

FREMONT ENVIRONMENTAL INC.

October 6, 2023

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

Subject: **Excavation Report**
 PTF-64N64W 32SENE
 SENE Sec. 32, T4N, R64W
 Weld County, Colorado
 Fremont Project No. C022-089
 Facility #327571, Remediation #23226

Dear Mr. Peterson:

Enclosed please find a copy of the above referenced Excavation Report for the PTF-64N64W 32SENE release site in Weld County, Colorado. The enclosed report describes excavation and sampling efforts to remediate impacted soil at the site.

Since excavation has confirmed the removal of subsurface petroleum impacts, Noble Energy Inc. should request that a No Further Action (NFA) determination be provided by the Energy and Carbon Management Commission (ECMC) for this site.

Please contact me at (603) 477-9517 if you require any additional information.

Fremont appreciates the opportunity to provide this service.

Sincerely,
FREMONT ENVIRONMENTAL INC.

A handwritten signature in black ink, appearing to read "Ethan Black", written over a light blue circular stamp.

Ethan D. Black, PG
Consultant

Enclosure

EXCAVATION REPORT

NOBLE ENERGY INC.

PTF-64N64W 32SENE

WELD COUNTY, COLORADO

FREMONT PROJECT NO. C022-089

FACILITY #327571, REMEDIATION #23226

**Prepared by:
Fremont Environmental Inc.
1759 Redwing Lane
Broomfield, CO 80020
(303) 956-8714**

October 6, 2023

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EXCAVATION REPORT
NOBLE ENERGY INC.
PTF-64N64W 32SENE
WELD COUNTY, COLORADO
FREMONT PROJECT NO. C022-089
FACILITY #327571, REMEDIATION #23226

1.0 INTRODUCTION

The purpose of this document is to present information collected during the excavation of petroleum-impacted soil at the PTF-64N64W 32SENE (PTF) tank battery located in Weld County, Colorado. This excavation project was completed on July 25, 2023.

2.0 BACKGROUND INFORMATION

2.1 Site Location

The PTF facility is located approximately eight miles south of Kersley, Colorado in Weld County as shown on Figure 1. The site is located in a rural and agricultural area approximately 0.31 miles south of the intersection of County Road 40 and County Road 53. The location is further described as the SE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 32, Township 4N, Range 64W.

2.2 Site History

The site consisted of the PTF tank battery which serviced the PTF C 32-8 and PTF C 32-1 natural gas wells. The PTF C 32-8 well was drilled in 1991 to a measured depth of 7,118 feet and the PTF C 32-1 well was drilled in 1991 to a measured depth of 7,130 feet.

A historical release was discovered within the produced water vault (PWV) excavation during decommissioning activities at the PTF facility in June of 2022. A site investigation

to determine the extent of soil impacts was undertaken on October 6, 2022. Groundwater was not encountered at that time.

3.0 FIELD ACTIVITIES

Remediation efforts consisted of the excavation of petroleum impacted soil directly beneath, and adjacent to the areas of the former PWV removed from the PTF facility. The soil consisted of poorly graded sand to the excavation's maximum depth of approximately nine feet below ground surface. Groundwater was encountered in the excavation at depth of nine feet bgs. The excavation extent is illustrated on Figures 2 through 7.

The excavation of impacts located at the former PWV was completed on July 25, 2023. Soil samples were collected, as grab samples, from the excavation's sidewalls between seven-and-eight feet bgs, and from the floor of the excavation in the saturated zone at nine feet bgs. Additionally, five groundwater samples were collected from the floor of the excavation at nine feet bgs.

The soil samples were analyzed by Summit Scientific, Inc. in Golden, Colorado for benzene, toluene, ethylbenzene and total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene (TMB), total petroleum hydrocarbons – gasoline range organics (TPH-GRO) by EPA method 8260B, TPH – diesel range organics (TPH-DRO), extended range organics (TPH-ORO) by EPA method 8015, polycyclic aromatic hydrocarbons (PAH) acenaphthene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, chrysene, dibenz (a,h) anthracene, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, pyrene, 1-methylnaphthalene, 2-methylnaphthalene by EPA method 8270D, specific conductance (EC) by EPA Method 120.1 saturated paste extraction, saturated paste extraction of soluble nutrients by EPA method 6020/USDA60 6(2) for calculated analysis of sodium absorption ratio (SAR), pH by saturated paste

extraction APHA/ASTM/EPA methods, Total Metals by EPA method 6020B, and Hexavalent Chromium by EPA method 7196. The laboratory reports and chain-of-custody documentation are included in Appendix B.

A summary of the soil laboratory data is included in Tables 1 through 4. The laboratory analyses indicate that organic petroleum constituents in soil samples collected from the sidewalls and floor of the excavation achieved the ECMC Table 915-1 Protection of Groundwater Soil Screening Levels (PGSSLs). However, two samples (E01@8.0' and S03@8.0') exceeded ECMC Table 915-1 PGSSLs for barium. A local background sample (BKG02@10.0) collected at similar depth in native soil, also exceeded the ECMC Table 915-1 PGSSLs for barium. Additionally, all samples exceeded ECMC Table 915-1 residential soil screening levels (RSSLs) for arsenic. Five local background samples collected adjacent to the excavation, in native soil at similar depths, also exceeded the ECMC Table 915-1 RSSLs for arsenic. Thus, it is proposed that these exceedances be attributed to native soil conditions.

Five groundwater samples (GW01, GW02, GW03, GW04, GW05), collected from the floor of the excavation at nine feet bgs, were submitted to Summit Scientific, Inc. for the analyses of organic petroleum constituents benzene, toluene, ethylbenzene, xylenes (BTEX), 1,2,4-trimethylbenzene; 1,3,5-trimethylbenzene and naphthalene by EPA Method 8260B.

The laboratory analysis indicate that all groundwater collected achieved the ECMC Table 915-1 standards for all organic petroleum constituents analyzed. The groundwater chemistry is shown on Figure 7 and the analytical data are summarized in Table 5. A copy of the laboratory's report is presented in Appendix B.

A total of approximately 2,352 tons (~ 1,680 cubic yards) of petroleum impacted soil was removed from the location via excavation by Tasman Geosciences Inc. during remediation efforts. Impacted soil was disposed of at Buffalo Ridge Landfill in Keenesburg, Colorado as non-hazardous waste, and the excavation was backfilled using clean imported fill.

4.0 DISCUSSION

As demonstrated by the soil sampling, petroleum impacted soil was removed from the PTF facility via excavation. This was confirmed by analysis of soil and groundwater samples collected from the exterior sidewalls and floor of the performed excavation. Furthermore, exceedances for barium and arsenic are proposed to be attributed to native soil conditions based on concentrations observed in five local background samples collected adjacent to the PWV excavation. Approximately 1,680 cubic yards of impacted soil were removed and transported to the landfill. The soil data for the excavation is illustrated and summarized in the attached tables and figures.


A no further action designation is being requested using the ECMC Table 915-1 RSSLs for the PTF-64N64W 32SENE site based on the results of groundwater samples collected in excavation observed to be unimpacted.

5.0 REMARKS

The discussion and conclusions contained in this report represent our professional opinions. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

This report was prepared by **FREMONT ENVIRONMENTAL INC.**

Prepared By:



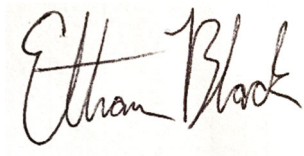
10/06/23

Date_____

Jeff T. Griggs

Geologist

Reviewed by:



10/06/23

Date_____

Ethan D. Black, PG

Consultant

TABLES

TABLE 1
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
PTF-64N64W 32SENE, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C022-089

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)
ECMC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500**		
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500**		
WCS01@5.0'	7/6/2023	5.0 Ft	<0.0020	<0.0050	0.15	<0.010	1.5	<0.0050	0.32	460	400	<50
B01@9.0'	7/7/2023	9.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
S01@8.0'	7/7/2023	8.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
W01@7.0'	7/7/2023	7.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
Imported Fill	7/7/2023	N/A	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
N01@8.0'	7/10/2023	8.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
W02@8.0'	7/10/2023	8.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
W03@8.0'	7/10/2023	8.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
B02@9.0'	7/11/2023	9.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
S02@7.0'	7/11/2023	7.0 Ft	<0.0020	<0.0050	<0.0050	0.021	0.0064	<0.0050	<0.0038	7.9	<50	<50
B03@9.0'	7/13/2023	9.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
N02@8.0'	7/14/2023	8.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
B04@9.0'	7/17/2023	9.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
B05@9.0'	7/17/2023	9.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
B06@9.0'	7/18/2023	9.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
E01@8.0'	7/19/2023	8.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
B07@9.0'	7/20/2023	9.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
N03@8.0'	7/20/2023	8.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
E03@8.0'	7/20/2023	8.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
B08@9.0'	7/24/2023	9.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
S03@8.0'	7/24/2023	8.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
E02@8.0'	7/24/2023	8.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<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

TABLE 2
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
PTF-64N64W 32SENE, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C022-089

Sample ID	Sample Date	Depth (ft)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Benzo (b) Fluoranthene (mg/kg)	Benzo (k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3- cd) Pyrene (mg/kg)	Pyrene (mg/kg)	1-Methyl - Naphthalene (mg/kg)	2-Methyl- Naphthalene (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
WCS01@5.0'	7/6/2023	5.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0365	<0.00500	<0.00500	0.161	0.218
B01@9.0'	7/7/2023	9.0 Ft	<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
S01@8.0'	7/7/2023	8.0 Ft	<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
W01@7.0'	7/7/2023	7.0 Ft	<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
Imported Fill	7/7/2023	N/A	<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
N01@8.0'	7/10/2023	8.0 Ft	<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
W02@8.0'	7/10/2023	8.0 Ft	<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
W03@8.0'	7/10/2023	8.0 Ft	<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
B02@9.0'	7/11/2023	9.0 Ft	<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
S02@7.0'	7/11/2023	7.0 Ft	<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
B03@9.0'	7/13/2023	9.0 Ft	<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
N02@8.0'	7/14/2023	8.0 Ft	<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
B04@9.0'	7/17/2023	9.0 Ft	<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
B05@9.0'	7/17/2023	9.0 Ft	<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
B06@9.0'	7/18/2023	9.0 Ft	<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
E01@8.0'	7/19/2023	8.0 Ft	<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
B07@9.0'	7/20/2023	9.0 Ft	<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
N03@8.0'	7/20/2023	8.0 Ft	<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
E03@8.0'	7/20/2023	8.0 Ft	<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
B08@9.0'	7/24/2023	9.0 Ft	<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
S03@8.0'	7/24/2023	8.0 Ft	<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
E02@8.0'	7/24/2023	8.0 Ft	<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

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

TABLE 3
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE ENERGY INC.
PTF-64N64W 32SENE, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C022-089

Sample ID	Sample Date	Depth (ft)	pH	EC (mmhos/cm)	SAR	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
WCS01@5.0'	7/6/2023	5.0 Ft	8.23	1.66	1.61	0.110
BKG01@10.0'	7/6/2002	10.0 Ft	7.83	1.23	1.65	0.246
BKG02@10.0'	7/6/2023	10.0 Ft	7.84	1.04	1.35	0.0760
BKG03@10.0'	7/6/2023	10.0 Ft	7.78	1.70	1.78	0.0515
BKG04@10.0'	7/6/2023	10.0 Ft	7.93	0.884	1.97	0.125
B01@9.0'	7/7/2023	9.0 Ft	7.94	0.900	1.56	0.0876
S01@8.0'	7/7/2023	8.0 Ft	7.92	0.952	1.28	0.153
W01@7.0'	7/7/2023	7.0 Ft	7.56	0.352	0.138	0.199
Imported Fill	7/7/2023	N/A	8.35	0.583	4.35	0.193
BKG05@10.0'	7/7/2023	10.0 Ft	7.88	1.44	2.42	0.292
N01@8.0'	7/10/2023	8.0 Ft	7.63	1.11	0.864	0.261
W02@8.0'	7/10/2023	8.0 Ft	7.53	1.08	1.14	0.296
W03@8.0'	7/10/2023	8.0 Ft	7.45	1.12	1.55	0.178
B02@9.0'	7/11/2023	9.0 Ft	7.51	1.20	2.04	0.0155
S02@7.0'	7/11/2023	7.0 Ft	7.83	0.855	1.26	0.0282
B03@9.0'	7/13/2023	9.0 Ft	7.43	1.17	1.39	0.123
N02@8.0'	7/14/2023	8.0 Ft	7.91	0.849	1.27	0.137
B04@9.0'	7/17/2023	9.0 Ft	7.60	1.10	1.70	0.145
B05@9.0'	7/17/2023	9.0 Ft	7.67	1.06	1.66	0.117
B06@9.0'	7/18/2023	9.0 Ft	7.60	1.27	1.85	<0.0100
E01@8.0'	7/19/2023	8.0 Ft	7.69	1.31	0.821	0.285

Sample ID	Sample Date	Depth (ft)	pH	EC (mmhos/cm)	SAR	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
B07@9.0'	7/20/2023	9.0 Ft	7.58	1.28	1.94	0.127
N03@8.0'	7/20/2023	8.0 Ft	7.30	1.26	1.48	0.230
E03@8.0'	7/20/2023	8.0 Ft	7.48	0.443	0.148	0.137
B08@9.0'	7/24/2023	9.0 Ft	7.81	0.956	2.35	0.202
S03@8.0'	7/24/2023	8.0 Ft	7.90	0.651	0.311	0.296
E02@8.0'	7/24/2023	8.0 Ft	7.73	0.909	2.04	0.116

Bold faced values exceed the COGCC Table 915-1 concentrations

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

Local Background Samples (BKG01@10.0', BKG02@10.0', BKG03@10.0', BKG04@10.0', BKG05@10.0')

TABLE 4
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
PTF-64N64W 32SENE, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C022-089

Sample ID	Sample Date	Depth (ft)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			0.68	15000	71	0.3	3100	400	1500	390	390	23000
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
WCS01@5.0'	7/6/2023	5.0 Ft	0.627	29.8	<0.240	<0.30	1.53	2.61	1.49	<0.312	<0.0240	5.74
BKG01@10.0'	7/6/2002	10.0 Ft	1.25	64.0	<0.241	<0.30	3.27	3.30	2.36	<0.313	<0.0241	8.98
BKG02@10.0'	7/6/2023	10.0 Ft	0.777	106	<0.248	<0.30	2.05	5.01	3.31	<0.323	0.0298	9.64
BKG03@10.0'	7/6/2023	10.0 Ft	2.11	31.1	<0.249	<0.30	1.42	2.47	1.53	<0.324	<0.0249	5.56
BKG04@10.0'	7/6/2023	10.0 Ft	0.744	28.2	<0.237	<0.30	1.52	2.29	1.28	<0.307	<0.0237	7.46
B01@9.0'	7/7/2023	9.0 Ft	0.924	25.3	<0.242	<0.30	1.89	2.81	2.41	<0.315	<0.0242	9.94
S01@8.0'	7/7/2023	8.0 Ft	1.56	48.2	<0.247	<0.30	2.65	3.79	3.28	<0.321	<0.0247	12.3
W01@7.0'	7/7/2023	7.0 Ft	3.20	44.6	<0.232	<0.30	4.09	4.08	4.20	<0.302	0.0339	14.5
Imported Fill	7/7/2023	N/A	2.69	51.1	<0.223	<0.30	4.33	6.42	5.42	<0.290	<0.0223	16.1
BKG05@10.0'	7/7/2023	10.0 Ft	2.33	54.9	<0.250	<0.30	3.10	3.52	3.24	<0.325	0.103	13.7
N01@8.0'	7/10/2023	8.0 Ft	1.64	47.0	<0.237	<0.30	2.25	3.61	3.10	<0.308	<0.0237	11.2
W02@8.0'	7/10/2023	8.0 Ft	1.64	67.8	<0.243	<0.30	3.48	4.54	4.14	<0.316	<0.0243	13.2
W03@8.0'	7/10/2023	8.0 Ft	1.75	45.1	<0.238	<0.30	2.79	2.94	2.72	<0.309	<0.0238	9.83
B02@9.0'	7/11/2023	9.0 Ft	0.595	33.4	<0.241	<0.30	1.16	2.79	1.19	<0.313	<0.0241	5.40
S02@7.0'	7/11/2023	7.0 Ft	1.93	64.7	<0.237	<0.30	1.50	3.59	1.49	<0.308	<0.0237	5.91
B03@9.0'	7/13/2023	9.0 Ft	0.925	48.3	<0.238	<0.30	1.57	3.89	1.78	<0.309	<0.0238	7.54
N02@8.0'	7/14/2023	8.0 Ft	1.31	58.6	<0.235	<0.30	2.40	3.84	3.02	<0.305	<0.0235	11.8
B04@9.0'	7/17/2023	9.0 Ft	1.63	35.9	<0.243	<0.30	2.55	3.46	3.59	<0.316	<0.0243	15.2
B05@9.0'	7/17/2023	9.0 Ft	1.62	36.6	<0.239	<0.30	2.16	3.29	2.99	<0.311	<0.0239	12.4
B06@9.0'	7/18/2023	9.0 Ft	1.45	27.6	<0.238	<0.30	1.48	2.42	1.70	<0.309	<0.0238	6.39
E01@8.0'	7/19/2023	8.0 Ft	2.51	102	<0.255	<0.30	2.26	3.59	2.70	<0.332	0.0301	8.25
B07@9.0'	7/20/2023	9.0 Ft	1.34	21.8	<0.200	<0.30	1.72	2.00	1.59	<0.310	<0.0200	6.79
N03@8.0'	7/20/2023	8.0 Ft	3.20	67.5	0.213	<0.30	4.56	5.24	5.26	<0.321	0.0281	20.0
E03@8.0'	7/20/2023	8.0 Ft	4.31	55.6	<0.200	<0.30	3.22	3.60	3.89	<0.323	<0.0200	13.0
B08@9.0'	7/24/2023	9.0 Ft	1.76	22.4	<0.200	<0.30	4.34	4.67	3.55	<0.312	<0.0200	14.3
S03@8.0'	7/24/2023	8.0 Ft	3.74	101	<0.200	<0.30	4.32	4.79	5.94	<0.327	0.0312	16.8
E02@8.0'	7/24/2023	8.0 Ft	2.80	66.5	<0.200	<0.30	4.03	4.24	5.10	<0.320	<0.0200	17.2

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

Local Background Samples (BKG01@10.0', BKG02@10.0', BKG03@10.0', BKG04@10.0', BKG05@10.0')

TABLE 5
SUMMARY OF GROUNDWATER ELEVATION DATA AND ORGANIC CHEMISTRY DATA
NOBLE ENERGY INC.
PTF-64N64W 32SENE, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C022-089

Sample ID	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4- Trimethyl- Benzene (µg/L)	1,3,5- Trimethyl- Benzene (µg/L)	TOC Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	LNAPL Thickness (ft)
ECMC Table 915-1 Limits		5.0	560	700	1400	140	67	67				
GW01	7/12/2023	<1.0	<1.0	<1.0	<2.0	6.4	3.4	2.8	N/A	9.0 Ft	N/A	NP
GW02	7/12/2023	<1.0	<1.0	<1.0	<2.0	<1.0	2.3	2.0	N/A	9.0 Ft	N/A	NP
GW03	7/17/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	N/A	9.0 Ft	N/A	NP
GW04	7/19/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	N/A	9.0 Ft	N/A	NP
GW05	7/24/2023	<1.0	<1.0	<1.0	13	<1.0	5.8	15	N/A	9.0 Ft	N/A	NP

Bold face values exceed the COGCC limits

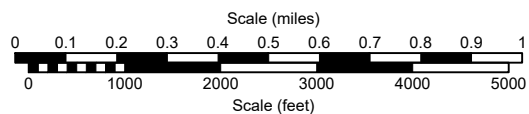
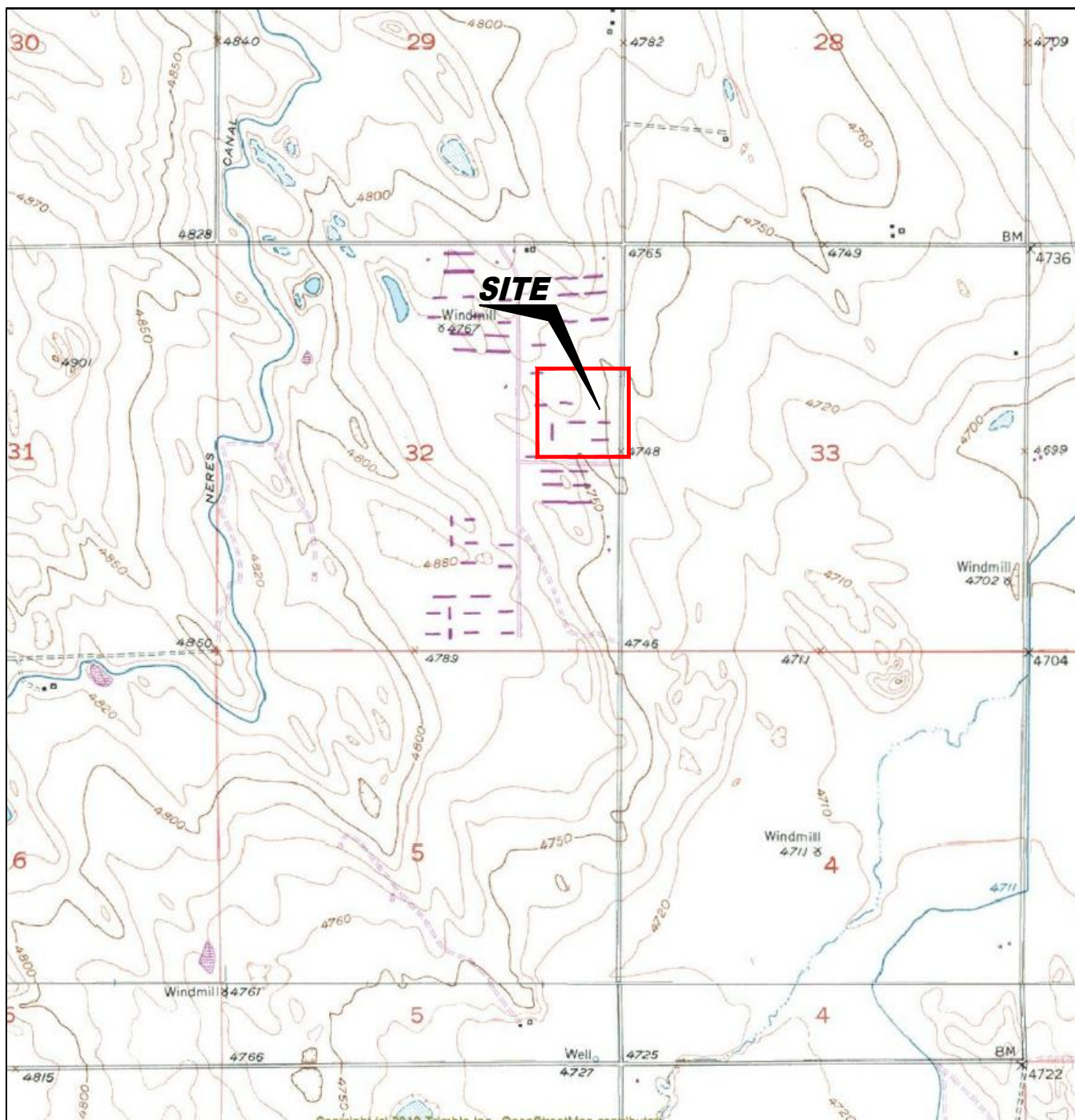
Red highlighted 915-1 Limits indicate the referenced groundwater screening level

NP - No measureable

LNAPL

NA - Not Analyzed

FIGURES



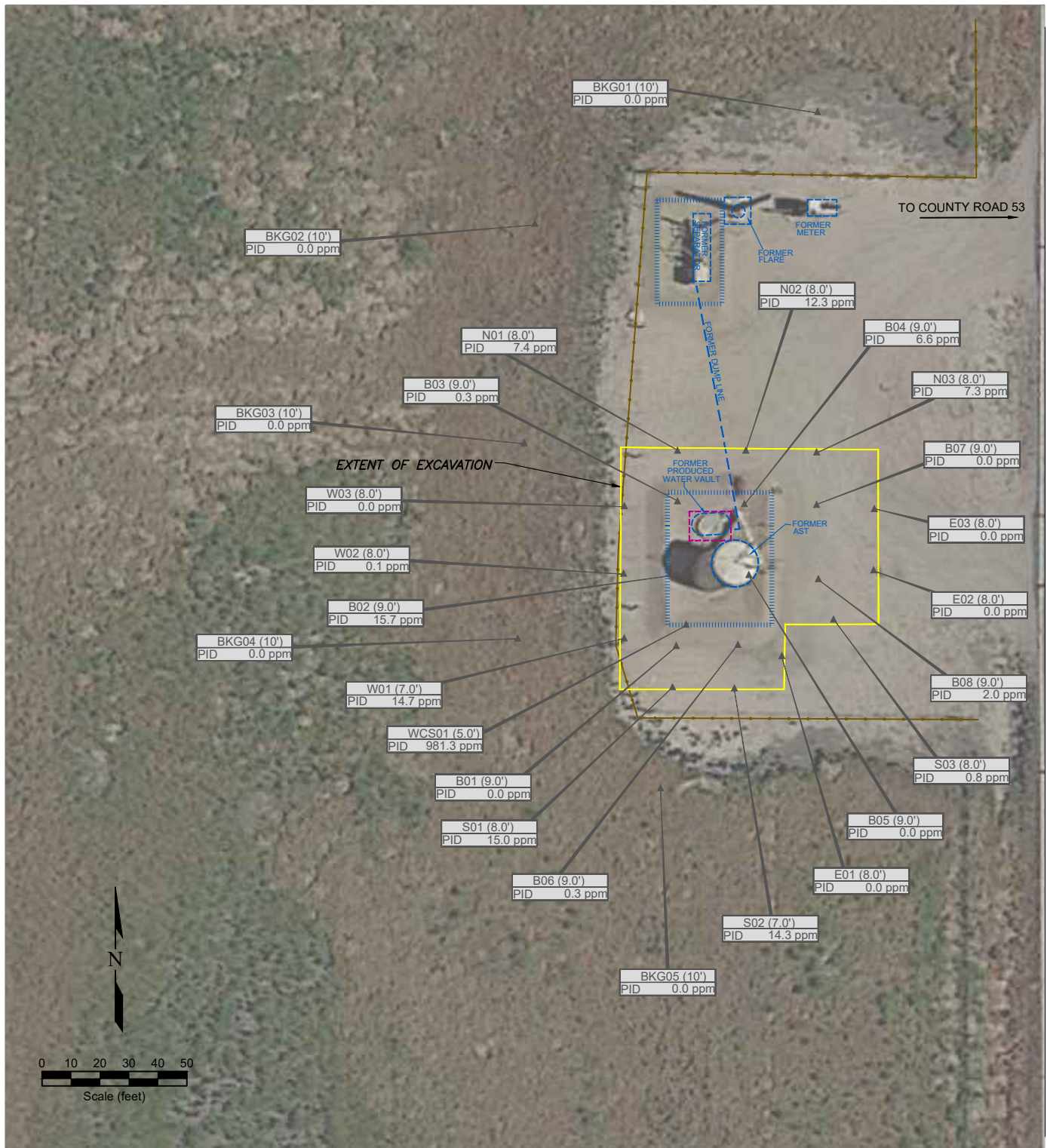
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

Noble Energy, Inc. ~ PTF-64N64W 32SENE
SENE Sec. 32, T4N, R64W, 6th PM
Weld County, Colorado
40.271692°, -104.565620°

Project # C022-089	API # 05-123-14878	Facility # 327571
Date 09/21/2023	Remediation # 23226	Filename 22089T





**Figure 2
SITE MAP**

Noble Energy, Inc. ~ PTF-64N64W 32SENE
 SENE Sec. 32, T4N, R64W, 6th PM
 Weld County, Colorado
 40.271692°, -104.565620°

Project No. C022-089	API # 05-123-14878	Facility # 327571
Date 9/23/2023	Remediation # 23226	Filename 22089QN2



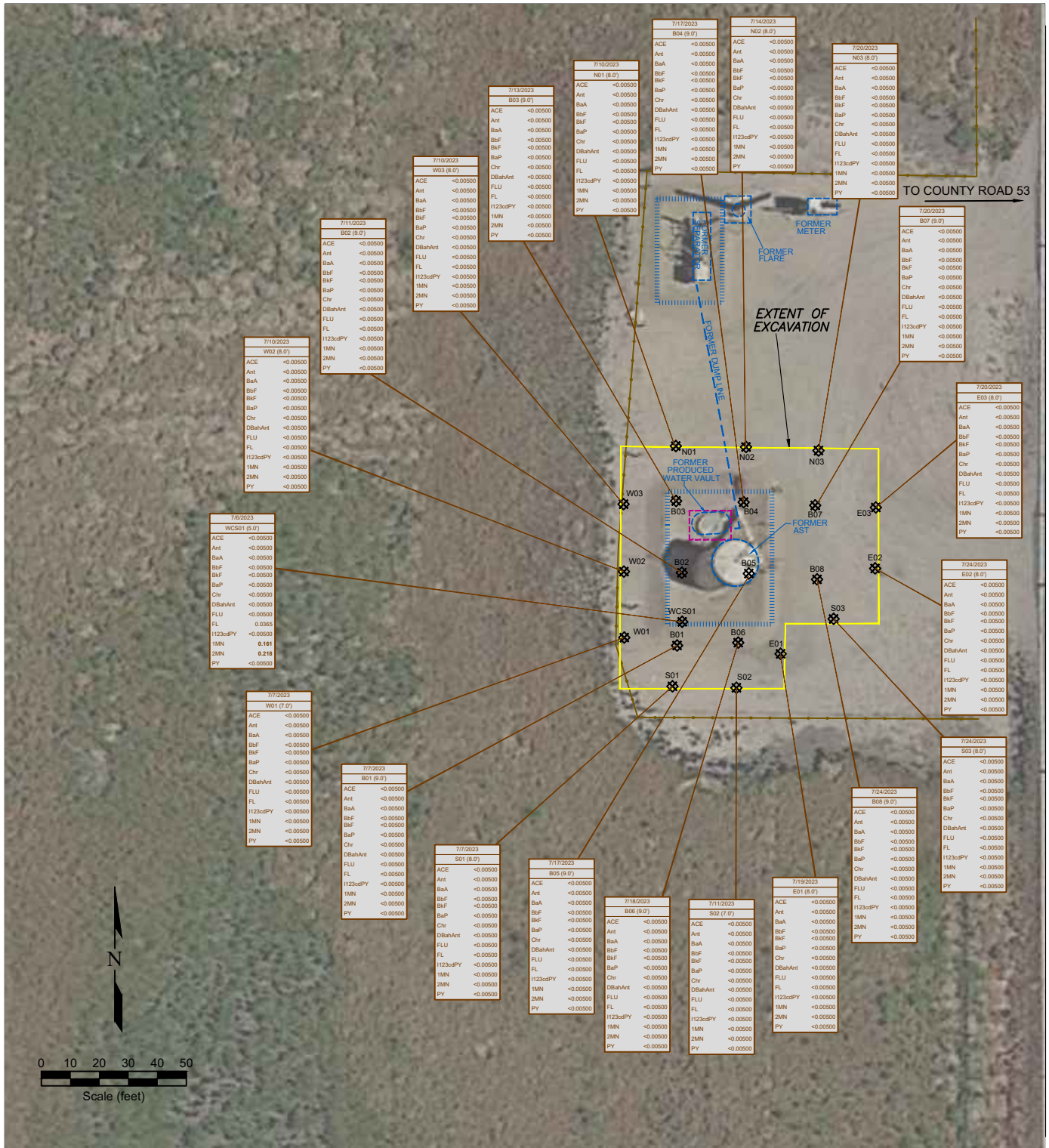
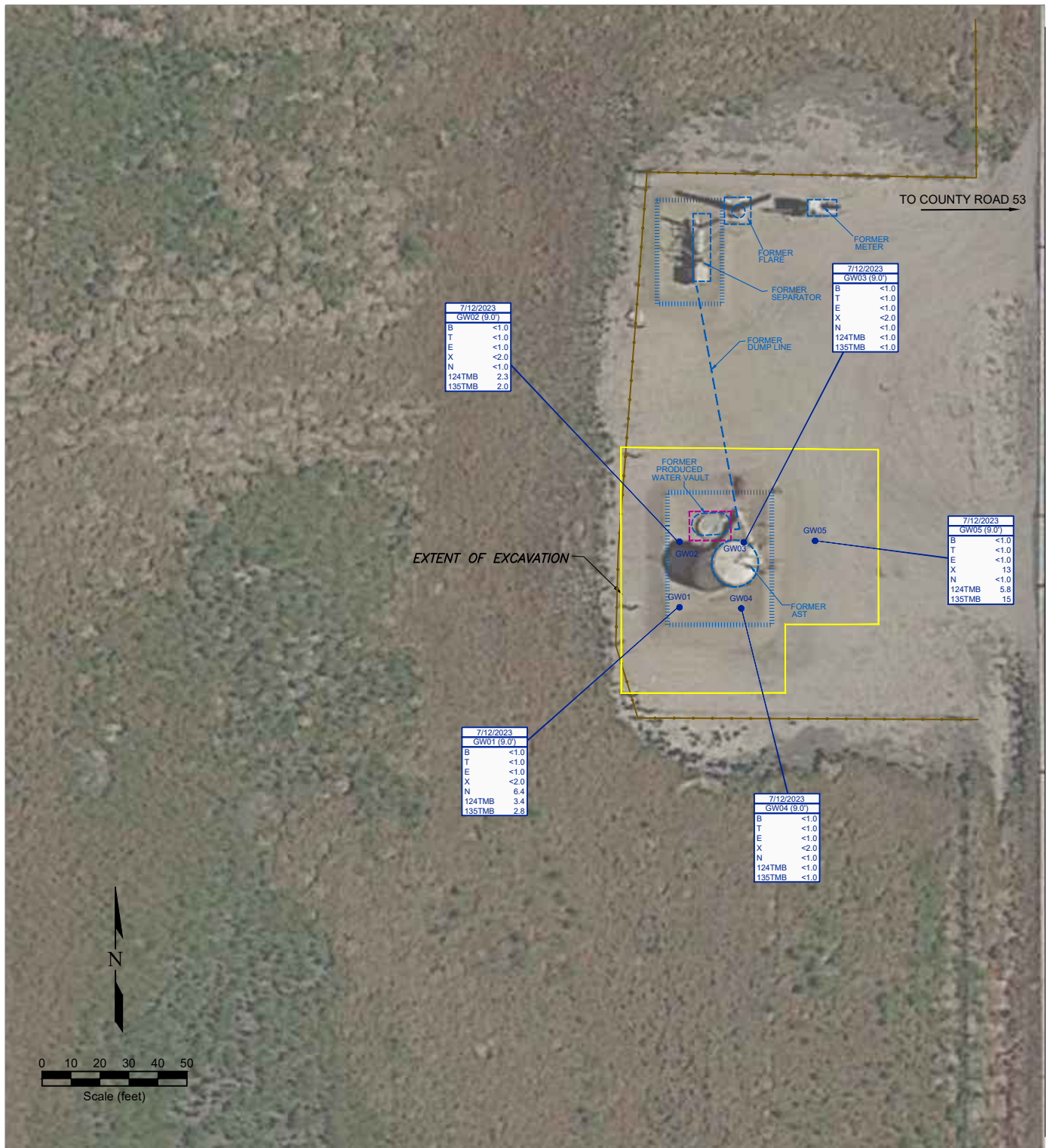


Figure 4
PAH SOIL CHEMISTRY MAP

Noble Energy, Inc. ~ PTF-64N64W 32SENE
SENE Sec. 32, T4N, R64W, 6th PM
Weld County, Colorado
40.271692°, -104.565620°

Project No. C022-089	API # 05-123-14878	Facility # 327571	REMONT ENVIRONMENTAL
Date 9/23/2023	Remediation # 23226	Filename 22089QN4	



LEGEND

- WATER SAMPLE LOCATION
- ABOVE GROUND STORAGE TANK
- FORMER FACILITY
- BUILDING
- CONTAINMENT WALL
- EXTENT OF EXCAVATION
- EXTENT OF EXCAVATION
- FENCE LINE
- DUMP LINE

DATE SAMPLED	SAMPLE ID & DEPTH (ft)
7/12/2023	GW01 (9.0')
B	<1.0
T	<1.0
E	<1.0
X	<2.0
N	6.4
124TMB	3.4
135TMB	2.8

BENZENE (ug/L)
TOLUENE (ug/L)
ETHYLBENZENE (ug/L)
TOTAL XYLENES (ug/L)
NAPHTHALENE (ug/L)
1,2,4-TRIMETHYLBENZENE (ug/L)
1,3,5-TRIMETHYLBENZENE (ug/L)

Figure 7

GROUNDWATER CHEMISTRY MAP

Noble Energy, Inc. ~ PTF-64N64W 32SENE
SENE Sec. 32, T4N, R64W, 6th PM
Weld County, Colorado
40.271692°, -104.565620°

Project No. C022-089	API # 05-123-14878	Facility # 327571
Date 9/22/23	Remediation # 23226	Filename 22089QN2



APPENDIX A

PHOTO LOG



Description:

PTF-64N64W 32SENE (Northern Facility) - Waste Characterization Sample - WCS01@5.0' - Staining and Odor Present - PID 981.3pp



Description:

PTF-64N64W 32SENE (Northern Facility) - Floor of Excavation - First Base Sample - B01@9.0' - No Impacts Noted - PID 0.0ppm



Description:

PTF-64N64W 32SENE (Northern Facility) - Floor of Excavation - Second Base Sample - B02@9.0' - No Impacts Noted - PID 15.7ppm



Description:

PTF-64N64W 32SENE (Northern Facility) - Floor of Excavation - Third Base Sample - B03@9.0' - No Impacts Noted - PID 0.3ppm



Description:

PTF-64N64W 32SENE (Northern Facility) - Floor of Excavation - Fourth Base Sample - B04@9.0' - No Impacts Noted - PID 6.6ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - Floor of Excavation - Fifth Base Sample - B05@9.0' - No Impacts Noted - PID 0.0ppm



Description:

PTF-64N64W 32SENE (Northern Facility) - Floor of Excavation - Sixth Base Sample - B06@9.0' - No Impacts Noted - PID 0.3ppm



Description:

PTF-64N64W 32SENE (Northern Facility) - Floor of Excavation - Seventh Base Sample - B07@9.0' - No Impacts Noted - PID 0.0ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - Floor of Excavation - Eighth Base Sample - B08@9.0' - No Impacts Noted - PID 2.0ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - North Sidewall of Excavation - Second Sample - N02@8.0' - No Impacts Noted - PID 12.3ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - North Sidewall of Excavation - Third Sample - N03@8.0' - No Impacts Noted - PID 7.3ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - South Sidewall of Excavation - First Sample - S01@8.0' - No Impacts Noted - PID 15.0ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - South Sidewall of Excavation - Second Sample - S02@7.0' - No Impacts Noted - PID 14.3ppm



Description:

PTF-64N64W 32SENE (Northern Facility) - South Sidewall of Excavation - Third Sample - S03@8.0' - No Impacts Noted - PID 0.8ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - East Sidewall of Excavation - First Sample - E01@8.0' - No Impacts Noted - PID 0.0ppm

Photo Log



Jul 24, 2023 3:31:56 PM

Description:

PTF-64N64W 32SENE (Northern Facility) - East Sidewall of Excavation - Second Sample - E02@8.0' - No Impacts Noted - PID 1.2ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - East Sidewall of Excavation - Third Sample - E03@8.0' - No Impacts Noted - PID 0.0ppm



Description:

PTF-64N64W 32SENE (Northern Facility) - West Sidewall of Excavation - First Sample - W01@7.0' - No Impacts Noted - PID 14.7ppm



Description:

PTF-64N64W 32SENE (Northern Facility) - West Sidewall of Excavation - Second Sample - W02@8.0' - No Impacts Noted - PID 0.1ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - West Sidewall of Excavation - Third Sample - W03@8.0' - No Impacts Noted - PID 0.0ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - First Groundwater Sample - GW01 - No Odor or Sheen - Depth to Groundwater - 9.0 Feet



Description:

PTF-64N64W 32SENE (Northern Facility) - Second Groundwater Sample - GW02 - No Odor or Sheen - Depth to Groundwater - 9.0 Feet



Description:

PTF-64N64W 32SENE (Northern Facility) - Third Groundwater Sample - GW03 - No Odor or Sheen - Depth to Groundwater - 9.0 Feet

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - Fourth Groundwater Sample - GW04 - No Odor or Sheen - Depth to Groundwater - 9.0 Feet

Photo Log



Description:

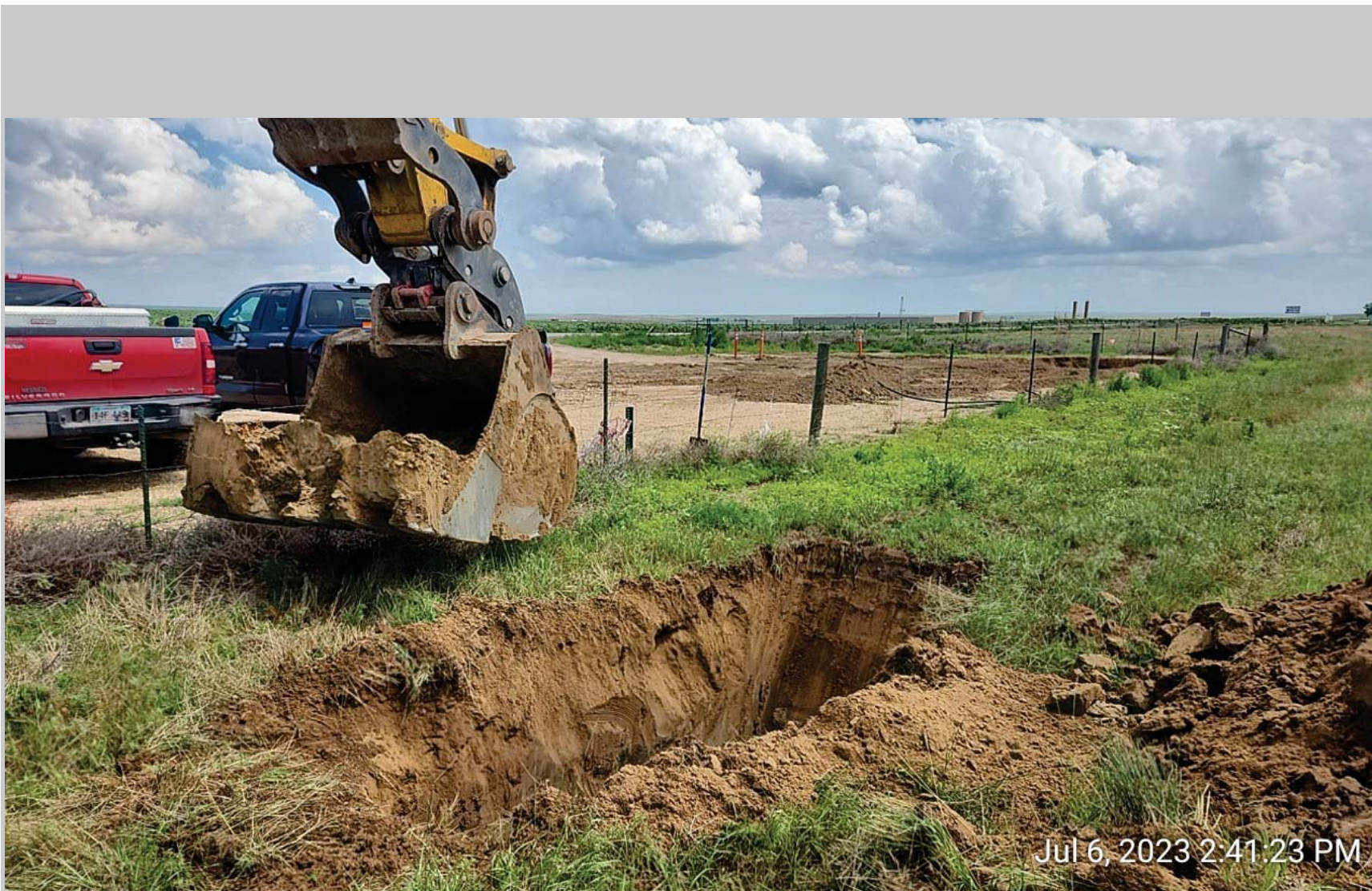
PTF-64N64W 32SENE (Northern Facility) - Fifth Groundwater Sample - GW05 - No Odor or Sheen - Depth to Groundwater - 9.0 Feet

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - First Local Background Sample - BKG01@10.0' - No Impacts Noted - PID 0.0ppm



Description:

PTF-64N64W 32SENE (Northern Facility) - Second Local Background Sample - BKG02@10.0' - No Impacts Noted - PID 0.0ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - Third Local Background Sample - BKG03@10.0' - No Impacts Noted - PID 0.0ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - Fourth Local Background Sample - BKG04@10.0' - No Impacts Noted - PID 0.0ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - Fifth Local Background Sample - BKG05@10.0' - No Impacts Noted - PID 0.0ppm

APPENDIX B

LABORATORY DOCUMENTATION

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

July 12, 2023

Paul Henehan

Fremont Environmental

PO Box 1289

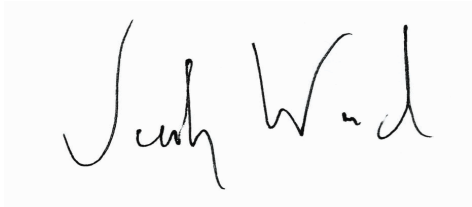
Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order # 2307064

Enclosed are the results of analyses for samples received by Summit Scientific on 07/06/23 16:58. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WCS01@5.0'	2307064-01	Soil	07/06/23 00:00	07/06/23 16:58
BKG01@10.0'	2307064-02	Soil	07/06/23 00:00	07/06/23 16:58
BKG02@10.0'	2307064-03	Soil	07/06/23 00:00	07/06/23 16:58
BKG03@10.0'	2307064-04	Soil	07/06/23 00:00	07/06/23 16:58
BKG04@10.0'	2307064-05	Soil	07/06/23 00:00	07/06/23 16:58

Summit Scientific

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


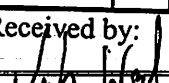
SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2307064	

Client: Fremont Env	Send Data To:	Send Invoice To:
Address:	Project Manager: Paul Henchan	Company: Noble
City/State/Zip:	E-Mail: Paulh@Fremontenv.com	Project Name/Location: PTF-64N64W 32SENE
Phone:	jeff@Fremontenv.com Ethab@Fremontenv.com	AFE#:
Sampler Name: JG	Project Name: PTF-64N64W 32SENE	PO/Billing Codes: UWRWF-A2338-ABN
	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Other	Analysis Requested						Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	BTEX+N	TMBs (915)	DRO,ORO,GRD	PAHs (915)	EC,PH,SAR, Boron	Metals (915)	
1	WCS01@5.0'	7/6/23		2			X			X		X	X	X	X	X	X	
2	BKG01@10.0'	↓		1			↓			↓						X	X	
3	BKG02@10.0'	↓		1			↓			↓						X	X	
4	BKG03@10.0'	↓		1			↓			↓						X	X	
5	BKG04@10.0'	↓		1			↓			↓						X	X	
6																X	X	
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		
15																		

Relinquished by: 	Date/Time: 7/6/23 16:57	Received by: 	Date/Time: 7/6/23 16:58	TAT Business Days	Field DO	Notes: Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	Field Turb.	
Temperature Upon Receipt: 22.5	Corrected Temperature	IR gun #: 2	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2307064Client: Fremont Client Project ID: PTF-64N64W 32 SENEShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____
☒ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 22.5 Thermometer # 2

	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"/>	on ice
If custody seals are present, are they intact? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Some data
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 type="checkbox"/>	<input checked="" 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"/>	No single times
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.				

Vah Ward

Custodian Printed Name

7/6/23 16:58

Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

WCS01@5.0'
2307064-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGG0151	07/06/23	07/07/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	0.15	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	1.5	0.050		"	10	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	1	"	"	"	"	
Naphthalene	0.32	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	460	5.0		"	10	"	"	"	"	

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.3 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		112 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		421 %		50-150		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	400	50		mg/kg	1	BGG0152	07/06/23	07/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		105 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

WCS01@5.0'
2307064-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0153	07/07/23	07/08/23	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	0.0365	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	0.161	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	0.218	0.00500		"	"	"	"	"	"	E

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		71.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		75.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.110	0.0100		mg/L	1	BGG0196	07/07/23	07/10/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/06/23 00:00**

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

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

WCS01@5.0'
2307064-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.627	0.240		mg/kg dry	1	BGG0156	07/07/23	07/08/23	EPA 6020B	
Barium	29.8	0.479		"	"	"	"	"	"	
Cadmium	ND	0.240		"	"	"	"	"	"	
Copper	1.53	0.479		"	"	"	"	"	"	
Lead	2.61	0.240		"	"	"	"	"	"	
Nickel	1.49	0.479		"	"	"	"	"	"	
Selenium	ND	0.312	0.210	"	"	"	"	"	"	
Silver	ND	0.0240		"	"	"	"	"	"	
Zinc	5.74	0.479		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 07/06/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0158	07/07/23	07/07/23	EPA 7196A	

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

Date Sampled: 07/06/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	47.3	0.0599		mg/L dry	1	BGG0148	07/06/23	07/10/23	EPA 6020B	
Magnesium	45.7	0.0599		"	"	"	"	"	"	
Sodium	64.6	0.0599		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 07/06/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.61	0.00100		units	1	BGG0255	07/10/23	07/10/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Fremont Environmental
PO Box 1289
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Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

WCS01@5.0'
2307064-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.5			%	1	BGG0159	07/07/23	07/07/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.66	0.0100		mmhos/cm	1	BGG0190	07/07/23	07/07/23	EPA 120.1	

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

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.23			pH Units	1	BGG0191	07/07/23	07/07/23	EPA 9045D	

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Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

BKG01@10.0'
2307064-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Boron	0.246	0.0100			mg/L	1	BGG0196	07/07/23	07/10/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Arsenic	1.25	0.241			mg/kg dry	1	BGG0156	07/07/23	07/08/23	EPA 6020B	
Barium	64.0	0.482			"	"	"	"	"	"	
Cadmium	ND	0.241			"	"	"	"	"	"	
Copper	3.27	0.482			"	"	"	"	"	"	
Lead	3.30	0.241			"	"	"	"	"	"	
Nickel	2.36	0.482			"	"	"	"	"	"	
Selenium	ND	0.313	0.211		"	"	"	"	"	"	
Silver	ND	0.0241			"	"	"	"	"	"	
Zinc	8.98	0.482			"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Chromium, Hexavalent	ND	0.30			mg/kg dry	1	BGG0158	07/07/23	07/07/23	EPA 7196A	

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

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Calcium	50.7	0.0602			mg/L dry	1	BGG0148	07/06/23	07/10/23	EPA 6020B	
Magnesium	34.0	0.0602			"	"	"	"	"	"	
Sodium	62.0	0.0602			"	"	"	"	"	"	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

BKG01@10.0'
2307064-02 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.65	0.00100		units	1	BGG0255	07/10/23	07/10/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.0			%	1	BGG0159	07/07/23	07/07/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.23	0.0100		mmhos/cm	1	BGG0190	07/07/23	07/07/23	EPA 120.1	

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

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.83			pH Units	1	BGG0191	07/07/23	07/07/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

BKG02@10.0'
2307064-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0760	0.0100		mg/L	1	BGG0196	07/07/23	07/10/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.777	0.248		mg/kg dry	1	BGG0156	07/07/23	07/08/23	EPA 6020B	
Barium	106	0.496		"	"	"	"	"	"	
Cadmium	ND	0.248		"	"	"	"	"	"	
Copper	2.05	0.496		"	"	"	"	"	"	
Lead	5.01	0.248		"	"	"	"	"	"	
Nickel	3.31	0.496		"	"	"	"	"	"	
Selenium	ND	0.323	0.217	"	"	"	"	"	"	
Silver	0.0298	0.0248		"	"	"	"	"	"	
Zinc	9.64	0.496		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0158	07/07/23	07/07/23	EPA 7196A	

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

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	41.8	0.0620		mg/L dry	1	BGG0148	07/06/23	07/10/23	EPA 6020B	
Magnesium	16.7	0.0620		"	"	"	"	"	"	
Sodium	40.8	0.0620		"	"	"	"	"	"	

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Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

BKG02@10.0'
2307064-03 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.35	0.00100		units	1	BGG0255	07/10/23	07/10/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.6			%	1	BGG0159	07/07/23	07/07/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.04	0.0100		mmhos/cm	1	BGG0190	07/07/23	07/07/23	EPA 120.1	

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

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.84			pH Units	1	BGG0191	07/07/23	07/07/23	EPA 9045D	

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Fremont Environmental
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Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

BKG03@10.0'
2307064-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0515	0.0100		mg/L	1	BGG0196	07/07/23	07/10/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	2.11	0.249		mg/kg dry	1	BGG0156	07/07/23	07/08/23	EPA 6020B	
Barium	31.1	0.499		"	"	"	"	"	"	
Cadmium	ND	0.249		"	"	"	"	"	"	
Copper	1.42	0.499		"	"	"	"	"	"	
Lead	2.47	0.249		"	"	"	"	"	"	
Nickel	1.53	0.499		"	"	"	"	"	"	
Selenium	ND	0.324	0.218	"	"	"	"	"	"	
Silver	ND	0.0249		"	"	"	"	"	"	
Zinc	5.56	0.499		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0158	07/07/23	07/07/23	EPA 7196A	

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

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	110	0.0623		mg/L dry	1	BGG0148	07/06/23	07/10/23	EPA 6020B	
Magnesium	48.9	0.0623		"	"	"	"	"	"	
Sodium	89.1	0.0623		"	"	"	"	"	"	

Summit Scientific

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Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

BKG03@10.0'
2307064-04 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.78	0.00100		units	1	BGG0255	07/10/23	07/10/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.2			%	1	BGG0159	07/07/23	07/07/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.70	0.0100		mmhos/cm	1	BGG0190	07/07/23	07/07/23	EPA 120.1	

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

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.78			pH Units	1	BGG0191	07/07/23	07/07/23	EPA 9045D	

Summit Scientific

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Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

BKG04@10.0'
2307064-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.125	0.0100		mg/L	1	BGG0196	07/07/23	07/10/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.744	0.237		mg/kg dry	1	BGG0156	07/07/23	07/08/23	EPA 6020B	
Barium	28.2	0.473		"	"	"	"	"	"	
Cadmium	ND	0.237		"	"	"	"	"	"	
Copper	1.52	0.473		"	"	"	"	"	"	
Lead	2.29	0.237		"	"	"	"	"	"	
Nickel	1.28	0.473		"	"	"	"	"	"	
Selenium	ND	0.307	0.207	"	"	"	"	"	"	
Silver	ND	0.0237		"	"	"	"	"	"	
Zinc	7.46	0.473		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0158	07/07/23	07/07/23	EPA 7196A	

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

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	32.3	0.0591		mg/L dry	1	BGG0148	07/06/23	07/10/23	EPA 6020B	
Magnesium	18.0	0.0591		"	"	"	"	"	"	
Sodium	56.2	0.0591		"	"	"	"	"	"	

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Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

BKG04@10.0'
2307064-05 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.97	0.00100		units	1	BGG0255	07/10/23	07/10/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.6			%	1	BGG0159	07/07/23	07/07/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.884	0.0100		mmhos/cm	1	BGG0190	07/07/23	07/07/23	EPA 120.1	

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

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.93			pH Units	1	BGG0191	07/07/23	07/07/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0151 - EPA 5030 Soil MS

Blank (BGG0151-BLK1)

Prepared: 07/06/23 Analyzed: 07/07/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0593		"	0.0400		148	50-150			
Surrogate: Toluene-d8	0.0308		"	0.0400		77.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0335		"	0.0400		83.8	50-150			

LCS (BGG0151-BS1)

Prepared: 07/06/23 Analyzed: 07/07/23

Benzene	0.173	0.0020	mg/kg	0.150		115	70-130			
Toluene	0.156	0.0050	"	0.150		104	70-130			
Ethylbenzene	0.160	0.0050	"	0.150		107	70-130			
m,p-Xylene	0.321	0.010	"	0.300		107	70-130			
o-Xylene	0.159	0.0050	"	0.150		106	70-130			
1,2,4-Trimethylbenzene	0.189	0.0050	"	0.150		126	70-130			
1,3,5-Trimethylbenzene	0.187	0.0050	"	0.150		124	70-130			
Naphthalene	0.171	0.0038	"	0.150		114	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0546		"	0.0400		137	50-150			
Surrogate: Toluene-d8	0.0305		"	0.0400		76.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0316		"	0.0400		79.0	50-150			

Matrix Spike (BGG0151-MS1)

Source: 2307062-01

Prepared: 07/06/23 Analyzed: 07/07/23

Benzene	0.174	0.0020	mg/kg	0.150	ND	116	70-130			
Toluene	0.156	0.0050	"	0.150	ND	104	70-130			
Ethylbenzene	0.158	0.0050	"	0.150	ND	105	70-130			
m,p-Xylene	0.317	0.010	"	0.300	ND	106	70-130			
o-Xylene	0.158	0.0050	"	0.150	ND	105	70-130			
1,2,4-Trimethylbenzene	0.190	0.0050	"	0.150	ND	126	70-130			
1,3,5-Trimethylbenzene	0.186	0.0050	"	0.150	ND	124	70-130			
Naphthalene	0.163	0.0038	"	0.150	ND	108	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0573		"	0.0400		143	50-150			
Surrogate: Toluene-d8	0.0305		"	0.0400		76.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0324		"	0.0400		81.0	50-150			

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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BGG0151 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0151-MSD1)	Source: 2307062-01			Prepared: 07/06/23 Analyzed: 07/07/23						
Benzene	0.174	0.0020	mg/kg	0.150	ND	116	70-130	0.0172	30	
Toluene	0.157	0.0050	"	0.150	ND	104	70-130	0.230	30	
Ethylbenzene	0.161	0.0050	"	0.150	ND	107	70-130	1.60	30	
m,p-Xylene	0.322	0.010	"	0.300	ND	107	70-130	1.40	30	
o-Xylene	0.160	0.0050	"	0.150	ND	107	70-130	1.34	30	
1,2,4-Trimethylbenzene	0.188	0.0050	"	0.150	ND	125	70-130	0.858	30	
1,3,5-Trimethylbenzene	0.185	0.0050	"	0.150	ND	123	70-130	0.534	30	
Naphthalene	0.172	0.0038	"	0.150	ND	115	70-130	5.78	30	
Surrogate: 1,2-Dichloroethane-d4	0.0566		"	0.0400		142	50-150			
Surrogate: Toluene-d8	0.0308		"	0.0400		76.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0315		"	0.0400		78.8	50-150			

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Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGG0152 - EPA 3550A

Blank (BGG0152-BLK1)

Prepared: 07/06/23 Analyzed: 07/07/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	10.2		"	12.5		81.3	30-150			

LCS (BGG0152-BS1)

Prepared: 07/06/23 Analyzed: 07/07/23

C10-C28 (DRO)	491	50	mg/kg	500		98.1	70-130			
Surrogate: o-Terphenyl	11.6		"	12.5		92.6	30-150			

Matrix Spike (BGG0152-MS1)

Source: 2307062-01

Prepared: 07/06/23 Analyzed: 07/07/23

C10-C28 (DRO)	431	50	mg/kg	500	15.6	83.2	70-130			
Surrogate: o-Terphenyl	15.7		"	12.5		126	30-150			

Matrix Spike Dup (BGG0152-MSD1)

Source: 2307062-01

Prepared: 07/06/23 Analyzed: 07/07/23

C10-C28 (DRO)	429	50	mg/kg	500	15.6	82.7	70-130	0.586	20	
Surrogate: o-Terphenyl	14.3		"	12.5		115	30-150			

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Fremont Environmental
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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0153 - EPA 5030 Soil MS

Blank (BGG0153-BLK1)

Prepared & Analyzed: 07/07/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0278		"	0.0333		83.5	40-150			
Surrogate: Fluoranthene-d10	0.0341		"	0.0333		102	40-150			

LCS (BGG0153-BS1)

Prepared & Analyzed: 07/07/23

Acenaphthene	0.0326	0.00500	mg/kg	0.0333		97.9	31-137			
Anthracene	0.0324	0.00500	"	0.0333		97.1	30-120			
Benzo (a) anthracene	0.0266	0.00500	"	0.0333		79.8	30-120			
Benzo (a) pyrene	0.0306	0.00500	"	0.0333		91.7	30-120			
Benzo (b) fluoranthene	0.0281	0.00500	"	0.0333		84.2	30-120			
Benzo (k) fluoranthene	0.0284	0.00500	"	0.0333		85.1	30-120			
Chrysene	0.0334	0.00500	"	0.0333		100	30-120			
Dibenz (a,h) anthracene	0.0340	0.00500	"	0.0333		102	30-120			
Fluoranthene	0.0325	0.00500	"	0.0333		97.6	30-120			
Fluorene	0.0313	0.00500	"	0.0333		93.9	30-120			
Indeno (1,2,3-cd) pyrene	0.0301	0.00500	"	0.0333		90.3	30-120			
Pyrene	0.0334	0.00500	"	0.0333		100	35-142			
1-Methylnaphthalene	0.0173	0.00500	"	0.0333		51.8	35-142			
2-Methylnaphthalene	0.0251	0.00500	"	0.0333		75.3	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0301		"	0.0333		90.4	40-150			
Surrogate: Fluoranthene-d10	0.0372		"	0.0333		112	40-150			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0153 - EPA 5030 Soil MS

Matrix Spike (BGG0153-MS1)

Source: 2307051-01

Prepared & Analyzed: 07/07/23

Acenaphthene	0.0135	0.00500	mg/kg	0.0333	ND	40.4	31-137		
Anthracene	0.0162	0.00500	"	0.0333	ND	48.7	30-120		
Benzo (a) anthracene	0.0174	0.00500	"	0.0333	ND	52.2	30-120		
Benzo (a) pyrene	0.0142	0.00500	"	0.0333	ND	42.7	30-120		
Benzo (b) fluoranthene	0.0145	0.00500	"	0.0333	ND	43.6	30-120		
Benzo (k) fluoranthene	0.0146	0.00500	"	0.0333	ND	43.8	30-120		
Chrysene	0.0141	0.00500	"	0.0333	ND	42.2	30-120		
Dibenz (a,h) anthracene	0.0136	0.00500	"	0.0333	ND	40.9	30-120		
Fluoranthene	0.0141	0.00500	"	0.0333	ND	42.2	30-120		
Fluorene	0.0150	0.00500	"	0.0333	ND	44.9	30-120		
Indeno (1,2,3-cd) pyrene	0.0137	0.00500	"	0.0333	ND	41.2	30-120		
Pyrene	0.0151	0.00500	"	0.0333	ND	45.4	35-142		
1-Methylnaphthalene	0.0139	0.00500	"	0.0333	ND	41.7	15-130		
2-Methylnaphthalene	0.0149	0.00500	"	0.0333	ND	44.7	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0170		"	0.0333		51.1	40-150		
Surrogate: Fluoranthene-d10	0.0139		"	0.0333		41.6	40-150		

Matrix Spike Dup (BGG0153-MSD1)

Source: 2307051-01

Prepared & Analyzed: 07/07/23

Acenaphthene	0.0141	0.00500	mg/kg	0.0333	ND	42.3	31-137	4.77	30
Anthracene	0.0152	0.00500	"	0.0333	ND	45.6	30-120	6.61	30
Benzo (a) anthracene	0.0144	0.00500	"	0.0333	ND	43.1	30-120	19.1	30
Benzo (a) pyrene	0.0156	0.00500	"	0.0333	ND	46.7	30-120	8.76	30
Benzo (b) fluoranthene	0.0141	0.00500	"	0.0333	ND	42.2	30-120	3.26	30
Benzo (k) fluoranthene	0.0137	0.00500	"	0.0333	ND	41.2	30-120	6.11	30
Chrysene	0.0133	0.00500	"	0.0333	ND	40.0	30-120	5.27	30
Dibenz (a,h) anthracene	0.0149	0.00500	"	0.0333	ND	44.8	30-120	9.22	30
Fluoranthene	0.0152	0.00500	"	0.0333	ND	45.5	30-120	7.55	30
Fluorene	0.0137	0.00500	"	0.0333	ND	41.2	30-120	8.43	30
Indeno (1,2,3-cd) pyrene	0.0138	0.00500	"	0.0333	ND	41.5	30-120	0.752	30
Pyrene	0.0142	0.00500	"	0.0333	ND	42.6	35-142	6.25	30
1-Methylnaphthalene	0.0153	0.00500	"	0.0333	ND	45.9	15-130	9.69	50
2-Methylnaphthalene	0.0137	0.00500	"	0.0333	ND	41.1	15-130	8.52	50
Surrogate: 2-Methylnaphthalene-d10	0.0158		"	0.0333		47.4	40-150		
Surrogate: Fluoranthene-d10	0.0190		"	0.0333		57.0	40-150		

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

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

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

Batch BGG0196 - EPA 3050B

Blank (BGG0196-BLK1)

Prepared: 07/07/23 Analyzed: 07/10/23

Boron ND 0.0100 mg/L

LCS (BGG0196-BS1)

Prepared: 07/07/23 Analyzed: 07/10/23

Boron 4.19 0.0100 mg/L 5.00 83.7 80-120

Duplicate (BGG0196-DUP1)

Source: 2307014-01

Prepared: 07/07/23 Analyzed: 07/10/23

Boron 0.0776 0.0100 mg/L 0.102 27.2 20 QR-01

Matrix Spike (BGG0196-MS1)

Source: 2307014-01

Prepared: 07/07/23 Analyzed: 07/10/23

Boron 3.81 0.0100 mg/L 5.00 0.102 74.2 75-125 QM-07

Matrix Spike Dup (BGG0196-MSD1)

Source: 2307014-01

Prepared: 07/07/23 Analyzed: 07/10/23

Boron 4.44 0.0100 mg/L 5.00 0.102 86.7 75-125 15.1 25

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGG0156 - EPA 3050B

Blank (BGG0156-BLK1)

Prepared & Analyzed: 07/07/23

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	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BGG0156-BS1)

Prepared & Analyzed: 07/07/23

Arsenic	35.2	0.200	mg/kg wet	40.0	87.9	80-120
Barium	32.0	0.400	"	40.0	80.1	80-120
Cadmium	1.83	0.200	"	2.00	91.5	80-120
Copper	35.7	0.400	"	40.0	89.3	80-120
Lead	16.1	0.200	"	20.0	80.5	80-120
Nickel	35.3	0.400	"	40.0	88.3	80-120
Selenium	3.50	0.260	"	4.00	87.5	80-120
Silver	1.87	0.0200	"	2.00	93.3	80-120
Zinc	35.8	0.400	"	40.0	89.6	80-120

Duplicate (BGG0156-DUP1)

Source: 2307014-01

Prepared & Analyzed: 07/07/23

Arsenic	0.826	0.236	mg/kg dry	0.969	16.0	20
Barium	38.6	0.471	"	46.0	17.6	20
Cadmium	0.0843	0.236	"	0.106	23.2	20
Copper	1.49	0.471	"	1.65	10.3	20
Lead	4.87	0.236	"	5.84	18.1	20
Nickel	2.10	0.471	"	2.53	18.2	20
Selenium	ND	0.306	"	ND		20
Silver	0.0160	0.0236	"	0.0188	16.2	20
Zinc	7.34	0.471	"	7.90	7.33	20

QR-01

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGG0156 - EPA 3050B

Matrix Spike (BGG0156-MS1)			Source: 2307014-01		Prepared & Analyzed: 07/07/23					
Arsenic	16.9	0.236	mg/kg dry	47.1	0.969	33.8	75-125			QM-07
Barium	89.6	0.471	"	47.1	46.0	92.4	75-125			
Cadmium	2.14	0.236	"	2.36	0.106	86.5	75-125			
Copper	18.9	0.471	"	47.1	1.65	36.5	75-125			QM-07
Lead	25.6	0.236	"	23.6	5.84	84.0	75-125			
Nickel	19.5	0.471	"	47.1	2.53	36.0	75-125			QM-07
Selenium	4.21	0.306	"	4.71	ND	89.3	75-125			
Silver	2.05	0.0236	"	2.36	0.0188	86.0	75-125			
Zinc	24.3	0.471	"	47.1	7.90	34.8	75-125			QM-07

Matrix Spike Dup (BGG0156-MSD1)			Source: 2307014-01		Prepared: 07/07/23 Analyzed: 07/08/23					
Arsenic	16.7	0.236	mg/kg dry	47.1	0.969	33.4	75-125	1.04	25	QM-07
Barium	80.8	0.471	"	47.1	46.0	73.8	75-125	10.3	25	QM-07
Cadmium	1.96	0.236	"	2.36	0.106	78.8	75-125	8.83	25	
Copper	18.5	0.471	"	47.1	1.65	35.9	75-125	1.67	25	QM-07
Lead	23.2	0.236	"	23.6	5.84	73.8	75-125	9.85	25	QM-07
Nickel	19.0	0.471	"	47.1	2.53	34.9	75-125	2.51	25	QM-07
Selenium	3.67	0.306	"	4.71	ND	77.9	75-125	13.7	25	
Silver	1.87	0.0236	"	2.36	0.0188	78.7	75-125	8.85	25	
Zinc	24.2	0.471	"	47.1	7.90	34.6	75-125	0.299	25	QM-07

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PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGG0158 - 3060A Mod

Blank (BGG0158-BLK1)

Prepared & Analyzed: 07/07/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0158-BS1)

Prepared & Analyzed: 07/07/23

Chromium, Hexavalent 24.3 0.30 mg/kg wet 25.0 97.2 80-120

Duplicate (BGG0158-DUP1)

Source: 2307014-01

Prepared & Analyzed: 07/07/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0158-MS1)

Source: 2307014-01

Prepared & Analyzed: 07/07/23

Chromium, Hexavalent 27.6 0.30 mg/kg dry 29.4 ND 93.8 75-125

Matrix Spike Dup (BGG0158-MSD1)

Source: 2307014-01

Prepared & Analyzed: 07/07/23

Chromium, Hexavalent 25.7 0.30 mg/kg dry 29.4 ND 87.4 75-125 7.06 20

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

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

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

Batch BGG0148 - General Preparation

Blank (BGG0148-BLK1)

Prepared: 07/06/23 Analyzed: 07/10/23

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

LCS (BGG0148-BS1)

Prepared: 07/06/23 Analyzed: 07/10/23

Calcium	4.24	0.0500	mg/L wet	5.00	84.7	70-130
Magnesium	4.41	0.0500	"	5.00	88.2	70-130
Sodium	4.32	0.0500	"	5.00	86.4	70-130

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

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

Summit Scientific

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

Batch BGG0159 - General Preparation

Duplicate (BGG0159-DUP1)

Source: 2307014-01

Prepared & Analyzed: 07/07/23

% Solids	84.8	%	84.9	0.136	20
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

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

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

Batch BGG0190 - General Preparation

Blank (BGG0190-BLK1)

Prepared & Analyzed: 07/07/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0190-BS1)

Prepared & Analyzed: 07/07/23

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BGG0190-DUP1)

Source: 2307062-01

Prepared & Analyzed: 07/07/23

Specific Conductance (EC) 0.559 0.0100 mmhos/cm 0.586 4.70 20

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

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

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

Batch BGG0191 - General Preparation

LCS (BGG0191-BS1)

Prepared & Analyzed: 07/07/23

pH	9.20	pH Units	9.18	100	95-105
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Duplicate (BGG0191-DUP1)

Source: 2307062-01

Prepared & Analyzed: 07/07/23

pH	7.94	pH Units	7.90	0.505	20
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
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.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

July 13, 2023

Paul Henehan

Fremont Environmental

PO Box 1289

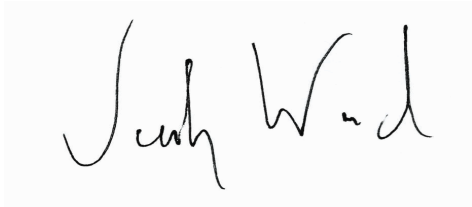
Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order # 2307093

Enclosed are the results of analyses for samples received by Summit Scientific on 07/07/23 16:20. 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, flowing style.

Jacob Wood For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@9.0'	2307093-01	Soil	07/07/23 00:00	07/07/23 16:20
S01@8.0'	2307093-02	Soil	07/07/23 00:00	07/07/23 16:20
W01@7.0'	2307093-03	Soil	07/07/23 00:00	07/07/23 16:20
Imported Fill	2307093-04	Soil	07/07/23 00:00	07/07/23 16:20
BKG05@10.0'	2307093-05	Soil	07/07/23 00:00	07/07/23 16:20

Summit Scientific

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

SUMMIT SCIENTIFIC

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

Lab ID	Page <u>1</u> of <u>1</u>
2307093	

Client: <u>Fremont Env</u>	Send Data To:	Send Invoice To:
Address:	Project Manager: <u>Paul Henehan</u>	Company: <u>Noble</u>
City/State/Zip:	E-Mail: <u>Paulh@Fremontenv.com</u>	Project Name/Location: <u>PTF-64N64W 32SENE</u>
Phone:	<u>jeffg@Fremontenv.com</u> <u>Ethanb@Fremontenv.com</u>	AFE#:
Sampler Name: <u>JG</u>	Project Name: <u>PTF-64N64W 32SENE</u>	PO/Billing Codes: <u>UWRWE-A2338-ABN</u>
	Project Number:	Contact:

					Preservative				Matrix			Analysis Requested						Special Instructions			
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEX+N	TMBs (915)	DR3000, G0	PAHs (915)	EC, pH, SAR, Boron	Metals (915)			
1	B01@9.0'	7/7/23		2			X			X			X	X	X	X	X	X			
2	S01@8.0'	↓		—			—			—			—	—	—	—	—	—			
3	W01@7.0'			—			—			—			—	—	—	—	—	—			
4	Imported Fill			2			—			—			X	X	X	X	—	—			
5	BKG05@10.0'	↓		1			—			—			X	X	X	X	X	X			
6																	X	X			
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: <u>[Signature]</u>	Date/Time: <u>7/7/23 16:20</u>	Received by: <u>[Signature]</u>	Date/Time: <u>7/7/23 16:20</u>	TAT Business Days	Field DO	Notes: <u>Bill to Noble</u>
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	Field Turb.	
Temperature Upon Receipt: <u>21.9</u>	Corrected Temperature	IR gun #:	<u>2</u>	HNO3 lot #:		

S₂

Sample Receipt Checklist

S2 Work Order# 2307093Client: Fremont Client Project ID: PTF-64N64W 3ZSENEShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☐ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 21.9 Thermometer # 2

	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"/>	on ice
If custody seals are present, are they intact? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No sample times
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.				

Vin Wad
Custodian Printed Name

7/7/23 16:20
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

B01@9.0'
2307093-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0203	07/07/23	07/07/23	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: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		79.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0202	07/07/23	07/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		92.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

B01@9.0'
2307093-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0208	07/10/23	07/10/23	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: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		88.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		104 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0876	0.0100		mg/L	1	BGG0248	07/10/23	07/11/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

B01@9.0'
2307093-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.924	0.242	mg/kg dry	1	BGG0210	07/10/23	07/12/23	EPA 6020B
Barium	25.3	0.484	"	"	"	"	"	"
Cadmium	ND	0.242	"	"	"	"	"	"
Copper	1.89	0.484	"	"	"	"	"	"
Lead	2.81	0.242	"	"	"	"	"	"
Nickel	2.41	0.484	"	"	"	"	"	"
Selenium	ND	0.315	0.212	"	"	"	"	"
Silver	ND	0.0242	"	"	"	"	"	"
Zinc	9.94	0.484	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0212	07/10/23	07/10/23	EPA 7196A	

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

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	45.2	0.0605		mg/L dry	1	BGG0207	07/09/23	07/12/23	EPA 6020B	
Magnesium	20.3	0.0605		"	"	"	"	"	"	
Sodium	50.4	0.0605		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.56	0.00100		units	1	BGG0356	07/12/23	07/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

B01@9.0'
2307093-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	82.6			%	1	BGG0214	07/10/23	07/10/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.900	0.0100		mmhos/cm	1	BGG0233	07/10/23	07/10/23	EPA 120.1	

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

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.94			pH Units	1	BGG0232	07/10/23	07/10/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

S01@8.0'
2307093-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0203	07/07/23	07/07/23	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: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		86.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0202	07/07/23	07/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		94.6 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

S01@8.0'
2307093-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BGG0208	07/10/23	07/10/23	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: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		64.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		98.6 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.153	0.0100		mg/L	1	BGG0248	07/10/23	07/11/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

S01@8.0'
2307093-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.56	0.247	mg/kg dry	1	BGG0210	07/10/23	07/12/23	EPA 6020B
Barium	48.2	0.493	"	"	"	"	"	"
Cadmium	ND	0.247	"	"	"	"	"	"
Copper	2.65	0.493	"	"	"	"	"	"
Lead	3.79	0.247	"	"	"	"	"	"
Nickel	3.28	0.493	"	"	"	"	"	"
Selenium	ND	0.321	0.216	"	"	"	"	"
Silver	ND	0.0247	"	"	"	"	"	"
Zinc	12.3	0.493	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0212	07/10/23	07/10/23	EPA 7196A	

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

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	40.6	0.0617		mg/L dry	1	BGG0207	07/09/23	07/12/23	EPA 6020B	
Magnesium	20.8	0.0617		"	"	"	"	"	"	
Sodium	40.2	0.0617		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.28	0.00100		units	1	BGG0356	07/12/23	07/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

S01@8.0'
2307093-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	81.1			%	1	BGG0214	07/10/23	07/10/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.952	0.0100		mmhos/cm	1	BGG0233	07/10/23	07/10/23	EPA 120.1	

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

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.92			pH Units	1	BGG0232	07/10/23	07/10/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

W01@7.0'
2307093-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0203	07/07/23	07/07/23	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: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		88.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0202	07/07/23	07/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		93.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:

07/13/23 12:09

W01@7.0'
2307093-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0208	07/10/23	07/10/23	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: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		59.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.199	0.0100		mg/L	1	BGG0248	07/10/23	07/11/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/07/23 00:00**

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

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

W01@7.0'
2307093-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.20	0.232		mg/kg dry	1	BGG0210	07/10/23	07/12/23	EPA 6020B	
Barium	44.6	0.465		"	"	"	"	"	"	
Cadmium	ND	0.232		"	"	"	"	"	"	
Copper	4.09	0.465		"	"	"	"	"	"	
Lead	4.08	0.232		"	"	"	"	"	"	
Nickel	4.20	0.465		"	"	"	"	"	"	
Selenium	ND	0.302	0.203	"	"	"	"	"	"	
Silver	0.0339	0.0232		"	"	"	"	"	"	
Zinc	14.5	0.465		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0212	07/10/23	07/10/23	EPA 7196A	

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

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	27.2	0.0581		mg/L dry	1	BGG0207	07/09/23	07/12/23	EPA 6020B	
Magnesium	7.01	0.0581		"	"	"	"	"	"	
Sodium	3.11	0.0581		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.138	0.00100		units	1	BGG0356	07/12/23	07/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

W01@7.0'
2307093-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	86.1			%	1	BGG0214	07/10/23	07/10/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.352	0.0100		mmhos/cm	1	BGG0233	07/10/23	07/10/23	EPA 120.1	

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

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.56			pH Units	1	BGG0232	07/10/23	07/10/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

Imported Fill
2307093-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0203	07/07/23	07/07/23	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: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		89.1 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		94.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0202	07/07/23	07/08/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		88.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

Imported Fill
2307093-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0208	07/10/23	07/10/23	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: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		59.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		70.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.193	0.0100		mg/L	1	BGG0248	07/10/23	07/11/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

Imported Fill
2307093-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.69	0.223		mg/kg dry	1	BGG0210	07/10/23	07/12/23	EPA 6020B
Barium	51.1	0.446		"	"	"	"	"	"
Cadmium	ND	0.223		"	"	"	"	"	"
Copper	4.33	0.446		"	"	"	"	"	"
Lead	6.42	0.223		"	"	"	"	"	"
Nickel	5.42	0.446		"	"	"	"	"	"
Selenium	ND	0.290	0.195	"	"	"	"	"	"
Silver	ND	0.0223		"	"	"	"	"	"
Zinc	16.1	0.446		"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0212	07/10/23	07/10/23	EPA 7196A	

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

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	10.5	0.0557		mg/L dry	1	BGG0207	07/09/23	07/12/23	EPA 6020B	
Magnesium	5.47	0.0557		"	"	"	"	"	"	
Sodium	69.8	0.0557		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.35	0.00100		units	1	BGG0356	07/12/23	07/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

Imported Fill
2307093-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	89.8			%	1	BGG0214	07/10/23	07/10/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.583	0.0100		mmhos/cm	1	BGG0233	07/10/23	07/10/23	EPA 120.1	

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

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.35			pH Units	1	BGG0232	07/10/23	07/10/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

BKG05@10.0'
2307093-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.292	0.0100		mg/L	1	BGG0248	07/10/23	07/11/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	2.33	0.250		mg/kg dry	1	BGG0210	07/10/23	07/12/23	EPA 6020B	
Barium	54.9	0.499		"	"	"	"	"	"	
Cadmium	ND	0.250		"	"	"	"	"	"	
Copper	3.10	0.499		"	"	"	"	"	"	
Lead	3.52	0.250		"	"	"	"	"	"	
Nickel	3.24	0.499		"	"	"	"	"	"	
Selenium	ND	0.325	0.218	"	"	"	"	"	"	
Silver	0.103	0.0250		"	"	"	"	"	"	
Zinc	13.7	0.499		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0212	07/10/23	07/10/23	EPA 7196A	

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

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	45.6	0.0624		mg/L dry	1	BGG0207	07/09/23	07/12/23	EPA 6020B	
Magnesium	41.2	0.0624		"	"	"	"	"	"	
Sodium	93.6	0.0624		"	"	"	"	"	"	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

BKG05@10.0'
2307093-05 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.42	0.00100		units	1	BGG0356	07/12/23	07/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.1			%	1	BGG0214	07/10/23	07/10/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.44	0.0100		mmhos/cm	1	BGG0233	07/10/23	07/10/23	EPA 120.1	

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

Date Sampled: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.88			pH Units	1	BGG0232	07/10/23	07/10/23	EPA 9045D	

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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0203 - EPA 5030 Soil MS

Blank (BGG0203-BLK1)

Prepared: 07/07/23 Analyzed: 07/08/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0302		"	0.0400		75.4	50-150			
Surrogate: Toluene-d8	0.0382		"	0.0400		95.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.8	50-150			

LCS (BGG0203-BS1)

Prepared: 07/07/23 Analyzed: 07/08/23

Benzene	0.0632	0.0020	mg/kg	0.0750		84.3	70-130			
Toluene	0.0778	0.0050	"	0.0750		104	70-130			
Ethylbenzene	0.0902	0.0050	"	0.0750		120	70-130			
m,p-Xylene	0.179	0.010	"	0.150		120	70-130			
o-Xylene	0.0804	0.0050	"	0.0750		107	70-130			
1,2,4-Trimethylbenzene	0.0851	0.0050	"	0.0750		113	70-130			
1,3,5-Trimethylbenzene	0.0887	0.0050	"	0.0750		118	70-130			
Naphthalene	0.0698	0.0038	"	0.0750		93.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0317		"	0.0400		79.4	50-150			
Surrogate: Toluene-d8	0.0399		"	0.0400		99.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	50-150			

Matrix Spike (BGG0203-MS1)

Source: 2307093-01

Prepared: 07/07/23 Analyzed: 07/08/23

Benzene	0.0633	0.0020	mg/kg	0.0750	ND	84.4	70-130			
Toluene	0.0784	0.0050	"	0.0750	ND	105	70-130			
Ethylbenzene	0.0905	0.0050	"	0.0750	ND	121	70-130			
m,p-Xylene	0.180	0.010	"	0.150	ND	120	70-130			
o-Xylene	0.0798	0.0050	"	0.0750	ND	106	70-130			
1,2,4-Trimethylbenzene	0.0845	0.0050	"	0.0750	ND	113	70-130			
1,3,5-Trimethylbenzene	0.0882	0.0050	"	0.0750	ND	118	70-130			
Naphthalene	0.0752	0.0038	"	0.0750	ND	100	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0330		"	0.0400		82.4	50-150			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0380		"	0.0400		95.0	50-150			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0203 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0203-MSD1)	Source: 2307093-01			Prepared: 07/07/23 Analyzed: 07/08/23						
Benzene	0.0635	0.0020	mg/kg	0.0750	ND	84.6	70-130	0.237	30	
Toluene	0.0771	0.0050	"	0.0750	ND	103	70-130	1.74	30	
Ethylbenzene	0.0943	0.0050	"	0.0750	ND	126	70-130	4.12	30	
m,p-Xylene	0.185	0.010	"	0.150	ND	123	70-130	2.98	30	
o-Xylene	0.0837	0.0050	"	0.0750	ND	112	70-130	4.77	30	
1,2,4-Trimethylbenzene	0.0883	0.0050	"	0.0750	ND	118	70-130	4.44	30	
1,3,5-Trimethylbenzene	0.0922	0.0050	"	0.0750	ND	123	70-130	4.36	30	
Naphthalene	0.0791	0.0038	"	0.0750	ND	106	70-130	5.05	30	
Surrogate: 1,2-Dichloroethane-d4	0.0321		"	0.0400		80.2	50-150			
Surrogate: Toluene-d8	0.0384		"	0.0400		95.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		100	50-150			

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGG0202 - EPA 3550A

Blank (BGG0202-BLK1)

Prepared & Analyzed: 07/07/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	11.6		"	12.5		92.8	30-150			

LCS (BGG0202-BS1)

Prepared & Analyzed: 07/07/23

C10-C28 (DRO)	479	50	mg/kg	500		95.8	70-130			
Surrogate: o-Terphenyl	11.5		"	12.5		91.8	30-150			

Matrix Spike (BGG0202-MS1)

Source: 2307093-01

Prepared & Analyzed: 07/07/23

C10-C28 (DRO)	485	50	mg/kg	500	16.8	93.7	70-130			
Surrogate: o-Terphenyl	10.7		"	12.5		85.6	30-150			

Matrix Spike Dup (BGG0202-MSD1)

Source: 2307093-01

Prepared & Analyzed: 07/07/23

C10-C28 (DRO)	450	50	mg/kg	500	16.8	86.7	70-130	7.52	20	
Surrogate: o-Terphenyl	10.8		"	12.5		86.8	30-150			

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0208 - EPA 5030 Soil MS

Blank (BGG0208-BLK1)

Prepared & Analyzed: 07/10/23

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0391		"	0.0333		117		40-150			
Surrogate: Fluoranthene-d10	0.0366		"	0.0333		110		40-150			

LCS (BGG0208-BS1)

Prepared & Analyzed: 07/10/23

Acenaphthene	0.0325	0.00500	mg/kg	0.0333		97.6		31-137			
Anthracene	0.0327	0.00500	"	0.0333		98.0		30-120			
Benzo (a) anthracene	0.0308	0.00500	"	0.0333		92.5		30-120			
Benzo (a) pyrene	0.0296	0.00500	"	0.0333		88.7		30-120			
Benzo (b) fluoranthene	0.0328	0.00500	"	0.0333		98.5		30-120			
Benzo (k) fluoranthene	0.0327	0.00500	"	0.0333		98.2		30-120			
Chrysene	0.0324	0.00500	"	0.0333		97.2		30-120			
Dibenz (a,h) anthracene	0.0299	0.00500	"	0.0333		89.7		30-120			
Fluoranthene	0.0277	0.00500	"	0.0333		83.2		30-120			
Fluorene	0.0317	0.00500	"	0.0333		95.2		30-120			
Indeno (1,2,3-cd) pyrene	0.0225	0.00500	"	0.0333		67.6		30-120			
Pyrene	0.0256	0.00500	"	0.0333		76.7		35-142			
1-Methylnaphthalene	0.0312	0.00500	"	0.0333		93.6		35-142			
2-Methylnaphthalene	0.0355	0.00500	"	0.0333		107		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0295		"	0.0333		88.4		40-150			
Surrogate: Fluoranthene-d10	0.0377		"	0.0333		113		40-150			

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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0208 - EPA 5030 Soil MS

Matrix Spike (BGG0208-MS1)			Source: 2307083-01		Prepared & Analyzed: 07/10/23						
Acenaphthene	0.0135	0.00500	mg/kg	0.0333	ND	40.5	31-137				
Anthracene	0.0134	0.00500	"	0.0333	ND	40.3	30-120				
Benzo (a) anthracene	0.0163	0.00500	"	0.0333	ND	48.9	30-120				
Benzo (a) pyrene	0.0144	0.00500	"	0.0333	ND	43.2	30-120				
Benzo (b) fluoranthene	0.0144	0.00500	"	0.0333	ND	43.1	30-120				
Benzo (k) fluoranthene	0.0142	0.00500	"	0.0333	ND	42.7	30-120				
Chrysene	0.0172	0.00500	"	0.0333	ND	51.6	30-120				
Dibenz (a,h) anthracene	0.0145	0.00500	"	0.0333	ND	43.6	30-120				
Fluoranthene	0.0142	0.00500	"	0.0333	ND	42.5	30-120				
Fluorene	0.0141	0.00500	"	0.0333	ND	42.2	30-120				
Indeno (1,2,3-cd) pyrene	0.0160	0.00500	"	0.0333	ND	48.1	30-120				
Pyrene	0.0138	0.00500	"	0.0333	ND	41.4	35-142				
1-Methylnaphthalene	0.0153	0.00500	"	0.0333	ND	46.0	15-130				
2-Methylnaphthalene	0.0163	0.00500	"	0.0333	ND	48.9	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0147		"	0.0333		44.1	40-150				
Surrogate: Fluoranthene-d10	0.0160		"	0.0333		48.0	40-150				

Matrix Spike Dup (BGG0208-MSD1)			Source: 2307083-01		Prepared & Analyzed: 07/10/23						
Acenaphthene	0.0164	0.00500	mg/kg	0.0333	ND	49.2	31-137	19.5	30		
Anthracene	0.0170	0.00500	"	0.0333	ND	50.9	30-120	23.3	30		
Benzo (a) anthracene	0.0166	0.00500	"	0.0333	ND	49.9	30-120	1.92	30		
Benzo (a) pyrene	0.0151	0.00500	"	0.0333	ND	45.4	30-120	4.99	30		
Benzo (b) fluoranthene	0.0166	0.00500	"	0.0333	ND	49.7	30-120	14.2	30		
Benzo (k) fluoranthene	0.0168	0.00500	"	0.0333	ND	50.5	30-120	16.7	30		
Chrysene	0.0172	0.00500	"	0.0333	ND	51.7	30-120	0.283	30		
Dibenz (a,h) anthracene	0.0143	0.00500	"	0.0333	ND	43.0	30-120	1.53	30		
Fluoranthene	0.0145	0.00500	"	0.0333	ND	43.5	30-120	2.33	30		
Fluorene	0.0163	0.00500	"	0.0333	ND	49.0	30-120	15.1	30		
Indeno (1,2,3-cd) pyrene	0.0157	0.00500	"	0.0333	ND	47.1	30-120	2.10	30		
Pyrene	0.0153	0.00500	"	0.0333	ND	45.9	35-142	10.4	30		
1-Methylnaphthalene	0.0146	0.00500	"	0.0333	ND	43.7	15-130	5.17	50		
2-Methylnaphthalene	0.0195	0.00500	"	0.0333	ND	58.6	15-130	18.2	50		
Surrogate: 2-Methylnaphthalene-d10	0.0162		"	0.0333		48.6	40-150				
Surrogate: Fluoranthene-d10	0.0195		"	0.0333		58.4	40-150				

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Fremont Environmental
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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

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

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

Batch BGG0248 - EPA 3050B

Blank (BGG0248-BLK1)

Prepared: 07/10/23 Analyzed: 07/11/23

Boron ND 0.0100 mg/L

LCS (BGG0248-BS1)

Prepared: 07/10/23 Analyzed: 07/11/23

Boron 6.02 0.0100 mg/L 5.00 120 80-120

Duplicate (BGG0248-DUP1)

Source: 2307093-01

Prepared: 07/10/23 Analyzed: 07/11/23

Boron 0.104 0.0100 mg/L 0.0876 17.1 20

Matrix Spike (BGG0248-MS1)

Source: 2307093-01

Prepared: 07/10/23 Analyzed: 07/11/23

Boron 5.95 0.0100 mg/L 5.00 0.0876 117 75-125

Matrix Spike Dup (BGG0248-MSD1)

Source: 2307093-01

Prepared: 07/10/23 Analyzed: 07/11/23

Boron 5.99 0.0100 mg/L 5.00 0.0876 118 75-125 0.628 25

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Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/13/23 12:09

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGG0210 - EPA 3050B

Blank (BGG0210-BLK1)

Prepared: 07/10/23 Analyzed: 07/12/23

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	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BGG0210-BS1)

Prepared: 07/10/23 Analyzed: 07/12/23

Arsenic	33.9	0.200	mg/kg wet	40.0	84.8	80-120
Barium	35.8	0.400	"	40.0	89.4	80-120
Cadmium	1.81	0.200	"	2.00	90.3	80-120
Copper	38.5	0.400	"	40.0	96.2	80-120
Lead	18.0	0.200	"	20.0	89.9	80-120
Nickel	37.8	0.400	"	40.0	94.4	80-120
Selenium	3.88	0.260	"	4.00	97.1	80-120
Silver	1.77	0.0200	"	2.00	88.7	80-120
Zinc	37.2	0.400	"	40.0	93.1	80-120

Duplicate (BGG0210-DUP1)

Source: 2307093-01

Prepared: 07/10/23 Analyzed: 07/12/23

Arsenic	0.812	0.242	mg/kg dry	0.924	13.0	20	
Barium	22.4	0.484	"	25.3	12.3	20	
Cadmium	0.0494	0.242	"	0.0596	18.7	20	
Copper	1.74	0.484	"	1.89	7.94	20	
Lead	2.27	0.242	"	2.81	21.2	20	QR-01
Nickel	2.11	0.484	"	2.41	13.2	20	
Selenium	ND	0.315	"	ND		20	
Silver	0.00726	0.0242	"	0.0111	42.1	20	QR-01
Zinc	8.62	0.484	"	9.94	14.2	20	

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BGG0210 - EPA 3050B

Matrix Spike (BGG0210-MS1)

Source: 2307093-01

Prepared: 07/10/23 Analyzed: 07/12/23

Arsenic	41.5	0.242	mg/kg dry	48.4	0.924	83.8	75-125
Barium	68.8	0.484	"	48.4	25.3	89.8	75-125
Cadmium	2.12	0.242	"	2.42	0.0596	85.3	75-125
Copper	38.9	0.484	"	48.4	1.89	76.4	75-125
Lead	23.0	0.242	"	24.2	2.81	83.5	75-125
Nickel	39.7	0.484	"	48.4	2.41	77.0	75-125
Selenium	4.10	0.315	"	4.84	ND	84.7	75-125
Silver	2.02	0.0242	"	2.42	0.0111	83.0	75-125
Zinc	48.0	0.484	"	48.4	9.94	78.7	75-125

Matrix Spike Dup (BGG0210-MSD1)

Source: 2307093-01

Prepared: 07/10/23 Analyzed: 07/12/23

Arsenic	40.9	0.242	mg/kg dry	48.4	0.924	82.5	75-125	1.50	25
Barium	70.6	0.484	"	48.4	25.3	93.4	75-125	2.52	25
Cadmium	2.21	0.242	"	2.42	0.0596	89.0	75-125	4.17	25
Copper	38.7	0.484	"	48.4	1.89	76.1	75-125	0.349	25
Lead	23.9	0.242	"	24.2	2.81	87.0	75-125	3.60	25
Nickel	39.2	0.484	"	48.4	2.41	76.0	75-125	1.23	25
Selenium	4.24	0.315	"	4.84	ND	87.5	75-125	3.22	25
Silver	2.09	0.0242	"	2.42	0.0111	86.0	75-125	3.48	25
Zinc	47.6	0.484	"	48.4	9.94	77.9	75-125	0.852	25

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGG0212 - 3060A Mod

Blank (BGG0212-BLK1)

Prepared & Analyzed: 07/10/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0212-BS1)

Prepared & Analyzed: 07/10/23

Chromium, Hexavalent 24.1 0.30 mg/kg wet 25.0 96.4 80-120

Duplicate (BGG0212-DUP1)

Source: 2307093-01

Prepared & Analyzed: 07/10/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0212-MS1)

Source: 2307093-01

Prepared & Analyzed: 07/10/23

Chromium, Hexavalent 29.1 0.30 mg/kg dry 30.3 ND 96.2 75-125

Matrix Spike Dup (BGG0212-MSD1)

Source: 2307093-01

Prepared & Analyzed: 07/10/23

Chromium, Hexavalent 29.8 0.30 mg/kg dry 30.3 ND 98.4 75-125 2.26 20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:

07/13/23 12:09

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

Summit Scientific

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

Batch BGG0207 - General Preparation

Blank (BGG0207-BLK1)

Prepared: 07/09/23 Analyzed: 07/12/23

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

LCS (BGG0207-BS1)

Prepared: 07/09/23 Analyzed: 07/12/23

Calcium	4.47	0.0500	mg/L wet	5.00	89.3	70-130
Magnesium	5.92	0.0500	"	5.00	118	70-130
Sodium	5.69	0.0500	"	5.00	114	70-130

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

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

Summit Scientific

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

Batch BGG0214 - General Preparation

Duplicate (BGG0214-DUP1)

Source: 2307093-01

Prepared & Analyzed: 07/10/23

% Solids	82.1	%	82.6	0.581	20
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Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:

07/13/23 12:09

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

Summit Scientific

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

Batch BGG0233 - General Preparation

Blank (BGG0233-BLK1)

Prepared & Analyzed: 07/10/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0233-BS1)

Prepared & Analyzed: 07/10/23

Specific Conductance (EC) 0.152 0.0100 mmhos/cm 0.150 102 95-105

Duplicate (BGG0233-DUP1)

Source: 2306631-02

Prepared & Analyzed: 07/10/23

Specific Conductance (EC) 1.60 0.0100 mmhos/cm 1.66 3.55 20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:

07/13/23 12:09

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

Summit Scientific

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

Batch BGG0232 - General Preparation

LCS (BGG0232-BS1)

Prepared & Analyzed: 07/10/23

pH	9.16	pH Units	9.18	99.8	95-105
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Duplicate (BGG0232-DUP1)

Source: 2306631-02

Prepared & Analyzed: 07/10/23

pH	7.65	pH Units	7.62	0.393	20
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Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/13/23 12:09

Notes and Definitions

QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

July 17, 2023

Paul Henehan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order # 2307137

Enclosed are the results of analyses for samples received by Summit Scientific on 07/10/23 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N01@8.0'	2307137-01	Soil	07/10/23 00:00	07/10/23 16:30
W02@8.0'	2307137-02	Soil	07/10/23 00:00	07/10/23 16:30
W03@8.0'	2307137-03	Soil	07/10/23 00:00	07/10/23 16:30

Summit Scientific

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


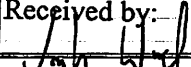
SUMMIT SCIENTIFIC

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

Lab ID	Page <u>1</u> of <u>1</u>
2307137	

Client: Fremont Env	Send Data To:	Send Invoice To:
Address:	Project Manager: Paul Hencham	Company: Noble
City/State/Zip:	E-Mail: Paulh@fremontenv.com	Project Name/Location: PTF-64N64W 32SENE
Phone:	Jeff@fremontenv.com Ethenb@fremontenv.com	AFE#:
Sampler Name: JG	Project Name: PTF-64N64W 32SENE	PO/Billing Codes: UWRWE-A2338-ABN
	Project Number:	Contact:

Contact:																			
ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested					Special Instructions		
					HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEX+N	TMBs (915)	GRD, DRD, DRO	PAHs (915)		EC, PH, SAR, Boron	Metals (915)
1	N01@8.0'	7/10/23		2			X			X			X	X	X	X	X		
2	W02@8.0'	↓		↓			↓			↓			↓	↓	↓	↓	↓		
3	W03@8.0'	↓		↓			↓			↓			↓	↓	↓	↓	↓		
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: 	Date/Time: 7/10/23 1630	Received by: 	Date/Time: 7/10/23 16:30	TAT Business Days	Field DO	Notes: Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Temperature Upon Receipt: 25.2	Corrected Temperature	IR gun #: 2	HNO3 lot #:	Standard	Field Turb.	

S₂

Sample Receipt Checklist

S2 Work Order# 2307137Client: Fremont Client Project ID: PTF-64NG4W 32SENEShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☒ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 25.2Thermometer # ☐

	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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Same day</i>
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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>No sample times</i>
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.				

John Wood
Custodian Printed Name

7/10/23 16:30
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

N01@8.0'
2307137-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0257	07/10/23	07/10/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		97.7 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0258	07/10/23	07/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		117 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

N01@8.0'
2307137-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0265	07/11/23	07/11/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		50.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		61.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.261	0.0100		mg/L	1	BGG0283	07/11/23	07/13/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	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 - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

N01@8.0'
2307137-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.64	0.237		mg/kg dry	1	BGG0260	07/11/23	07/12/23	EPA 6020B	
Barium	47.0	0.473		"	"	"	"	"	"	
Cadmium	ND	0.237		"	"	"	"	"	"	
Copper	2.25	0.473		"	"	"	"	"	"	
Lead	3.61	0.237		"	"	"	"	"	"	
Nickel	3.10	0.473		"	"	"	"	"	"	
Selenium	ND	0.308	0.207	"	"	"	"	"	"	
Silver	ND	0.0237		"	"	"	"	"	"	
Zinc	11.2	0.473		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0261	07/11/23	07/11/23	EPA 7196A	

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

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	41.7	0.0592		mg/L dry	1	BGG0259	07/10/23	07/13/23	EPA 6020B	
Magnesium	24.8	0.0592		"	"	"	"	"	"	
Sodium	28.5	0.0592		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.864	0.00100		units	1	BGG0385	07/13/23	07/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

N01@8.0'
2307137-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.5			%	1	BGG0262	07/11/23	07/11/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.11	0.0100		mmhos/cm	1	BGG0270	07/11/23	07/11/23	EPA 120.1	

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

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.63			pH Units	1	BGG0271	07/11/23	07/11/23	EPA 9045D	

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

W02@8.0'
2307137-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0257	07/10/23	07/10/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		99.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.8 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0258	07/10/23	07/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		128 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

W02@8.0'
2307137-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0265	07/11/23	07/12/23	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: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		49.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		52.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.296	0.0100		mg/L	1	BGG0283	07/11/23	07/13/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	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 - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

W02@8.0'
2307137-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.64	0.243		mg/kg dry	1	BGG0260	07/11/23	07/12/23	EPA 6020B	
Barium	67.8	0.486		"	"	"	"	"	"	
Cadmium	ND	0.243		"	"	"	"	"	"	
Copper	3.48	0.486		"	"	"	"	"	"	
Lead	4.54	0.243		"	"	"	"	"	"	
Nickel	4.14	0.486		"	"	"	"	"	"	
Selenium	ND	0.316	0.213	"	"	"	"	"	"	
Silver	ND	0.0243		"	"	"	"	"	"	
Zinc	13.2	0.486		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0261	07/11/23	07/11/23	EPA 7196A	

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

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	70.0	0.0607		mg/L dry	1	BGG0259	07/10/23	07/13/23	EPA 6020B	
Magnesium	27.3	0.0607		"	"	"	"	"	"	
Sodium	44.5	0.0607		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.14	0.00100		units	1	BGG0385	07/13/23	07/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

W02@8.0'
2307137-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	82.3			%	1	BGG0262	07/11/23	07/11/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.08	0.0100		mmhos/cm	1	BGG0270	07/11/23	07/11/23	EPA 120.1	

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

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.53			pH Units	1	BGG0271	07/11/23	07/11/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

W03@8.0'
2307137-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0257	07/10/23	07/10/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		98.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.7 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0258	07/10/23	07/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		127 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

W03@8.0'
2307137-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0265	07/11/23	07/12/23	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: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		49.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		55.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.178	0.0100		mg/L	1	BGG0283	07/11/23	07/13/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/10/23 00:00**

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

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

W03@8.0'
2307137-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.75	0.238		mg/kg dry	1	BGG0260	07/11/23	07/12/23	EPA 6020B	
Barium	45.1	0.475		"	"	"	"	"	"	
Cadmium	ND	0.238		"	"	"	"	"	"	
Copper	2.79	0.475		"	"	"	"	"	"	
Lead	2.94	0.238		"	"	"	"	"	"	
Nickel	2.72	0.475		"	"	"	"	"	"	
Selenium	ND	0.309	0.208	"	"	"	"	"	"	
Silver	ND	0.0238		"	"	"	"	"	"	
Zinc	9.83	0.475		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 07/10/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0261	07/11/23	07/11/23	EPA 7196A	

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

Date Sampled: 07/10/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	49.1	0.0594		mg/L dry	1	BGG0259	07/10/23	07/13/23	EPA 6020B	
Magnesium	21.3	0.0594		"	"	"	"	"	"	
Sodium	51.5	0.0594		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 07/10/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.55	0.00100		units	1	BGG0385	07/13/23	07/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

W03@8.0'
2307137-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.2			%	1	BGG0262	07/11/23	07/11/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.12	0.0100		mmhos/cm	1	BGG0270	07/11/23	07/11/23	EPA 120.1	

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

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.45			pH Units	1	BGG0271	07/11/23	07/11/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0257 - EPA 5030 Soil MS

Blank (BGG0257-BLK1)

Prepared & Analyzed: 07/10/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0385		"	0.0400		96.3	50-150			
Surrogate: Toluene-d8	0.0412		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0388		"	0.0400		96.9	50-150			

LCS (BGG0257-BS1)

Prepared & Analyzed: 07/10/23

Benzene	0.0648	0.0020	mg/kg	0.0750		86.4	70-130			
Toluene	0.0859	0.0050	"	0.0750		115	70-130			
Ethylbenzene	0.0962	0.0050	"	0.0750		128	70-130			
m,p-Xylene	0.187	0.010	"	0.150		125	70-130			
o-Xylene	0.0886	0.0050	"	0.0750		118	70-130			
1,2,4-Trimethylbenzene	0.0892	0.0050	"	0.0750		119	70-130			
1,3,5-Trimethylbenzene	0.0919	0.0050	"	0.0750		123	70-130			
Naphthalene	0.0735	0.0038	"	0.0750		98.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0392		"	0.0400		98.1	50-150			
Surrogate: Toluene-d8	0.0418		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0418		"	0.0400		105	50-150			

Matrix Spike (BGG0257-MS1)

Source: 2307137-01

Prepared & Analyzed: 07/10/23

Benzene	0.0591	0.0020	mg/kg	0.0750	ND	78.8	70-130			
Toluene	0.0775	0.0050	"	0.0750	ND	103	70-130			
Ethylbenzene	0.0871	0.0050	"	0.0750	ND	116	70-130			
m,p-Xylene	0.173	0.010	"	0.150	ND	115	70-130			
o-Xylene	0.0814	0.0050	"	0.0750	ND	109	70-130			
1,2,4-Trimethylbenzene	0.0841	0.0050	"	0.0750	ND	112	70-130			
1,3,5-Trimethylbenzene	0.0848	0.0050	"	0.0750	ND	113	70-130			
Naphthalene	0.0768	0.0038	"	0.0750	ND	102	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0412		"	0.0400		103	50-150			
Surrogate: Toluene-d8	0.0399		"	0.0400		99.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0407		"	0.0400		102	50-150			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BGG0257 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0257-MSD1)	Source: 2307137-01			Prepared & Analyzed: 07/10/23						
Benzene	0.0589	0.0020	mg/kg	0.0750	ND	78.6	70-130	0.356	30	
Toluene	0.0771	0.0050	"	0.0750	ND	103	70-130	0.466	30	
Ethylbenzene	0.0901	0.0050	"	0.0750	ND	120	70-130	3.42	30	
m,p-Xylene	0.176	0.010	"	0.150	ND	118	70-130	1.91	30	
o-Xylene	0.0844	0.0050	"	0.0750	ND	113	70-130	3.62	30	
1,2,4-Trimethylbenzene	0.0860	0.0050	"	0.0750	ND	115	70-130	2.26	30	
1,3,5-Trimethylbenzene	0.0884	0.0050	"	0.0750	ND	118	70-130	4.23	30	
Naphthalene	0.0765	0.0038	"	0.0750	ND	102	70-130	0.470	30	
Surrogate: 1,2-Dichloroethane-d4	0.0388		"	0.0400		97.0	50-150			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.3	50-150			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGG0258 - EPA 3550A

Blank (BGG0258-BLK1)

Prepared: 07/10/23 Analyzed: 07/11/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	14.6		"	12.5		117	30-150			

LCS (BGG0258-BS1)

Prepared: 07/10/23 Analyzed: 07/11/23

C10-C28 (DRO)	389	50	mg/kg	500		77.7	70-130			
Surrogate: o-Terphenyl	14.4		"	12.5		115	30-150			

Matrix Spike (BGG0258-MS1)

Source: 2307137-01

Prepared: 07/10/23 Analyzed: 07/11/23

C10-C28 (DRO)	331	50	mg/kg	500	8.62	64.5	70-130			QM-07
Surrogate: o-Terphenyl	14.1		"	12.5		113	30-150			

Matrix Spike Dup (BGG0258-MSD1)

Source: 2307137-01

Prepared: 07/10/23 Analyzed: 07/11/23

C10-C28 (DRO)	327	50	mg/kg	500	8.62	63.7	70-130	1.26	20	QM-07
Surrogate: o-Terphenyl	12.2		"	12.5		97.5	30-150			

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0265 - EPA 5030 Soil MS

Blank (BGG0265-BLK1)

Prepared & Analyzed: 07/11/23

Acenaphthene	ND	0.00500	mg/kg
Anthracene	ND	0.00500	"
Benzo (a) anthracene	ND	0.00500	"
Benzo (a) pyrene	ND	0.00500	"
Benzo (b) fluoranthene	ND	0.00500	"
Benzo (k) fluoranthene	ND	0.00500	"
Chrysene	ND	0.00500	"
Dibenz (a,h) anthracene	ND	0.00500	"
Fluoranthene	ND	0.00500	"
Fluorene	ND	0.00500	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"
Pyrene	ND	0.00500	"
1-Methylnaphthalene	ND	0.00500	"
2-Methylnaphthalene	ND	0.00500	"

Surrogate: 2-Methylnaphthalene-d10	0.0306	"	0.0333	91.7	40-150
Surrogate: Fluoranthene-d10	0.0360	"	0.0333	108	40-150

LCS (BGG0265-BS1)

Prepared & Analyzed: 07/11/23

Acenaphthene	0.0340	0.00500	mg/kg	0.0333	102	31-137
Anthracene	0.0335	0.00500	"	0.0333	101	30-120
Benzo (a) anthracene	0.0352	0.00500	"	0.0333	106	30-120
Benzo (a) pyrene	0.0322	0.00500	"	0.0333	96.5	30-120
Benzo (b) fluoranthene	0.0341	0.00500	"	0.0333	102	30-120
Benzo (k) fluoranthene	0.0332	0.00500	"	0.0333	99.6	30-120
Chrysene	0.0339	0.00500	"	0.0333	102	30-120
Dibenz (a,h) anthracene	0.0313	0.00500	"	0.0333	93.8	30-120
Fluoranthene	0.0343	0.00500	"	0.0333	103	30-120
Fluorene	0.0335	0.00500	"	0.0333	101	30-120
Indeno (1,2,3-cd) pyrene	0.0247	0.00500	"	0.0333	74.0	30-120
Pyrene	0.0352	0.00500	"	0.0333	106	35-142
1-Methylnaphthalene	0.0308	0.00500	"	0.0333	92.3	35-142
2-Methylnaphthalene	0.0355	0.00500	"	0.0333	106	35-142

Surrogate: 2-Methylnaphthalene-d10	0.0313	"	0.0333	94.0	40-150
Surrogate: Fluoranthene-d10	0.0399	"	0.0333	120	40-150

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0265 - EPA 5030 Soil MS

Matrix Spike (BGG0265-MS1)

Source: 2306563-01

Prepared & Analyzed: 07/11/23

Acenaphthene	0.0244	0.00500	mg/kg	0.0333	ND	73.2	31-137		
Anthracene	0.0236	0.00500	"	0.0333	ND	70.7	30-120		
Benzo (a) anthracene	0.0256	0.00500	"	0.0333	ND	76.9	30-120		
Benzo (a) pyrene	0.0225	0.00500	"	0.0333	ND	67.5	30-120		
Benzo (b) fluoranthene	0.0246	0.00500	"	0.0333	ND	73.8	30-120		
Benzo (k) fluoranthene	0.0242	0.00500	"	0.0333	ND	72.6	30-120		
Chrysene	0.0244	0.00500	"	0.0333	ND	73.1	30-120		
Dibenz (a,h) anthracene	0.0222	0.00500	"	0.0333	ND	66.6	30-120		
Fluoranthene	0.0243	0.00500	"	0.0333	ND	72.8	30-120		
Fluorene	0.0241	0.00500	"	0.0333	ND	72.2	30-120		
Indeno (1,2,3-cd) pyrene	0.0170	0.00500	"	0.0333	ND	50.9	30-120		
Pyrene	0.0262	0.00500	"	0.0333	ND	78.5	35-142		
1-Methylnaphthalene	0.0218	0.00500	"	0.0333	ND	65.3	15-130		
2-Methylnaphthalene	0.0247	0.00500	"	0.0333	ND	74.0	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0230		"	0.0333		69.0	40-150		
Surrogate: Fluoranthene-d10	0.0285		"	0.0333		85.5	40-150		

Matrix Spike Dup (BGG0265-MSD1)

Source: 2306563-01

Prepared & Analyzed: 07/11/23

Acenaphthene	0.0222	0.00500	mg/kg	0.0333	ND	66.7	31-137	9.21	30
Anthracene	0.0217	0.00500	"	0.0333	ND	65.0	30-120	8.36	30
Benzo (a) anthracene	0.0237	0.00500	"	0.0333	ND	71.0	30-120	7.89	30
Benzo (a) pyrene	0.0206	0.00500	"	0.0333	ND	61.9	30-120	8.58	30
Benzo (b) fluoranthene	0.0219	0.00500	"	0.0333	ND	65.6	30-120	11.9	30
Benzo (k) fluoranthene	0.0217	0.00500	"	0.0333	ND	65.2	30-120	10.8	30
Chrysene	0.0219	0.00500	"	0.0333	ND	65.7	30-120	10.7	30
Dibenz (a,h) anthracene	0.0197	0.00500	"	0.0333	ND	59.1	30-120	11.9	30
Fluoranthene	0.0221	0.00500	"	0.0333	ND	66.2	30-120	9.50	30
Fluorene	0.0219	0.00500	"	0.0333	ND	65.7	30-120	9.46	30
Indeno (1,2,3-cd) pyrene	0.0154	0.00500	"	0.0333	ND	46.2	30-120	9.66	30
Pyrene	0.0236	0.00500	"	0.0333	ND	70.7	35-142	10.4	30
1-Methylnaphthalene	0.0211	0.00500	"	0.0333	ND	63.4	15-130	2.95	50
2-Methylnaphthalene	0.0210	0.00500	"	0.0333	ND	63.0	15-130	16.1	50
Surrogate: 2-Methylnaphthalene-d10	0.0235		"	0.0333		70.5	40-150		
Surrogate: Fluoranthene-d10	0.0258		"	0.0333		77.5	40-150		

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

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

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

Batch BGG0283 - EPA 3050B

Blank (BGG0283-BLK1)

Prepared: 07/11/23 Analyzed: 07/13/23

Boron ND 0.0100 mg/L

LCS (BGG0283-BS1)

Prepared: 07/11/23 Analyzed: 07/13/23

Boron 5.67 0.0100 mg/L 5.00 113 80-120

Duplicate (BGG0283-DUP1)

Source: 2307065-01

Prepared: 07/11/23 Analyzed: 07/13/23

Boron 0.245 0.0100 mg/L 0.275 11.4 20

Matrix Spike (BGG0283-MS1)

Source: 2307065-01

Prepared: 07/11/23 Analyzed: 07/13/23

Boron 5.72 0.0100 mg/L 5.00 0.275 109 75-125

Matrix Spike Dup (BGG0283-MSD1)

Source: 2307065-01

Prepared: 07/11/23 Analyzed: 07/13/23

Boron 5.86 0.0100 mg/L 5.00 0.275 112 75-125 2.45 25

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGG0260 - EPA 3050B

Blank (BGG0260-BLK1)

Prepared: 07/11/23 Analyzed: 07/12/23

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	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BGG0260-BS1)

Prepared: 07/11/23 Analyzed: 07/12/23

Arsenic	37.1	0.200	mg/kg wet	40.0	92.8	80-120
Barium	37.1	0.400	"	40.0	92.7	80-120
Cadmium	1.75	0.200	"	2.00	87.6	80-120
Copper	35.7	0.400	"	40.0	89.3	80-120
Lead	17.7	0.200	"	20.0	88.4	80-120
Nickel	34.3	0.400	"	40.0	85.8	80-120
Selenium	4.07	0.260	"	4.00	102	80-120
Silver	1.76	0.0200	"	2.00	87.8	80-120
Zinc	34.5	0.400	"	40.0	86.4	80-120

Duplicate (BGG0260-DUP1)

Source: 2305454-30

Prepared: 07/11/23 Analyzed: 07/12/23

Arsenic	1.60	0.217	mg/kg dry	1.78	11.1	20
Barium	16.5	0.435	"	17.7	7.18	20
Cadmium	0.122	0.217	"	0.131	6.87	20
Copper	2.28	0.435	"	2.41	5.91	20
Lead	4.23	0.217	"	4.68	10.1	20
Nickel	5.20	0.435	"	5.54	6.33	20
Selenium	ND	0.283	"	ND		20
Silver	0.0100	0.0217	"	0.0100	0.00	20
Zinc	24.4	0.435	"	26.3	7.55	20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BGG0260 - EPA 3050B

Matrix Spike (BGG0260-MS1)		Source: 2305454-30			Prepared: 07/11/23 Analyzed: 07/12/23					
Arsenic	44.6	0.217	mg/kg dry	43.5	1.78	98.4	75-125			
Barium	63.8	0.435	"	43.5	17.7	106	75-125			
Cadmium	2.31	0.217	"	2.17	0.131	100	75-125			
Copper	32.0	0.435	"	43.5	2.41	68.2	75-125			QM-07
Lead	26.6	0.217	"	21.7	4.68	101	75-125			
Nickel	34.4	0.435	"	43.5	5.54	66.5	75-125			QM-07
Selenium	4.33	0.283	"	4.35	ND	99.5	75-125			
Silver	2.11	0.0217	"	2.17	0.0100	96.7	75-125			
Zinc	58.4	0.435	"	43.5	26.3	73.8	75-125			QM-07

Matrix Spike Dup (BGG0260-MSD1)		Source: 2305454-30			Prepared: 07/11/23 Analyzed: 07/12/23					
Arsenic	45.3	0.217	mg/kg dry	43.5	1.78	100	75-125	1.66	25	
Barium	61.3	0.435	"	43.5	17.7	100	75-125	4.07	25	
Cadmium	2.24	0.217	"	2.17	0.131	96.8	75-125	3.21	25	
Copper	32.7	0.435	"	43.5	2.41	69.6	75-125	1.86	25	QM-07
Lead	25.5	0.217	"	21.7	4.68	96.0	75-125	3.99	25	
Nickel	35.4	0.435	"	43.5	5.54	68.6	75-125	2.67	25	QM-07
Selenium	4.25	0.283	"	4.35	ND	97.9	75-125	1.71	25	
Silver	2.03	0.0217	"	2.17	0.0100	92.8	75-125	4.08	25	
Zinc	59.8	0.435	"	43.5	26.3	77.1	75-125	2.45	25	

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGG0261 - 3060A Mod

Blank (BGG0261-BLK1)

Prepared & Analyzed: 07/11/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0261-BS1)

Prepared & Analyzed: 07/11/23

Chromium, Hexavalent 24.2 0.30 mg/kg wet 25.0 97.0 80-120

Duplicate (BGG0261-DUP1)

Source: 2307137-01

Prepared & Analyzed: 07/11/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0261-MS1)

Source: 2307137-01

Prepared & Analyzed: 07/11/23

Chromium, Hexavalent 28.3 0.30 mg/kg dry 29.6 ND 95.6 75-125

Matrix Spike Dup (BGG0261-MSD1)

Source: 2307137-01

Prepared & Analyzed: 07/11/23

Chromium, Hexavalent 29.4 0.30 mg/kg dry 29.6 ND 99.4 75-125 3.90 20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

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

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

Batch BGG0259 - General Preparation

Blank (BGG0259-BLK1)

Prepared: 07/10/23 Analyzed: 07/13/23

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

LCS (BGG0259-BS1)

Prepared: 07/10/23 Analyzed: 07/13/23

Calcium	4.31	0.0500	mg/L wet	5.00	86.1	70-130
Magnesium	4.71	0.0500	"	5.00	94.1	70-130
Sodium	4.74	0.0500	"	5.00	94.7	70-130

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

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

Summit Scientific

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

Batch BGG0262 - General Preparation

Duplicate (BGG0262-DUP1)

Source: 2305454-30

Prepared & Analyzed: 07/11/23

% Solids	92.0	%	92.0	0.0189	20
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Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

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

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

Batch BGG0270 - General Preparation

Blank (BGG0270-BLK1)

Prepared & Analyzed: 07/11/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0270-BS1)

Prepared & Analyzed: 07/11/23

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 104 95-105

Duplicate (BGG0270-DUP1)

Source: 2306663-01

Prepared & Analyzed: 07/11/23

Specific Conductance (EC) 2.22 0.0100 mmhos/cm 2.27 2.40 20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

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

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

Batch BGG0271 - General Preparation

LCS (BGG0271-BS1)

Prepared & Analyzed: 07/11/23

pH	9.06	pH Units	9.18	98.7	95-105
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Duplicate (BGG0271-DUP1)

Source: 2306663-01

Prepared & Analyzed: 07/11/23

pH	8.20	pH Units	8.19	0.122	20
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Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

July 17, 2023

Paul Henehan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order # 2307162

Enclosed are the results of analyses for samples received by Summit Scientific on 07/11/23 16:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B02@9.0'	2307162-01	Soil	07/11/23 00:00	07/11/23 16:25
S02@7.0'	2307162-02	Soil	07/11/23 00:00	07/11/23 16:25

Summit Scientific

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


SUMMIT SCIENTIFIC

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

Lab ID	Page <u>1</u> of <u>1</u>
2307162	

Send Data To:		Send Invoice To:	
Client: Fremont Env	Project Manager: Paul Henahan	Company: Noble	
Address:	E-Mail: Paulh@fremontenv.com	Project Name/Location: PTF-64N64W 32NESE	
City/State/Zip:	jeff@fremontenv.com Ethamb@fremontenv.com	AFE#:	
Phone:	Project Name: PTF-64N64W 32SENE	PO/Billing Codes: UWRWE-A2338-ABN	
Sampler Name: JG	Project Number:	Contact:	

					Preservative				Matrix				Analysis Requested						Special Instructions		
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEX+N	TMBs (915)	DRO,ORO,GRD	PAHs (915)	EC,PH,SAR, Boron	Metals (915)			
1	B02@9.0'	7/11/23		2			X			X			X	X	X	X	X	X			
2	S02@7.0'	7/11/23		2			X			X			X	X	X	X	X	X			
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: 	Date/Time: 7/11/23 16:25	Received by: Jah Wad	Date/Time: 7/11/23 16:25	TAT Business Days	Field DO	Notes: Bill to Noble
				Same Day	<input checked="" type="checkbox"/> Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 24.9	Corrected Temperature	IR gun #: Z	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2307162Client: Fremont Client Project ID: PTF-64N64V 32SENEShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☒ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 24.9 Thermometer # Z

	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"/>	on ice
If custody seals are present, are they intact? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	same day
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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No Sample tags
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.
John Ward
Custodian Printed Name

7/11/23 16:25
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

B02@9.0'
2307162-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0306	07/11/23	07/11/23	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: **07/11/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		117 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		108 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0307	"	07/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		86.0 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

B02@9.0'
2307162-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0314	07/12/23	07/12/23	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: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		41.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0155	0.0100		mg/L	1	BGG0319	07/12/23	07/13/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	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 - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

B02@9.0'
2307162-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.595	0.241	mg/kg dry	1	BGG0310	07/12/23	07/13/23	EPA 6020B
Barium	33.4	0.482	"	"	"	"	"	"
Cadmium	ND	0.241	"	"	"	"	"	"
Copper	1.16	0.482	"	"	"	"	"	"
Lead	2.79	0.241	"	"	"	"	"	"
Nickel	1.19	0.482	"	"	"	"	"	"
Selenium	ND	0.313	0.211	"	"	"	"	"
Silver	ND	0.0241	"	"	"	"	"	"
Zinc	5.40	0.482	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0311	07/12/23	07/12/23	EPA 7196A	

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

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	84.3	0.0602		mg/L dry	1	BGG0343	07/12/23	07/14/23	EPA 6020B	
Magnesium	29.6	0.0602		"	"	"	"	"	"	
Sodium	85.6	0.0602		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.04	0.00100		units	1	BGG0462	07/15/23	07/15/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

B02@9.0'
2307162-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.0			%	1	BGG0313	07/12/23	07/12/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.20	0.0100		mmhos/cm	1	BGG0390	07/13/23	07/13/23	EPA 120.1	

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

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.51			pH Units	1	BGG0391	07/13/23	07/13/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

S02@7.0'
2307162-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGG0306	07/11/23	07/11/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	0.021	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.0064	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	7.9	0.50		"	"	"	"	"	"	

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		99.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		118 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0307	"	07/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		82.7 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

S02@7.0'
2307162-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0314	07/12/23	07/12/23	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: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		43.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		46.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0282	0.0100		mg/L	1	BGG0319	07/12/23	07/13/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	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 - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

S02@7.0'
2307162-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.93	0.237		mg/kg dry	1	BGG0310	07/12/23	07/13/23	EPA 6020B	
Barium	64.7	0.473		"	"	"	"	"	"	
Cadmium	ND	0.237		"	"	"	"	"	"	
Copper	1.50	0.473		"	"	"	"	"	"	
Lead	3.59	0.237		"	"	"	"	"	"	
Nickel	1.49	0.473		"	"	"	"	"	"	
Selenium	ND	0.308	0.207	"	"	"	"	"	"	
Silver	ND	0.0237		"	"	"	"	"	"	
Zinc	5.91	0.473		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 07/11/23 00:00

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0311	07/12/23	07/12/23	EPA 7196A	

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

Date Sampled: 07/11/23 00:00

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	25.5	0.0591		mg/L dry	1	BGG0343	07/12/23	07/14/23	EPA 6020B	
Magnesium	29.4	0.0591		"	"	"	"	"	"	
Sodium	39.5	0.0591		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 07/11/23 00:00

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.26	0.00100		units	1	BGG0462	07/15/23	07/15/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

S02@7.0'
2307162-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.5			%	1	BGG0313	07/12/23	07/12/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.855	0.0100		mmhos/cm	1	BGG0390	07/13/23	07/13/23	EPA 120.1	

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

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.83			pH Units	1	BGG0391	07/13/23	07/13/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0306 - EPA 5030 Soil MS

Blank (BGG0306-BLK1)

Prepared & Analyzed: 07/11/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0368		"	0.0400		91.9	50-150			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0380		"	0.0400		95.1	50-150			

LCS (BGG0306-BS1)

Prepared & Analyzed: 07/11/23

Benzene	0.0617	0.0020	mg/kg	0.0750		82.3	70-130			
Toluene	0.0825	0.0050	"	0.0750		110	70-130			
Ethylbenzene	0.0925	0.0050	"	0.0750		123	70-130			
m,p-Xylene	0.182	0.010	"	0.150		121	70-130			
o-Xylene	0.0840	0.0050	"	0.0750		112	70-130			
1,2,4-Trimethylbenzene	0.0854	0.0050	"	0.0750		114	70-130			
1,3,5-Trimethylbenzene	0.0896	0.0050	"	0.0750		119	70-130			
Naphthalene	0.0700	0.0038	"	0.0750		93.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0385		"	0.0400		96.2	50-150			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400		102	50-150			

Matrix Spike (BGG0306-MS1)

Source: 2307164-01

Prepared: 07/11/23 Analyzed: 07/12/23

Benzene	0.0618	0.0020	mg/kg	0.0750	ND	82.4	70-130			
Toluene	0.0798	0.0050	"	0.0750	ND	106	70-130			
Ethylbenzene	0.0957	0.0050	"	0.0750	ND	128	70-130			
m,p-Xylene	0.185	0.010	"	0.150	ND	124	70-130			
o-Xylene	0.0875	0.0050	"	0.0750	ND	117	70-130			
1,2,4-Trimethylbenzene	0.0880	0.0050	"	0.0750	ND	117	70-130			
1,3,5-Trimethylbenzene	0.0905	0.0050	"	0.0750	ND	121	70-130			
Naphthalene	0.0713	0.0038	"	0.0750	ND	95.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0358		"	0.0400		89.4	50-150			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0400		97.2	50-150			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BGG0306 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0306-MSD1)	Source: 2307164-01			Prepared: 07/11/23 Analyzed: 07/12/23						
Benzene	0.0606	0.0020	mg/kg	0.0750	ND	80.8	70-130	1.86	30	
Toluene	0.0811	0.0050	"	0.0750	ND	108	70-130	1.64	30	
Ethylbenzene	0.0939	0.0050	"	0.0750	ND	125	70-130	1.87	30	
m,p-Xylene	0.187	0.010	"	0.150	ND	124	70-130	0.774	30	
o-Xylene	0.0859	0.0050	"	0.0750	ND	115	70-130	1.83	30	
1,2,4-Trimethylbenzene	0.0867	0.0050	"	0.0750	ND	116	70-130	1.51	30	
1,3,5-Trimethylbenzene	0.0910	0.0050	"	0.0750	ND	121	70-130	0.529	30	
Naphthalene	0.0725	0.0038	"	0.0750	ND	96.7	70-130	1.67	30	
Surrogate: 1,2-Dichloroethane-d4	0.0349		"	0.0400		87.2	50-150			
Surrogate: Toluene-d8	0.0382		"	0.0400		95.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0388		"	0.0400		97.0	50-150			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGG0307 - EPA 3550A

Blank (BGG0307-BLK1)

Prepared & Analyzed: 07/11/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	10.9		"	12.5		87.2	30-150			

LCS (BGG0307-BS1)

Prepared: 07/11/23 Analyzed: 07/12/23

C10-C28 (DRO)	459	50	mg/kg	500		91.9	70-130			
Surrogate: o-Terphenyl	10.9		"	12.5		87.3	30-150			

Matrix Spike (BGG0307-MS1)

Source: 2307164-01

Prepared: 07/11/23 Analyzed: 07/12/23

C10-C28 (DRO)	374	50	mg/kg	500	26.5	69.6	70-130			QM-07
Surrogate: o-Terphenyl	9.67		"	12.5		77.4	30-150			

Matrix Spike Dup (BGG0307-MSD1)

Source: 2307164-01

Prepared: 07/11/23 Analyzed: 07/12/23

C10-C28 (DRO)	415	50	mg/kg	500	26.5	77.6	70-130	10.2	20	
Surrogate: o-Terphenyl	11.0		"	12.5		87.7	30-150			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0314 - EPA 5030 Soil MS

Blank (BGG0314-BLK1)

Prepared & Analyzed: 07/12/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0352		"	0.0333		106	40-150			
Surrogate: Fluoranthene-d10	0.0273		"	0.0333		82.0	40-150			

LCS (BGG0314-BS1)

Prepared & Analyzed: 07/12/23

Acenaphthene	0.0292	0.00500	mg/kg	0.0333		87.6	31-137			
Anthracene	0.0277	0.00500	"	0.0333		83.0	30-120			
Benzo (a) anthracene	0.0213	0.00500	"	0.0333		64.0	30-120			
Benzo (a) pyrene	0.0248	0.00500	"	0.0333		74.4	30-120			
Benzo (b) fluoranthene	0.0241	0.00500	"	0.0333		72.4	30-120			
Benzo (k) fluoranthene	0.0282	0.00500	"	0.0333		84.5	30-120			
Chrysene	0.0312	0.00500	"	0.0333		93.6	30-120			
Dibenz (a,h) anthracene	0.0221	0.00500	"	0.0333		66.4	30-120			
Fluoranthene	0.0282	0.00500	"	0.0333		84.7	30-120			
Fluorene	0.0287	0.00500	"	0.0333		86.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0182	0.00500	"	0.0333		54.5	30-120			
Pyrene	0.0299	0.00500	"	0.0333		89.6	35-142			
1-Methylnaphthalene	0.0164	0.00500	"	0.0333		49.3	35-142			
2-Methylnaphthalene	0.0278	0.00500	"	0.0333		83.3	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0328		"	0.0333		98.5	40-150			
Surrogate: Fluoranthene-d10	0.0332		"	0.0333		99.7	40-150			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0314 - EPA 5030 Soil MS

Matrix Spike (BGG0314-MS1)

Source: 2307140-01

Prepared & Analyzed: 07/12/23

Acenaphthene	0.0168	0.00500	mg/kg	0.0333	ND	50.5	31-137		
Anthracene	0.0149	0.00500	"	0.0333	ND	44.7	30-120		
Benzo (a) anthracene	0.0153	0.00500	"	0.0333	ND	45.8	30-120		
Benzo (a) pyrene	0.0142	0.00500	"	0.0333	ND	42.5	30-120		
Benzo (b) fluoranthene	0.0143	0.00500	"	0.0333	ND	42.9	30-120		
Benzo (k) fluoranthene	0.0142	0.00500	"	0.0333	ND	42.5	30-120		
Chrysene	0.0159	0.00500	"	0.0333	ND	47.8	30-120		
Dibenz (a,h) anthracene	0.0138	0.00500	"	0.0333	ND	41.4	30-120		
Fluoranthene	0.0141	0.00500	"	0.0333	ND	42.3	30-120		
Fluorene	0.0158	0.00500	"	0.0333	ND	47.3	30-120		
Indeno (1,2,3-cd) pyrene	0.0140	0.00500	"	0.0333	ND	41.9	30-120		
Pyrene	0.0161	0.00500	"	0.0333	ND	48.3	35-142		
1-Methylnaphthalene	0.0161	0.00500	"	0.0333	ND	48.4	15-130		
2-Methylnaphthalene	0.0155	0.00500	"	0.0333	ND	46.5	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0170		"	0.0333		51.1	40-150		
Surrogate: Fluoranthene-d10	0.0166		"	0.0333		49.7	40-150		

Matrix Spike Dup (BGG0314-MSD1)

Source: 2307140-01

Prepared & Analyzed: 07/12/23

Acenaphthene	0.0156	0.00500	mg/kg	0.0333	ND	46.7	31-137	7.80	30
Anthracene	0.0158	0.00500	"	0.0333	ND	47.5	30-120	6.18	30
Benzo (a) anthracene	0.0182	0.00500	"	0.0333	ND	54.7	30-120	17.7	30
Benzo (a) pyrene	0.0150	0.00500	"	0.0333	ND	45.0	30-120	5.80	30
Benzo (b) fluoranthene	0.0174	0.00500	"	0.0333	ND	52.3	30-120	19.8	30
Benzo (k) fluoranthene	0.0139	0.00500	"	0.0333	ND	41.6	30-120	2.21	30
Chrysene	0.0166	0.00500	"	0.0333	ND	49.9	30-120	4.36	30
Dibenz (a,h) anthracene	0.0154	0.00500	"	0.0333	ND	46.3	30-120	11.0	30
Fluoranthene	0.0147	0.00500	"	0.0333	ND	44.2	30-120	4.21	30
Fluorene	0.0155	0.00500	"	0.0333	ND	46.6	30-120	1.52	30
Indeno (1,2,3-cd) pyrene	0.0138	0.00500	"	0.0333	ND	41.4	30-120	1.31	30
Pyrene	0.0168	0.00500	"	0.0333	ND	50.5	35-142	4.62	30
1-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.5	15-130	4.17	50
2-Methylnaphthalene	0.0152	0.00500	"	0.0333	ND	45.5	15-130	2.17	50
Surrogate: 2-Methylnaphthalene-d10	0.0182		"	0.0333		54.7	40-150		
Surrogate: Fluoranthene-d10	0.0173		"	0.0333		52.0	40-150		

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

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

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

Batch BGG0319 - EPA 3050B

Blank (BGG0319-BLK1)

Prepared: 07/12/23 Analyzed: 07/13/23

Boron ND 0.0100 mg/L

LCS (BGG0319-BS1)

Prepared: 07/12/23 Analyzed: 07/13/23

Boron 5.30 0.0100 mg/L 5.00 106 80-120

Duplicate (BGG0319-DUP1)

Source: 2307161-03

Prepared: 07/12/23 Analyzed: 07/13/23

Boron 0.213 0.0100 mg/L 0.250 15.7 20

Matrix Spike (BGG0319-MS1)

Source: 2307161-03

Prepared: 07/12/23 Analyzed: 07/13/23

Boron 5.86 0.0100 mg/L 5.00 0.250 112 75-125

Matrix Spike Dup (BGG0319-MSD1)

Source: 2307161-03

Prepared: 07/12/23 Analyzed: 07/13/23

Boron 6.07 0.0100 mg/L 5.00 0.250 116 75-125 3.52 25

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGG0310 - EPA 3050B

Blank (BGG0310-BLK1)

Prepared: 07/12/23 Analyzed: 07/13/23

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	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BGG0310-BS1)

Prepared: 07/12/23 Analyzed: 07/13/23

Arsenic	32.6	0.200	mg/kg wet	40.0	81.5	80-120
Barium	32.7	0.400	"	40.0	81.8	80-120
Cadmium	1.68	0.200	"	2.00	84.1	80-120
Copper	32.1	0.400	"	40.0	80.4	80-120
Lead	16.6	0.200	"	20.0	82.8	80-120
Nickel	32.3	0.400	"	40.0	80.8	80-120
Selenium	3.76	0.260	"	4.00	94.1	80-120
Silver	1.63	0.0200	"	2.00	81.5	80-120
Zinc	32.1	0.400	"	40.0	80.3	80-120

Duplicate (BGG0310-DUP1)

Source: 2307161-03

Prepared: 07/12/23 Analyzed: 07/13/23

Arsenic	0.914	0.234	mg/kg dry	1.00	9.10	20	
Barium	71.5	0.469	"	133	60.1	20	QR-03
Cadmium	0.251	0.234	"	0.372	39.0	20	QR-01
Copper	2.29	0.469	"	2.50	8.72	20	
Lead	6.00	0.234	"	8.77	37.5	20	QR-03
Nickel	2.34	0.469	"	3.04	26.2	20	QR-01
Selenium	ND	0.305	"	ND		20	
Silver	0.0136	0.0234	"	0.0192	34.3	20	QR-01
Zinc	7.73	0.469	"	8.13	5.04	20	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGG0310 - EPA 3050B

Matrix Spike (BGG0310-MS1)		Source: 2307161-03			Prepared: 07/12/23 Analyzed: 07/13/23					
Arsenic	13.7	0.234	mg/kg dry	46.9	1.00	27.0	75-125			QM-01
Barium	145	0.469	"	46.9	133	26.3	75-125			QM-01
Cadmium	2.56	0.234	"	2.34	0.372	93.2	75-125			
Copper	15.1	0.469	"	46.9	2.50	26.8	75-125			QM-01
Lead	28.2	0.234	"	23.4	8.77	82.8	75-125			
Nickel	14.9	0.469	"	46.9	3.04	25.3	75-125			QM-01
Selenium	4.70	0.305	"	4.69	ND	100	75-125			
Silver	2.20	0.0234	"	2.34	0.0192	92.9	75-125			
Zinc	21.5	0.469	"	46.9	8.13	28.6	75-125			QM-01

Matrix Spike Dup (BGG0310-MSD1)		Source: 2307161-03			Prepared: 07/12/23 Analyzed: 07/13/23					
Arsenic	14.1	0.234	mg/kg dry	46.9	1.00	27.9	75-125	2.99	25	QM-01
Barium	162	0.469	"	46.9	133	62.3	75-125	11.0	25	QM-01
Cadmium	2.79	0.234	"	2.34	0.372	103	75-125	8.62	25	
Copper	15.6	0.469	"	46.9	2.50	28.0	75-125	3.73	25	QM-01
Lead	30.8	0.234	"	23.4	8.77	94.2	75-125	9.03	25	
Nickel	15.7	0.469	"	46.9	3.04	27.0	75-125	5.01	25	QM-01
Selenium	4.64	0.305	"	4.69	ND	99.0	75-125	1.21	25	
Silver	2.41	0.0234	"	2.34	0.0192	102	75-125	9.19	25	
Zinc	22.5	0.469	"	46.9	8.13	30.7	75-125	4.49	25	QM-01

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGG0311 - 3060A Mod

Blank (BGG0311-BLK1)

Prepared & Analyzed: 07/12/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0311-BS1)

Prepared & Analyzed: 07/12/23

Chromium, Hexavalent 24.0 0.30 mg/kg wet 25.0 96.2 80-120

Duplicate (BGG0311-DUP1)

Source: 2307014-06

Prepared & Analyzed: 07/12/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0311-MS1)

Source: 2307014-06

Prepared & Analyzed: 07/12/23

Chromium, Hexavalent 26.1 0.30 mg/kg dry 28.2 ND 92.8 75-125

Matrix Spike Dup (BGG0311-MSD1)

Source: 2307014-06

Prepared & Analyzed: 07/12/23

Chromium, Hexavalent 27.7 0.30 mg/kg dry 28.2 ND 98.4 75-125 5.86 20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

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

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

Batch BGG0343 - General Preparation

Blank (BGG0343-BLK1)

Prepared: 07/12/23 Analyzed: 07/14/23

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

LCS (BGG0343-BS1)

Prepared: 07/12/23 Analyzed: 07/14/23

Calcium	4.89	0.0500	mg/L wet	5.00	97.8	70-130
Magnesium	5.91	0.0500	"	5.00	118	70-130
Sodium	5.95	0.0500	"	5.00	119	70-130

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

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

Summit Scientific

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

Batch BGG0313 - General Preparation

Duplicate (BGG0313-DUP1)

Source: 2307014-06

Prepared & Analyzed: 07/12/23

% Solids	88.4	%	88.8	0.439	20
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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

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

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

Batch BGG0390 - General Preparation

Blank (BGG0390-BLK1)

Prepared & Analyzed: 07/13/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0390-BS1)

Prepared & Analyzed: 07/13/23

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

Duplicate (BGG0390-DUP1)

Source: 2307083-01

Prepared & Analyzed: 07/13/23

Specific Conductance (EC) 0.341 0.0100 mmhos/cm 0.346 1.48 20

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

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

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

Batch BGG0391 - General Preparation

LCS (BGG0391-BS1)

Prepared & Analyzed: 07/13/23

pH	9.10	pH Units	9.18	99.1	95-105
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Duplicate (BGG0391-DUP1)

Source: 2307083-01

Prepared & Analyzed: 07/13/23

pH	7.64	pH Units	7.56	1.05	20
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. 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.
QM-01	The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 13, 2023

Paul Henchan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order #2307190

Enclosed are the results of analyses for samples received by Summit Scientific on 07/12/23 16:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/13/23 06:56

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW01	2307190-01	Water	07/12/23 00:00	07/12/23 16:15
GW02	2307190-02	Water	07/12/23 00:00	07/12/23 16:15

Summit Scientific

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

SUMMIT SCIENTIFIC

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

Lab ID	Page <u>1</u> of <u>1</u>
2307190	

Send Data To:		Send Invoice To:	
Client: <u>Fremont Env</u>	Project Manager: <u>Paul Henahan</u>	Company: <u>Noble</u>	
Address:	E-Mail: <u>Paulh@fremontenv.com</u>	Project Name/Location: <u>PTF-64N64W 32SENE</u>	
City/State/Zip:	<u>Jeff@fremontenv.com</u> <u>Ethan@fremontenv.com</u>	AFE#:	
Phone:	Project Name: <u>PTF-64N64W 32SENE</u>	PO/Billing Codes: <u>UWRWE-A2338-ABN</u>	
Sampler Name: <u>JG</u>	Project Number:	Contact:	

				Preservative				Matrix				Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMBS(915)							
1	GW01	7/12/23		W	X				X				X	X							
2	GW02	7/12/23		W	X				X				X	X							
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: <u>[Signature]</u> Date/Time: <u>7/12/23 1615</u>	Received by: <u>[Signature]</u> Date/Time: <u>7/12/23 16:15</u>	TAT Business Days	Field DO	Notes: <u>Bill to Noble</u>
		Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by: _____ Date/Time: _____	Received by: _____ Date/Time: _____	1 Day <input type="checkbox"/>	Field ORP	
		2 Days <input type="checkbox"/>	Field pH	
Relinquished by: _____ Date/Time: _____	Received by: _____ Date/Time: _____	3 Days <input type="checkbox"/>	Field Temp.	
		Standard <input type="checkbox"/>	Field Turb.	
Temperature Upon Receipt: <u>24.8</u>	Corrected Temperature _____	IR gun #: <u>2</u>	HNO3 lot #: _____	

S₂

Sample Receipt Checklist

S2 Work Order# 2307190Client: Fremont Client Project ID: PTF-64NG4W 32SENEShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☒ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☒ Other ☐Temp (°C) 24.8 Thermometer # 2

	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"/>	on ice
If custody seals are present, are they intact? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	same day
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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No Sample times
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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCl
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.
Vah Ward
Custodian Printed Name

7/12/23 11:15
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/13/23 06:56

GW01
2307190-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/12/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGG0363	07/12/23	07/12/23	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	6.4	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	3.4	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	2.8	1.0		"	"	"	"	"	"	

Date Sampled: **07/12/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	14.6	110 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.2	99.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.1	98.0 %		21-167		"	"	"	"	

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/13/23 06:56

GW02
2307190-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/12/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGG0363	07/12/23	07/12/23	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	2.3	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	2.0	1.0		"	"	"	"	"	"	

Date Sampled: **07/12/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	13.8	104 %		23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>	12.9	96.5 %		20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	12.9	96.5 %		21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/13/23 06:56

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0363 - EPA 5030 Water MS

Blank (BGG0363-BLK1)

Prepared: 07/12/23 Analyzed: 07/13/23

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.2		"	13.3		99.2	23-173			
Surrogate: Toluene-d8	12.8		"	13.3		95.8	20-170			
Surrogate: 4-Bromofluorobenzene	12.4		"	13.3		93.0	21-167			

LCS (BGG0363-BS1)

Prepared: 07/12/23 Analyzed: 07/13/23

Benzene	35.9	1.0	ug/l	41.7		86.2	51-132			
Toluene	37.9	1.0	"	41.7		90.9	51-138			
Ethylbenzene	37.8	1.0	"	41.7		90.7	58-146			
m,p-Xylene	76.6	2.0	"	83.3		91.9	57-144			
o-Xylene	36.4	1.0	"	41.7		87.2	53-146			
Naphthalene	37.8	1.0	"	41.7		90.6	70-130			
1,2,4-Trimethylbenzene	38.6	1.0	"	41.7		92.7	70-130			
1,3,5-Trimethylbenzene	40.2	1.0	"	41.7		96.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.9		"	13.3		104	23-173			
Surrogate: Toluene-d8	13.2		"	13.3		98.9	20-170			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		97.1	21-167			

Matrix Spike (BGG0363-MS1)

Source: 2307190-01

Prepared: 07/12/23 Analyzed: 07/13/23

Benzene	36.3	1.0	ug/l	41.7	ND	87.2	34-141			
Toluene	38.8	1.0	"	41.7	ND	93.1	27-151			
Ethylbenzene	38.7	1.0	"	41.7	ND	92.9	29-160			
m,p-Xylene	77.7	2.0	"	83.3	ND	93.2	20-166			
o-Xylene	36.8	1.0	"	41.7	ND	88.3	33-159			
Naphthalene	47.8	1.0	"	41.7	6.36	99.4	70-130			
1,2,4-Trimethylbenzene	39.6	1.0	"	41.7	3.38	86.9	70-130			
1,3,5-Trimethylbenzene	41.2	1.0	"	41.7	2.76	92.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.0		"	13.3		105	23-173			
Surrogate: Toluene-d8	13.6		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.4	21-167			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/13/23 06:56

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BGG0363 - EPA 5030 Water MS

Matrix Spike Dup (BGG0363-MSD1)	Source: 2307190-01			Prepared: 07/12/23 Analyzed: 07/13/23						
Benzene	36.2	1.0	ug/l	41.7	ND	87.0	34-141	0.303	30	
Toluene	38.4	1.0	"	41.7	ND	92.3	27-151	0.932	30	
Ethylbenzene	38.2	1.0	"	41.7	ND	91.7	29-160	1.35	30	
m,p-Xylene	76.7	2.0	"	83.3	ND	92.0	20-166	1.27	30	
o-Xylene	36.6	1.0	"	41.7	ND	87.8	33-159	0.573	30	
Naphthalene	48.1	1.0	"	41.7	6.36	100	70-130	0.689	30	
1,2,4-Trimethylbenzene	39.4	1.0	"	41.7	3.38	86.4	70-130	0.608	30	
1,3,5-Trimethylbenzene	41.1	1.0	"	41.7	2.76	92.0	70-130	0.316	30	
Surrogate: 1,2-Dichloroethane-d4	14.6		"	13.3		109	23-173			
Surrogate: Toluene-d8	13.4		"	13.3		101	20-170			
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3		101	21-167			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/13/23 06:56

Notes and Definitions

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

July 20, 2023

Paul Henehan

Fremont Environmental

PO Box 1289

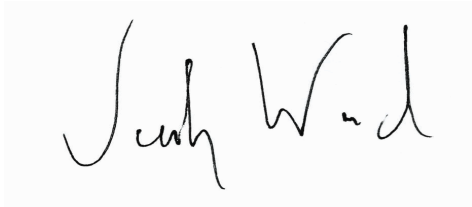
Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order # 2307213

Enclosed are the results of analyses for samples received by Summit Scientific on 07/13/23 16:23. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/20/23 10:56

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B03@9.0'	2307213-01	Soil	07/13/23 00:00	07/13/23 16:23

Summit Scientific

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

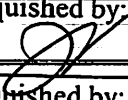
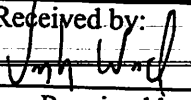
SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2307213	

Client: Fremont Env	Send Data To:	Send Invoice To:
Address:	Project Manager: Paul Henehan	Company: Noble
City/State/Zip:	E-Mail: Paul.H@Fremontenv.com	Project Name/Location: PTF-64N64W 32SENE
Phone:	jeffg@fremontenv.com Ethunb@fremontenv.com	AFE#:
Sampler Name: JG	Project Name: PTF-64N64W 32SENE	PO/Billing Codes: UWRWE-A2338-ABN
	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMBs (915)	DRO,ORO,6RO	PAHs (915)	EC1PH,SAR,Boron	Metals (915)	
1	B03@9.0'	7/13/23		2			X			X			X	X	X	X	X	X	
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: 	Date/Time: 7/13/23 16:23	Received by: 	Date/Time: 7/13/23 16:23	TAT Business Days	Field DO	Notes: Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Temperature Upon Receipt: 27.3		Corrected Temperature		Standard	Field Turb.	
			IR gun #: 2		HNO3 lot #:	

S₂

Sample Receipt Checklist

S2 Work Order# 2307213Client: Fremont Client Project ID: 9TF-64N64W 32 SENEShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____
☒ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 27.3 Thermometer # 2

	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"/>	on ice
If custody seals are present, are they intact? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No Sample times
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.

John Wald
Custodian Printed Name

7/13/23 16:23
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/20/23 10:56

B03@9.0'
2307213-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/13/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0401	07/13/23	07/13/23	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: **07/13/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		98.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/13/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0402	07/13/23	07/13/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/13/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		95.6 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/20/23 10:56

B03@9.0'
2307213-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/13/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BGG0405	07/14/23	07/14/23	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: **07/13/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		56.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		64.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/13/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.123	0.0100		mg/L	1	BGG0417	07/14/23	07/17/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/13/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/20/23 10:56

B03@9.0'
2307213-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.925	0.238		mg/kg dry	1	BGG0404	07/14/23	07/15/23	EPA 6020B	
Barium	48.3	0.475		"	"	"	"	"	"	
Cadmium	ND	0.238		"	"	"	"	"	"	
Copper	1.57	0.475		"	"	"	"	"	"	
Lead	3.89	0.238		"	"	"	"	"	"	
Nickel	1.78	0.475		"	"	"	"	"	"	
Selenium	ND	0.309	0.208	"	"	"	"	"	"	
Silver	ND	0.0238		"	"	"	"	"	"	
Zinc	7.54	0.475		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 07/13/23 00:00

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0409	07/14/23	07/14/23	EPA 7196A	

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

Date Sampled: 07/13/23 00:00

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	41.9	0.0594		mg/L dry	1	BGG0400	07/13/23	07/15/23	EPA 6020B	
Magnesium	18.6	0.0594		"	"	"	"	"	"	
Sodium	43.0	0.0594		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 07/13/23 00:00

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.39	0.00100		units	1	BGG0463	07/15/23	07/15/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/20/23 10:56

B03@9.0'
2307213-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/13/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.2			%	1	BGG0436	07/14/23	07/14/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/13/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.17	0.0100		mmhos/cm	1	BGG0427	07/14/23	07/14/23	EPA 120.1	

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

Date Sampled: **07/13/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.43			pH Units	1	BGG0425	07/14/23	07/14/23	EPA 9045D	

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/20/23 10:56

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch BGG0401 - EPA 5030 Soil MS

Blank (BGG0401-BLK1)

Prepared & Analyzed: 07/13/23

Benzene	ND	0.0020	mg/kg
Toluene	ND	0.0050	"
Ethylbenzene	ND	0.0050	"
Xylenes (total)	ND	0.010	"
1,2,4-Trimethylbenzene	ND	0.0050	"
1,3,5-Trimethylbenzene	ND	0.0050	"
Naphthalene	ND	0.0038	"
Gasoline Range Hydrocarbons	ND	0.50	"

Surrogate: 1,2-Dichloroethane-d4	0.0376	"	0.0400	94.0	50-150
Surrogate: Toluene-d8	0.0402	"	0.0400	100	50-150
Surrogate: 4-Bromofluorobenzene	0.0402	"	0.0400	101	50-150

LCS (BGG0401-BS1)

Prepared & Analyzed: 07/13/23

Benzene	0.0674	0.0020	mg/kg	0.0750	89.8	70-130
Toluene	0.0814	0.0050	"	0.0750	109	70-130
Ethylbenzene	0.0876	0.0050	"	0.0750	117	70-130
m,p-Xylene	0.171	0.010	"	0.150	114	70-130
o-Xylene	0.0790	0.0050	"	0.0750	105	70-130
1,2,4-Trimethylbenzene	0.0808	0.0050	"	0.0750	108	70-130
1,3,5-Trimethylbenzene	0.0844	0.0050	"	0.0750	113	70-130
Naphthalene	0.0654	0.0038	"	0.0750	87.2	70-130

Surrogate: 1,2-Dichloroethane-d4	0.0393	"	0.0400	98.2	50-150
Surrogate: Toluene-d8	0.0396	"	0.0400	99.0	50-150
Surrogate: 4-Bromofluorobenzene	0.0398	"	0.0400	99.5	50-150

Matrix Spike (BGG0401-MS1)

Source: 2307216-01

Prepared & Analyzed: 07/13/23

Benzene	0.0622	0.0020	mg/kg	0.0750	ND	83.0	70-130
Toluene	0.0731	0.0050	"	0.0750	ND	97.5	70-130
Ethylbenzene	0.0767	0.0050	"	0.0750	ND	102	70-130
m,p-Xylene	0.153	0.010	"	0.150	ND	102	70-130
o-Xylene	0.0722	0.0050	"	0.0750	ND	96.3	70-130
1,2,4-Trimethylbenzene	0.0737	0.0050	"	0.0750	ND	98.3	70-130
1,3,5-Trimethylbenzene	0.0754	0.0050	"	0.0750	ND	101	70-130
Naphthalene	0.0659	0.0038	"	0.0750	ND	87.8	70-130

Surrogate: 1,2-Dichloroethane-d4	0.0424	"	0.0400	106	50-150
Surrogate: Toluene-d8	0.0392	"	0.0400	98.0	50-150
Surrogate: 4-Bromofluorobenzene	0.0410	"	0.0400	103	50-150

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/20/23 10:56

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch BGG0401 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0401-MSD1)	Source: 2307216-01			Prepared & Analyzed: 07/13/23						
Benzene	0.0678	0.0020	mg/kg	0.0750	ND	90.4	70-130	8.49	30	
Toluene	0.0760	0.0050	"	0.0750	ND	101	70-130	3.86	30	
Ethylbenzene	0.0822	0.0050	"	0.0750	ND	110	70-130	6.87	30	
m,p-Xylene	0.164	0.010	"	0.150	ND	109	70-130	6.89	30	
o-Xylene	0.0761	0.0050	"	0.0750	ND	102	70-130	5.26	30	
1,2,4-Trimethylbenzene	0.0780	0.0050	"	0.0750	ND	104	70-130	5.62	30	
1,3,5-Trimethylbenzene	0.0802	0.0050	"	0.0750	ND	107	70-130	6.21	30	
Naphthalene	0.0712	0.0038	"	0.0750	ND	94.9	70-130	7.71	30	
Surrogate: 1,2-Dichloroethane-d4	0.0418		"	0.0400		105	50-150			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		99.1	50-150			

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:

07/20/23 10:56

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

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

Batch BGG0402 - EPA 3550A

Blank (BGG0402-BLK1)

Prepared & Analyzed: 07/13/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.0		"	12.5		95.8	30-150			

LCS (BGG0402-BS1)

Prepared & Analyzed: 07/13/23

C10-C28 (DRO)	568	50	mg/kg	500		114	70-130			
Surrogate: o-Terphenyl	11.5		"	12.5		92.0	30-150			

Matrix Spike (BGG0402-MS1)

Source: 2307216-01

Prepared & Analyzed: 07/13/23

C10-C28 (DRO)	512	50	mg/kg	500	10.6	100	70-130			
Surrogate: o-Terphenyl	10.9		"	12.5		87.2	30-150			

Matrix Spike Dup (BGG0402-MSD1)

Source: 2307216-01

Prepared & Analyzed: 07/13/23

C10-C28 (DRO)	658	50	mg/kg	500	10.6	130	70-130	25.0	20	QR-02
Surrogate: o-Terphenyl	12.0		"	12.5		95.6	30-150			

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/20/23 10:56

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0405 - EPA 5030 Soil MS

Blank (BGG0405-BLK1)

Prepared & Analyzed: 07/14/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0152		"	0.0333		45.5	40-150			
Surrogate: Fluoranthene-d10	0.0170		"	0.0333		51.0	40-150			

LCS (BGG0405-BS1)

Prepared & Analyzed: 07/14/23

Acenaphthene	0.0160	0.00500	mg/kg	0.0333		48.1	31-137			
Anthracene	0.0150	0.00500	"	0.0333		45.0	30-120			
Benzo (a) anthracene	0.0140	0.00500	"	0.0333		42.0	30-120			
Benzo (a) pyrene	0.0139	0.00500	"	0.0333		41.8	30-120			
Benzo (b) fluoranthene	0.0135	0.00500	"	0.0333		40.6	30-120			
Benzo (k) fluoranthene	0.0145	0.00500	"	0.0333		43.5	30-120			
Chrysene	0.0152	0.00500	"	0.0333		45.6	30-120			
Dibenz (a,h) anthracene	0.0153	0.00500	"	0.0333		45.9	30-120			
Fluoranthene	0.0149	0.00500	"	0.0333		44.7	30-120			
Fluorene	0.0157	0.00500	"	0.0333		47.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0150	0.00500	"	0.0333		45.1	30-120			
Pyrene	0.0147	0.00500	"	0.0333		44.1	35-142			
1-Methylnaphthalene	0.0138	0.00500	"	0.0333		41.5	35-142			
2-Methylnaphthalene	0.0145	0.00500	"	0.0333		43.5	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0149		"	0.0333		44.8	40-150			
Surrogate: Fluoranthene-d10	0.0172		"	0.0333		51.7	40-150			

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/20/23 10:56

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0405 - EPA 5030 Soil MS

Matrix Spike (BGG0405-MS1)

Source: 2307209-01

Prepared & Analyzed: 07/14/23

Acenaphthene	0.0195	0.00500	mg/kg	0.0333	ND	58.6	31-137		
Anthracene	0.0155	0.00500	"	0.0333	ND	46.5	30-120		
Benzo (a) anthracene	0.0169	0.00500	"	0.0333	ND	50.7	30-120		
Benzo (a) pyrene	0.0141	0.00500	"	0.0333	ND	42.4	30-120		
Benzo (b) fluoranthene	0.0142	0.00500	"	0.0333	ND	42.6	30-120		
Benzo (k) fluoranthene	0.0139	0.00500	"	0.0333	ND	41.7	30-120		
Chrysene	0.0166	0.00500	"	0.0333	ND	49.8	30-120		
Dibenz (a,h) anthracene	0.0166	0.00500	"	0.0333	ND	49.7	30-120		
Fluoranthene	0.0149	0.00500	"	0.0333	ND	44.7	30-120		
Fluorene	0.0201	0.00500	"	0.0333	ND	60.2	30-120		
Indeno (1,2,3-cd) pyrene	0.0135	0.00500	"	0.0333	ND	40.4	30-120		
Pyrene	0.0164	0.00500	"	0.0333	ND	49.2	35-142		
1-Methylnaphthalene	0.0145	0.00500	"	0.0333	ND	43.5	15-130		
2-Methylnaphthalene	0.0164	0.00500	"	0.0333	ND	49.3	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0170		"	0.0333		51.1	40-150		
Surrogate: Fluoranthene-d10	0.0179		"	0.0333		53.6	40-150		

Matrix Spike Dup (BGG0405-MSD1)

Source: 2307209-01

Prepared & Analyzed: 07/14/23

Acenaphthene	0.0166	0.00500	mg/kg	0.0333	ND	49.8	31-137	16.3	30	
Anthracene	0.0155	0.00500	"	0.0333	ND	46.4	30-120	0.342	30	
Benzo (a) anthracene	0.0164	0.00500	"	0.0333	ND	49.2	30-120	3.06	30	
Benzo (a) pyrene	0.0194	0.00500	"	0.0333	ND	58.1	30-120	31.4	30	QR-02
Benzo (b) fluoranthene	0.0152	0.00500	"	0.0333	ND	45.6	30-120	6.88	30	
Benzo (k) fluoranthene	0.0173	0.00500	"	0.0333	ND	51.9	30-120	21.7	30	
Chrysene	0.0164	0.00500	"	0.0333	ND	49.2	30-120	1.13	30	
Dibenz (a,h) anthracene	0.0159	0.00500	"	0.0333	ND	47.7	30-120	3.99	30	
Fluoranthene	0.0150	0.00500	"	0.0333	ND	45.1	30-120	0.995	30	
Fluorene	0.0190	0.00500	"	0.0333	ND	57.1	30-120	5.39	30	
Indeno (1,2,3-cd) pyrene	0.0148	0.00500	"	0.0333	ND	44.4	30-120	9.50	30	
Pyrene	0.0173	0.00500	"	0.0333	ND	52.0	35-142	5.63	30	
1-Methylnaphthalene	0.0170	0.00500	"	0.0333	ND	51.1	15-130	16.0	50	
2-Methylnaphthalene	0.0138	0.00500	"	0.0333	ND	41.3	15-130	17.8	50	
Surrogate: 2-Methylnaphthalene-d10	0.0142		"	0.0333		42.7	40-150			
Surrogate: Fluoranthene-d10	0.0181		"	0.0333		54.2	40-150			

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Fremont Environmental
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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/20/23 10:56

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

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

Batch BGG0417 - EPA 3050B

Blank (BGG0417-BLK1)

Prepared: 07/14/23 Analyzed: 07/17/23

Boron ND 0.0100 mg/L

LCS (BGG0417-BS1)

Prepared: 07/14/23 Analyzed: 07/17/23

Boron 5.12 0.0100 mg/L 5.00 102 80-120

Duplicate (BGG0417-DUP1)

Source: 2307213-01

Prepared: 07/14/23 Analyzed: 07/17/23

Boron 0.176 0.0100 mg/L 0.123 34.9 20 QR-04

Matrix Spike (BGG0417-MS1)

Source: 2307213-01

Prepared: 07/14/23 Analyzed: 07/17/23

Boron 6.81 0.0100 mg/L 5.00 0.123 134 75-125 QM-07

Matrix Spike Dup (BGG0417-MSD1)

Source: 2307213-01

Prepared: 07/14/23 Analyzed: 07/17/23

Boron 6.93 0.0100 mg/L 5.00 0.123 136 75-125 1.66 25 QM-07

Summit Scientific

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:

07/20/23 10:56

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BGG0404 - EPA 3050B

Blank (BGG0404-BLK1)

Prepared: 07/14/23 Analyzed: 07/15/23

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	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BGG0404-BS1)

Prepared: 07/14/23 Analyzed: 07/15/23

Arsenic	41.3	0.200	mg/kg wet	40.0	103	80-120
Barium	32.3	0.400	"	40.0	80.8	80-120
Cadmium	1.98	0.200	"	2.00	99.1	80-120
Copper	41.8	0.400	"	40.0	105	80-120
Lead	16.2	0.200	"	20.0	80.8	80-120
Nickel	41.1	0.400	"	40.0	103	80-120
Selenium	4.13	0.260	"	4.00	103	80-120
Silver	1.91	0.0200	"	2.00	95.5	80-120
Zinc	42.4	0.400	"	40.0	106	80-120


Duplicate (BGG0404-DUP1)

Source: 2307213-01

Prepared: 07/14/23 Analyzed: 07/15/23

Arsenic	0.729	0.238	mg/kg dry	0.925	23.7	20	QR-01
Barium	35.5	0.475	"	48.3	30.6	20	QR-04
Cadmium	0.0850	0.238	"	0.142	49.9	20	QR-01
Copper	1.35	0.475	"	1.57	15.3	20	
Lead	2.75	0.238	"	3.89	34.4	20	QR-04
Nickel	1.61	0.475	"	1.78	9.56	20	
Selenium	ND	0.309	"	ND		20	
Silver	0.0109	0.0238	"	0.0166	41.4	20	QR-01
Zinc	6.91	0.475	"	7.54	8.74	20	

Summit Scientific



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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:

07/20/23 10:56

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BGG0404 - EPA 3050B

Matrix Spike (BGG0404-MS1)

Source: 2307213-01

Prepared: 07/14/23 Analyzed: 07/15/23

Arsenic	23.3	0.238	mg/kg dry	47.5	0.925	47.1	75-125			QM-01
Barium	68.9	0.475	"	47.5	48.3	43.3	75-125			QM-01
Cadmium	1.98	0.238	"	2.38	0.142	77.3	75-125			
Copper	23.2	0.475	"	47.5	1.57	45.5	75-125			QM-01
Lead	18.6	0.238	"	23.8	3.89	62.0	75-125			QM-01
Nickel	23.5	0.475	"	47.5	1.78	45.7	75-125			QM-01
Selenium	6.43	0.309	"	4.75	ND	135	75-125			QM-01
Silver	1.77	0.0238	"	2.38	0.0166	73.6	75-125			QM-01
Zinc	29.3	0.475	"	47.5	7.54	45.8	75-125			QM-01

Matrix Spike Dup (BGG0404-MSD1)

Source: 2307213-01

Prepared: 07/14/23 Analyzed: 07/15/23

Arsenic	23.6	0.238	mg/kg dry	47.5	0.925	47.8	75-125	1.53	25	QM-01
Barium	69.9	0.475	"	47.5	48.3	45.3	75-125	1.37	25	QM-01
Cadmium	1.97	0.238	"	2.38	0.142	77.1	75-125	0.240	25	
Copper	23.9	0.475	"	47.5	1.57	46.9	75-125	2.92	25	QM-01
Lead	19.1	0.238	"	23.8	3.89	63.8	75-125	2.29	25	QM-01
Nickel	24.1	0.475	"	47.5	1.78	46.9	75-125	2.47	25	QM-01
Selenium	7.34	0.309	"	4.75	ND	155	75-125	13.3	25	QM-01
Silver	1.80	0.0238	"	2.38	0.0166	75.0	75-125	1.81	25	
Zinc	29.9	0.475	"	47.5	7.54	47.0	75-125	2.03	25	QM-01

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:

07/20/23 10:56

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

Summit Scientific

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

Batch BGG0400 - General Preparation

Blank (BGG0400-BLK1)

Prepared: 07/13/23 Analyzed: 07/15/23

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

LCS (BGG0400-BS1)

Prepared: 07/13/23 Analyzed: 07/15/23

Calcium	4.33	0.0500	mg/L wet	5.00	86.6	70-130
Magnesium	5.55	0.0500	"	5.00	111	70-130
Sodium	5.63	0.0500	"	5.00	113	70-130

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:

07/20/23 10:56

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

Summit Scientific

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

Batch BGG0436 - General Preparation

Duplicate (BGG0436-DUP1)

Source: 2306315-05

Prepared & Analyzed: 07/14/23

% Solids	88.1	%		89.1			1.07	20
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:

07/20/23 10:56

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

Summit Scientific

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

Batch BGG0427 - General Preparation

Blank (BGG0427-BLK1)

Prepared & Analyzed: 07/14/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0427-BS1)

Prepared & Analyzed: 07/14/23

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BGG0427-DUP1)

Source: 2307213-01

Prepared & Analyzed: 07/14/23

Specific Conductance (EC) 1.15 0.0100 mmhos/cm 1.17 1.55 20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:

07/20/23 10:56

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

Summit Scientific

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

Batch BGG0425 - General Preparation

LCS (BGG0425-BS1)

Prepared & Analyzed: 07/14/23

pH	9.09	pH Units	9.18	99.0	95-105
----	------	----------	------	------	--------

Duplicate (BGG0425-DUP1)

Source: 2307213-01

Prepared & Analyzed: 07/14/23

pH	7.45	pH Units	7.43	0.269	20
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/20/23 10:56

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-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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.
QM-01	The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 25, 2023

Paul Henchan

Fremont Environmental

PO Box 1289


Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order #2307249

Enclosed are the results of analyses for samples received by Summit Scientific on 07/14/23 15:21. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N02@8.0'	2307249-01	Soil	07/14/23 00:00	07/14/23 15:21

Summit Scientific

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

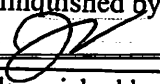
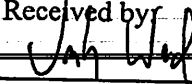
SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2307249	

Client: Fremont Env	Send Data To:	Send Invoice To:
Address:	Project Manager: Paul Henehan	Company: Noble
City/State/Zip:	E-Mail: Paulh@fremontenv.com	Project Name/Location: PTF-64N64W 32SENE
Phone:	jeffg@fremontenv.com Ethn@fremontenv.com	AFE#:
Sampler Name: JG	Project Name: PTF-64N64W 32SENE	PO/Billing Codes: UWRWE-A2338-ABN
	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMS (915)	DRO,ORO,GRO	PAHs (915)	EC,pH,SAR,Baron	Metals (915)	
1	NO2@8.0'	7/14/23		2			X			X			X	X	X	X	X	X	
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: 	Date/Time: 7/14/23 15:21	Received by: 	Date/Time: 7/14/23 15:21	TAT Business Days	Field DO	Notes: Bill to Noble Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Temperature Upon Receipt: 24.4	Corrected Temperature	IR gun #: 2	HNO3 lot #:	Standard	Field Turb.	

S₂

Sample Receipt Checklist

S2 Work Order# 2307249

Client: Fremont Client Project ID: PTF-64N64W 32SENEShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☒ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 24.4 Thermometer # 2

	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"/>	on ice
If custody seals are present, are they intact? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No sample times
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.				

Custodian Printed Name

Date/Time

Vin Wood7/14/23 15:21



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

N02@8.0'
2307249-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0456	07/14/23	07/14/23	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: **07/14/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0446	112 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0399	99.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0410	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0457	"	07/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.8	94.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

N02@8.0'
2307249-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0469	07/17/23	07/18/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0288	86.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0172	51.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.137	0.0100	mg/L	1	BGG0486	07/17/23	07/20/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/14/23 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 - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

N02@8.0'
2307249-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.31	0.235	mg/kg dry	1	BGG0465	07/17/23	07/18/23	EPA 6020B
Barium	58.6	0.470	"	"	"	"	"	"
Cadmium	ND	0.235	"	"	"	"	"	"
Copper	2.40	0.470	"	"	"	"	"	"
Lead	3.84	0.235	"	"	"	"	"	"
Nickel	3.02	0.470	"	"	"	"	"	"
Selenium	ND	0.305	"	"	"	"	"	"
Silver	ND	0.0235	"	"	"	"	"	"
Zinc	11.8	0.470	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGG0467	07/17/23	07/17/23	EPA 7196A	

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

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	40.2	0.0587	mg/L dry	1	BGG0455	07/14/23	07/19/23	EPA 6020B	
Magnesium	28.4	0.0587	"	"	"	"	"	"	
Sodium	43.1	0.0587	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.27	0.00100	units	1	BGG0577	07/19/23	07/19/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

N02@8.0'
2307249-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	85.1			%	1	BGG0468	07/17/23	07/17/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.849	0.0100		mmhos/cm	1	BGG0501	07/17/23	07/17/23	EPA 120.1	

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

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.91			pH Units	1	BGG0500	07/17/23	07/17/23	EPA 9045D	

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0456 - EPA 5030 Soil MS

Blank (BGG0456-BLK1)

Prepared & Analyzed: 07/14/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0452		"	0.0400		113	50-150			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	50-150			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	50-150			

LCS (BGG0456-BS1)

Prepared & Analyzed: 07/14/23

Benzene	0.113	0.0020	mg/kg	0.100		113	70-130			
Toluene	0.116	0.0050	"	0.100		116	70-130			
Ethylbenzene	0.115	0.0050	"	0.100		115	70-130			
m,p-Xylene	0.224	0.010	"	0.200		112	70-130			
o-Xylene	0.107	0.0050	"	0.100		107	70-130			
1,2,4-Trimethylbenzene	0.113	0.0050	"	0.100		113	70-130			
1,3,5-Trimethylbenzene	0.117	0.0050	"	0.100		117	70-130			
Naphthalene	0.112	0.0038	"	0.100		112	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0405		"	0.0400		101	50-150			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		98.9	50-150			

Matrix Spike (BGG0456-MS1)

Source: 2307249-01

Prepared & Analyzed: 07/14/23

Benzene	0.116	0.0020	mg/kg	0.100	ND	116	70-130			
Toluene	0.122	0.0050	"	0.100	ND	122	70-130			
Ethylbenzene	0.117	0.0050	"	0.100	ND	117	70-130			
m,p-Xylene	0.230	0.010	"	0.200	ND	115	70-130			
o-Xylene	0.111	0.0050	"	0.100	ND	111	70-130			
1,2,4-Trimethylbenzene	0.119	0.0050	"	0.100	ND	119	70-130			
1,3,5-Trimethylbenzene	0.121	0.0050	"	0.100	ND	121	70-130			
Naphthalene	0.128	0.0038	"	0.100	ND	128	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0431		"	0.0400		108	50-150			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	50-150			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0456 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0456-MSD1)	Source: 2307249-01			Prepared & Analyzed: 07/14/23							
Benzene	0.118	0.0020	mg/kg	0.100	ND	118	70-130	1.76	30		
Toluene	0.122	0.0050	"	0.100	ND	122	70-130	0.0987	30		
Ethylbenzene	0.117	0.0050	"	0.100	ND	117	70-130	0.103	30		
m,p-Xylene	0.228	0.010	"	0.200	ND	114	70-130	0.942	30		
o-Xylene	0.112	0.0050	"	0.100	ND	112	70-130	1.59	30		
1,2,4-Trimethylbenzene	0.118	0.0050	"	0.100	ND	118	70-130	0.963	30		
1,3,5-Trimethylbenzene	0.122	0.0050	"	0.100	ND	122	70-130	0.864	30		
Naphthalene	0.122	0.0038	"	0.100	ND	122	70-130	4.75	30		
Surrogate: 1,2-Dichloroethane-d4	0.0436		"	0.0400		109	50-150				
Surrogate: Toluene-d8	0.0405		"	0.0400		101	50-150				
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	50-150				

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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGG0457 - EPA 3550A

Blank (BGG0457-BLK1)

Prepared & Analyzed: 07/14/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	10.9		"	12.5		87.4	30-150			

LCS (BGG0457-BS1)

Prepared & Analyzed: 07/14/23

C10-C28 (DRO)	596	50	mg/kg	500		119	70-130			
Surrogate: o-Terphenyl	12.2		"	12.5		97.3	30-150			

Matrix Spike (BGG0457-MS1)

Source: 2307249-01

Prepared & Analyzed: 07/14/23

C10-C28 (DRO)	600	50	mg/kg	500	9.74	118	70-130			
Surrogate: o-Terphenyl	12.0		"	12.5		96.1	30-150			

Matrix Spike Dup (BGG0457-MSD1)

Source: 2307249-01

Prepared & Analyzed: 07/14/23

C10-C28 (DRO)	594	50	mg/kg	500	9.74	117	70-130	0.951	20	
Surrogate: o-Terphenyl	11.8		"	12.5		94.4	30-150			

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PO Box 1289
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Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0469 - EPA 5030 Soil MS

Blank (BGG0469-BLK1)

Prepared & Analyzed: 07/17/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0398		"	0.0333		120	40-150			
Surrogate: Fluoranthene-d10	0.0238		"	0.0333		71.4	40-150			

LCS (BGG0469-BS1)

Prepared & Analyzed: 07/17/23

Acenaphthene	0.0263	0.00500	mg/kg	0.0333		78.9	31-137			
Anthracene	0.0269	0.00500	"	0.0333		80.8	30-120			
Benzo (a) anthracene	0.0197	0.00500	"	0.0333		59.0	30-120			
Benzo (a) pyrene	0.0259	0.00500	"	0.0333		77.7	30-120			
Benzo (b) fluoranthene	0.0236	0.00500	"	0.0333		70.8	30-120			
Benzo (k) fluoranthene	0.0252	0.00500	"	0.0333		75.6	30-120			
Chrysene	0.0273	0.00500	"	0.0333		82.0	30-120			
Dibenz (a,h) anthracene	0.0225	0.00500	"	0.0333		67.5	30-120			
Fluoranthene	0.0264	0.00500	"	0.0333		79.3	30-120			
Fluorene	0.0262	0.00500	"	0.0333		78.5	30-120			
Indeno (1,2,3-cd) pyrene	0.0215	0.00500	"	0.0333		64.5	30-120			
Pyrene	0.0287	0.00500	"	0.0333		86.2	35-142			
1-Methylnaphthalene	0.0186	0.00500	"	0.0333		55.7	35-142			
2-Methylnaphthalene	0.0383	0.00500	"	0.0333		115	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0310		"	0.0333		93.0	40-150			
Surrogate: Fluoranthene-d10	0.0275		"	0.0333		82.6	40-150			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

PAH by EPA Method 8270D SIM - Quality Control

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

Batch BGG0469 - EPA 5030 Soil MS

Matrix Spike (BGG0469-MS1)

Source: 2307272-01

Prepared & Analyzed: 07/17/23

Acenaphthene	0.0138	0.00500	mg/kg	0.0333	ND	41.4	31-137				
Anthracene	0.0143	0.00500	"	0.0333	ND	42.8	30-120				
Benzo (a) anthracene	0.0154	0.00500	"	0.0333	ND	46.1	30-120				
Benzo (a) pyrene	0.0135	0.00500	"	0.0333	ND	40.5	30-120				
Benzo (b) fluoranthene	0.0194	0.00500	"	0.0333	ND	58.1	30-120				
Benzo (k) fluoranthene	0.0144	0.00500	"	0.0333	ND	43.1	30-120				
Chrysene	0.0139	0.00500	"	0.0333	ND	41.7	30-120				
Dibenz (a,h) anthracene	0.0144	0.00500	"	0.0333	ND	43.1	30-120				
Fluoranthene	0.0147	0.00500	"	0.0333	ND	44.2	30-120				
Fluorene	0.0144	0.00500	"	0.0333	ND	43.2	30-120				
Indeno (1,2,3-cd) pyrene	0.0153	0.00500	"	0.0333	ND	46.0	30-120				
Pyrene	0.0140	0.00500	"	0.0333	ND	41.9	35-142				
1-Methylnaphthalene	0.0230	0.00500	"	0.0333	ND	68.9	15-130				
2-Methylnaphthalene	0.0277	0.00500	"	0.0333	ND	83.0	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0235		"	0.0333		70.6	40-150				
Surrogate: Fluoranthene-d10	0.0154		"	0.0333		46.3	40-150				

Matrix Spike Dup (BGG0469-MSD1)

Source: 2307272-01

Prepared & Analyzed: 07/17/23

Acenaphthene	0.0138	0.00500	mg/kg	0.0333	ND	41.5	31-137	0.389	30
Anthracene	0.0146	0.00500	"	0.0333	ND	43.8	30-120	2.50	30
Benzo (a) anthracene	0.0188	0.00500	"	0.0333	ND	56.5	30-120	20.2	30
Benzo (a) pyrene	0.0168	0.00500	"	0.0333	ND	50.5	30-120	21.9	30
Benzo (b) fluoranthene	0.0170	0.00500	"	0.0333	ND	51.1	30-120	12.9	30
Benzo (k) fluoranthene	0.0173	0.00500	"	0.0333	ND	51.9	30-120	18.5	30
Chrysene	0.0140	0.00500	"	0.0333	ND	41.9	30-120	0.452	30
Dibenz (a,h) anthracene	0.0174	0.00500	"	0.0333	ND	52.2	30-120	19.0	30
Fluoranthene	0.0137	0.00500	"	0.0333	ND	41.2	30-120	7.02	30
Fluorene	0.0135	0.00500	"	0.0333	ND	40.5	30-120	6.53	30
Indeno (1,2,3-cd) pyrene	0.0160	0.00500	"	0.0333	ND	47.9	30-120	3.97	30
Pyrene	0.0173	0.00500	"	0.0333	ND	51.9	35-142	21.2	30
1-Methylnaphthalene	0.0187	0.00500	"	0.0333	ND	56.0	15-130	20.8	50
2-Methylnaphthalene	0.0290	0.00500	"	0.0333	ND	86.9	15-130	4.51	50
Surrogate: 2-Methylnaphthalene-d10	0.0300		"	0.0333		90.0	40-150		
Surrogate: Fluoranthene-d10	0.0151		"	0.0333		45.4	40-150		

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

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

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

Batch BGG0486 - EPA 3050B

Blank (BGG0486-BLK1)

Prepared: 07/17/23 Analyzed: 07/20/23

Boron ND 0.0100 mg/L

LCS (BGG0486-BS1)

Prepared: 07/17/23 Analyzed: 07/20/23

Boron 4.66 0.0100 mg/L 5.00 93.3 80-120

Duplicate (BGG0486-DUP1)

Source: 2305666-01

Prepared: 07/17/23 Analyzed: 07/20/23

Boron 0.109 0.0100 mg/L 0.126 14.3 20

Matrix Spike (BGG0486-MS1)

Source: 2305666-01

Prepared: 07/17/23 Analyzed: 07/20/23

Boron 4.69 0.0100 mg/L 5.00 0.126 91.2 75-125

Matrix Spike Dup (BGG0486-MSD1)

Source: 2305666-01

Prepared: 07/17/23 Analyzed: 07/20/23

Boron 4.74 0.0100 mg/L 5.00 0.126 92.2 75-125 1.07 25

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BGG0465 - EPA 3050B

Blank (BGG0465-BLK1)

Prepared: 07/17/23 Analyzed: 07/18/23

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	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BGG0465-BS1)

Prepared: 07/17/23 Analyzed: 07/18/23

Arsenic	36.3	0.200	mg/kg wet	40.0	90.9	80-120
Barium	38.0	0.400	"	40.0	95.1	80-120
Cadmium	1.86	0.200	"	2.00	93.0	80-120
Copper	39.4	0.400	"	40.0	98.4	80-120
Lead	18.6	0.200	"	20.0	92.9	80-120
Nickel	38.3	0.400	"	40.0	95.8	80-120
Selenium	3.77	0.260	"	4.00	94.3	80-120
Silver	1.87	0.0200	"	2.00	93.7	80-120
Zinc	37.9	0.400	"	40.0	94.8	80-120

Duplicate (BGG0465-DUP1)

Source: 2305666-01

Prepared: 07/17/23 Analyzed: 07/18/23

Arsenic	2.19	0.233	mg/kg dry	2.55	15.3	20	
Barium	333	0.466	"	348	4.60	20	
Cadmium	0.211	0.233	"	0.248	16.4	20	
Copper	2.91	0.466	"	3.51	18.7	20	
Lead	5.35	0.233	"	7.06	27.5	20	QR-04
Nickel	2.92	0.466	"	3.51	18.6	20	
Selenium	ND	0.303	"	ND		20	
Silver	0.0172	0.0233	"	0.0224	25.9	20	QR-01
Zinc	12.7	0.466	"	14.9	16.4	20	

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PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGG0465 - EPA 3050B

Matrix Spike (BGG0465-MS1)		Source: 2305666-01			Prepared: 07/17/23		Analyzed: 07/18/23		QM-07	
Arsenic	43.3	0.233	mg/kg dry	46.6	2.55	87.5	75-125			
Barium	488	0.466	"	46.6	348	299	75-125			
Cadmium	2.42	0.233	"	2.33	0.248	93.3	75-125			
Copper	34.8	0.466	"	46.6	3.51	67.2	75-125			
Lead	27.5	0.233	"	23.3	7.06	87.9	75-125			
Nickel	34.9	0.466	"	46.6	3.51	67.4	75-125			
Selenium	3.95	0.303	"	4.66	ND	84.8	75-125			
Silver	2.15	0.0233	"	2.33	0.0224	91.5	75-125			
Zinc	46.9	0.466	"	46.6	14.9	68.7	75-125			

Matrix Spike Dup (BGG0465-MSD1)		Source: 2305666-01			Prepared: 07/17/23		Analyzed: 07/18/23		QM-07	
Arsenic	43.2	0.233	mg/kg dry	46.6	2.55	87.3	75-125	0.256	25	
Barium	485	0.466	"	46.6	348	293	75-125	0.561	25	
Cadmium	2.39	0.233	"	2.33	0.248	92.0	75-125	1.20	25	
Copper	34.8	0.466	"	46.6	3.51	67.2	75-125	0.0803	25	
Lead	27.5	0.233	"	23.3	7.06	87.8	75-125	0.0829	25	
Nickel	34.9	0.466	"	46.6	3.51	67.5	75-125	0.0973	25	
Selenium	4.13	0.303	"	4.66	ND	88.8	75-125	4.55	25	
Silver	2.13	0.0233	"	2.33	0.0224	90.4	75-125	1.18	25	
Zinc	46.9	0.466	"	46.6	14.9	68.6	75-125	0.106	25	

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PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGG0467 - 3060A Mod

Blank (BGG0467-BLK1)

Prepared & Analyzed: 07/17/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0467-BS1)

Prepared & Analyzed: 07/17/23

Chromium, Hexavalent 20.4 0.30 mg/kg wet 25.0 81.6 80-120

Duplicate (BGG0467-DUP1)

Source: 2305666-01

Prepared & Analyzed: 07/17/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0467-MS1)

Source: 2305666-01

Prepared & Analyzed: 07/17/23

Chromium, Hexavalent 27.3 0.30 mg/kg dry 29.1 ND 93.8 75-125

Matrix Spike Dup (BGG0467-MSD1)

Source: 2305666-01

Prepared & Analyzed: 07/17/23

Chromium, Hexavalent 27.8 0.30 mg/kg dry 29.1 ND 95.6 75-125 1.90 20

Summit Scientific

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PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

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

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

Batch BGG0455 - General Preparation

Blank (BGG0455-BLK1)

Prepared: 07/14/23 Analyzed: 07/18/23

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

LCS (BGG0455-BS1)

Prepared: 07/14/23 Analyzed: 07/18/23

Calcium	5.99	0.0500	mg/L wet	5.00	120	70-130
Magnesium	5.76	0.0500	"	5.00	115	70-130
Sodium	5.48	0.0500	"	5.00	110	70-130

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

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

Summit Scientific

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

Batch BGG0468 - General Preparation

Duplicate (BGG0468-DUP1)

Source: 2305666-01

Prepared & Analyzed: 07/17/23

% Solids	84.9	%	85.9	1.20	20
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Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

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

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

Batch BGG0501 - General Preparation

Blank (BGG0501-BLK1)

Prepared & Analyzed: 07/17/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0501-BS1)

Prepared & Analyzed: 07/17/23

Specific Conductance (EC) 0.158 0.0100 mmhos/cm 0.150 105 95-105

Duplicate (BGG0501-DUP1)

Source: 2305666-01

Prepared & Analyzed: 07/17/23

Specific Conductance (EC) 0.256 0.0100 mmhos/cm 0.261 2.13 20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

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

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

Batch BGG0500 - General Preparation

LCS (BGG0500-BS1)

Prepared & Analyzed: 07/17/23

pH	9.12	pH Units	9.18	99.3	95-105
----	------	----------	------	------	--------

Duplicate (BGG0500-DUP1)

Source: 2305666-01

Prepared & Analyzed: 07/17/23

pH	8.16	pH Units	8.25	1.10	20
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

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.
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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

July 25, 2023

Paul Henehan

Fremont Environmental

PO Box 1289

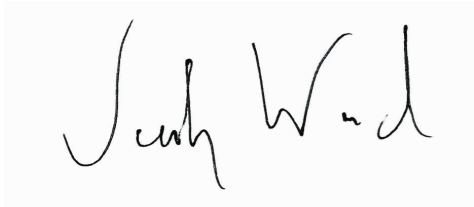
Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order # 2307280

Enclosed are the results of analyses for samples received by Summit Scientific on 07/17/23 16:33. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B04@9.0'	2307280-01	Soil	07/17/23 00:00	07/17/23 16:33
B05@9.0'	2307280-02	Soil	07/17/23 00:00	07/17/23 16:33
GW03	2307280-03	Water	07/17/23 00:00	07/17/23 16:33

Summit Scientific

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SUMMIT SCIENTIFIC

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

Lab ID	Page <u>1</u> of <u>1</u>
2307280	

Client: <u>Fremont Env</u>	Send Data To:	Send Invoice To:
Address:	Project Manager: <u>Paul Henahan</u>	Company: <u>Noble</u>
City/State/Zip:	E-Mail: <u>Paulh@fremontenv.com</u>	Project Name/Location: <u>PTF-64N64W 32SENE</u>
Phone:	<u>jeffg@fremontenv.com</u> <u>Ethanb@fremontenv.com</u>	AFE#:
Sampler Name: <u>JG</u>	Project Name: <u>PTF-64N64W 32SENE</u>	PO/Billing Codes: <u>UWRWE-A 2338-ABN</u>
	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMBs (915)	DRD,ORO,GRO	PAHs(915)	EC,PH,SAR,Boron	Metals (915)	
1	B04@9.0'	7/17/23		1			X			X			X	X	X	X	X	X	
2	B05@9.0'			1			X			X			X	X	X	X	X	X	
3	GW03			1	X				X	X			X	X	X	X	X	X	
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: <u>[Signature]</u>	Date/Time: <u>7/17/23 1635</u>	Received by: <u>[Signature]</u>	Date/Time: <u>7/17/23 16:33</u>	TAT Business Days	Field DO	Notes: <u>Bill to Noble</u>
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Temperature Upon Receipt: <u>28.3</u>	Corrected Temperature	IR gun #: <u>2</u>	HNO3 lot #:	Standard	Field Turb.	

S₂

Sample Receipt Checklist

S2 Work Order# 2307280Client: Fremont Client Project ID: 9TF-64N64W 3ZSENEShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☒ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☒ Other ☐Temp (°C) 28.3 Thermometer # 2

	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"/>	on ice
If custody seals are present, are they intact? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
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 checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	no sample times
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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCl
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 checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

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

Josh Ward
Custodian Printed Name

7/17/23 16:33
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

B04@9.0'
2307280-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0510	07/17/23	07/17/23	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: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		126 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		87.7 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0509	"	07/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		88.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

B04@9.0'
2307280-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0516	07/18/23	07/19/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		47.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		44.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.145	0.0100		mg/L	1	BGG0518	07/18/23	07/20/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/17/23 00:00**

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

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

B04@9.0'
2307280-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.63	0.243		mg/kg dry	1	BGG0511	07/18/23	07/20/23	EPA 6020B	
Barium	35.9	0.486		"	"	"	"	"	"	
Cadmium	ND	0.243		"	"	"	"	"	"	
Copper	2.55	0.486		"	"	"	"	"	"	
Lead	3.46	0.243		"	"	"	"	"	"	
Nickel	3.59	0.486		"	"	"	"	"	"	
Selenium	ND	0.316	0.213	"	"	"	"	"	"	
Silver	ND	0.0243		"	"	"	"	"	"	
Zinc	15.2	0.486		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/17/23 00:00**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0513	07/18/23	07/18/23	EPA 7196A	

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

Date Sampled: **07/17/23 00:00**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	62.6	0.0607		mg/L dry	1	BGG0508	07/17/23	07/19/23	EPA 6020B	
Magnesium	28.7	0.0607		"	"	"	"	"	"	
Sodium	64.7	0.0607		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/17/23 00:00**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.70	0.00100		units	1	BGG0646	07/20/23	07/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

B04@9.0'
2307280-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	82.3			%	1	BGG0515	07/18/23	07/18/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.10	0.0100		mmhos/cm	1	BGG0528	07/18/23	07/18/23	EPA 120.1	

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

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.60			pH Units	1	BGG0529	07/18/23	07/18/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

B05@9.0'
2307280-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0510	07/17/23	07/17/23	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: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		133 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		88.6 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0509	"	07/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		90.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

B05@9.0'
2307280-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0516	07/18/23	07/19/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		41.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		54.9 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/17/23 00:00**

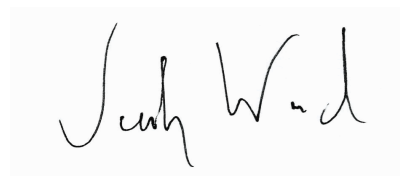
Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.117	0.0100		mg/L	1	BGG0518	07/18/23	07/20/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/17/23 00:00**

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



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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

B05@9.0'
2307280-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.62	0.239		mg/kg dry	1	BGG0511	07/18/23	07/20/23	EPA 6020B
Barium	36.6	0.478		"	"	"	"	"	"
Cadmium	ND	0.239		"	"	"	"	"	"
Copper	2.16	0.478		"	"	"	"	"	"
Lead	3.29	0.239		"	"	"	"	"	"
Nickel	2.99	0.478		"	"	"	"	"	"
Selenium	ND	0.311	0.209	"	"	"	"	"	"
Silver	ND	0.0239		"	"	"	"	"	"
Zinc	12.4	0.478		"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0513	07/18/23	07/18/23	EPA 7196A	

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

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	60.3	0.0598		mg/L dry	1	BGG0508	07/17/23	07/19/23	EPA 6020B	
Magnesium	27.2	0.0598		"	"	"	"	"	"	
Sodium	62.0	0.0598		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.66	0.00100		units	1	BGG0646	07/20/23	07/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]

Project Manager: Paul Henehan

Reported:
07/25/23 09:23

B05@9.0'
2307280-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.6			%	1	BGG0515	07/18/23	07/18/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.06	0.0100		mmhos/cm	1	BGG0528	07/18/23	07/18/23	EPA 120.1	

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

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.67			pH Units	1	BGG0529	07/18/23	07/18/23	EPA 9045D	

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PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

GW03
2307280-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	1.0		ug/l	1	BGG0506	07/17/23	07/18/23	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		99.4 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		85.9 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.2 %		21-167		"	"	"	"	

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Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch BGG0506 - EPA 5030 Water MS

Blank (BGG0506-BLK1)

Prepared: 07/17/23 Analyzed: 07/19/23

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	20.2		"	13.3		151	23-173			
Surrogate: Toluene-d8	11.8		"	13.3		88.7	20-170			
Surrogate: 4-Bromofluorobenzene	15.0		"	13.3		112	21-167			

LCS (BGG0506-BS1)

Prepared: 07/17/23 Analyzed: 07/19/23

Benzene	43.3	1.0	ug/l	50.0		86.5	51-132			
Toluene	45.2	1.0	"	50.0		90.3	51-138			
Ethylbenzene	40.4	1.0	"	50.0		80.9	58-146			
m,p-Xylene	69.2	2.0	"	100		69.2	57-144			
o-Xylene	40.8	1.0	"	50.0		81.6	53-146			
Naphthalene	37.2	1.0	"	50.0		74.4	70-130			
1,2,4-Trimethylbenzene	45.6	1.0	"	50.0		91.1	70-130			
1,3,5-Trimethylbenzene	39.6	1.0	"	50.0		79.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	17.5		"	13.3		131	23-173			
Surrogate: Toluene-d8	12.3		"	13.3		92.0	20-170			
Surrogate: 4-Bromofluorobenzene	14.6		"	13.3		110	21-167			

Matrix Spike (BGG0506-MS1)

Source: 2307260-01

Prepared: 07/17/23 Analyzed: 07/19/23

Benzene	24.4	1.0	ug/l	50.0	ND	48.9	34-141			
Toluene	20.1	1.0	"	50.0	ND	40.2	27-151			
Ethylbenzene	41.1	1.0	"	50.0	ND	82.2	29-160			
m,p-Xylene	40.4	2.0	"	100	ND	40.4	20-166			
o-Xylene	21.5	1.0	"	50.0	ND	43.0	33-159			
Naphthalene	39.8	1.0	"	50.0	ND	79.5	70-130			
1,2,4-Trimethylbenzene	45.7	1.0	"	50.0	ND	91.4	70-130			
1,3,5-Trimethylbenzene	39.8	1.0	"	50.0	ND	79.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	16.9		"	13.3		127	23-173			
Surrogate: Toluene-d8	12.4		"	13.3		92.8	20-170			
Surrogate: 4-Bromofluorobenzene	14.9		"	13.3		112	21-167			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BGG0506 - EPA 5030 Water MS

Matrix Spike Dup (BGG0506-MSD1)	Source: 2307260-01			Prepared: 07/17/23 Analyzed: 07/19/23						
Benzene	27.2	1.0	ug/l	50.0	ND	54.4	34-141	10.7	30	
Toluene	22.4	1.0	"	50.0	ND	44.8	27-151	10.6	30	
Ethylbenzene	43.8	1.0	"	50.0	ND	87.5	29-160	6.29	30	
m,p-Xylene	45.5	2.0	"	100	ND	45.5	20-166	12.0	30	
o-Xylene	24.4	1.0	"	50.0	ND	48.9	33-159	12.7	30	
Naphthalene	46.6	1.0	"	50.0	ND	93.2	70-130	15.9	30	
1,2,4-Trimethylbenzene	50.0	1.0	"	50.0	ND	100	70-130	9.05	30	
1,3,5-Trimethylbenzene	43.0	1.0	"	50.0	ND	86.1	70-130	7.87	30	
Surrogate: 1,2-Dichloroethane-d4	17.4		"	13.3		130	23-173			
Surrogate: Toluene-d8	12.2		"	13.3		91.7	20-170			
Surrogate: 4-Bromofluorobenzene	14.6		"	13.3		109	21-167			

Batch BGG0510 - EPA 5030 Soil MS

Blank (BGG0510-BLK1)	Prepared: 07/17/23 Analyzed: 07/18/23									
Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0522		"	0.0400		130	50-150			
Surrogate: Toluene-d8	0.0353		"	0.0400		88.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0548		"	0.0400		137	50-150			

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PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BGG0510 - EPA 5030 Soil MS

LCS (BGG0510-BS1)

Prepared: 07/17/23 Analyzed: 07/18/23

Benzene	0.102	0.0020	mg/kg	0.100		102	70-130			
Toluene	0.129	0.0050	"	0.100		129	70-130			
Ethylbenzene	0.116	0.0050	"	0.100		116	70-130			
1,2,4-Trimethylbenzene	0.122	0.0050	"	0.100		122	70-130			
1,3,5-Trimethylbenzene	0.124	0.0050	"	0.100		124	70-130			
Naphthalene	0.102	0.0038	"	0.100		102	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0490		"	0.0400		123	50-150			
Surrogate: Toluene-d8	0.0376		"	0.0400		94.1	50-150			

Matrix Spike (BGG0510-MS1)

Source: 2307280-01

Prepared: 07/17/23 Analyzed: 07/18/23

Benzene	0.124	0.0020	mg/kg	0.100	ND	124	70-130			
Toluene	0.117	0.0050	"	0.100	ND	117	70-130			
Ethylbenzene	0.115	0.0050	"	0.100	ND	115	70-130			
1,2,4-Trimethylbenzene	0.124	0.0050	"	0.100	ND	124	70-130			
1,3,5-Trimethylbenzene	0.130	0.0050	"	0.100	ND	130	70-130			
Naphthalene	0.0973	0.0038	"	0.100	ND	97.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0511		"	0.0400		128	50-150			
Surrogate: Toluene-d8	0.0382		"	0.0400		95.4	50-150			

Matrix Spike Dup (BGG0510-MSD1)

Source: 2307280-01

Prepared: 07/17/23 Analyzed: 07/18/23

Benzene	0.105	0.0020	mg/kg	0.100	ND	105	70-130	16.7	30	
Toluene	0.101	0.0050	"	0.100	ND	101	70-130	14.3	30	
Ethylbenzene	0.115	0.0050	"	0.100	ND	115	70-130	0.470	30	
1,2,4-Trimethylbenzene	0.116	0.0050	"	0.100	ND	116	70-130	6.68	30	
1,3,5-Trimethylbenzene	0.118	0.0050	"	0.100	ND	118	70-130	9.77	30	
Naphthalene	0.104	0.0038	"	0.100	ND	104	70-130	7.05	30	
Surrogate: 1,2-Dichloroethane-d4	0.0511		"	0.0400		128	50-150			
Surrogate: Toluene-d8	0.0381		"	0.0400		95.2	50-150			

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Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGG0509 - EPA 3550A

Blank (BGG0509-BLK1)

Prepared: 07/17/23 Analyzed: 07/19/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	9.53		"	12.5		76.3	30-150			

LCS (BGG0509-BS1)

Prepared: 07/17/23 Analyzed: 07/19/23

C10-C28 (DRO)	603	50	mg/kg	500		121	70-130			
Surrogate: o-Terphenyl	11.0		"	12.5		88.3	30-150			

Matrix Spike (BGG0509-MS1)

Source: 2307280-01

Prepared: 07/17/23 Analyzed: 07/19/23

C10-C28 (DRO)	424	50	mg/kg	500	ND	84.9	70-130			
Surrogate: o-Terphenyl	8.97		"	12.5		71.8	30-150			

Matrix Spike Dup (BGG0509-MSD1)

Source: 2307280-01

Prepared: 07/17/23 Analyzed: 07/19/23

C10-C28 (DRO)	634	50	mg/kg	500	ND	127	70-130	39.6	20	QR-04
Surrogate: o-Terphenyl	12.3		"	12.5		98.7	30-150			

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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0516 - EPA 5030 Soil MS

Blank (BGG0516-BLK1)

Prepared: 07/18/23 Analyzed: 07/19/23

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0233		"	0.0333		70.0		40-150			
Surrogate: Fluoranthene-d10	0.0313		"	0.0333		93.8		40-150			

LCS (BGG0516-BS1)

Prepared: 07/18/23 Analyzed: 07/19/23

Acenaphthene	0.0276	0.00500	mg/kg	0.0333		82.9		31-137			
Anthracene	0.0269	0.00500	"	0.0333		80.7		30-120			
Benzo (a) anthracene	0.0226	0.00500	"	0.0333		67.8		30-120			
Benzo (a) pyrene	0.0227	0.00500	"	0.0333		68.1		30-120			
Benzo (b) fluoranthene	0.0252	0.00500	"	0.0333		75.5		30-120			
Benzo (k) fluoranthene	0.0254	0.00500	"	0.0333		76.3		30-120			
Chrysene	0.0233	0.00500	"	0.0333		70.0		30-120			
Dibenz (a,h) anthracene	0.0225	0.00500	"	0.0333		67.4		30-120			
Fluoranthene	0.0304	0.00500	"	0.0333		91.3		30-120			
Fluorene	0.0276	0.00500	"	0.0333		82.8		30-120			
Indeno (1,2,3-cd) pyrene	0.0235	0.00500	"	0.0333		70.5		30-120			
Pyrene	0.0230	0.00500	"	0.0333		68.9		35-142			
1-Methylnaphthalene	0.0197	0.00500	"	0.0333		59.2		35-142			
2-Methylnaphthalene	0.0371	0.00500	"	0.0333		111		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0195		"	0.0333		58.5		40-150			
Surrogate: Fluoranthene-d10	0.0311		"	0.0333		93.4		40-150			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0516 - EPA 5030 Soil MS

Matrix Spike (BGG0516-MS1)

Source: 2307214-02

Prepared: 07/18/23 Analyzed: 07/19/23

Acenaphthene	0.0185	0.00500	mg/kg	0.0333	ND	55.6	31-137		
Anthracene	0.0172	0.00500	"	0.0333	ND	51.5	30-120		
Benzo (a) anthracene	0.0170	0.00500	"	0.0333	ND	50.9	30-120		
Benzo (a) pyrene	0.0151	0.00500	"	0.0333	ND	45.3	30-120		
Benzo (b) fluoranthene	0.0177	0.00500	"	0.0333	ND	53.2	30-120		
Benzo (k) fluoranthene	0.0179	0.00500	"	0.0333	ND	53.7	30-120		
Chrysene	0.0172	0.00500	"	0.0333	ND	51.6	30-120		
Dibenz (a,h) anthracene	0.0153	0.00500	"	0.0333	ND	45.9	30-120		
Fluoranthene	0.0186	0.00500	"	0.0333	ND	55.7	30-120		
Fluorene	0.0192	0.00500	"	0.0333	ND	57.7	30-120		
Indeno (1,2,3-cd) pyrene	0.0163	0.00500	"	0.0333	ND	48.9	30-120		
Pyrene	0.0190	0.00500	"	0.0333	ND	57.0	35-142		
1-Methylnaphthalene	0.0163	0.00500	"	0.0333	ND	49.0	15-130		
2-Methylnaphthalene	0.0212	0.00500	"	0.0333	ND	63.5	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0138		"	0.0333		41.3	40-150		
Surrogate: Fluoranthene-d10	0.0181		"	0.0333		54.4	40-150		

Matrix Spike Dup (BGG0516-MSD1)

Source: 2307214-02

Prepared: 07/18/23 Analyzed: 07/19/23

Acenaphthene	0.0225	0.00500	mg/kg	0.0333	ND	67.5	31-137	19.4	30
Anthracene	0.0219	0.00500	"	0.0333	ND	65.7	30-120	24.2	30
Benzo (a) anthracene	0.0218	0.00500	"	0.0333	ND	65.3	30-120	24.9	30
Benzo (a) pyrene	0.0204	0.00500	"	0.0333	ND	61.1	30-120	29.6	30
Benzo (b) fluoranthene	0.0225	0.00500	"	0.0333	ND	67.6	30-120	23.9	30
Benzo (k) fluoranthene	0.0230	0.00500	"	0.0333	ND	69.1	30-120	25.0	30
Chrysene	0.0225	0.00500	"	0.0333	ND	67.5	30-120	26.7	30
Dibenz (a,h) anthracene	0.0197	0.00500	"	0.0333	ND	59.1	30-120	25.2	30
Fluoranthene	0.0223	0.00500	"	0.0333	ND	66.9	30-120	18.3	30
Fluorene	0.0229	0.00500	"	0.0333	ND	68.6	30-120	17.2	30
Indeno (1,2,3-cd) pyrene	0.0199	0.00500	"	0.0333	ND	59.6	30-120	19.7	30
Pyrene	0.0247	0.00500	"	0.0333	ND	74.2	35-142	26.2	30
1-Methylnaphthalene	0.0215	0.00500	"	0.0333	ND	64.5	15-130	27.3	50
2-Methylnaphthalene	0.0240	0.00500	"	0.0333	ND	72.0	15-130	12.5	50
Surrogate: 2-Methylnaphthalene-d10	0.0214		"	0.0333		64.3	40-150		
Surrogate: Fluoranthene-d10	0.0227		"	0.0333		68.0	40-150		

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

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

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

Batch BGG0518 - EPA 3050B

Blank (BGG0518-BLK1)

Prepared: 07/18/23 Analyzed: 07/20/23

Boron ND 0.0100 mg/L

LCS (BGG0518-BS1)

Prepared: 07/18/23 Analyzed: 07/20/23

Boron 4.84 0.0100 mg/L 5.00 96.8 80-120

Duplicate (BGG0518-DUP1)

Source: 2307274-01

Prepared: 07/18/23 Analyzed: 07/20/23

Boron 0.214 0.0100 mg/L 0.165 25.7 20 QR-04

Matrix Spike (BGG0518-MS1)

Source: 2307274-01

Prepared: 07/18/23 Analyzed: 07/20/23

Boron 5.62 0.0100 mg/L 5.00 0.165 109 75-125

Matrix Spike Dup (BGG0518-MSD1)

Source: 2307274-01

Prepared: 07/18/23 Analyzed: 07/20/23

Boron 5.33 0.0100 mg/L 5.00 0.165 103 75-125 5.35 25

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGG0511 - EPA 3050B

Blank (BGG0511-BLK1)

Prepared: 07/18/23 Analyzed: 07/20/23

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	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BGG0511-BS1)

Prepared: 07/18/23 Analyzed: 07/20/23

Arsenic	34.9	0.200	mg/kg wet	40.0	87.2	80-120
Barium	35.5	0.400	"	40.0	88.7	80-120
Cadmium	1.80	0.200	"	2.00	90.0	80-120
Copper	38.2	0.400	"	40.0	95.4	80-120
Lead	18.0	0.200	"	20.0	89.9	80-120
Nickel	37.2	0.400	"	40.0	93.1	80-120
Selenium	3.95	0.260	"	4.00	98.7	80-120
Silver	1.79	0.0200	"	2.00	89.7	80-120
Zinc	37.4	0.400	"	40.0	93.6	80-120

Duplicate (BGG0511-DUP1)

Source: 2306637-01

Prepared: 07/18/23 Analyzed: 07/20/23

Arsenic	1.97	0.237	mg/kg dry	1.93	1.92	20
Barium	76.5	0.475	"	76.4	0.145	20
Cadmium	0.214	0.237	"	0.233	8.07	20
Copper	4.62	0.475	"	4.93	6.46	20
Lead	5.13	0.237	"	6.52	23.8	20
Nickel	3.95	0.475	"	3.92	0.832	20
Selenium	ND	0.308	"	ND		20
Silver	0.0223	0.0237	"	0.0228	2.11	20
Zinc	19.0	0.475	"	20.4	7.25	20

QR-04

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGG0511 - EPA 3050B

Matrix Spike (BGG0511-MS1)		Source: 2306637-01			Prepared: 07/18/23 Analyzed: 07/20/23					
Arsenic	44.4	0.237	mg/kg dry	47.5	1.93	89.6	75-125			
Barium	152	0.475	"	47.5	76.4	158	75-125			QM-05
Cadmium	2.56	0.237	"	2.37	0.233	98.0	75-125			
Copper	41.9	0.475	"	47.5	4.93	77.8	75-125			
Lead	27.9	0.237	"	23.7	6.52	89.9	75-125			
Nickel	41.0	0.475	"	47.5	3.92	78.2	75-125			
Selenium	4.98	0.308	"	4.75	ND	105	75-125			
Silver	2.28	0.0237	"	2.37	0.0228	94.9	75-125			
Zinc	59.3	0.475	"	47.5	20.4	81.9	75-125			

Matrix Spike Dup (BGG0511-MSD1)		Source: 2306637-01			Prepared: 07/18/23 Analyzed: 07/20/23					
Arsenic	43.5	0.237	mg/kg dry	47.5	1.93	87.5	75-125	2.19	25	
Barium	150	0.475	"	47.5	76.4	154	75-125	1.32	25	QM-05
Cadmium	2.53	0.237	"	2.37	0.233	96.8	75-125	1.19	25	
Copper	41.2	0.475	"	47.5	4.93	76.5	75-125	1.54	25	
Lead	27.4	0.237	"	23.7	6.52	87.9	75-125	1.74	25	
Nickel	40.4	0.475	"	47.5	3.92	76.8	75-125	1.62	25	
Selenium	4.53	0.308	"	4.75	ND	95.5	75-125	9.34	25	
Silver	2.25	0.0237	"	2.37	0.0228	93.8	75-125	1.22	25	
Zinc	58.8	0.475	"	47.5	20.4	80.8	75-125	0.955	25	

Post Spike (BGG0511-PS1)		Source: 2306637-01			Prepared: 07/18/23 Analyzed: 07/20/23					
Arsenic	97.5		ug/l	100	4.07	93.5	75-125			
Barium	266		"	100	161	105	75-125			
Cadmium	5.52		"	5.00	0.490	101	75-125			
Copper	93.0		"	100	10.4	82.6	75-125			
Lead	63.1		"	50.0	13.7	98.7	75-125			
Nickel	90.3		"	100	8.26	82.1	75-125			
Selenium	10.6		"	10.0	0.190	104	75-125			
Silver	4.98		"	5.00	0.0480	98.7	75-125			
Zinc	127		"	100	43.1	84.0	75-125			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGG0513 - 3060A Mod

Blank (BGG0513-BLK1)

Prepared & Analyzed: 07/18/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0513-BS1)

Prepared & Analyzed: 07/18/23

Chromium, Hexavalent 22.7 0.30 mg/kg wet 25.0 90.8 80-120

Duplicate (BGG0513-DUP1)

Source: 2307015-03

Prepared & Analyzed: 07/18/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0513-MS1)

Source: 2307015-03

Prepared & Analyzed: 07/18/23

Chromium, Hexavalent 26.4 0.30 mg/kg dry 28.7 ND 92.0 75-125

Matrix Spike Dup (BGG0513-MSD1)

Source: 2307015-03

Prepared & Analyzed: 07/18/23

Chromium, Hexavalent 26.9 0.30 mg/kg dry 28.7 ND 93.6 75-125 1.72 20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

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

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

Batch BGG0508 - General Preparation

Blank (BGG0508-BLK1)

Prepared: 07/17/23 Analyzed: 07/19/23

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

LCS (BGG0508-BS1)

Prepared: 07/17/23 Analyzed: 07/19/23

Calcium	5.85	0.0500	mg/L wet	5.00	117	70-130
Magnesium	5.78	0.0500	"	5.00	116	70-130
Sodium	5.83	0.0500	"	5.00	117	70-130

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

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

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

Batch BGG0515 - General Preparation

Duplicate (BGG0515-DUP1)

Source: 2307253-01

Prepared & Analyzed: 07/18/23

% Solids	85.4	%	85.6	0.171	20
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

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

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

Batch BGG0528 - General Preparation

Blank (BGG0528-BLK1)

Prepared & Analyzed: 07/18/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0528-BS1)

Prepared & Analyzed: 07/18/23

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

Duplicate (BGG0528-DUP1)

Source: 2307274-01

Prepared & Analyzed: 07/18/23

Specific Conductance (EC) 0.262 0.0100 mmhos/cm 0.264 0.950 20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

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

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

Batch BGG0529 - General Preparation

LCS (BGG0529-BS1)

Prepared & Analyzed: 07/18/23

pH	9.02	pH Units	9.18	98.3	95-105
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Duplicate (BGG0529-DUP1)

Source: 2307274-01

Prepared & Analyzed: 07/18/23

pH	7.56	pH Units	7.53	0.398	20
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

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.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

July 25, 2023

Paul Henehan

Fremont Environmental

PO Box 1289

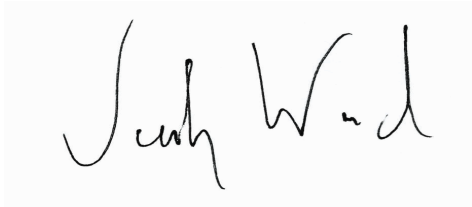
Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order # 2307298

Enclosed are the results of analyses for samples received by Summit Scientific on 07/18/23 16:36. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/25/23 09:29

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B06@9.0'	2307298-01	Soil	07/18/23 00:00	07/18/23 16:36

Summit Scientific

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

SUMMIT SCIENTIFIC

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

Lab ID	Page <u>1</u> of <u>1</u>
2307298	

Client: Fremont Env	Send Data To:	Send Invoice To:
Address:	Project Manager: Paul Henehan	Company: Noble
City/State/Zip:	E-Mail: Paul.H@fremontenv.com	Project Name/Location: PTF-64N64W 32SENE
Phone:	jeffg@fremontenv.com Ethanb@fremontenv.com	AFE#:
Sampler Name: JG	Project Name: PTF-64N64W 32SENE	PO/Billing Codes: UWRWE-A2338-ABN
	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMBs (915)	DEO,ORO,GRO	PAHs (915)	EC,PH,STAR, Boron	Metals (915)	
1	B06@9.0'	7/18/23		2			X			X			X	X	X	X	X	X	
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: <u>[Signature]</u>	Date/Time: <u>7/18/23 1637</u>	Received by: <u>[Signature]</u>	Date/Time: <u>7/18/23 16:36</u>	TAT Business Days	Field DO	Notes: Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day <input type="checkbox"/>	Field ORP	
				2 Days <input type="checkbox"/>	Field pH	
				3 Days <input type="checkbox"/>	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard <input type="checkbox"/>	Field Turb.	
Temperature Upon Receipt: <u>24.0</u>	Corrected Temperature	IR gun #: <u>2</u>	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2307298Client: Fremont Client Project ID: PTF-64N64W 32SENEShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☒ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 24.0 Thermometer # 2

	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"/>	on ice
If custody seals are present, are they intact? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No Sample times
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.				

Vah Wad

Custodian Printed Name

7/18/23 16:36

Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/25/23 09:29

B06@9.0'
2307298-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/18/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0552	07/18/23	07/18/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **07/18/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		92.1 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		94.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/18/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0553	07/18/23	07/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/18/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		94.4 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/25/23 09:29

B06@9.0'
2307298-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/18/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0560	07/19/23	07/20/23	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: **07/18/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		44.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		44.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/18/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	0.0100		mg/L	1	BGG0558	07/19/23	07/20/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/18/23 00:00**

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

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/25/23 09:29

B06@9.0'
2307298-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.45	0.238		mg/kg dry	1	BGG0563	07/19/23	07/20/23	EPA 6020B	
Barium	27.6	0.476		"	"	"	"	"	"	
Cadmium	ND	0.238		"	"	"	"	"	"	
Copper	1.48	0.476		"	"	"	"	"	"	
Lead	2.42	0.238		"	"	"	"	"	"	
Nickel	1.70	0.476		"	"	"	"	"	"	
Selenium	ND	0.309	0.208	"	"	"	"	"	"	
Silver	ND	0.0238		"	"	"	"	"	"	
Zinc	6.39	0.476		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 07/18/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0565	07/19/23	07/19/23	EPA 7196A	

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

Date Sampled: 07/18/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	79.0	0.0595		mg/L dry	1	BGG0551	07/18/23	07/19/23	EPA 6020B	
Magnesium	38.1	0.0595		"	"	"	"	"	"	
Sodium	80.2	0.0595		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 07/18/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.85	0.00100		units	1	BGG0645	07/20/23	07/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/25/23 09:29

B06@9.0'
2307298-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/18/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.0			%	1	BGG0559	07/19/23	07/19/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/18/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.27	0.0100		mmhos/cm	1	BGG0574	07/19/23	07/19/23	EPA 120.1	

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

Date Sampled: **07/18/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.60			pH Units	1	BGG0573	07/19/23	07/19/23	EPA 9045D	

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/25/23 09:29

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0552 - EPA 5030 Soil MS

Blank (BGG0552-BLK1)

Prepared: 07/18/23 Analyzed: 07/19/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0338		"	0.0400		84.6	50-150			
Surrogate: Toluene-d8	0.0366		"	0.0400		91.5	50-150			
Surrogate: 4-Bromofluorobenzene	0.0439		"	0.0400		110	50-150			

LCS (BGG0552-BS1)

Prepared: 07/18/23 Analyzed: 07/19/23

Benzene	0.0888	0.0020	mg/kg	0.100		88.8	70-130			
Toluene	0.0769	0.0050	"	0.100		76.9	70-130			
Ethylbenzene	0.124	0.0050	"	0.100		124	70-130			
m,p-Xylene	0.245	0.010	"	0.200		122	70-130			
o-Xylene	0.127	0.0050	"	0.100		127	70-130			
1,2,4-Trimethylbenzene	0.109	0.0050	"	0.100		109	70-130			
1,3,5-Trimethylbenzene	0.0982	0.0050	"	0.100		98.2	70-130			
Naphthalene	0.124	0.0038	"	0.100		124	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0269		"	0.0400		67.3	50-150			
Surrogate: Toluene-d8	0.0353		"	0.0400		88.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0417		"	0.0400		104	50-150			

Matrix Spike (BGG0552-MS1)

Source: 2307298-01

Prepared: 07/18/23 Analyzed: 07/19/23

Benzene	0.0722	0.0020	mg/kg	0.100	ND	72.2	70-130			
Toluene	0.0717	0.0050	"	0.100	ND	71.7	70-130			
Ethylbenzene	0.0764	0.0050	"	0.100	ND	76.4	70-130			
m,p-Xylene	0.151	0.010	"	0.200	0.00543	72.6	70-130			
o-Xylene	0.0756	0.0050	"	0.100	ND	75.6	70-130			
1,2,4-Trimethylbenzene	0.0814	0.0050	"	0.100	ND	81.4	70-130			
1,3,5-Trimethylbenzene	0.0745	0.0050	"	0.100	ND	74.5	70-130			
Naphthalene	0.0988	0.0038	"	0.100	ND	98.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0323		"	0.0400		80.9	50-150			
Surrogate: Toluene-d8	0.0368		"	0.0400		92.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0421		"	0.0400		105	50-150			

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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/25/23 09:29

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0552 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0552-MSD1)	Source: 2307298-01			Prepared: 07/18/23 Analyzed: 07/19/23						
Benzene	0.0707	0.0020	mg/kg	0.100	ND	70.7	70-130	2.06	30	
Toluene	0.0720	0.0050	"	0.100	ND	72.0	70-130	0.376	30	
Ethylbenzene	0.0741	0.0050	"	0.100	ND	74.1	70-130	2.99	30	
m,p-Xylene	0.148	0.010	"	0.200	0.00543	71.1	70-130	2.05	30	
o-Xylene	0.0731	0.0050	"	0.100	ND	73.1	70-130	3.27	30	
1,2,4-Trimethylbenzene	0.0800	0.0050	"	0.100	ND	80.0	70-130	1.67	30	
1,3,5-Trimethylbenzene	0.0730	0.0050	"	0.100	ND	73.0	70-130	2.03	30	
Naphthalene	0.0941	0.0038	"	0.100	ND	94.1	70-130	4.91	30	
Surrogate: 1,2-Dichloroethane-d4	0.0341		"	0.0400		85.3	50-150			
Surrogate: Toluene-d8	0.0361		"	0.0400		90.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	50-150			

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/25/23 09:29

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGG0553 - EPA 3550A

Blank (BGG0553-BLK1)

Prepared: 07/18/23 Analyzed: 07/19/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	10.8		"	12.5		86.4	30-150			

LCS (BGG0553-BS1)

Prepared: 07/18/23 Analyzed: 07/19/23

C10-C28 (DRO)	563	50	mg/kg	500		113	70-130			
Surrogate: o-Terphenyl	10.7		"	12.5		85.2	30-150			

Matrix Spike (BGG0553-MS1)

Source: 2307298-01

Prepared: 07/18/23 Analyzed: 07/19/23

C10-C28 (DRO)	523	50	mg/kg	500	13.1	102	70-130			
Surrogate: o-Terphenyl	10.9		"	12.5		87.0	30-150			

Matrix Spike Dup (BGG0553-MSD1)

Source: 2307298-01

Prepared: 07/18/23 Analyzed: 07/19/23

C10-C28 (DRO)	511	50	mg/kg	500	13.1	99.6	70-130	2.41	20	
Surrogate: o-Terphenyl	10.7		"	12.5		86.0	30-150			

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Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/25/23 09:29

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0560 - EPA 5030 Soil MS

Blank (BGG0560-BLK1)

Prepared: 07/19/23 Analyzed: 07/20/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0246		"	0.0333		73.8	40-150			
Surrogate: Fluoranthene-d10	0.0193		"	0.0333		57.8	40-150			

LCS (BGG0560-BS1)

Prepared: 07/19/23 Analyzed: 07/20/23

Acenaphthene	0.0223	0.00500	mg/kg	0.0333		66.9	31-137			
Anthracene	0.0228	0.00500	"	0.0333		68.5	30-120			
Benzo (a) anthracene	0.0250	0.00500	"	0.0333		75.0	30-120			
Benzo (a) pyrene	0.0214	0.00500	"	0.0333		64.3	30-120			
Benzo (b) fluoranthene	0.0239	0.00500	"	0.0333		71.6	30-120			
Benzo (k) fluoranthene	0.0240	0.00500	"	0.0333		71.9	30-120			
Chrysene	0.0242	0.00500	"	0.0333		72.6	30-120			
Dibenz (a,h) anthracene	0.0213	0.00500	"	0.0333		64.0	30-120			
Fluoranthene	0.0240	0.00500	"	0.0333		72.1	30-120			
Fluorene	0.0241	0.00500	"	0.0333		72.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0228	0.00500	"	0.0333		68.3	30-120			
Pyrene	0.0248	0.00500	"	0.0333		74.3	35-142			
1-Methylnaphthalene	0.0250	0.00500	"	0.0333		75.0	35-142			
2-Methylnaphthalene	0.0252	0.00500	"	0.0333		75.5	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0220		"	0.0333		65.9	40-150			
Surrogate: Fluoranthene-d10	0.0237		"	0.0333		71.0	40-150			

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/25/23 09:29

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0560 - EPA 5030 Soil MS

Matrix Spike (BGG0560-MS1)			Source: 2307297-01		Prepared: 07/19/23 Analyzed: 07/20/23					
Acenaphthene	0.0175	0.00500	mg/kg	0.0333	ND	52.5	31-137			
Anthracene	0.0174	0.00500	"	0.0333	ND	52.2	30-120			
Benzo (a) anthracene	0.0204	0.00500	"	0.0333	ND	61.1	30-120			
Benzo (a) pyrene	0.0160	0.00500	"	0.0333	ND	48.1	30-120			
Benzo (b) fluoranthene	0.0186	0.00500	"	0.0333	ND	55.9	30-120			
Benzo (k) fluoranthene	0.0187	0.00500	"	0.0333	ND	56.1	30-120			
Chrysene	0.0193	0.00500	"	0.0333	ND	57.8	30-120			
Dibenz (a,h) anthracene	0.0164	0.00500	"	0.0333	ND	49.3	30-120			
Fluoranthene	0.0178	0.00500	"	0.0333	ND	53.3	30-120			
Fluorene	0.0179	0.00500	"	0.0333	0.0250	NR	30-120			QM-07
Indeno (1,2,3-cd) pyrene	0.0178	0.00500	"	0.0333	ND	53.4	30-120			
Pyrene	0.0209	0.00500	"	0.0333	ND	62.7	35-142			
1-Methylnaphthalene	0.0192	0.00500	"	0.0333	ND	57.7	15-130			
2-Methylnaphthalene	0.0178	0.00500	"	0.0333	0.144	NR	15-130			QM-07
Surrogate: 2-Methylnaphthalene-d10	0.0181		"	0.0333		54.2	40-150			
Surrogate: Fluoranthene-d10	0.0172		"	0.0333		51.6	40-150			

Matrix Spike Dup (BGG0560-MSD1)			Source: 2307297-01		Prepared: 07/19/23 Analyzed: 07/20/23					
Acenaphthene	0.0159	0.00500	mg/kg	0.0333	ND	47.7	31-137	9.54	30	
Anthracene	0.0163	0.00500	"	0.0333	ND	49.0	30-120	6.27	30	
Benzo (a) anthracene	0.0174	0.00500	"	0.0333	ND	52.1	30-120	15.9	30	
Benzo (a) pyrene	0.0160	0.00500	"	0.0333	ND	47.8	30-120	0.482	30	
Benzo (b) fluoranthene	0.0181	0.00500	"	0.0333	ND	54.4	30-120	2.70	30	
Benzo (k) fluoranthene	0.0180	0.00500	"	0.0333	ND	54.0	30-120	3.96	30	
Chrysene	0.0181	0.00500	"	0.0333	ND	54.4	30-120	6.15	30	
Dibenz (a,h) anthracene	0.0152	0.00500	"	0.0333	ND	45.7	30-120	7.72	30	
Fluoranthene	0.0168	0.00500	"	0.0333	ND	50.5	30-120	5.41	30	
Fluorene	0.0172	0.00500	"	0.0333	0.0250	NR	30-120	3.93	30	QM-07
Indeno (1,2,3-cd) pyrene	0.0183	0.00500	"	0.0333	ND	54.8	30-120	2.61	30	
Pyrene	0.0204	0.00500	"	0.0333	ND	61.3	35-142	2.24	30	
1-Methylnaphthalene	0.0207	0.00500	"	0.0333	ND	62.0	15-130	7.06	50	
2-Methylnaphthalene	0.0190	0.00500	"	0.0333	0.144	NR	15-130	6.48	50	QM-07
Surrogate: 2-Methylnaphthalene-d10	0.0194		"	0.0333		58.2	40-150			
Surrogate: Fluoranthene-d10	0.0155		"	0.0333		46.5	40-150			

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/25/23 09:29

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

Summit Scientific

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

Batch BGG0558 - EPA 3050B

Blank (BGG0558-BLK1)

Prepared: 07/19/23 Analyzed: 07/20/23

Boron ND 0.0100 mg/L

LCS (BGG0558-BS1)

Prepared: 07/19/23 Analyzed: 07/20/23

Boron 5.04 0.0100 mg/L 5.00 101 80-120

Duplicate (BGG0558-DUP1)

Source: 2307295-01

Prepared: 07/19/23 Analyzed: 07/20/23

Boron 0.0325 0.0100 mg/L 0.0156 70.3 20 QR-01

Matrix Spike (BGG0558-MS1)

Source: 2307295-01

Prepared: 07/19/23 Analyzed: 07/20/23

Boron 4.98 0.0100 mg/L 5.00 0.0156 99.3 75-125

Matrix Spike Dup (BGG0558-MSD1)

Source: 2307295-01

Prepared: 07/19/23 Analyzed: 07/20/23

Boron 5.03 0.0100 mg/L 5.00 0.0156 100 75-125 0.905 25

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Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/25/23 09:29

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BGG0563 - EPA 3050B

Blank (BGG0563-BLK1)

Prepared: 07/19/23 Analyzed: 07/20/23

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	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BGG0563-BS1)

Prepared: 07/19/23 Analyzed: 07/20/23

Arsenic	36.9	0.200	mg/kg wet	40.0	92.3	80-120
Barium	33.8	0.400	"	40.0	84.6	80-120
Cadmium	1.73	0.200	"	2.00	86.6	80-120
Copper	36.0	0.400	"	40.0	89.9	80-120
Lead	18.5	0.200	"	20.0	92.5	80-120
Nickel	35.6	0.400	"	40.0	89.0	80-120
Selenium	3.91	0.260	"	4.00	97.8	80-120
Silver	1.64	0.0200	"	2.00	82.2	80-120
Zinc	40.6	0.400	"	40.0	102	80-120

Duplicate (BGG0563-DUP1)

Source: 2307283-02

Prepared: 07/19/23 Analyzed: 07/20/23

Arsenic	1.21	0.235	mg/kg dry	1.11	8.64	20	
Barium	129	0.469	"	95.8	29.7	20	QR-04
Cadmium	0.241	0.235	"	0.190	23.8	20	QR-01
Copper	1.33	0.469	"	1.23	8.31	20	
Lead	4.46	0.235	"	3.75	17.3	20	
Nickel	1.66	0.469	"	1.56	6.13	20	
Selenium	ND	0.305	"	ND		20	
Silver	0.0263	0.0235	"	0.0206	24.0	20	QR-01
Zinc	5.30	0.469	"	4.96	6.60	20	

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/25/23 09:29

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BGG0563 - EPA 3050B

Matrix Spike (BGG0563-MS1)		Source: 2307283-02			Prepared: 07/19/23		Analyzed: 07/20/23			
Arsenic	15.9	0.235	mg/kg dry	46.9	1.11	31.5	75-125			QM-01
Barium	173	0.469	"	46.9	95.8	164	75-125			QM-01
Cadmium	1.82	0.235	"	2.35	0.190	69.3	75-125			QM-01
Copper	16.0	0.469	"	46.9	1.23	31.5	75-125			QM-01
Lead	19.3	0.235	"	23.5	3.75	66.1	75-125			QM-01
Nickel	16.6	0.469	"	46.9	1.56	32.1	75-125			QM-01
Selenium	4.31	0.305	"	4.69	ND	91.9	75-125			
Silver	1.65	0.0235	"	2.35	0.0206	69.4	75-125			QM-01
Zinc	21.4	0.469	"	46.9	4.96	35.0	75-125			QM-01

Matrix Spike Dup (BGG0563-MSD1)		Source: 2307283-02			Prepared: 07/19/23		Analyzed: 07/20/23			
Arsenic	16.2	0.235	mg/kg dry	46.9	1.11	32.1	75-125	1.77	25	QM-01
Barium	188	0.469	"	46.9	95.8	196	75-125	8.38	25	QM-01
Cadmium	2.03	0.235	"	2.35	0.190	78.3	75-125	11.0	25	
Copper	16.1	0.469	"	46.9	1.23	31.7	75-125	0.620	25	QM-01
Lead	21.0	0.235	"	23.5	3.75	73.6	75-125	8.74	25	QM-01
Nickel	16.6	0.469	"	46.9	1.56	32.1	75-125	0.186	25	QM-01
Selenium	3.47	0.305	"	4.69	ND	74.0	75-125	21.6	25	QM-01
Silver	1.78	0.0235	"	2.35	0.0206	75.0	75-125	7.63	25	
Zinc	21.2	0.469	"	46.9	4.96	34.7	75-125	0.671	25	QM-01

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/25/23 09:29

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGG0565 - 3060A Mod

Blank (BGG0565-BLK1)

Prepared & Analyzed: 07/19/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0565-BS1)

Prepared & Analyzed: 07/19/23

Chromium, Hexavalent 23.9 0.30 mg/kg wet 25.0 95.6 80-120

Duplicate (BGG0565-DUP1)

Source: 2307295-01

Prepared & Analyzed: 07/19/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0565-MS1)

Source: 2307295-01

Prepared & Analyzed: 07/19/23

Chromium, Hexavalent 23.6 0.30 mg/kg dry 25.4 ND 93.0 75-125

Matrix Spike Dup (BGG0565-MSD1)

Source: 2307295-01

Prepared & Analyzed: 07/19/23

Chromium, Hexavalent 22.4 0.30 mg/kg dry 25.4 ND 88.0 75-125 5.52 20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:

07/25/23 09:29

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

Summit Scientific

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

Batch BGG0551 - General Preparation

Blank (BGG0551-BLK1)

Prepared: 07/18/23 Analyzed: 07/19/23

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

LCS (BGG0551-BS1)

Prepared: 07/18/23 Analyzed: 07/19/23

Calcium	5.47	0.0500	mg/L wet	5.00	109	70-130
Magnesium	5.82	0.0500	"	5.00	116	70-130
Sodium	5.93	0.0500	"	5.00	119	70-130

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/25/23 09:29

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

Summit Scientific

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

Batch BGG0559 - General Preparation

Duplicate (BGG0559-DUP1)

Source: 2307295-01

Prepared & Analyzed: 07/19/23

% Solids	98.3	%	98.3	0.0101	20
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/25/23 09:29

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

Summit Scientific

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

Batch BGG0574 - General Preparation

Blank (BGG0574-BLK1)

Prepared & Analyzed: 07/19/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0574-BS1)

Prepared & Analyzed: 07/19/23

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 104 95-105

Duplicate (BGG0574-DUP1)

Source: 2307295-01

Prepared & Analyzed: 07/19/23

Specific Conductance (EC) 0.131 0.0100 mmhos/cm 0.132 1.22 20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:

07/25/23 09:29

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

Summit Scientific

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

Batch BGG0573 - General Preparation

LCS (BGG0573-BS1)

Prepared & Analyzed: 07/19/23

pH	9.03	pH Units	9.18	98.4	95-105
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Duplicate (BGG0573-DUP1)

Source: 2307295-01

Prepared & Analyzed: 07/19/23

pH	6.17	pH Units	6.14	0.487	20
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/25/23 09:29

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.
QM-01	The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

July 27, 2023

Paul Henehan

Fremont Environmental

PO Box 1289

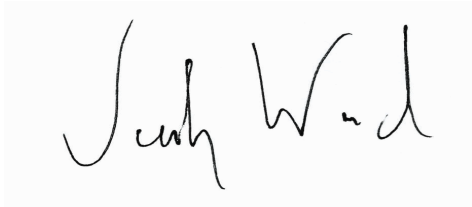
Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order # 2307343

Enclosed are the results of analyses for samples received by Summit Scientific on 07/19/23 16:39. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/27/23 08:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E01@8.0'	2307343-01	Soil	07/19/23 00:00	07/19/23 16:39
GW04	2307343-02	Water	07/19/23 00:00	07/19/23 16:39

Summit Scientific

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

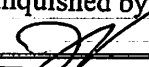
SUMMIT SCIENTIFIC

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

Lab ID	Page <u>1</u> of <u>1</u>
2307343	

Client: Fremont Env	Send Data To:	Send Invoice To:
Address:	Project Manager: Paul Henchen	Company: Noble
City/State/Zip:	E-Mail: Paulh@fremontenv.com	Project Name/Location: PTF-64N64W 32SENE
Phone:	jeff@fremontenv.com Ethenb@fremontenv.com	AFE#:
Sampler Name: JG	Project Name: PTF-64N64W 32SENE	PO/Billing Codes: UWRWE-A2338-ABN
	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions	
					HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEX+N	TMBs (915)	DRD, DRD, GRO	PAHs (915)	EC, pH, SA, Boron	Metals (915)			
1	E01@8.0'	7/19/23		2										X	X	X	X	X			
2	GW04	7/19/23		3	X	X	X		X	X				X	X	X	X	X			
3														X	X						
4																					
5																					
6																					
7																					
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9																					
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12																					
13																					
14																					
15																					

Relinquished by: 	Date/Time: 7/19/23 1639	Received by: Josh Wood	Date/Time: 7/19/23 16:39	TAT Business Days	Field DO	Notes: Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	Field Turb.	
Temperature Upon Receipt: 24.1	Corrected Temperature	IR gun #: 2	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2307343

Client: Fremont Client Project ID: PTF-64N64V 3ZSENEShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☒ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 24.1 Thermometer # 2

	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"/>	on ice
If custody seals are present, are they intact? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	same day
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 type="checkbox"/>	<input checked="" 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"/>	NO sample lines
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.

John Wal
Custodian Printed Name

7/19/23 16:39
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/27/23 08:34

E01@8.0'
2307343-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0598	07/19/23	07/19/23	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: **07/19/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		84.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		89.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0599	07/19/23	07/19/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		87.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/27/23 08:34

E01@8.0'
2307343-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Acenaphthene	ND	0.00500			mg/kg	1	BGG0643	07/20/23	07/22/23	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: **07/19/23 00:00**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Surrogate: 2-Methylnaphthalene-d10		47.9 %			40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		53.6 %			40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Boron	0.285	0.0100			mg/L	1	BGG0627	07/20/23	07/22/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/27/23 08:34

E01@8.0'
2307343-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.51	0.255		mg/kg dry	1	BGG0601	07/20/23	07/20/23	EPA 6020B	
Barium	102	0.511		"	"	"	"	"	"	
Cadmium	ND	0.255		"	"	"	"	"	"	
Copper	2.26	0.511		"	"	"	"	"	"	
Lead	3.59	0.255		"	"	"	"	"	"	
Nickel	2.70	0.511		"	"	"	"	"	"	
Selenium	ND	0.332	0.223	"	"	"	"	"	"	
Silver	0.0301	0.0255		"	"	"	"	"	"	
Zinc	8.25	0.511		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0603	07/20/23	07/20/23	EPA 7196A	

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

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	74.2	0.0639		mg/L dry	1	BGG0586	07/19/23	07/24/23	EPA 6020B	
Magnesium	70.3	0.0639		"	"	"	"	"	"	
Sodium	41.1	0.0639		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.821	0.00100		units	1	BGG0794	07/25/23	07/25/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/27/23 08:34

E01@8.0'
2307343-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	78.3			%	1	BGG0605	07/20/23	07/20/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.31	0.0100		mmhos/cm	1	BGG0638	07/20/23	07/20/23	EPA 120.1	

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

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.69			pH Units	1	BGG0637	07/20/23	07/20/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/27/23 08:34

GW04
2307343-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Z-01

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	1.0		ug/l	1	BGG0600	07/19/23	07/19/23	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		99.6 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		86.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.7 %		21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental
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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/27/23 08:34

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0598 - EPA 5030 Soil MS

Blank (BGG0598-BLK1)

Prepared & Analyzed: 07/19/23

Benzene	ND	0.0020	mg/kg
Toluene	ND	0.0050	"
Ethylbenzene	ND	0.0050	"
Xylenes (total)	ND	0.010	"
1,2,4-Trimethylbenzene	ND	0.0050	"
1,3,5-Trimethylbenzene	ND	0.0050	"
Naphthalene	ND	0.0038	"
Gasoline Range Hydrocarbons	ND	0.50	"

Surrogate: 1,2-Dichloroethane-d4	0.0338	"	0.0400	84.4	50-150
Surrogate: Toluene-d8	0.0360	"	0.0400	90.0	50-150
Surrogate: 4-Bromofluorobenzene	0.0406	"	0.0400	101	50-150

LCS (BGG0598-BS1)

Prepared & Analyzed: 07/19/23

Benzene	0.0798	0.0020	mg/kg	0.100	79.8	70-130
Toluene	0.0827	0.0050	"	0.100	82.7	70-130
Ethylbenzene	0.0941	0.0050	"	0.100	94.1	70-130
m,p-Xylene	0.186	0.010	"	0.200	93.0	70-130
o-Xylene	0.0881	0.0050	"	0.100	88.1	70-130
1,2,4-Trimethylbenzene	0.100	0.0050	"	0.100	100	70-130
1,3,5-Trimethylbenzene	0.0958	0.0050	"	0.100	95.8	70-130
Naphthalene	0.0934	0.0038	"	0.100	93.4	70-130

Surrogate: 1,2-Dichloroethane-d4	0.0293	"	0.0400	73.2	50-150
Surrogate: Toluene-d8	0.0367	"	0.0400	91.6	50-150
Surrogate: 4-Bromofluorobenzene	0.0405	"	0.0400	101	50-150

Matrix Spike (BGG0598-MS1)

Source: 2307344-01

Prepared & Analyzed: 07/19/23

Benzene	0.0724	0.0020	mg/kg	0.100	ND	72.4	70-130
Toluene	0.0729	0.0050	"	0.100	ND	72.9	70-130
Ethylbenzene	0.0803	0.0050	"	0.100	ND	80.3	70-130
m,p-Xylene	0.160	0.010	"	0.200	ND	79.9	70-130
o-Xylene	0.0765	0.0050	"	0.100	ND	76.5	70-130
1,2,4-Trimethylbenzene	0.0849	0.0050	"	0.100	ND	84.9	70-130
1,3,5-Trimethylbenzene	0.0806	0.0050	"	0.100	ND	80.6	70-130
Naphthalene	0.0620	0.0038	"	0.100	ND	62.0	70-130

Surrogate: 1,2-Dichloroethane-d4	0.0333	"	0.0400	83.2	50-150
Surrogate: Toluene-d8	0.0356	"	0.0400	89.0	50-150
Surrogate: 4-Bromofluorobenzene	0.0422	"	0.0400	105	50-150

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/27/23 08:34

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BGG0598 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0598-MSD1)			Source: 2307344-01		Prepared & Analyzed: 07/19/23					
Benzene	0.0702	0.0020	mg/kg	0.100	ND	70.2	70-130	3.11	30	
Toluene	0.0711	0.0050	"	0.100	ND	71.1	70-130	2.50	30	
Ethylbenzene	0.0789	0.0050	"	0.100	ND	78.9	70-130	1.77	30	
m,p-Xylene	0.156	0.010	"	0.200	ND	78.1	70-130	2.26	30	
o-Xylene	0.0749	0.0050	"	0.100	ND	74.9	70-130	2.10	30	
1,2,4-Trimethylbenzene	0.0840	0.0050	"	0.100	ND	84.0	70-130	1.14	30	
1,3,5-Trimethylbenzene	0.0770	0.0050	"	0.100	ND	77.0	70-130	4.57	30	
Naphthalene	0.0630	0.0038	"	0.100	ND	63.0	70-130	1.54	30	QM-07
<i>Surrogate: 1,2-Dichloroethane-d4</i>										
	0.0311		"	0.0400		77.8	50-150			
<i>Surrogate: Toluene-d8</i>										
	0.0354		"	0.0400		88.4	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>										
	0.0425		"	0.0400		106	50-150			

Batch BGG0600 - EPA 5030 Water MS

Blank (BGG0600-BLK1)			Prepared & Analyzed: 07/19/23							
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>										
	12.5		"	13.3		94.0	23-173			
<i>Surrogate: Toluene-d8</i>										
	11.7		"	13.3		87.8	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>										
	12.7		"	13.3		95.3	21-167			

LCS (BGG0600-BS1)			Prepared & Analyzed: 07/19/23							
Benzene	27.6	1.0	ug/l	33.3		82.8	51-132			
Toluene	27.6	1.0	"	33.3		82.8	51-138			
Ethylbenzene	27.3	1.0	"	33.3		81.8	58-146			
m,p-Xylene	67.5	2.0	"	66.7		101	57-144			
o-Xylene	28.6	1.0	"	33.3		86.0	53-146			
Naphthalene	31.4	1.0	"	33.3		94.3	70-130			
1,2,4-Trimethylbenzene	26.8	1.0	"	33.3		80.3	70-130			
1,3,5-Trimethylbenzene	27.7	1.0	"	33.3		83.0	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>										
	12.3		"	13.3		92.5	23-173			
<i>Surrogate: Toluene-d8</i>										
	11.9		"	13.3		89.4	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>										
	12.5		"	13.3		94.1	21-167			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/27/23 08:34

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0600 - EPA 5030 Water MS

Matrix Spike (BGG0600-MS1)

Source: 2307343-02

Prepared & Analyzed: 07/19/23

Benzene	27.8	1.0	ug/l	33.3	ND	83.6	34-141			
Toluene	27.8	1.0	"	33.3	ND	83.5	27-151			
Ethylbenzene	28.4	1.0	"	33.3	ND	85.1	29-160			
m,p-Xylene	69.7	2.0	"	66.7	ND	105	20-166			
o-Xylene	29.5	1.0	"	33.3	ND	88.4	33-159			
Naphthalene	32.5	1.0	"	33.3	ND	97.4	70-130			
1,2,4-Trimethylbenzene	27.6	1.0	"	33.3	ND	82.9	70-130			
1,3,5-Trimethylbenzene	28.6	1.0	"	33.3	ND	85.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	12.3		"	13.3		92.0	23-173			
Surrogate: Toluene-d8	11.6		"	13.3		87.4	20-170			
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3		94.4	21-167			

Matrix Spike Dup (BGG0600-MSD1)

Source: 2307343-02

Prepared: 07/19/23 Analyzed: 07/20/23

Benzene	27.6	1.0	ug/l	33.3	ND	82.9	34-141	0.829	30	
Toluene	27.6	1.0	"	33.3	ND	82.9	27-151	0.757	30	
Ethylbenzene	27.6	1.0	"	33.3	ND	82.7	29-160	2.86	30	
m,p-Xylene	67.9	2.0	"	66.7	ND	102	20-166	2.66	30	
o-Xylene	28.9	1.0	"	33.3	ND	86.6	33-159	2.06	30	
Naphthalene	33.0	1.0	"	33.3	ND	99.0	70-130	1.62	30	
1,2,4-Trimethylbenzene	27.1	1.0	"	33.3	ND	81.2	70-130	2.01	30	
1,3,5-Trimethylbenzene	28.0	1.0	"	33.3	ND	83.9	70-130	2.19	30	
Surrogate: 1,2-Dichloroethane-d4	12.5		"	13.3		93.6	23-173			
Surrogate: Toluene-d8	11.8		"	13.3		88.7	20-170			
Surrogate: 4-Bromofluorobenzene	12.3		"	13.3		92.0	21-167			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/27/23 08:34

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGG0599 - EPA 3550A

Blank (BGG0599-BLK1)

Prepared & Analyzed: 07/19/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	11.2		"	12.5		89.8	30-150			

LCS (BGG0599-BS1)

Prepared & Analyzed: 07/19/23

C10-C28 (DRO)	723	50	mg/kg	500		145	70-130			QR-02
Surrogate: o-Terphenyl	15.4		"	12.5		123	30-150			

Matrix Spike (BGG0599-MS1)

Source: 2307344-01

Prepared: 07/19/23 Analyzed: 07/20/23

C10-C28 (DRO)	494	50	mg/kg	500	28.4	93.2	70-130			
Surrogate: o-Terphenyl	11.2		"	12.5		89.3	30-150			

Matrix Spike Dup (BGG0599-MSD1)

Source: 2307344-01

Prepared: 07/19/23 Analyzed: 07/20/23

C10-C28 (DRO)	607	50	mg/kg	500	28.4	116	70-130	20.5	20	QR-02
Surrogate: o-Terphenyl	11.7		"	12.5		93.8	30-150			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/27/23 08:34

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0643 - EPA 5030 Soil MS

Blank (BGG0643-BLK1)

Prepared: 07/20/23 Analyzed: 07/22/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0194		"	0.0333		58.2	40-150			
Surrogate: Fluoranthene-d10	0.0237		"	0.0333		71.1	40-150			

LCS (BGG0643-BS1)

Prepared: 07/20/23 Analyzed: 07/22/23

Acenaphthene	0.0297	0.00500	mg/kg	0.0333		89.2	31-137			
Anthracene	0.0301	0.00500	"	0.0333		90.2	30-120			
Benzo (a) anthracene	0.0198	0.00500	"	0.0333		59.3	30-120			
Benzo (a) pyrene	0.0301	0.00500	"	0.0333		90.2	30-120			
Benzo (b) fluoranthene	0.0318	0.00500	"	0.0333		95.4	30-120			
Benzo (k) fluoranthene	0.0287	0.00500	"	0.0333		86.0	30-120			
Chrysene	0.0304	0.00500	"	0.0333		91.1	30-120			
Dibenz (a,h) anthracene	0.0281	0.00500	"	0.0333		84.2	30-120			
Fluoranthene	0.0271	0.00500	"	0.0333		81.3	30-120			
Fluorene	0.0284	0.00500	"	0.0333		85.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0217	0.00500	"	0.0333		65.0	30-120			
Pyrene	0.0350	0.00500	"	0.0333		105	35-142			
1-Methylnaphthalene	0.0319	0.00500	"	0.0333		95.7	35-142			
2-Methylnaphthalene	0.0234	0.00500	"	0.0333		70.2	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0237		"	0.0333		71.1	40-150			
Surrogate: Fluoranthene-d10	0.0276		"	0.0333		82.9	40-150			

Summit Scientific

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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/27/23 08:34

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0643 - EPA 5030 Soil MS

Matrix Spike (BGG0643-MS1)

Source: 2307320-01

Prepared: 07/20/23 Analyzed: 07/22/23

Acenaphthene	0.0230	0.00500	mg/kg	0.0333	ND	69.1	31-137		
Anthracene	0.0241	0.00500	"	0.0333	ND	72.4	30-120		
Benzo (a) anthracene	0.0234	0.00500	"	0.0333	ND	70.1	30-120		
Benzo (a) pyrene	0.0236	0.00500	"	0.0333	ND	70.8	30-120		
Benzo (b) fluoranthene	0.0248	0.00500	"	0.0333	ND	74.3	30-120		
Benzo (k) fluoranthene	0.0228	0.00500	"	0.0333	ND	68.4	30-120		
Chrysene	0.0245	0.00500	"	0.0333	ND	73.4	30-120		
Dibenz (a,h) anthracene	0.0234	0.00500	"	0.0333	ND	70.1	30-120		
Fluoranthene	0.0224	0.00500	"	0.0333	ND	67.2	30-120		
Fluorene	0.0233	0.00500	"	0.0333	ND	70.0	30-120		
Indeno (1,2,3-cd) pyrene	0.0185	0.00500	"	0.0333	ND	55.5	30-120		
Pyrene	0.0280	0.00500	"	0.0333	ND	84.0	35-142		
1-Methylnaphthalene	0.0172	0.00500	"	0.0333	ND	51.5	15-130		
2-Methylnaphthalene	0.0222	0.00500	"	0.0333	ND	66.7	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0190		"	0.0333		57.0	40-150		
Surrogate: Fluoranthene-d10	0.0228		"	0.0333		68.3	40-150		

Matrix Spike Dup (BGG0643-MSD1)

Source: 2307320-01

Prepared: 07/20/23 Analyzed: 07/22/23

Acenaphthene	0.0201	0.00500	mg/kg	0.0333	ND	60.4	31-137	13.5	30
Anthracene	0.0198	0.00500	"	0.0333	ND	59.5	30-120	19.6	30
Benzo (a) anthracene	0.0205	0.00500	"	0.0333	ND	61.6	30-120	12.9	30
Benzo (a) pyrene	0.0206	0.00500	"	0.0333	ND	61.7	30-120	13.7	30
Benzo (b) fluoranthene	0.0211	0.00500	"	0.0333	ND	63.2	30-120	16.1	30
Benzo (k) fluoranthene	0.0194	0.00500	"	0.0333	ND	58.3	30-120	16.0	30
Chrysene	0.0209	0.00500	"	0.0333	ND	62.6	30-120	15.9	30
Dibenz (a,h) anthracene	0.0194	0.00500	"	0.0333	ND	58.2	30-120	18.5	30
Fluoranthene	0.0179	0.00500	"	0.0333	ND	53.6	30-120	22.5	30
Fluorene	0.0203	0.00500	"	0.0333	ND	60.9	30-120	13.9	30
Indeno (1,2,3-cd) pyrene	0.0146	0.00500	"	0.0333	ND	43.9	30-120	23.4	30
Pyrene	0.0258	0.00500	"	0.0333	ND	77.4	35-142	8.26	30
1-Methylnaphthalene	0.0106	0.00500	"	0.0333	ND	31.8	15-130	47.5	50
2-Methylnaphthalene	0.0135	0.00500	"	0.0333	ND	40.4	15-130	49.2	50
Surrogate: 2-Methylnaphthalene-d10	0.0135		"	0.0333		40.6	40-150		
Surrogate: Fluoranthene-d10	0.0176		"	0.0333		52.7	40-150		

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/27/23 08:34

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

Summit Scientific

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

Batch BGG0627 - EPA 3050B

Blank (BGG0627-BLK1)

Prepared: 07/20/23 Analyzed: 07/21/23

Boron ND 0.0100 mg/L

LCS (BGG0627-BS1)

Prepared: 07/20/23 Analyzed: 07/21/23

Boron 5.71 0.0100 mg/L 5.00 114 80-120

Duplicate (BGG0627-DUP1)

Source: 2307320-01

Prepared: 07/20/23 Analyzed: 07/21/23

Boron 0.440 0.0100 mg/L 0.431 2.14 20

Matrix Spike (BGG0627-MS1)

Source: 2307320-01

Prepared: 07/20/23 Analyzed: 07/21/23

Boron 7.12 0.0100 mg/L 5.00 0.431 134 75-125 QM-07

Matrix Spike Dup (BGG0627-MSD1)

Source: 2307320-01

Prepared: 07/20/23 Analyzed: 07/21/23

Boron 7.18 0.0100 mg/L 5.00 0.431 135 75-125 0.881 25 QM-07

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/27/23 08:34

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BGG0601 - EPA 3050B

Blank (BGG0601-BLK1)

Prepared & Analyzed: 07/20/23

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	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BGG0601-BS1)

Prepared & Analyzed: 07/20/23

Arsenic	38.3	0.200	mg/kg wet	40.0	95.7	80-120
Barium	32.2	0.400	"	40.0	80.4	80-120
Cadmium	1.90	0.200	"	2.00	94.8	80-120
Copper	38.2	0.400	"	40.0	95.5	80-120
Lead	16.2	0.200	"	20.0	80.8	80-120
Nickel	37.5	0.400	"	40.0	93.9	80-120
Selenium	4.50	0.260	"	4.00	112	80-120
Silver	1.97	0.0200	"	2.00	98.4	80-120
Zinc	38.5	0.400	"	40.0	96.2	80-120

Duplicate (BGG0601-DUP1)

Source: 2306023-01

Prepared & Analyzed: 07/20/23

Arsenic	1.96	0.252	mg/kg dry	1.75	11.0	20	
Barium	111	0.503	"	73.9	40.3	20	QR-04
Cadmium	0.343	0.252	"	0.219	43.9	20	QR-01
Copper	3.02	0.503	"	2.80	7.25	20	
Lead	5.76	0.252	"	4.14	32.8	20	QR-04
Nickel	3.08	0.503	"	2.75	11.4	20	
Selenium	ND	0.327	"	ND		20	
Silver	0.0307	0.0252	"	0.0211	36.9	20	QR-01
Zinc	9.93	0.503	"	8.48	15.7	20	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/27/23 08:34

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BGG0601 - EPA 3050B

Matrix Spike (BGG0601-MS1)			Source: 2306023-01		Prepared & Analyzed: 07/20/23						
Arsenic	17.0	0.252	mg/kg dry	50.3	1.75	30.3	75-125				QM-01
Barium	130	0.503	"	50.3	73.9	112	75-125				
Cadmium	1.89	0.252	"	2.52	0.219	66.3	75-125				QM-01
Copper	17.7	0.503	"	50.3	2.80	29.7	75-125				QM-01
Lead	20.4	0.252	"	25.2	4.14	64.7	75-125				QM-01
Nickel	17.9	0.503	"	50.3	2.75	30.2	75-125				QM-01
Selenium	3.68	0.327	"	5.03	ND	73.1	75-125				QM-01
Silver	1.62	0.0252	"	2.52	0.0211	63.7	75-125				QM-01
Zinc	25.1	0.503	"	50.3	8.48	33.0	75-125				QM-01

Matrix Spike Dup (BGG0601-MSD1)			Source: 2306023-01		Prepared & Analyzed: 07/20/23						
Arsenic	17.8	0.252	mg/kg dry	50.3	1.75	31.8	75-125	4.44	25		QM-01
Barium	129	0.503	"	50.3	73.9	109	75-125	1.40	25		
Cadmium	1.96	0.252	"	2.52	0.219	69.0	75-125	3.61	25		QM-01
Copper	18.5	0.503	"	50.3	2.80	31.1	75-125	4.07	25		QM-01
Lead	21.1	0.252	"	25.2	4.14	67.3	75-125	3.11	25		QM-01
Nickel	18.7	0.503	"	50.3	2.75	31.7	75-125	4.18	25		QM-01
Selenium	3.69	0.327	"	5.03	ND	73.3	75-125	0.301	25		QM-01
Silver	1.67	0.0252	"	2.52	0.0211	65.6	75-125	2.84	25		QM-01
Zinc	25.7	0.503	"	50.3	8.48	34.2	75-125	2.40	25		QM-01

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/27/23 08:34

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGG0603 - 3060A Mod

Blank (BGG0603-BLK1)

Prepared & Analyzed: 07/20/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0603-BS1)

Prepared & Analyzed: 07/20/23

Chromium, Hexavalent 23.5 0.30 mg/kg wet 25.0 94.0 80-120

Duplicate (BGG0603-DUP1)

Source: 2306023-01

Prepared & Analyzed: 07/20/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0603-MS1)

Source: 2306023-01

Prepared & Analyzed: 07/20/23

Chromium, Hexavalent 30.0 0.30 mg/kg dry 31.5 ND 95.2 75-125

Matrix Spike Dup (BGG0603-MSD1)

Source: 2306023-01

Prepared & Analyzed: 07/20/23

Chromium, Hexavalent 29.8 0.30 mg/kg dry 31.5 ND 94.6 75-125 0.632 20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/27/23 08:34

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

Summit Scientific

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

Batch BGG0586 - General Preparation

Blank (BGG0586-BLK1)

Prepared: 07/19/23 Analyzed: 07/24/23

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

LCS (BGG0586-BS1)

Prepared: 07/19/23 Analyzed: 07/25/23

Calcium	5.63	0.0500	mg/L wet	5.00	113	70-130
Magnesium	4.86	0.0500	"	5.00	97.2	70-130
Sodium	5.04	0.0500	"	5.00	101	70-130

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:

07/27/23 08:34

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

Summit Scientific

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

Batch BGG0605 - General Preparation

Duplicate (BGG0605-DUP1)

Source: 2307335-01

Prepared & Analyzed: 07/20/23

% Solids	90.0	%	90.2	0.216	20
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/27/23 08:34

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

Summit Scientific

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

Batch BGG0638 - General Preparation

Blank (BGG0638-BLK1)

Prepared & Analyzed: 07/20/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0638-BS1)

Prepared & Analyzed: 07/20/23

Specific Conductance (EC) 0.146 0.0100 mmhos/cm 0.150 97.4 95-105

Duplicate (BGG0638-DUP1)

Source: 2307252-01

Prepared & Analyzed: 07/20/23

Specific Conductance (EC) 9.92 0.0100 mmhos/cm 10.0 0.753 20

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/27/23 08:34

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

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

Batch BGG0637 - General Preparation

LCS (BGG0637-BS1)

Prepared & Analyzed: 07/20/23

pH	9.02	pH Units	9.18	98.3	95-105
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Duplicate (BGG0637-DUP1)

Source: 2307252-01

Prepared & Analyzed: 07/20/23

pH	7.72	pH Units	7.72	0.00	20
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/27/23 08:34

Notes and Definitions

Z-01	Unknown computer error. Data quality is unaffected.
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-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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.
QM-01	The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 16, 2023

Paul Henchan

Fremont Environmental

PO Box 1289

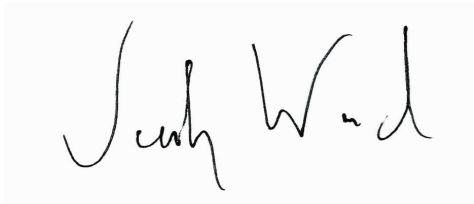
Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order #2307370

Enclosed are the results of analyses for samples received by Summit Scientific on 07/20/23 17:27. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B07@9.0'	2307370-01	Soil	07/20/23 00:00	07/20/23 17:27
N03@8.0'	2307370-02	Soil	07/20/23 00:00	07/20/23 17:27
E03@8.0'	2307370-03	Soil	07/20/23 00:00	07/20/23 17:27

Summit Scientific

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

SUMMIT SCIENTIFIC

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

Lab ID	Page <u>1</u> of <u>1</u>
2307370	

Client: <u>Fremont Env</u>	Send Data To:	Send Invoice To:
Address:	Project Manager: <u>Paul Henahan</u>	Company: <u>Noble</u>
City/State/Zip:	E-Mail: <u>Paulh@fremontenv.com</u>	Project Name/Location: <u>PTF-64N64W 32SENE</u>
Phone:	<u>jeff@fremontenv.com</u> <u>Ethan@fremontenv.com</u>	AFE#:
Sampler Name: <u>JG</u>	Project Name: <u>PTF-64N64W 32SENE</u>	PO/Billing Codes: <u>UWRWE-A2338-ABN</u>
	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMBs (915)	DRD, DRD, GRO	PAHs (915)	EC-PH, SAR, Boron	Metals (915)	
1	B07@9.0'	7/20/23		2			X			X			X	X	X	X	X	X	
2	N03@8.0'	↓		↓			↓			↓			↓	↓	↓	↓	↓	↓	
3	E03@8.0'	↓		↓			↓			↓			↓	↓	↓	↓	↓	↓	
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: <u>[Signature]</u>	Date/Time: <u>7/20/23 1633</u>	Received by: <u>[Signature]</u>	Date/Time: <u>7/20/23 16:33</u>	TAT Business Days	Field DO	Notes: Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	Field Turb.	
Temperature Upon Receipt: <u>24.1</u>	Corrected Temperature	IR gun #: <u>2</u>	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2307370Client: Fremont Client Project ID: PTF-64N64W 32SENEShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____

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

Matrix (Check all that apply)

Air

☐

Soil/Solid

☒

Water

☐

Other

☐

Temp (°C)

24.1

Thermometer #

2

	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"/>	on ice
If custody seals are present, are they intact? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No Sample times
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 checked="" type="checkbox"/>	<input type="checkbox"/>	1 bottle label does not match COC
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.				

John Vial

Custodian Printed Name

7/20/23 16:33

Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

B07@9.0'
2307370-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BGG0650	07/20/23	07/20/23	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: **07/20/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0347	86.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0356	89.1 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0404	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0651	07/20/23	07/20/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	8.46	67.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

B07@9.0'
2307370-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0675	07/21/23	07/22/23	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: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0193	57.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0181	54.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/20/23 00:00**

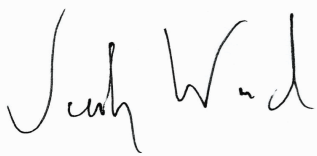
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.127	0.0100	mg/L	1	BGG0703	07/23/23	07/24/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/20/23 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 - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

B07@9.0'
2307370-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.34	0.200	mg/kg dry	1	BGG0653	07/21/23	07/24/23	EPA 6020B
Barium	21.8	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	1.72	0.400	"	"	"	"	"	"
Lead	2.00	0.200	"	"	"	"	"	"
Nickel	1.59	0.400	"	"	"	"	"	"
Selenium	ND	0.310	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	6.79	0.400	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGG0655	07/21/23	07/21/23	EPA 7196A	

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

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	77.2	0.0596	mg/L dry	1	BGG0624	07/20/23	07/21/23	EPA 6020B	
Magnesium	28.3	0.0596	"	"	"	"	"	"	
Sodium	78.3	0.0596	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.94	0.00100	units	1	BGG0734	07/24/23	07/24/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

B07@9.0'
2307370-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.9		%	1	BGG0657	07/21/23	07/21/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.28	0.0100	mmhos/cm	1	BGG0660	07/21/23	07/21/23	EPA 120.1	

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

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.58		pH Units	1	BGG0661	07/21/23	07/21/23	EPA 9045D	

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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

N03@8.0'
2307370-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0650	07/20/23	07/20/23	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: **07/20/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0321	80.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0355	88.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0406	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0651	07/20/23	07/20/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.40	75.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

N03@8.0'
2307370-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0675	07/21/23	07/22/23	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: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0218	65.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0179	53.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.230	0.0100	mg/L	1	BGG0703	07/23/23	07/24/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/20/23 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 - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

N03@8.0'
2307370-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.20	0.200	mg/kg dry	1	BGG0653	07/21/23	07/24/23	EPA 6020B
Cadmium	0.213	0.200	"	"	"	"	"	"
Copper	4.56	0.400	"	"	"	"	"	"
Lead	5.24	0.200	"	"	"	"	"	"
Nickel	5.26	0.400	"	"	"	"	"	"
Selenium	ND	0.321	"	"	"	"	"	"
Silver	0.0281	0.0200	"	"	"	"	"	"
Zinc	20.0	0.400	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGG0655	07/21/23	07/21/23	EPA 7196A	

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

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	44.7	0.0617	mg/L dry	1	BGG0624	07/20/23	07/21/23	EPA 6020B	
Magnesium	24.2	0.0617	"	"	"	"	"	"	
Sodium	49.6	0.0617	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.48	0.00100	units	1	BGG0734	07/24/23	07/24/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.0		%	1	BGG0657	07/21/23	07/21/23	Calculation	

Summit Scientific

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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

N03@8.0'
2307370-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Specific Conductance (EC)	1.26	0.0100	mmhos/cm	1	BGG0660	07/21/23	07/21/23	EPA 120.1	

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

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
pH	7.30		pH Units	1	BGG0661	07/21/23	07/21/23	EPA 9045D	

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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

N03@8.0'
2307370-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Barium	67.5	0.400		mg/kg dry	1	BGH0245	07/21/23	08/09/23	EPA 6020B	

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Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

E03@8.0'
2307370-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0650	07/20/23	07/20/23	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: **07/20/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0340	85.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0353	88.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0413	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0651	07/20/23	07/20/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.79	62.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

E03@8.0'
2307370-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0675	07/21/23	07/22/23	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: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0189	56.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0195	58.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.137	0.0100	mg/L	1	BGG0703	07/23/23	07/24/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

E03@8.0'
2307370-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	4.31	0.200	mg/kg dry	1	BGG0653	07/21/23	07/24/23	EPA 6020B
Barium	55.6	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	3.22	0.400	"	"	"	"	"	"
Lead	3.60	0.200	"	"	"	"	"	"
Nickel	3.89	0.400	"	"	"	"	"	"
Selenium	ND	0.323	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	13.0	0.400	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGG0655	07/21/23	07/21/23	EPA 7196A	

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

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	50.3	0.0622	mg/L dry	1	BGG0624	07/20/23	07/21/23	EPA 6020B	
Magnesium	18.4	0.0622	"	"	"	"	"	"	
Sodium	4.83	0.0622	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.148	0.00100	units	1	BGG0734	07/24/23	07/24/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project Manager: Paul Henchan

Reported:
08/16/23 15:42

E03@8.0'
2307370-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.4		%	1	BGG0657	07/21/23	07/21/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.443	0.0100	mmhos/cm	1	BGG0660	07/21/23	07/21/23	EPA 120.1	

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

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.48		pH Units	1	BGG0661	07/21/23	07/21/23	EPA 9045D	

Summit Scientific

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Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0650 - EPA 5030 Soil MS

Blank (BGG0650-BLK1)

Prepared & Analyzed: 07/20/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0317		"	0.0400		79.2	50-150			
Surrogate: Toluene-d8	0.0353		"	0.0400		88.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0420		"	0.0400		105	50-150			

LCS (BGG0650-BS1)

Prepared & Analyzed: 07/20/23

Benzene	0.114	0.0020	mg/kg	0.115		98.9	70-130			
Toluene	0.116	0.0050	"	0.115		100	70-130			
Ethylbenzene	0.141	0.0050	"	0.115		122	70-130			
m,p-Xylene	0.275	0.010	"	0.230		119	70-130			
o-Xylene	0.135	0.0050	"	0.115		117	70-130			
1,2,4-Trimethylbenzene	0.145	0.0050	"	0.115		126	70-130			
1,3,5-Trimethylbenzene	0.146	0.0050	"	0.115		127	70-130			
Naphthalene	0.109	0.0038	"	0.115		95.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0293		"	0.0400		73.2	50-150			
Surrogate: Toluene-d8	0.0352		"	0.0400		88.1	50-150			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	50-150			

Matrix Spike (BGG0650-MS1)

Source: 2307370-01

Prepared & Analyzed: 07/20/23

Benzene	0.183	0.0020	mg/kg	0.115	ND	159	70-130			QM-07
Toluene	0.187	0.0050	"	0.115	ND	162	70-130			QM-07
Ethylbenzene	0.230	0.0050	"	0.115	ND	200	70-130			QM-07
m,p-Xylene	0.450	0.010	"	0.230	ND	196	70-130			QM-07
o-Xylene	0.216	0.0050	"	0.115	ND	188	70-130			QM-07
1,2,4-Trimethylbenzene	0.239	0.0050	"	0.115	ND	208	70-130			QM-07
1,3,5-Trimethylbenzene	0.240	0.0050	"	0.115	ND	209	70-130			QM-07
Naphthalene	0.193	0.0038	"	0.115	ND	168	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0315		"	0.0400		78.8	50-150			
Surrogate: Toluene-d8	0.0356		"	0.0400		89.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0415		"	0.0400		104	50-150			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BGG0650 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0650-MSD1)		Source: 2307370-01			Prepared & Analyzed: 07/20/23					
Benzene	0.186	0.0020	mg/kg	0.115	ND	162	70-130	2.07	30	QM-07
Toluene	0.187	0.0050	"	0.115	ND	162	70-130	0.0643	30	QM-07
Ethylbenzene	0.243	0.0050	"	0.115	ND	211	70-130	5.49	30	QM-07
m,p-Xylene	0.477	0.010	"	0.230	ND	207	70-130	5.76	30	QM-07
o-Xylene	0.227	0.0050	"	0.115	ND	198	70-130	4.96	30	QM-07
1,2,4-Trimethylbenzene	0.251	0.0050	"	0.115	ND	219	70-130	5.18	30	QM-07
1,3,5-Trimethylbenzene	0.253	0.0050	"	0.115	ND	220	70-130	5.10	30	QM-07
Naphthalene	0.195	0.0038	"	0.115	ND	170	70-130	1.02	30	QM-07
Surrogate: 1,2-Dichloroethane-d4		0.0276	"	0.0400		68.9	50-150			
Surrogate: Toluene-d8		0.0344	"	0.0400		86.0	50-150			
Surrogate: 4-Bromofluorobenzene		0.0413	"	0.0400		103	50-150			

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Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGG0651 - EPA 3550A

Blank (BGG0651-BLK1)

Prepared & Analyzed: 07/20/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	10.4		"	12.5		83.3	30-150			

LCS (BGG0651-BS1)

Prepared & Analyzed: 07/20/23

C10-C28 (DRO)	438	50	mg/kg	500		87.6	70-130			
Surrogate: o-Terphenyl	11.6		"	12.5		93.0	30-150			

Matrix Spike (BGG0651-MS1)

Source: 2307370-01

Prepared & Analyzed: 07/20/23

C10-C28 (DRO)	442	50	mg/kg	500	12.4	85.9	70-130			
Surrogate: o-Terphenyl	9.94		"	12.5		79.5	30-150			

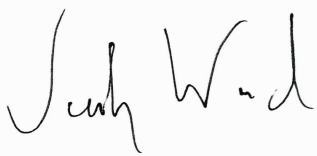
Matrix Spike Dup (BGG0651-MSD1)

Source: 2307370-01

Prepared & Analyzed: 07/20/23

C10-C28 (DRO)	385	50	mg/kg	500	12.4	74.6	70-130	13.7	20	
Surrogate: o-Terphenyl	11.1		"	12.5		89.1	30-150			

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Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0675 - EPA 5030 Soil MS

Blank (BGG0675-BLK1)

Prepared: 07/21/23 Analyzed: 07/22/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0224		"	0.0333		67.2	40-150			
Surrogate: Fluoranthene-d10	0.0160		"	0.0333		48.1	40-150			

LCS (BGG0675-BS1)

Prepared: 07/21/23 Analyzed: 07/22/23

Acenaphthene	0.0224	0.00500	mg/kg	0.0333		67.2	31-137			
Anthracene	0.0220	0.00500	"	0.0333		66.1	30-120			
Benzo (a) anthracene	0.0271	0.00500	"	0.0333		81.3	30-120			
Benzo (a) pyrene	0.0240	0.00500	"	0.0333		72.1	30-120			
Benzo (b) fluoranthene	0.0259	0.00500	"	0.0333		77.7	30-120			
Benzo (k) fluoranthene	0.0230	0.00500	"	0.0333		68.9	30-120			
Chrysene	0.0233	0.00500	"	0.0333		70.0	30-120			
Dibenz (a,h) anthracene	0.0259	0.00500	"	0.0333		77.8	30-120			
Fluoranthene	0.0219	0.00500	"	0.0333		65.6	30-120			
Fluorene	0.0222	0.00500	"	0.0333		66.7	30-120			
Indeno (1,2,3-cd) pyrene	0.0275	0.00500	"	0.0333		82.5	30-120			
Pyrene	0.0239	0.00500	"	0.0333		71.6	35-142			
1-Methylnaphthalene	0.0279	0.00500	"	0.0333		83.6	35-142			
2-Methylnaphthalene	0.0210	0.00500	"	0.0333		62.9	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0267		"	0.0333		80.2	40-150			
Surrogate: Fluoranthene-d10	0.0212		"	0.0333		63.6	40-150			

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Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0675 - EPA 5030 Soil MS

Matrix Spike (BGG0675-MS1)

Source: 2307360-02

Prepared: 07/21/23 Analyzed: 07/22/23

Acenaphthene	0.0136	0.00500	mg/kg	0.0333	ND	40.8	31-137				
Anthracene	0.0141	0.00500	"	0.0333	ND	42.3	30-120				
Benzo (a) anthracene	0.0144	0.00500	"	0.0333	ND	43.3	30-120				
Benzo (a) pyrene	0.0118	0.00500	"	0.0333	ND	35.5	30-120				
Benzo (b) fluoranthene	0.0142	0.00500	"	0.0333	ND	42.5	30-120				
Benzo (k) fluoranthene	0.0122	0.00500	"	0.0333	ND	36.6	30-120				
Chrysene	0.0126	0.00500	"	0.0333	ND	37.7	30-120				
Dibenz (a,h) anthracene	0.0134	0.00500	"	0.0333	ND	40.1	30-120				
Fluoranthene	0.0112	0.00500	"	0.0333	ND	33.6	30-120				
Fluorene	0.0143	0.00500	"	0.0333	ND	42.9	30-120				
Indeno (1,2,3-cd) pyrene	0.0106	0.00500	"	0.0333	ND	31.8	30-120				
Pyrene	0.0138	0.00500	"	0.0333	ND	41.5	35-142				
1-Methylnaphthalene	0.0134	0.00500	"	0.0333	ND	40.2	15-130				
2-Methylnaphthalene	0.0106	0.00500	"	0.0333	ND	31.7	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0162		"	0.0333		48.6	40-150				
Surrogate: Fluoranthene-d10	0.0161		"	0.0333		48.4	40-150				

Matrix Spike Dup (BGG0675-MSD1)

Source: 2307360-02

Prepared: 07/21/23 Analyzed: 07/22/23

Acenaphthene	0.0147	0.00500	mg/kg	0.0333	ND	44.0	31-137	7.50	30		
Anthracene	0.0148	0.00500	"	0.0333	ND	44.4	30-120	5.00	30		
Benzo (a) anthracene	0.0177	0.00500	"	0.0333	ND	53.1	30-120	20.3	30		
Benzo (a) pyrene	0.0159	0.00500	"	0.0333	ND	47.7	30-120	29.3	30		
Benzo (b) fluoranthene	0.0181	0.00500	"	0.0333	ND	54.2	30-120	24.3	30		
Benzo (k) fluoranthene	0.0160	0.00500	"	0.0333	ND	48.0	30-120	27.0	30		
Chrysene	0.0165	0.00500	"	0.0333	ND	49.5	30-120	27.1	30		
Dibenz (a,h) anthracene	0.0175	0.00500	"	0.0333	ND	52.6	30-120	27.0	30		
Fluoranthene	0.0147	0.00500	"	0.0333	ND	44.2	30-120	27.4	30		
Fluorene	0.0153	0.00500	"	0.0333	ND	45.8	30-120	6.51	30		
Indeno (1,2,3-cd) pyrene	0.0142	0.00500	"	0.0333	ND	42.6	30-120	28.9	30		
Pyrene	0.0177	0.00500	"	0.0333	ND	53.0	35-142	24.4	30		
1-Methylnaphthalene	0.0193	0.00500	"	0.0333	ND	57.8	15-130	35.9	50		
2-Methylnaphthalene	0.0161	0.00500	"	0.0333	ND	48.3	15-130	41.4	50		
Surrogate: 2-Methylnaphthalene-d10	0.0192		"	0.0333		57.6	40-150				
Surrogate: Fluoranthene-d10	0.0136		"	0.0333		40.7	40-150				

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

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

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

Batch BGG0703 - EPA 3050B

Blank (BGG0703-BLK1)

Prepared: 07/23/23 Analyzed: 07/24/23

Boron ND 0.0100 mg/L

LCS (BGG0703-BS1)

Prepared: 07/23/23 Analyzed: 07/24/23

Boron 5.49 0.0100 mg/L 5.00 110 80-120

Duplicate (BGG0703-DUP1)

Source: 2307370-01

Prepared: 07/23/23 Analyzed: 07/24/23

Boron 0.162 0.0100 mg/L 0.127 24.0 20 QR-04

Matrix Spike (BGG0703-MS1)

Source: 2307370-01

Prepared: 07/23/23 Analyzed: 07/24/23

Boron 5.50 0.0100 mg/L 5.00 0.127 108 75-125

Matrix Spike Dup (BGG0703-MSD1)

Source: 2307370-01

Prepared: 07/23/23 Analyzed: 07/24/23

Boron 5.88 0.0100 mg/L 5.00 0.127 115 75-125 6.65 25

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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

Total Metals by EPA 6020B - Quality Control

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

Batch BGG0653 - EPA 3050B

Blank (BGG0653-BLK1)

Prepared: 07/21/23 Analyzed: 07/24/23

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	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BGG0653-BS1)

Prepared: 07/21/23 Analyzed: 07/24/23

Arsenic	38.1	0.200	mg/kg wet	40.0	95.3	80-120
Barium	32.7	0.400	"	40.0	81.7	80-120
Cadmium	1.93	0.200	"	2.00	96.7	80-120
Copper	35.0	0.400	"	40.0	87.6	80-120
Lead	22.2	0.200	"	20.0	111	80-120
Nickel	33.1	0.400	"	40.0	82.8	80-120
Selenium	4.72	0.260	"	4.00	118	80-120
Silver	1.96	0.0200	"	2.00	98.2	80-120
Zinc	32.9	0.400	"	40.0	82.4	80-120

Duplicate (BGG0653-DUP1)

Source: 2307370-01

Prepared: 07/21/23 Analyzed: 07/24/23

Arsenic	1.40	0.200	mg/kg dry	1.34	4.27	20	
Barium	35.9	0.400	"	21.8	48.9	20	QR-04
Cadmium	0.0701	0.200	"	0.0558	22.7	20	QR-01
Copper	1.86	0.400	"	1.72	7.64	20	
Lead	2.09	0.200	"	2.00	4.01	20	
Nickel	2.00	0.400	"	1.59	22.8	20	QR-01
Selenium	ND	0.310	"	ND		20	
Silver	0.0134	0.0200	"	0.0105	24.0	20	QR-01
Zinc	8.57	0.400	"	6.79	23.1	20	QM-04

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Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGG0653 - EPA 3050B

Matrix Spike (BGG0653-MS1)		Source: 2307370-01			Prepared: 07/21/23 Analyzed: 07/24/23					
Arsenic	38.9	0.200	mg/kg dry	47.7	1.34	78.8	75-125			
Barium	68.4	0.400	"	47.7	21.8	97.7	75-125			
Cadmium	2.05	0.200	"	2.38	0.0558	83.5	75-125			
Copper	36.6	0.400	"	47.7	1.72	73.1	75-125			QM-07
Lead	21.8	0.200	"	23.8	2.00	83.2	75-125			
Nickel	35.6	0.400	"	47.7	1.59	71.2	75-125			QM-07
Selenium	5.67	0.310	"	4.77	ND	119	75-125			
Silver	1.94	0.0200	"	2.38	0.0105	80.8	75-125			
Zinc	43.1	0.400	"	47.7	6.79	76.1	75-125			

Matrix Spike Dup (BGG0653-MSD1)		Source: 2307370-01			Prepared: 07/21/23 Analyzed: 07/24/23					
Arsenic	38.4	0.200	mg/kg dry	47.7	1.34	77.7	75-125	1.34	25	
Barium	68.3	0.400	"	47.7	21.8	97.4	75-125	0.181	25	
Cadmium	2.07	0.200	"	2.38	0.0558	84.3	75-125	0.950	25	
Copper	37.1	0.400	"	47.7	1.72	74.2	75-125	1.50	25	QM-07
Lead	22.0	0.200	"	23.8	2.00	84.0	75-125	0.813	25	
Nickel	36.0	0.400	"	47.7	1.59	72.1	75-125	1.15	25	QM-07
Selenium	5.82	0.310	"	4.77	ND	122	75-125	2.76	25	
Silver	1.95	0.0200	"	2.38	0.0105	81.3	75-125	0.638	25	
Zinc	43.9	0.400	"	47.7	6.79	77.7	75-125	1.81	25	

Batch BGH0245 - EPA 3050B

Blank (BGH0245-BLK1)		Prepared: 08/07/23 Analyzed: 08/08/23								
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	"							
Selenium	ND	0.260	"							
Silver	ND	0.0200	"							
Zinc	ND	0.400	"							

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Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGH0245 - EPA 3050B

LCS (BGH0245-BS1)

Prepared: 08/07/23 Analyzed: 08/08/23

Arsenic	39.8	0.200	mg/kg wet	40.0		99.4	80-120			
Barium	37.7	0.400	"	40.0		94.1	80-120			
Cadmium	1.70	0.200	"	2.00		84.8	80-120			
Copper	33.2	0.400	"	40.0		83.0	80-120			
Lead	17.5	0.200	"	20.0		87.5	80-120			
Nickel	32.7	0.400	"	40.0		81.6	80-120			
Selenium	4.11	0.260	"	4.00		103	80-120			
Silver	1.74	0.0200	"	2.00		87.1	80-120			
Zinc	33.7	0.400	"	40.0		84.2	80-120			

Duplicate (BGH0245-DUP1)

Source: 2307286-01

Prepared: 08/07/23 Analyzed: 08/08/23

Arsenic	1.89	0.200	mg/kg wet		1.85			1.69	20	
Barium	64.4	0.400	"		74.5			14.5	20	
Cadmium	0.0976	0.200	"		0.0992			1.63	20	
Copper	4.63	0.400	"		4.51			2.57	20	
Lead	5.12	0.200	"		5.66			10.0	20	
Nickel	4.69	0.400	"		4.48			4.61	20	
Selenium	ND	0.260	"		ND				20	
Silver	0.0300	0.0200	"		0.0296			1.34	20	
Zinc	14.1	0.400	"		14.1			0.209	20	

Matrix Spike (BGH0245-MS1)

Source: 2307286-01

Prepared: 08/07/23 Analyzed: 08/08/23

Arsenic	35.4	0.200	mg/kg wet	40.0	1.85	83.9	75-125			
Barium	117	0.400	"	40.0	74.5	106	75-125			
Cadmium	1.63	0.200	"	2.00	0.0992	76.7	75-125			
Copper	23.3	0.400	"	40.0	4.51	47.0	75-125			QM-07
Lead	19.9	0.200	"	20.0	5.66	71.0	75-125			QM-07
Nickel	23.7	0.400	"	40.0	4.48	47.9	75-125			QM-07
Selenium	3.24	0.260	"	4.00	ND	80.9	75-125			
Silver	1.55	0.0200	"	2.00	0.0296	75.9	75-125			
Zinc	33.4	0.400	"	40.0	14.1	48.2	75-125			QM-07

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PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGH0245 - EPA 3050B

Matrix Spike Dup (BGH0245-MSD1)		Source: 2307286-01			Prepared: 08/07/23 Analyzed: 08/08/23						
Arsenic	39.6	0.200	mg/kg wet	40.0	1.85	94.5	75-125	11.3	25		
Barium	127	0.400	"	40.0	74.5	132	75-125	8.37	25		QM-07
Cadmium	1.78	0.200	"	2.00	0.0992	84.1	75-125	8.72	25		
Copper	24.9	0.400	"	40.0	4.51	51.0	75-125	6.55	25		QM-07
Lead	22.4	0.200	"	20.0	5.66	83.9	75-125	12.2	25		
Nickel	25.0	0.400	"	40.0	4.48	51.2	75-125	5.44	25		QM-07
Selenium	3.71	0.260	"	4.00	ND	92.8	75-125	13.7	25		
Silver	1.69	0.0200	"	2.00	0.0296	82.9	75-125	8.75	25		
Zinc	36.3	0.400	"	40.0	14.1	55.3	75-125	8.11	25		QM-07

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGG0655 - 3060A Mod

Blank (BGG0655-BLK1)

Prepared & Analyzed: 07/21/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0655-BS1)

Prepared & Analyzed: 07/21/23

Chromium, Hexavalent 24.0 0.30 mg/kg wet 25.0 95.8 80-120

Duplicate (BGG0655-DUP1)

Source: 2307370-01

Prepared & Analyzed: 07/21/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0655-MS1)

Source: 2307370-01

Prepared & Analyzed: 07/21/23

Chromium, Hexavalent 27.3 0.30 mg/kg dry 29.8 ND 91.6 75-125

Matrix Spike Dup (BGG0655-MSD1)

Source: 2307370-01

Prepared & Analyzed: 07/21/23

Chromium, Hexavalent 26.7 0.30 mg/kg dry 29.8 ND 89.6 75-125 2.21 20

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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

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

Summit Scientific

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

Batch BGG0624 - General Preparation

Blank (BGG0624-BLK1)

Prepared: 07/20/23 Analyzed: 07/21/23

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

LCS (BGG0624-BS1)

Prepared: 07/20/23 Analyzed: 07/21/23

Calcium	5.31	0.0500	mg/L wet	5.00	106	70-130
Magnesium	5.93	0.0500	"	5.00	119	70-130
Sodium	6.10	0.0500	"	5.00	122	70-130

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henchan

Reported:
08/16/23 15:42

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

Summit Scientific

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

Batch BGG0657 - General Preparation

Duplicate (BGG0657-DUP1)

Source: 2307370-01

Prepared & Analyzed: 07/21/23

% Solids	83.7	%		83.9		0.248	20
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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

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

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

Batch BGG0660 - General Preparation

Blank (BGG0660-BLK1)

Prepared & Analyzed: 07/21/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0660-BS1)

Prepared & Analyzed: 07/21/23

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

Duplicate (BGG0660-DUP1)

Source: 2307355-01

Prepared & Analyzed: 07/21/23

Specific Conductance (EC) 0.360 0.0100 mmhos/cm 0.360 0.00 20

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henchan

Reported:
08/16/23 15:42

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

Summit Scientific

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

Batch BGG0661 - General Preparation

LCS (BGG0661-BS1)

Prepared & Analyzed: 07/21/23

pH	8.83	pH Units	9.18	96.2	95-105
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Duplicate (BGG0661-DUP1)

Source: 2307355-01

Prepared & Analyzed: 07/21/23

pH	8.19	pH Units	8.19	0.00	20
----	------	----------	------	------	----

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

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.
QM-04	Visual evaluation of the sample indicates the RPD is above the control limit due to a non-homogeneous sample matrix.
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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 17, 2023

Paul Henchan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order #2307426

Enclosed are the results of analyses for samples received by Summit Scientific on 07/24/23 17:02. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B08@9.0'	2307426-01	Soil	07/24/23 00:00	07/24/23 17:02
S03@8.0'	2307426-02	Soil	07/24/23 00:00	07/24/23 17:02
E02@8.0'	2307426-03	Soil	07/24/23 00:00	07/24/23 17:02
GW05	2307426-04	Water	07/24/23 00:00	07/24/23 17:02

Summit Scientific

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SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2307426	

Client: Fremont Env	Send Data To:	Send Invoice To:
Address:	Project Manager: Paul Henahan	Company: Noble
City/State/Zip:	E-Mail: Paulh@fremontenv.com	Project Name/Location: PTF-64N64W 32SENE
Phone:	jeffg@fremontenv.com Ethemb@fremontenv.com	AFE#:
Sampler Name: JG	Project Name: PTF-64N64W 32SENE	PO/Billing Codes: UWRWE-A2328-ABN
	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMBs (915)	DRD,ORO,GRD	PAHs (915)	EC,PH,SAR, Boron	Metals (915)	
1	B08@9.0'	7/24/23		3			X			X			X	X	X	X	X	X	
2	S03@8.0'			3			X			X			X	X	X	X	X	X	
3	E02@8.0'			3			X			X			X	X	X	X	X	X	
4	GW05			3	X				X	X			X	X	X	X	X	X	
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by:	Date/Time:	Received by:	Date/Time:	TAT Business Days	Field DO	Notes: Bill to Noble
	7/24/23		7/25/23	Same Day	X	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day		
				2 Days		
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days		
Temperature Upon Receipt:	Corrected Temperature	IR gun #:	HNO3 lot #:	Standard	Field Temp.	
	26.6°C				Field Turb.	

S₂

Sample Receipt Checklist

S2 Work Order# 2307420

Client: Fremont Env Client Project ID: PTF-6416HW 32 SENEShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☒ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☒ Other ☐Temp (°C) 26.6°C Thermometer # 02

	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"/>	<u>only</u>
If custody seals are present, are they intact? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>same day</u>
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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.

GAC

Custodian Printed Name

7/24/23

Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

B08@9.0'
2307426-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGG0764	07/24/23	07/24/23	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: **07/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0285	71.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0390	97.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0375	93.8 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0765	07/24/23	07/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.2	89.9 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

B08@9.0'
2307426-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0775	07/25/23	07/25/23	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: **07/24/23 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	0.0166	49.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.202	0.0100	mg/L	1	BGG0779	07/25/23	07/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/24/23 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 - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

B08@9.0'
2307426-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.76	0.200	mg/kg dry	1	BGG0770	07/25/23	07/27/23	EPA 6020B
Barium	22.4	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	4.34	0.400	"	"	"	"	"	"
Lead	4.67	0.200	"	"	"	"	"	"
Nickel	3.55	0.400	"	"	"	"	"	"
Selenium	ND	0.312	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	14.3	0.400	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGG0772	07/25/23	07/25/23	EPA 7196A	

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

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	61.1	0.0600	mg/L dry	1	BGG0766	07/24/23	07/26/23	EPA 6020B	
Magnesium	33.8	0.0600	"	"	"	"	"	"	
Sodium	92.1	0.0600	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.35	0.00100	units	1	BGG0906	07/27/23	07/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

B08@9.0'
2307426-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.4		%	1	BGG0774	07/25/23	07/25/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.956	0.0100	mmhos/cm	1	BGG0788	07/25/23	07/25/23	EPA 120.1	

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

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.81		pH Units	1	BGG0789	07/25/23	07/25/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

S03@8.0'
2307426-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0764	07/24/23	07/24/23	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: **07/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0374	93.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0384	95.9 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0765	07/24/23	07/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.6	93.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

S03@8.0'
2307426-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0775	07/25/23	07/25/23	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: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0138	41.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0137	41.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/24/23 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.296	0.0100	mg/L	1	BGG0779	07/25/23	07/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/24/23 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 - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

S03@8.0'
2307426-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.74	0.200	mg/kg dry	1	BGG0770	07/25/23	07/27/23	EPA 6020B
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	4.32	0.400	"	"	"	"	"	"
Lead	4.79	0.200	"	"	"	"	"	"
Nickel	5.94	0.400	"	"	"	"	"	"
Selenium	ND	0.327	"	"	"	"	"	"
Silver	0.0312	0.0200	"	"	"	"	"	"
Zinc	16.8	0.400	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGG0772	07/25/23	07/25/23	EPA 7196A	

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

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	44.5	0.0629	mg/L dry	1	BGG0766	07/24/23	07/26/23	EPA 6020B	
Magnesium	39.1	0.0629	"	"	"	"	"	"	
Sodium	11.8	0.0629	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.311	0.00100	units	1	BGG0906	07/27/23	07/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/24/23 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 - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

S03@8.0'
2307426-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	79.5	%	1	BGG0774	07/25/23	07/25/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.651	0.0100	mmhos/cm	1	BGG0788	07/25/23	07/25/23	EPA 120.1	

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

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.90		pH Units	1	BGG0789	07/25/23	07/25/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

S03@8.0'
2307426-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Barium	101	0.400		mg/kg dry	1	BGH0609	07/25/23	08/16/23	EPA 6020B	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

E02@8.0'
2307426-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0764	07/24/23	07/24/23	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: **07/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0360	90.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0378	94.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0370	92.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0765	07/24/23	07/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.5	91.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

E02@8.0'
2307426-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0775	07/25/23	07/25/23	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: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0173	51.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0168	50.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/24/23 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.116	0.0100	mg/L	1	BGG0779	07/25/23	07/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/24/23 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 - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

E02@8.0'
2307426-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.80	0.200	mg/kg dry	1	BGG0770	07/25/23	07/27/23	EPA 6020B
Barium	66.5	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	4.03	0.400	"	"	"	"	"	"
Lead	4.24	0.200	"	"	"	"	"	"
Nickel	5.10	0.400	"	"	"	"	"	"
Selenium	ND	0.320	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	17.2	0.400	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGG0772	07/25/23	07/25/23	EPA 7196A	

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

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	74.1	0.0615	mg/L dry	1	BGG0766	07/24/23	07/26/23	EPA 6020B	
Magnesium	32.6	0.0615	"	"	"	"	"	"	
Sodium	83.8	0.0615	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.04	0.00100	units	1	BGG0906	07/27/23	07/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

E02@8.0'
2307426-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.3		%	1	BGG0774	07/25/23	07/25/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.909	0.0100	mmhos/cm	1	BGG0788	07/25/23	07/25/23	EPA 120.1	

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

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.73		pH Units	1	BGG0789	07/25/23	07/25/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

GW05
2307426-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGG0769	07/24/23	07/24/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	13	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	5.8	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	15	1.0	"	"	"	"	"	"	

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	14.3	107 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>	13.3	99.5 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	13.1	98.2 %	21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0764 - EPA 5030 Soil MS

Blank (BGG0764-BLK1)

Prepared & Analyzed: 07/24/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0331		"	0.0400		82.8	50-150			
Surrogate: Toluene-d8	0.0384		"	0.0400		96.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.6	50-150			

LCS (BGG0764-BS1)

Prepared: 07/24/23 Analyzed: 07/25/23

Benzene	0.101	0.0020	mg/kg	0.100		101	70-130			
Toluene	0.103	0.0050	"	0.100		103	70-130			
Ethylbenzene	0.120	0.0050	"	0.100		120	70-130			
m,p-Xylene	0.236	0.010	"	0.200		118	70-130			
o-Xylene	0.111	0.0050	"	0.100		111	70-130			
1,2,4-Trimethylbenzene	0.108	0.0050	"	0.100		108	70-130			
1,3,5-Trimethylbenzene	0.116	0.0050	"	0.100		116	70-130			
Naphthalene	0.0708	0.0038	"	0.100		70.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0320		"	0.0400		80.0	50-150			
Surrogate: Toluene-d8	0.0384		"	0.0400		96.1	50-150			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.7	50-150			

Matrix Spike (BGG0764-MS1)

Source: 2307427-01

Prepared: 07/24/23 Analyzed: 07/25/23

Benzene	0.101	0.0020	mg/kg	0.100	ND	101	70-130			
Toluene	0.103	0.0050	"	0.100	ND	103	70-130			
Ethylbenzene	0.121	0.0050	"	0.100	ND	121	70-130			
m,p-Xylene	0.238	0.010	"	0.200	ND	119	70-130			
o-Xylene	0.112	0.0050	"	0.100	ND	112	70-130			
1,2,4-Trimethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130			
1,3,5-Trimethylbenzene	0.116	0.0050	"	0.100	ND	116	70-130			
Naphthalene	0.0930	0.0038	"	0.100	ND	93.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0154		"	0.0400		38.6	50-150			QM-07
Surrogate: Toluene-d8	0.0391		"	0.0400		97.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	50-150			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BGG0764 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0764-MSD1)			Source: 2307427-01		Prepared: 07/24/23 Analyzed: 07/25/23					
Benzene	0.103	0.0020	mg/kg	0.100	ND	103	70-130	1.56	30	
Toluene	0.105	0.0050	"	0.100	ND	105	70-130	1.15	30	
Ethylbenzene	0.123	0.0050	"	0.100	ND	123	70-130	1.67	30	
m,p-Xylene	0.237	0.010	"	0.200	ND	118	70-130	0.606	30	
o-Xylene	0.113	0.0050	"	0.100	ND	113	70-130	0.879	30	
1,2,4-Trimethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130	1.35	30	
1,3,5-Trimethylbenzene	0.121	0.0050	"	0.100	ND	121	70-130	4.47	30	
Naphthalene	0.101	0.0038	"	0.100	ND	101	70-130	7.96	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0298		"	0.0400		74.5	50-150			
Surrogate: Toluene-d8	0.0384		"	0.0400		96.1	50-150			
Surrogate: 4-Bromofluorobenzene	0.0445		"	0.0400		111	50-150			

Batch BGG0769 - EPA 5030 Water MS

Blank (BGG0769-BLK1)			Prepared & Analyzed: 07/24/23							
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	13.7		"	13.3		103	23-173			
Surrogate: Toluene-d8	15.5		"	13.3		117	20-170			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		95.6	21-167			

LCS (BGG0769-BS1)			Prepared & Analyzed: 07/24/23							
Benzene	37.3	1.0	ug/l	38.3		97.2	51-132			
Toluene	35.1	1.0	"	38.3		91.6	51-138			
Ethylbenzene	33.3	1.0	"	38.3		87.0	58-146			
m,p-Xylene	72.2	2.0	"	76.7		94.1	57-144			
o-Xylene	35.4	1.0	"	38.3		92.4	53-146			
Naphthalene	36.7	1.0	"	38.3		95.7	70-130			
1,2,4-Trimethylbenzene	39.3	1.0	"	38.3		102	70-130			
1,3,5-Trimethylbenzene	40.8	1.0	"	38.3		107	70-130			
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	14.8		"	13.3		111	23-173			
Surrogate: Toluene-d8	12.4		"	13.3		93.0	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.3	21-167			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BGG0769 - EPA 5030 Water MS

Matrix Spike (BGG0769-MS1)				Source: 2307426-04		Prepared & Analyzed: 07/24/23				
Benzene	36.2	1.0	ug/l	38.3	ND	94.5	34-141			
Toluene	33.4	1.0	"	38.3	ND	87.0	27-151			
Ethylbenzene	34.1	1.0	"	38.3	ND	89.1	29-160			
m,p-Xylene	89.4	2.0	"	76.7	13.2	99.5	20-166			
o-Xylene	39.7	1.0	"	38.3	ND	104	33-159			
Naphthalene	52.2	1.0	"	38.3	ND	136	70-130			QM-07
1,2,4-Trimethylbenzene	49.4	1.0	"	38.3	5.84	114	70-130			
1,3,5-Trimethylbenzene	58.9	1.0	"	38.3	14.8	115	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.9		"	13.3		112	23-173			
Surrogate: Toluene-d8	11.5		"	13.3		86.4	20-170			
Surrogate: 4-Bromofluorobenzene	14.1		"	13.3		106	21-167			

Matrix Spike Dup (BGG0769-MSD1)				Source: 2307426-04		Prepared & Analyzed: 07/24/23				
Benzene	36.2	1.0	ug/l	38.3	ND	94.6	34-141	0.0828	30	
Toluene	32.8	1.0	"	38.3	ND	85.7	27-151	1.54	30	
Ethylbenzene	37.3	1.0	"	38.3	ND	97.4	29-160	8.90	30	
m,p-Xylene	90.3	2.0	"	76.7	13.2	101	20-166	0.990	30	
o-Xylene	43.1	1.0	"	38.3	ND	112	33-159	8.24	30	
Naphthalene	52.5	1.0	"	38.3	ND	137	70-130	0.497	30	QM-07
1,2,4-Trimethylbenzene	51.5	1.0	"	38.3	5.84	119	70-130	4.20	30	
1,3,5-Trimethylbenzene	60.4	1.0	"	38.3	14.8	119	70-130	2.48	30	
Surrogate: 1,2-Dichloroethane-d4	15.8		"	13.3		119	23-173			
Surrogate: Toluene-d8	11.2		"	13.3		84.4	20-170			
Surrogate: 4-Bromofluorobenzene	15.5		"	13.3		116	21-167			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGG0765 - EPA 3550A

Blank (BGG0765-BLK1)

Prepared: 07/24/23 Analyzed: 07/25/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	11.5		"	12.5		91.7	30-150			

LCS (BGG0765-BS1)

Prepared: 07/24/23 Analyzed: 07/25/23

C10-C28 (DRO)	534	50	mg/kg	500		107	70-130			
Surrogate: o-Terphenyl	11.4		"	12.5		91.2	30-150			

Matrix Spike (BGG0765-MS1)

Source: 2307427-01

Prepared: 07/24/23 Analyzed: 07/25/23

C10-C28 (DRO)	482	50	mg/kg	500	66.2	83.1	70-130			
Surrogate: o-Terphenyl	11.4		"	12.5		91.5	30-150			

Matrix Spike Dup (BGG0765-MSD1)

Source: 2307427-01

Prepared: 07/24/23 Analyzed: 07/25/23

C10-C28 (DRO)	458	50	mg/kg	500	66.2	78.4	70-130	5.03	20	
Surrogate: o-Terphenyl	11.1		"	12.5		88.4	30-150			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0775 - EPA 5030 Soil MS

Blank (BGG0775-BLK1)

Prepared & Analyzed: 07/25/23

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0333		"	0.0333		100		40-150			
Surrogate: Fluoranthene-d10	0.0264		"	0.0333		79.3		40-150			

LCS (BGG0775-BS1)

Prepared & Analyzed: 07/25/23

Acenaphthene	0.0306	0.00500	mg/kg	0.0333		91.9		31-137			
Anthracene	0.0317	0.00500	"	0.0333		95.0		30-120			
Benzo (a) anthracene	0.0323	0.00500	"	0.0333		96.8		30-120			
Benzo (a) pyrene	0.0297	0.00500	"	0.0333		89.1		30-120			
Benzo (b) fluoranthene	0.0310	0.00500	"	0.0333		93.1		30-120			
Benzo (k) fluoranthene	0.0304	0.00500	"	0.0333		91.3		30-120			
Chrysene	0.0307	0.00500	"	0.0333		92.1		30-120			
Dibenz (a,h) anthracene	0.0274	0.00500	"	0.0333		82.1		30-120			
Fluoranthene	0.0309	0.00500	"	0.0333		92.7		30-120			
Fluorene	0.0304	0.00500	"	0.0333		91.3		30-120			
Indeno (1,2,3-cd) pyrene	0.0227	0.00500	"	0.0333		68.2		30-120			
Pyrene	0.0342	0.00500	"	0.0333		102		35-142			
1-Methylnaphthalene	0.0290	0.00500	"	0.0333		86.9		35-142			
2-Methylnaphthalene	0.0338	0.00500	"	0.0333		101		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0260		"	0.0333		78.1		40-150			
Surrogate: Fluoranthene-d10	0.0318		"	0.0333		95.5		40-150			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0775 - EPA 5030 Soil MS

Matrix Spike (BGG0775-MS1)

Source: 2307436-01

Prepared & Analyzed: 07/25/23

Acenaphthene	0.0151	0.00500	mg/kg	0.0333	ND	45.3	31-137			
Anthracene	0.0142	0.00500	"	0.0333	ND	42.5	30-120			
Benzo (a) anthracene	0.0142	0.00500	"	0.0333	ND	42.5	30-120			
Benzo (a) pyrene	0.0137	0.00500	"	0.0333	ND	41.0	30-120			
Benzo (b) fluoranthene	0.0143	0.00500	"	0.0333	ND	42.8	30-120			
Benzo (k) fluoranthene	0.0141	0.00500	"	0.0333	ND	42.3	30-120			
Chrysene	0.0141	0.00500	"	0.0333	ND	42.2	30-120			
Dibenz (a,h) anthracene	0.0146	0.00500	"	0.0333	ND	43.8	30-120			
Fluoranthene	0.0135	0.00500	"	0.0333	ND	40.5	30-120			
Fluorene	0.0141	0.00500	"	0.0333	ND	42.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0140	0.00500	"	0.0333	ND	42.1	30-120			
Pyrene	0.0163	0.00500	"	0.0333	ND	48.8	35-142			
1-Methylnaphthalene	0.0144	0.00500	"	0.0333	ND	43.3	15-130			
2-Methylnaphthalene	0.0147	0.00500	"	0.0333	ND	44.0	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0146		"	0.0333		43.8	40-150			
Surrogate: Fluoranthene-d10	0.0141		"	0.0333		42.3	40-150			

Matrix Spike Dup (BGG0775-MSD1)

Source: 2307436-01

Prepared & Analyzed: 07/25/23

Acenaphthene	0.0196	0.00500	mg/kg	0.0333	ND	58.7	31-137	25.8	30	
Anthracene	0.0186	0.00500	"	0.0333	ND	55.7	30-120	27.0	30	
Benzo (a) anthracene	0.0187	0.00500	"	0.0333	ND	56.2	30-120	27.7	30	
Benzo (a) pyrene	0.0173	0.00500	"	0.0333	ND	52.0	30-120	23.5	30	
Benzo (b) fluoranthene	0.0183	0.00500	"	0.0333	ND	55.0	30-120	24.9	30	
Benzo (k) fluoranthene	0.0181	0.00500	"	0.0333	ND	54.2	30-120	24.5	30	
Chrysene	0.0186	0.00500	"	0.0333	ND	55.9	30-120	27.9	30	
Dibenz (a,h) anthracene	0.0163	0.00500	"	0.0333	ND	48.9	30-120	11.2	30	
Fluoranthene	0.0184	0.00500	"	0.0333	ND	55.2	30-120	30.6	30	QR-02
Fluorene	0.0197	0.00500	"	0.0333	ND	59.1	30-120	32.8	30	QR-02
Indeno (1,2,3-cd) pyrene	0.0141	0.00500	"	0.0333	ND	42.2	30-120	0.166	30	
Pyrene	0.0212	0.00500	"	0.0333	ND	63.6	35-142	26.3	30	
1-Methylnaphthalene	0.0188	0.00500	"	0.0333	ND	56.5	15-130	26.4	50	
2-Methylnaphthalene	0.0201	0.00500	"	0.0333	ND	60.2	15-130	31.0	50	
Surrogate: 2-Methylnaphthalene-d10	0.0177		"	0.0333		53.0	40-150			
Surrogate: Fluoranthene-d10	0.0191		"	0.0333		57.2	40-150			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

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

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

Batch BGG0779 - EPA 3050B

Blank (BGG0779-BLK1)

Prepared: 07/25/23 Analyzed: 07/26/23

Boron ND 0.0100 mg/L

LCS (BGG0779-BS1)

Prepared: 07/25/23 Analyzed: 07/26/23

Boron 5.44 0.0100 mg/L 5.00 109 80-120

Duplicate (BGG0779-DUP1)

Source: 2307426-01

Prepared: 07/25/23 Analyzed: 07/26/23

Boron 0.196 0.0100 mg/L 0.202 3.04 20

Matrix Spike (BGG0779-MS1)

Source: 2307426-01

Prepared: 07/25/23 Analyzed: 07/26/23

Boron 6.47 0.0100 mg/L 5.00 0.202 125 75-125

Matrix Spike Dup (BGG0779-MSD1)

Source: 2307426-01

Prepared: 07/25/23 Analyzed: 07/26/23

Boron 6.32 0.0100 mg/L 5.00 0.202 122 75-125 2.32 25

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGG0770 - EPA 3050B

Blank (BGG0770-BLK1)

Prepared: 07/25/23 Analyzed: 07/27/23

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	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BGG0770-BS1)

Prepared: 07/25/23 Analyzed: 07/27/23

Arsenic	33.1	0.200	mg/kg wet	40.0	82.7	80-120
Barium	35.3	0.400	"	40.0	88.2	80-120
Cadmium	1.64	0.200	"	2.00	82.0	80-120
Copper	36.3	0.400	"	40.0	90.7	80-120
Lead	16.1	0.200	"	20.0	80.6	80-120
Nickel	35.3	0.400	"	40.0	88.2	80-120
Selenium	4.11	0.260	"	4.00	103	80-120
Silver	1.63	0.0200	"	2.00	81.5	80-120
Zinc	35.2	0.400	"	40.0	88.1	80-120


Duplicate (BGG0770-DUP1)

Source: 2307426-01

Prepared: 07/25/23 Analyzed: 07/27/23

Arsenic	1.58	0.200	mg/kg dry	1.76	10.7	20	
Barium	18.2	0.400	"	22.4	20.6	20	QR-04
Cadmium	0.102	0.200	"	0.127	21.8	20	QR-01
Copper	3.73	0.400	"	4.34	14.9	20	
Lead	4.11	0.200	"	4.67	12.9	20	
Nickel	3.12	0.400	"	3.55	12.8	20	
Selenium	ND	0.312	"	ND		20	
Silver	0.0115	0.0200	"	0.0154	28.6	20	QR-01
Zinc	12.2	0.400	"	14.3	16.0	20	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGG0770 - EPA 3050B

Matrix Spike (BGG0770-MS1)			Source: 2307426-01		Prepared: 07/25/23 Analyzed: 07/27/23						
Arsenic	32.8	0.200	mg/kg dry	48.0	1.76	64.7	75-125				QM-07
Barium	61.7	0.400	"	48.0	22.4	82.0	75-125				
Cadmium	1.97	0.200	"	2.40	0.127	76.7	75-125				
Copper	35.0	0.400	"	48.0	4.34	63.9	75-125				QM-07
Lead	22.0	0.200	"	24.0	4.67	72.2	75-125				QM-07
Nickel	34.3	0.400	"	48.0	3.55	64.1	75-125				QM-07
Selenium	4.33	0.312	"	4.80	ND	90.4	75-125				
Silver	1.82	0.0200	"	2.40	0.0154	75.1	75-125				
Zinc	44.4	0.400	"	48.0	14.3	62.8	75-125				QM-07

Matrix Spike Dup (BGG0770-MSD1)			Source: 2307426-01		Prepared: 07/25/23 Analyzed: 07/27/23						
Arsenic	32.5	0.200	mg/kg dry	48.0	1.76	64.1	75-125	0.860	25		QM-07
Barium	62.3	0.400	"	48.0	22.4	83.1	75-125	0.884	25		
Cadmium	2.01	0.200	"	2.40	0.127	78.7	75-125	2.41	25		
Copper	35.0	0.400	"	48.0	4.34	63.9	75-125	0.0302	25		QM-07
Lead	22.2	0.200	"	24.0	4.67	73.1	75-125	0.940	25		QM-07
Nickel	34.4	0.400	"	48.0	3.55	64.3	75-125	0.356	25		QM-07
Selenium	4.37	0.312	"	4.80	ND	91.0	75-125	0.761	25		
Silver	1.83	0.0200	"	2.40	0.0154	75.5	75-125	0.501	25		
Zinc	43.9	0.400	"	48.0	14.3	61.8	75-125	1.09	25		QM-07

Batch BGH0245 - EPA 3050B

Blank (BGH0245-BLK1)			Prepared: 08/07/23 Analyzed: 08/08/23								
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	"								
Selenium	ND	0.260	"								
Silver	ND	0.0200	"								
Zinc	ND	0.400	"								

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGH0245 - EPA 3050B

LCS (BGH0245-BS1)

Prepared: 08/07/23 Analyzed: 08/08/23

Arsenic	39.8	0.200	mg/kg wet	40.0		99.4	80-120			
Barium	37.7	0.400	"	40.0		94.1	80-120			
Cadmium	1.70	0.200	"	2.00		84.8	80-120			
Copper	33.2	0.400	"	40.0		83.0	80-120			
Lead	17.5	0.200	"	20.0		87.5	80-120			
Nickel	32.7	0.400	"	40.0		81.6	80-120			
Selenium	4.11	0.260	"	4.00		103	80-120			
Silver	1.74	0.0200	"	2.00		87.1	80-120			
Zinc	33.7	0.400	"	40.0		84.2	80-120			

Duplicate (BGH0245-DUP1)

Source: 2307286-01

Prepared: 08/07/23 Analyzed: 08/08/23

Arsenic	1.89	0.200	mg/kg wet		1.85			1.69	20	
Barium	64.4	0.400	"		74.5			14.5	20	
Cadmium	0.0976	0.200	"		0.0992			1.63	20	
Copper	4.63	0.400	"		4.51			2.57	20	
Lead	5.12	0.200	"		5.66			10.0	20	
Nickel	4.69	0.400	"		4.48			4.61	20	
Selenium	ND	0.260	"		ND				20	
Silver	0.0300	0.0200	"		0.0296			1.34	20	
Zinc	14.1	0.400	"		14.1			0.209	20	

Matrix Spike (BGH0245-MS1)

Source: 2307286-01

Prepared: 08/07/23 Analyzed: 08/08/23

Arsenic	35.4	0.200	mg/kg wet	40.0	1.85	83.9	75-125			
Barium	117	0.400	"	40.0	74.5	106	75-125			
Cadmium	1.63	0.200	"	2.00	0.0992	76.7	75-125			
Copper	23.3	0.400	"	40.0	4.51	47.0	75-125			QM-07
Lead	19.9	0.200	"	20.0	5.66	71.0	75-125			QM-07
Nickel	23.7	0.400	"	40.0	4.48	47.9	75-125			QM-07
Selenium	3.24	0.260	"	4.00	ND	80.9	75-125			
Silver	1.55	0.0200	"	2.00	0.0296	75.9	75-125			
Zinc	33.4	0.400	"	40.0	14.1	48.2	75-125			QM-07

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGH0245 - EPA 3050B

Matrix Spike Dup (BGH0245-MSD1)			Source: 2307286-01		Prepared: 08/07/23 Analyzed: 08/08/23					
Arsenic	39.6	0.200	mg/kg wet	40.0	1.85	94.5	75-125	11.3	25	
Barium	127	0.400	"	40.0	74.5	132	75-125	8.37	25	QM-07
Cadmium	1.78	0.200	"	2.00	0.0992	84.1	75-125	8.72	25	
Copper	24.9	0.400	"	40.0	4.51	51.0	75-125	6.55	25	QM-07
Lead	22.4	0.200	"	20.0	5.66	83.9	75-125	12.2	25	
Nickel	25.0	0.400	"	40.0	4.48	51.2	75-125	5.44	25	QM-07
Selenium	3.71	0.260	"	4.00	ND	92.8	75-125	13.7	25	
Silver	1.69	0.0200	"	2.00	0.0296	82.9	75-125	8.75	25	
Zinc	36.3	0.400	"	40.0	14.1	55.3	75-125	8.11	25	QM-07

Batch BGH0609 - EPA 3050B

Blank (BGH0609-BLK1)			Prepared: 08/15/23 Analyzed: 08/16/23							
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	"							
Selenium	ND	0.260	"							
Silver	ND	0.0200	"							
Zinc	ND	0.400	"							

LCS (BGH0609-BS1)			Prepared: 08/15/23 Analyzed: 08/16/23							
Arsenic	35.7	0.200	mg/kg wet	40.0		89.2	80-120			
Barium	36.3	0.400	"	40.0		90.8	80-120			
Cadmium	1.79	0.200	"	2.00		89.5	80-120			
Copper	35.2	0.400	"	40.0		88.0	80-120			
Lead	19.0	0.200	"	20.0		95.0	80-120			
Nickel	34.4	0.400	"	40.0		85.9	80-120			
Selenium	3.23	0.260	"	4.00		80.8	80-120			
Silver	1.74	0.0200	"	2.00		87.0	80-120			
Zinc	37.1	0.400	"	40.0		92.7	80-120			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGH0609 - EPA 3050B

Duplicate (BGH0609-DUP1)			Source: 2307343-01		Prepared: 08/15/23 Analyzed: 08/16/23						
Arsenic	1.40	0.200	mg/kg wet		1.16			18.3	20		
Barium	93.5	0.400	"		76.2			20.3	20		QR-04
Cadmium	0.221	0.200	"		0.124			56.1	20		QR-01
Copper	0.372	0.400	"		0.284			26.8	20		QR-01
Lead	3.58	0.200	"		3.12			13.8	20		
Nickel	1.81	0.400	"		1.68			7.24	20		
Selenium	ND	0.260	"		ND				20		
Silver	0.0272	0.0200	"		0.0220			21.1	20		QR-01
Zinc	4.92	0.400	"		5.08			3.27	20		

Matrix Spike (BGH0609-MS1)			Source: 2307343-01		Prepared: 08/15/23 Analyzed: 08/16/23						
Arsenic	13.9	0.200	mg/kg wet	40.0	1.16	31.9	75-125				QM-01
Barium	143	0.400	"	40.0	76.2	168	75-125				QM-01
Cadmium	2.01	0.200	"	2.00	0.124	94.2	75-125				
Copper	12.6	0.400	"	40.0	0.284	30.8	75-125				QM-01
Lead	20.8	0.200	"	20.0	3.12	88.4	75-125				
Nickel	13.8	0.400	"	40.0	1.68	30.2	75-125				QM-01
Selenium	2.81	0.260	"	4.00	ND	70.1	75-125				QM-01
Silver	1.70	0.0200	"	2.00	0.0220	84.1	75-125				
Zinc	17.8	0.400	"	40.0	5.08	31.8	75-125				QM-01

Matrix Spike Dup (BGH0609-MSD1)			Source: 2307343-01		Prepared: 08/15/23 Analyzed: 08/16/23						
Arsenic	14.1	0.200	mg/kg wet	40.0	1.16	32.3	75-125	1.05	25		QM-01
Barium	132	0.400	"	40.0	76.2	140	75-125	8.19	25		QM-01
Cadmium	1.84	0.200	"	2.00	0.124	85.7	75-125	8.82	25		
Copper	12.8	0.400	"	40.0	0.284	31.4	75-125	1.73	25		QM-01
Lead	20.0	0.200	"	20.0	3.12	84.4	75-125	3.93	25		
Nickel	14.1	0.400	"	40.0	1.68	30.9	75-125	2.09	25		QM-01
Selenium	2.75	0.260	"	4.00	ND	68.7	75-125	2.09	25		QM-01
Silver	1.66	0.0200	"	2.00	0.0220	81.8	75-125	2.71	25		
Zinc	17.8	0.400	"	40.0	5.08	31.8	75-125	0.0247	25		QM-01

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Fremont Environmental
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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGG0772 - 3060A Mod

Blank (BGG0772-BLK1)

Prepared & Analyzed: 07/25/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0772-BS1)

Prepared & Analyzed: 07/25/23

Chromium, Hexavalent 23.4 0.30 mg/kg wet 25.0 93.6 80-120

Duplicate (BGG0772-DUP1)

Source: 2307426-01

Prepared & Analyzed: 07/25/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0772-MS1)

Source: 2307426-01

Prepared & Analyzed: 07/25/23

Chromium, Hexavalent 27.7 0.30 mg/kg dry 30.0 ND 92.4 75-125

Matrix Spike Dup (BGG0772-MSD1)

Source: 2307426-01

Prepared & Analyzed: 07/25/23

Chromium, Hexavalent 28.5 0.30 mg/kg dry 30.0 ND 95.2 75-125 2.99 20

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PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

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

Summit Scientific

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

Batch BGG0766 - General Preparation

Blank (BGG0766-BLK1)

Prepared: 07/24/23 Analyzed: 07/26/23

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

LCS (BGG0766-BS1)

Prepared: 07/24/23 Analyzed: 07/26/23

Calcium	4.93	0.0500	mg/L wet	5.00	98.6	70-130
Magnesium	4.78	0.0500	"	5.00	95.7	70-130
Sodium	4.81	0.0500	"	5.00	96.3	70-130

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Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - PTF-64N64W 32SENE Project Number: UWRWE-A2338-ABN Project Manager: Paul Henchan	Reported: 08/17/23 16:03
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Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

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

Batch BGG0774 - General Preparation

Duplicate (BGG0774-DUP1)	Source: 2307426-01			Prepared & Analyzed: 07/25/23						
% Solids	84.1		%		83.4			0.805	20	

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Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

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

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

Batch BGG0788 - General Preparation

Blank (BGG0788-BLK1)

Prepared & Analyzed: 07/25/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0788-BS1)

Prepared & Analyzed: 07/25/23

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

Duplicate (BGG0788-DUP1)

Source: 2307426-01

Prepared & Analyzed: 07/25/23

Specific Conductance (EC) 0.944 0.0100 mmhos/cm 0.956 1.27 20

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henchan

Reported:

08/17/23 16:03

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

Summit Scientific

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

Batch BGG0789 - General Preparation

LCS (BGG0789-BS1)

Prepared & Analyzed: 07/25/23

pH	9.02	pH Units	9.18	98.3	95-105
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Duplicate (BGG0789-DUP1)

Source: 2307426-01

Prepared & Analyzed: 07/25/23

pH	7.84	pH Units	7.81	0.383	20
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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

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-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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.
QM-01	The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
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