49.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0153	46.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental
PO Box 1289
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Project: Noble - Grant Arens 02 Facility
Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

PWV01-E@4'
2310444-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.54	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B
Barium	67.7	0.400	"	"	"	"	"	"
Cadmium	0.618	0.200	"	"	"	"	"	"
Copper	6.87	0.400	"	"	"	"	"	"
Lead	31.8	0.200	"	"	"	"	"	"
Nickel	2.42	0.400	"	"	"	"	"	"
Silver	0.322	0.0200	"	"	"	"	"	"
Zinc	58.5	0.400	"	"	"	"	"	"
Selenium	0.286	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	98.9	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	19.3	0.0500	"	"	"	"	"	"	
Sodium	3.29	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 10/23/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0792	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/23/23 00:00

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 - Grant Arens 02 Facility
 Project Number: UWRWE-A2090-ABN
 Project Manager: Paul Henchan

Reported:
 11/06/23 09:05

PWV01-E@4'
2310444-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	86.9	%	1	BGJ1203	10/30/23	10/31/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.130	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.67		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG01@0.5'
2310444-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.11	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	59.8	0.400	"	"	"	"	"	"	
Cadmium	0.542	0.200	"	"	"	"	"	"	
Copper	5.49	0.400	"	"	"	"	"	"	
Lead	18.0	0.200	"	"	"	"	"	"	
Nickel	2.23	0.400	"	"	"	"	"	"	
Silver	0.272	0.0200	"	"	"	"	"	"	
Zinc	23.3	0.400	"	"	"	"	"	"	
Selenium	0.354	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	42.8	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	10.0	0.0500	"	"	"	"	"	"	
Sodium	49.2	0.0500	"	"	"	"	"	"	

Calculated Analysis

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility
Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG01@0.5'
2310444-07 (Soil)

Summit Scientific

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.76	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.2		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.428	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.76		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG01@4'
2310444-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.03	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	55.3	0.400	"	"	"	"	"	"	
Cadmium	0.432	0.200	"	"	"	"	"	"	
Copper	4.81	0.400	"	"	"	"	"	"	
Lead	14.6	0.200	"	"	"	"	"	"	
Nickel	2.10	0.400	"	"	"	"	"	"	
Silver	0.197	0.0200	"	"	"	"	"	"	
Zinc	18.5	0.400	"	"	"	"	"	"	
Selenium	0.268	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	118	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	23.8	0.0500	"	"	"	"	"	"	
Sodium	54.1	0.0500	"	"	"	"	"	"	

Calculated Analysis

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Project: Noble - Grant Arens 02 Facility
Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG01@4'
2310444-08 (Soil)

Summit Scientific

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.19	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.7		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.431	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.08		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG01@5'
2310444-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.926	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	65.3	0.400	"	"	"	"	"	"	
Cadmium	0.343	0.200	"	"	"	"	"	"	
Copper	3.63	0.400	"	"	"	"	"	"	
Lead	10.6	0.200	"	"	"	"	"	"	
Nickel	2.33	0.400	"	"	"	"	"	"	
Silver	0.0886	0.0200	"	"	"	"	"	"	
Zinc	12.2	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	43.1	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	12.4	0.0500	"	"	"	"	"	"	
Sodium	67.6	0.0500	"	"	"	"	"	"	

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Project: Noble - Grant Arens 02 Facility
 Project Number: UWRWE-A2090-ABN
 Project Manager: Paul Henchan

Reported:
 11/06/23 09:05

BKG01@5'
2310444-09 (Soil)

Summit Scientific

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.34	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.7		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.554	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.88		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG02@0.5'
2310444-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	1.12	0.200		mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	47.3	0.400		"	"	"	"	"	"	
Cadmium	0.453	0.200		"	"	"	"	"	"	
Copper	5.61	0.400		"	"	"	"	"	"	
Lead	14.8	0.200		"	"	"	"	"	"	
Nickel	2.22	0.400		"	"	"	"	"	"	
Silver	0.223	0.0200		"	"	"	"	"	"	
Zinc	22.6	0.400		"	"	"	"	"	"	
Selenium	0.265	0.260		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	56.7	0.0500		mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	13.4	0.0500		"	"	"	"	"	"	
Sodium	61.4	0.0500		"	"	"	"	"	"	

Calculated Analysis

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility
Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG02@0.5'
2310444-10 (Soil)

Summit Scientific

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.90	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.4		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.522	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.03		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG02@4'
2310444-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.981	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	60.1	0.400	"	"	"	"	"	"	
Cadmium	0.518	0.200	"	"	"	"	"	"	
Copper	4.71	0.400	"	"	"	"	"	"	
Lead	17.7	0.200	"	"	"	"	"	"	
Nickel	1.88	0.400	"	"	"	"	"	"	
Silver	0.256	0.0200	"	"	"	"	"	"	
Zinc	18.2	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	74.7	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	15.2	0.0500	"	"	"	"	"	"	
Sodium	46.0	0.0500	"	"	"	"	"	"	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility
Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG02@4'
2310444-11 (Soil)

Summit Scientific

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.27	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.1		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.400	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.97		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG02@5'
2310444-12 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	0.981	0.200		mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	98.5	0.400		"	"	"	"	"	"	
Cadmium	0.303	0.200		"	"	"	"	"	"	
Copper	3.15	0.400		"	"	"	"	"	"	
Lead	9.91	0.200		"	"	"	"	"	"	
Nickel	2.57	0.400		"	"	"	"	"	"	
Silver	0.0640	0.0200		"	"	"	"	"	"	
Zinc	10.6	0.400		"	"	"	"	"	"	
Selenium	ND	0.260		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	36.1	0.0500		mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	10.7	0.0500		"	"	"	"	"	"	
Sodium	62.2	0.0500		"	"	"	"	"	"	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility
Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG02@5'
2310444-12 (Soil)

Summit Scientific

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.34	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.0		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.536	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.69		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG03@0.5'
2310444-13 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.11	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	59.6	0.400	"	"	"	"	"	"	
Cadmium	0.567	0.200	"	"	"	"	"	"	
Copper	5.45	0.400	"	"	"	"	"	"	
Lead	18.7	0.200	"	"	"	"	"	"	
Nickel	2.23	0.400	"	"	"	"	"	"	
Silver	0.287	0.0200	"	"	"	"	"	"	
Zinc	22.9	0.400	"	"	"	"	"	"	
Selenium	0.286	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	86.6	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	20.1	0.0500	"	"	"	"	"	"	
Sodium	66.4	0.0500	"	"	"	"	"	"	

Calculated Analysis

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Project: Noble - Grant Arens 02 Facility
Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG03@0.5'
2310444-13 (Soil)

Summit Scientific

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.67	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.0		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.582	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.69		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG03@4'
2310444-14 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.962	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	55.9	0.400	"	"	"	"	"	"	
Cadmium	0.463	0.200	"	"	"	"	"	"	
Copper	4.53	0.400	"	"	"	"	"	"	
Lead	14.5	0.200	"	"	"	"	"	"	
Nickel	2.14	0.400	"	"	"	"	"	"	
Silver	0.159	0.0200	"	"	"	"	"	"	
Zinc	16.5	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	116	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	24.9	0.0500	"	"	"	"	"	"	
Sodium	49.7	0.0500	"	"	"	"	"	"	

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Fremont Environmental
 PO Box 1289
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Project: Noble - Grant Arens 02 Facility
 Project Number: UWRWE-A2090-ABN
 Project Manager: Paul Henchan

Reported:
 11/06/23 09:05

BKG03@4'
2310444-14 (Soil)

Summit Scientific

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.09	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.4		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.393	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.68		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG03@5'
2310444-15 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.03	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	109	0.400	"	"	"	"	"	"	
Cadmium	0.282	0.200	"	"	"	"	"	"	
Copper	2.94	0.400	"	"	"	"	"	"	
Lead	8.60	0.200	"	"	"	"	"	"	
Nickel	2.94	0.400	"	"	"	"	"	"	
Silver	0.0514	0.0200	"	"	"	"	"	"	
Zinc	10.7	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	54.3	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	17.6	0.0500	"	"	"	"	"	"	
Sodium	61.7	0.0500	"	"	"	"	"	"	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility
Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG03@5'
2310444-15 (Soil)

Summit Scientific

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.86	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.6		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.457	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.63		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG04@0.5'
2310444-16 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	1.12	0.200		mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	65.1	0.400		"	"	"	"	"	"	
Cadmium	0.609	0.200		"	"	"	"	"	"	
Copper	5.57	0.400		"	"	"	"	"	"	
Lead	20.6	0.200		"	"	"	"	"	"	
Nickel	2.28	0.400		"	"	"	"	"	"	
Silver	0.317	0.0200		"	"	"	"	"	"	
Zinc	24.2	0.400		"	"	"	"	"	"	
Selenium	0.322	0.260		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	24.1	0.0500		mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	8.17	0.0500		"	"	"	"	"	"	
Sodium	40.3	0.0500		"	"	"	"	"	"	

Calculated Analysis

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility
 Project Number: UWRWE-A2090-ABN
 Project Manager: Paul Henchan

Reported:
 11/06/23 09:05

BKG04@0.5'
2310444-16 (Soil)

Summit Scientific

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.81	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.4		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.349	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.02		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG04@4'
2310444-17 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.969	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	61.3	0.400	"	"	"	"	"	"	
Cadmium	0.511	0.200	"	"	"	"	"	"	
Copper	4.72	0.400	"	"	"	"	"	"	
Lead	16.7	0.200	"	"	"	"	"	"	
Nickel	2.03	0.400	"	"	"	"	"	"	
Silver	0.214	0.0200	"	"	"	"	"	"	
Zinc	17.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	36.1	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	8.07	0.0500	"	"	"	"	"	"	
Sodium	22.8	0.0500	"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility
Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG04@4'
2310444-17 (Soil)

Summit Scientific

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.893	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.5		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.166	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.11		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens O2 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG04@5'
2310444-18 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.960	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	81.5	0.400	"	"	"	"	"	"	
Cadmium	0.436	0.200	"	"	"	"	"	"	
Copper	3.70	0.400	"	"	"	"	"	"	
Lead	12.0	0.200	"	"	"	"	"	"	
Nickel	2.49	0.400	"	"	"	"	"	"	
Silver	0.105	0.0200	"	"	"	"	"	"	
Zinc	12.6	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	31.7	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	12.2	0.0500	"	"	"	"	"	"	
Sodium	62.7	0.0500	"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility
Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG04@5'
2310444-18 (Soil)

Summit Scientific

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.40	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.4		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.549	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.69		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG05@0.5'
2310444-19 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.12	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	61.2	0.400	"	"	"	"	"	"	
Cadmium	0.563	0.200	"	"	"	"	"	"	
Copper	5.38	0.400	"	"	"	"	"	"	
Lead	19.1	0.200	"	"	"	"	"	"	
Nickel	2.23	0.400	"	"	"	"	"	"	
Silver	0.287	0.0200	"	"	"	"	"	"	
Zinc	23.0	0.400	"	"	"	"	"	"	
Selenium	0.418	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	23.8	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	7.92	0.0500	"	"	"	"	"	"	
Sodium	42.8	0.0500	"	"	"	"	"	"	

Calculated Analysis

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility
Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG05@0.5'
2310444-19 (Soil)

Summit Scientific

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.94	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.2		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.360	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.72		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG05@4'
2310444-20 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.05	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	47.7	0.400	"	"	"	"	"	"	
Cadmium	0.437	0.200	"	"	"	"	"	"	
Copper	5.28	0.400	"	"	"	"	"	"	
Lead	14.9	0.200	"	"	"	"	"	"	
Nickel	1.99	0.400	"	"	"	"	"	"	
Silver	0.203	0.0200	"	"	"	"	"	"	
Zinc	19.4	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	26.4	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	8.99	0.0500	"	"	"	"	"	"	
Sodium	25.2	0.0500	"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility
 Project Number: UWRWE-A2090-ABN
 Project Manager: Paul Henchan

Reported:
 11/06/23 09:05

BKG05@4'
2310444-20 (Soil)

Summit Scientific

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.08	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.5		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.280	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.27		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG05@5'
2310444-21 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGJ1211	10/30/23	11/03/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.02	0.200	mg/kg dry	1	BGJ1174	10/30/23	11/01/23	EPA 6020B	
Barium	70.9	0.400	"	"	"	"	"	"	
Cadmium	0.283	0.200	"	"	"	"	"	"	
Copper	3.49	0.400	"	"	"	"	"	"	
Lead	9.27	0.200	"	"	"	"	"	"	
Nickel	2.66	0.400	"	"	"	"	"	"	
Silver	0.0754	0.0200	"	"	"	"	"	"	
Zinc	12.0	0.400	"	"	"	"	"	"	
Selenium	0.261	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0999	10/25/23	10/25/23	EPA 7196A	

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

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

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	26.5	0.0500	mg/L dry	1	BGJ1145	10/27/23	11/02/23	EPA 6020B	
Magnesium	10.5	0.0500	"	"	"	"	"	"	
Sodium	55.2	0.0500	"	"	"	"	"	"	

Calculated Analysis

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility
Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

BKG05@5'
2310444-21 (Soil)

Summit Scientific

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.30	0.00100	units	1	BGK0069	11/02/23	11/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.6		%	1	BGJ1203	10/30/23	10/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.482	0.0100	mmhos/cm	1	BGJ1192	10/30/23	10/30/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.59		pH Units	1	BGJ1191	10/30/23	10/30/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

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 BGJ0948 - EPA 5030 Soil MS

Blank (BGJ0948-BLK1)

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

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
Naphthalene	ND	0.0038	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0434		"	0.0400		108	50-150				
<i>Surrogate: Toluene-d8</i>	0.0373		"	0.0400		93.3	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0387		"	0.0400		96.7	50-150				

LCS (BGJ0948-BS1)

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

Benzene	0.113	0.0020	mg/kg	0.100		113	70-130				
Toluene	0.0929	0.0050	"	0.100		92.9	70-130				
Ethylbenzene	0.0997	0.0050	"	0.100		99.7	70-130				
m,p-Xylene	0.194	0.010	"	0.200		97.0	70-130				
o-Xylene	0.0960	0.0050	"	0.100		96.0	70-130				
1,2,4-Trimethylbenzene	0.0988	0.0050	"	0.100		98.8	70-130				
1,3,5-Trimethylbenzene	0.0982	0.0050	"	0.100		98.2	70-130				
Naphthalene	0.0806	0.0038	"	0.100		80.6	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0447		"	0.0400		112	50-150				
<i>Surrogate: Toluene-d8</i>	0.0379		"	0.0400		94.8	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0385		"	0.0400		96.3	50-150				

Matrix Spike (BGJ0948-MS1)

Source: 2310439-01

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

Benzene	0.104	0.0020	mg/kg	0.100	ND	104	70-130				
Toluene	0.0836	0.0050	"	0.100	ND	83.6	70-130				
Ethylbenzene	0.0842	0.0050	"	0.100	ND	84.2	70-130				
m,p-Xylene	0.163	0.010	"	0.200	ND	81.3	70-130				
o-Xylene	0.0790	0.0050	"	0.100	ND	79.0	70-130				
1,2,4-Trimethylbenzene	0.0755	0.0050	"	0.100	ND	75.5	70-130				
1,3,5-Trimethylbenzene	0.0750	0.0050	"	0.100	ND	75.0	70-130				
Naphthalene	0.0731	0.0038	"	0.100	ND	73.1	70-130				QLCS-03
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0464		"	0.0400		116	50-150				
<i>Surrogate: Toluene-d8</i>	0.0386		"	0.0400		96.4	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0384		"	0.0400		95.9	50-150				

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Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
 Project Manager: Paul Henchan

Reported:
 11/06/23 09:05

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 BGJ0948 - EPA 5030 Soil MS

Matrix Spike Dup (BGJ0948-MSD1)	Source: 2310439-01			Prepared: 10/24/23		Analyzed: 10/25/23				
Benzene	0.104	0.0020	mg/kg	0.100	ND	104	70-130	0.664	30	
Toluene	0.0863	0.0050	"	0.100	ND	86.3	70-130	3.14	30	
Ethylbenzene	0.0843	0.0050	"	0.100	ND	84.3	70-130	0.107	30	
m,p-Xylene	0.162	0.010	"	0.200	ND	81.0	70-130	0.333	30	
o-Xylene	0.0802	0.0050	"	0.100	ND	80.2	70-130	1.58	30	
1,2,4-Trimethylbenzene	0.0755	0.0050	"	0.100	ND	75.5	70-130	0.0795	30	
1,3,5-Trimethylbenzene	0.0760	0.0050	"	0.100	ND	76.0	70-130	1.31	30	
Naphthalene	0.0705	0.0038	"	0.100	ND	70.5	70-130	3.59	30	QLCS-03
Surrogate: 1,2-Dichloroethane-d4	0.0478		"	0.0400		119	50-150			
Surrogate: Toluene-d8	0.0397		"	0.0400		99.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.6	50-150			

Summit Scientific

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Project: Noble - Grant Arens 02 Facility
 Project Number: UWRWE-A2090-ABN
 Project Manager: Paul Henchan

Reported:
 11/06/23 09:05

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGJ0953 - EPA 3550A

Blank (BGJ0953-BLK1)

Prepared & Analyzed: 10/24/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	14.3		"	12.5	115	30-150					

LCS (BGJ0953-BS1)

Prepared & Analyzed: 10/24/23

C10-C28 (DRO)	404	50	mg/kg	500	80.7	70-130					
Surrogate: <i>o</i> -Terphenyl	15.5		"	12.5	124	30-150					

Matrix Spike (BGJ0953-MS1)

Source: 2310439-01

Prepared & Analyzed: 10/24/23

C10-C28 (DRO)	457	50	mg/kg	500	16.3	88.1	70-130				
Surrogate: <i>o</i> -Terphenyl	11.1		"	12.5	88.9	30-150					

Matrix Spike Dup (BGJ0953-MSD1)

Source: 2310439-01

Prepared & Analyzed: 10/24/23

C10-C28 (DRO)	453	50	mg/kg	500	16.3	87.4	70-130	0.768	20		
Surrogate: <i>o</i> -Terphenyl	11.1		"	12.5	89.1	30-150					

Summit Scientific

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Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

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 BGJ0925 - EPA 5030 Soil MS

Blank (BGJ0925-BLK1)

Prepared & Analyzed: 10/24/23

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	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0329</i>		<i>"</i>	<i>0.0333</i>		<i>98.8</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0326</i>		<i>"</i>	<i>0.0333</i>		<i>97.7</i>		<i>40-150</i>		

LCS (BGJ0925-BS1)

Prepared & Analyzed: 10/24/23

Acenaphthene	0.0317	0.00500	mg/kg	0.0333	95.2	31-137
Anthracene	0.0320	0.00500	"	0.0333	96.1	30-120
Benzo (a) anthracene	0.0254	0.00500	"	0.0333	76.2	30-120
Benzo (a) pyrene	0.0278	0.00500	"	0.0333	83.5	30-120
Benzo (b) fluoranthene	0.0271	0.00500	"	0.0333	81.2	30-120
Benzo (k) fluoranthene	0.0328	0.00500	"	0.0333	98.3	30-120
Chrysene	0.0319	0.00500	"	0.0333	95.7	30-120
Dibenz (a,h) anthracene	0.0228	0.00500	"	0.0333	68.5	30-120
Fluoranthene	0.0305	0.00500	"	0.0333	91.6	30-120
Fluorene	0.0315	0.00500	"	0.0333	94.5	30-120
Indeno (1,2,3-cd) pyrene	0.0239	0.00500	"	0.0333	71.8	30-120
Pyrene	0.0340	0.00500	"	0.0333	102	35-142
1-Methylnaphthalene	0.0290	0.00500	"	0.0333	87.1	35-142
2-Methylnaphthalene	0.0321	0.00500	"	0.0333	96.4	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0329</i>		<i>"</i>	<i>0.0333</i>	<i>98.7</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0316</i>		<i>"</i>	<i>0.0333</i>	<i>94.7</i>	<i>40-150</i>

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Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

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 BGJ0925 - EPA 5030 Soil MS

Matrix Spike (BGJ0925-MS1)

Source: 2310441-01

Prepared & Analyzed: 10/24/23

Acenaphthene	0.0238	0.00500	mg/kg	0.0333	ND	71.5	31-137			
Anthracene	0.0250	0.00500	"	0.0333	ND	75.0	30-120			
Benzo (a) anthracene	0.0230	0.00500	"	0.0333	ND	69.0	30-120			
Benzo (a) pyrene	0.0231	0.00500	"	0.0333	0.00860	43.5	30-120			
Benzo (b) fluoranthene	0.0210	0.00500	"	0.0333	0.00991	33.2	30-120			
Benzo (k) fluoranthene	0.0248	0.00500	"	0.0333	0.00693	53.6	30-120			
Chrysene	0.0252	0.00500	"	0.0333	0.00636	56.4	30-120			
Dibenz (a,h) anthracene	0.0209	0.00500	"	0.0333	ND	62.8	30-120			
Fluoranthene	0.0250	0.00500	"	0.0333	0.00759	52.2	30-120			
Fluorene	0.0245	0.00500	"	0.0333	ND	73.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0207	0.00500	"	0.0333	0.00709	40.9	30-120			
Pyrene	0.0280	0.00500	"	0.0333	0.00919	56.5	35-142			
1-Methylnaphthalene	0.0208	0.00500	"	0.0333	ND	62.3	15-130			
2-Methylnaphthalene	0.0219	0.00500	"	0.0333	ND	65.8	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0212</i>		<i>"</i>	<i>0.0333</i>		<i>63.5</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0255</i>		<i>"</i>	<i>0.0333</i>		<i>76.6</i>	<i>40-150</i>			

Matrix Spike Dup (BGJ0925-MSD1)

Source: 2310441-01

Prepared & Analyzed: 10/24/23

Acenaphthene	0.0228	0.00500	mg/kg	0.0333	ND	68.5	31-137	4.28	30
Anthracene	0.0239	0.00500	"	0.0333	ND	71.8	30-120	4.29	30
Benzo (a) anthracene	0.0217	0.00500	"	0.0333	ND	65.1	30-120	5.76	30
Benzo (a) pyrene	0.0224	0.00500	"	0.0333	0.00860	41.5	30-120	3.01	30
Benzo (b) fluoranthene	0.0204	0.00500	"	0.0333	0.00991	31.4	30-120	3.00	30
Benzo (k) fluoranthene	0.0240	0.00500	"	0.0333	0.00693	51.3	30-120	3.08	30
Chrysene	0.0238	0.00500	"	0.0333	0.00636	52.4	30-120	5.46	30
Dibenz (a,h) anthracene	0.0208	0.00500	"	0.0333	ND	62.3	30-120	0.752	30
Fluoranthene	0.0234	0.00500	"	0.0333	0.00759	47.3	30-120	6.76	30
Fluorene	0.0233	0.00500	"	0.0333	ND	70.0	30-120	4.73	30
Indeno (1,2,3-cd) pyrene	0.0209	0.00500	"	0.0333	0.00709	41.4	30-120	0.841	30
Pyrene	0.0274	0.00500	"	0.0333	0.00919	54.6	35-142	2.23	30
1-Methylnaphthalene	0.0191	0.00500	"	0.0333	ND	57.2	15-130	8.42	50
2-Methylnaphthalene	0.0218	0.00500	"	0.0333	ND	65.3	15-130	0.689	50
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0204</i>		<i>"</i>	<i>0.0333</i>		<i>61.2</i>	<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0241</i>		<i>"</i>	<i>0.0333</i>		<i>72.3</i>	<i>40-150</i>		

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
 Project Manager: Paul Henchan

Reported:
 11/06/23 09:05

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 BGJ1211 - EPA 3050B

Blank (BGJ1211-BLK1)

Prepared: 10/30/23 Analyzed: 11/02/23

Boron ND 2.00 mg/L

LCS (BGJ1211-BS1)

Prepared: 10/30/23 Analyzed: 11/02/23

Boron 4.81 2.00 mg/L 5.00 96.1 80-120

Duplicate (BGJ1211-DUP1)

Source: 2310444-01

Prepared: 10/30/23 Analyzed: 11/03/23

Boron 0.0522 2.00 mg/L 0.0641 20.5 20 QR-01

Matrix Spike (BGJ1211-MS1)

Source: 2310444-01

Prepared: 10/30/23 Analyzed: 11/03/23

Boron 4.66 2.00 mg/L 5.00 0.0641 92.0 75-125

Matrix Spike Dup (BGJ1211-MSD1)

Source: 2310444-01

Prepared: 10/30/23 Analyzed: 11/03/23

Boron 4.70 2.00 mg/L 5.00 0.0641 92.7 75-125 0.789 25

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Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGJ1174 - EPA 3050B

Blank (BGJ1174-BLK1)

Prepared: 10/30/23 Analyzed: 11/01/23

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 (BGJ1174-BS1)

Prepared: 10/30/23 Analyzed: 11/01/23

Arsenic	47.5	0.200	mg/kg wet	40.0	119	80-120				
Barium	42.9	0.400	"	40.0	107	80-120				
Cadmium	2.11	0.200	"	2.00	105	80-120				
Copper	46.5	0.400	"	40.0	116	80-120				
Lead	20.9	0.200	"	20.0	104	80-120				
Nickel	46.8	0.400	"	40.0	117	80-120				
Silver	2.04	0.0200	"	2.00	102	80-120				
Zinc	46.9	0.400	"	40.0	117	80-120				
Selenium	4.20	0.260	"	4.00	105	80-120				

Duplicate (BGJ1174-DUP1)

Source: 2310444-01

Prepared: 10/30/23 Analyzed: 11/01/23

Arsenic	0.561	0.200	mg/kg dry	0.667	17.2	20				
Barium	5.38	0.400	"	7.03	26.7	20				QR-04
Cadmium	0.0337	0.200	"	0.0373	10.3	20				
Copper	6.76	0.400	"	15.4	77.8	20				QR-04
Lead	1.57	0.200	"	1.68	6.61	20				
Nickel	3.18	0.400	"	5.62	55.5	20				QR-01
Silver	0.0130	0.0200	"	0.0179	31.6	20				QR-01
Zinc	2.43	0.400	"	2.74	11.8	20				
Selenium	ND	0.260	"	ND		20				

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Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
 Project Manager: Paul Henchan

Reported:
 11/06/23 09:05

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGJ1174 - EPA 3050B

Matrix Spike (BGJ1174-MS1)

Source: 2310444-01

Prepared: 10/30/23 Analyzed: 11/01/23

Arsenic	24.8	0.200	mg/kg dry	40.6	0.667	59.4	75-125				QM-07
Barium	49.7	0.400	"	40.6	7.03	105	75-125				
Cadmium	2.07	0.200	"	2.03	0.0373	100	75-125				
Copper	30.1	0.400	"	40.6	15.4	36.2	75-125				QM-07
Lead	20.7	0.200	"	20.3	1.68	94.0	75-125				
Nickel	26.1	0.400	"	40.6	5.62	50.4	75-125				QM-07
Silver	1.95	0.0200	"	2.03	0.0179	95.3	75-125				
Zinc	26.5	0.400	"	40.6	2.74	58.6	75-125				QM-07
Selenium	7.22	0.260	"	4.06	ND	178	75-125				QM-07

Matrix Spike Dup (BGJ1174-MSD1)

Source: 2310444-01

Prepared: 10/30/23 Analyzed: 11/01/23

Arsenic	24.7	0.200	mg/kg dry	40.6	0.667	59.3	75-125	0.162	25		QM-07
Barium	51.1	0.400	"	40.6	7.03	109	75-125	2.82	25		
Cadmium	2.14	0.200	"	2.03	0.0373	104	75-125	3.25	25		
Copper	29.8	0.400	"	40.6	15.4	35.4	75-125	0.993	25		QM-07
Lead	21.2	0.200	"	20.3	1.68	96.4	75-125	2.30	25		
Nickel	25.9	0.400	"	40.6	5.62	50.0	75-125	0.636	25		QM-07
Silver	2.00	0.0200	"	2.03	0.0179	97.8	75-125	2.59	25		
Zinc	26.6	0.400	"	40.6	2.74	58.9	75-125	0.427	25		QM-07
Selenium	6.68	0.260	"	4.06	ND	165	75-125	7.73	25		QM-07

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Project: Noble - Grant Arens 02 Facility
 Project Number: UWRWE-A2090-ABN
 Project Manager: Paul Henchan

Reported:
 11/06/23 09:05

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGJ0999 - 3060A Mod

Blank (BGJ0999-BLK1)

Prepared & Analyzed: 10/25/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGJ0999-BS1)

Prepared & Analyzed: 10/25/23

Chromium, Hexavalent 25.6 0.30 mg/kg wet 25.0 102 80-120

Duplicate (BGJ0999-DUP1)

Source: 2310444-01

Prepared & Analyzed: 10/25/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGJ0999-MS1)

Source: 2310444-01

Prepared & Analyzed: 10/25/23

Chromium, Hexavalent 25.2 0.30 mg/kg dry 25.4 ND 99.4 75-125

Matrix Spike Dup (BGJ0999-MSD1)

Source: 2310444-01

Prepared & Analyzed: 10/25/23

Chromium, Hexavalent 25.3 0.30 mg/kg dry 25.4 ND 99.8 75-125 0.402 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
 Project Manager: Paul Henchan

Reported:
 11/06/23 09:05

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

Summit Scientific

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

Batch BGJ1145 - General Preparation

Blank (BGJ1145-BLK1)

Prepared: 10/27/23 Analyzed: 11/01/23

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

LCS (BGJ1145-BS1)

Prepared: 10/27/23 Analyzed: 11/01/23

Calcium	5.24	0.0500	mg/L wet	5.00		105	70-130			
Magnesium	5.31	0.0500	"	5.00		106	70-130			
Sodium	5.60	0.0500	"	5.00		112	70-130			

Summit Scientific

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Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
 Project Manager: Paul Henchan

Reported:
 11/06/23 09:05

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

Summit Scientific

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

Batch BGJ1203 - General Preparation

Duplicate (BGJ1203-DUP1)	Source: 2310444-01		Prepared: 10/30/23 Analyzed: 10/31/23		
% Solids	98.6	%	98.6	0.0636	20

Summit Scientific



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 Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility
 Project Number: UWRWE-A2090-ABN
 Project Manager: Paul Henchan

Reported:
 11/06/23 09:05

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

Summit Scientific

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

Batch BGJ1192 - General Preparation

Blank (BGJ1192-BLK1)

Prepared & Analyzed: 10/30/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGJ1192-BS1)

Prepared & Analyzed: 10/30/23

Specific Conductance (EC) 0.153 0.0100 mmhos/cm 0.150 102 95-105

Duplicate (BGJ1192-DUP1)

Source: 2310444-01

Prepared & Analyzed: 10/30/23

Specific Conductance (EC) 0.0244 0.0100 mmhos/cm 0.0251 2.87 20

Summit Scientific

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 PO Box 1289
 Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
 Project Manager: Paul Henchan

Reported:
 11/06/23 09:05

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

Summit Scientific

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

Batch BGJ1191 - General Preparation

LCS (BGJ1191-BS1)

Prepared & Analyzed: 10/30/23

pH 9.13 pH Units 9.18 99.5 95-105

Duplicate (BGJ1191-DUP1)

Source: 2310444-01

Prepared & Analyzed: 10/30/23

pH 6.57 pH Units 6.73 2.41 20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Grant Arens 02 Facility

Project Number: UWRWE-A2090-ABN
Project Manager: Paul Henchan

Reported:
11/06/23 09:05

Notes and Definitions

- QR-04 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- 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.
- QLCS-03 The spike recovery was outside acceptance limits for this analyte indicating a potential low bias.
- 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