FREMONT ENVIRONMENTAL INC.

April 8, 2022

Mr. Jacob Evans
Noble Energy Inc.
2115 117th Ave,
Greeley, CO 80634

Subject: **Excavation Report**
CPC Hoshiko 35-1, Hoshiko B 35-14 (AST)
API # 05-123-12716
NESW Sec. 35, T5N, R64W
Weld County, Colorado
Fremont Project No. C020-049
Facility #323210, Remediation #15651

Dear Mr. Evans:

Enclosed please find a copy of the above referenced Excavation Report for the CPC Hoshiko 35-1, Hoshiko B 35-14 (AST) site in Weld County, Colorado. The enclosed report describes excavation and sampling efforts to remediate impacted soil at the site.

As shown in the attached report, soils achieved the COGCC Table 915-1 standards. However, groundwater impacts observed prior to excavation activities necessitate the continuation of the current quarterly groundwater monitoring program to confirm residual groundwater impacts are adequately addressed.

Please contact me at (303) 956-8714 if you require any additional information.

Fremont appreciates the opportunity to provide this service.

Sincerely,
FREMONT ENVIRONMENTAL INC.

Paul V. Henehan, P.E.
Senior Consultant

Enclosure

1759 Redwing Lane, Broomfield, CO 80020
(303) 956-8714 (direct)

EXCAVATION REPORT

NOBLE ENERGY INC.

CPC HOSHIKO 35-1, HOSHIKO B35-14 (AST)

WELD COUNTY, COLORADO

FREMONT PROJECT NO. C020-049

FACILITY #323210, REMEDIATION #15651

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

April 8, 2022

TABLE OF CONTENTS

Tables

Figures

Appendices

EXCAVATION REPORT

NOBLE ENERGY INC.

CPC HOSHIKO 35-1, HOSHIKO B35-14 (AST)

WELD COUNTY, COLORADO

FREMONT PROJECT NO. C020-049

FACILITY #323210, REMEDIATION #15651

1.0 INTRODUCTION

The purpose of this document is to present information collected during the five-day excavation of petroleum-impacted soil at the CPC Hoshiko 35-1, Hoshiko B 35-14 former aboveground storage tank (Hoshiko AST) location in Weld County, Colorado. This excavation project began on February 9, 2022 and was completed on February 16, 2022.

2.0 BACKGROUND INFORMATION

2.1 Site Location

The CPC Hoshiko 35-1, Hoshiko B 35-14 (AST) site is located approximately 3.5 miles southeast of Kersey, Colorado in Weld County as shown on Figure 1. The site is located in an agricultural area approximately one quarter mile east of the intersection of County Road 50 and County Road 57. The location is further described as the SE ¼ of the SW ¼ of Section 35, Township 5N, Range 64W.

2.2 Site History

The site's excavation area consisted of the former CPC Hoshiko 35-1, Hoshiko B 35-14 (AST) water vault. The CPC Hoshiko 35-1 well was drilled in 1985 to a vertical depth of approximately 6,860 feet. Soil impacts were identified at the Hoshiko AST facility during its abandonment and a limited excavation to preliminarily delineate the source impacts was undertaken. These impacts were fully delineated during a site investigation conducted between August 28, 2020 and November 17, 2020.

The site investigation defined the vertical and lateral extent of soil impacts left in place following the limited preliminary excavation. As a result of the site investigation, the need for a comprehensive site excavation was determined. Seven monitoring wells were installed to monitor the groundwater quality at the former facility until excavation activities could be conducted.

3.0 FIELD ACTIVITIES

3.1 Soil Excavation and Sampling

Remediation efforts consisted of the excavation and removal of petroleum-impacted soil at and adjacent to the former Hoshiko AST water vault location. The soil consisted of road base which was underlain by sandy clay that extends to a depth of approximately four feet. The sandy clay is underlain by saturated, well-graded sand, extending to at least seven feet below ground surface. Groundwater was encountered in the excavation at approximately seven feet. The 36'x46'x7' deep excavation in shown on Figure 2.

The five-day excavation was completed at the Hoshiko AST location on February 16, 2022. Soil samples collected from the excavation sidewalls and floor were collected as grab samples. Depths of samples collected from the excavation were between five and six feet below ground surface.

The soil samples were analyzed by Summit Scientific Inc. of Golden, Colorado for benzene, toluene, ethylbenzene and total xylenes (BTEX), naphthalene, 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): Acenapthene, 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 report and chain-of-custody documentation are included in Appendix B.

A summary of the laboratory data for the soil samples is included in Tables 1 through 4. The laboratory analyses indicated that organic petroleum constituents in soil samples collected from the sidewalls of the excavation achieved the COGCC Table 915-1 standards. However, pH, arsenic, barium, and selenium exceeded the COGCC Table 915-1 standards. A Background sample collected at a depth of one foot in the field adjacent to the Hoshiko AST site also exceed the Table 915-1 standards for arsenic and selenium. Since elevated levels of arsenic and selenium were observed in both the excavation samples and background samples, these concentrations can be attributed to native soil conditions. Barium exceedances cannot be attributed to native soil conditions and will need to be sampled in groundwater during the coming quarter monitoring events to ensure these impacts have not impacted groundwater.

Groundwater flowed into the bottom of the excavation limiting the vertical extent of soil impacts removed within the saturated zone. One groundwater sample (W1) was collected in the floor of the excavation. The sample was 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 inorganic petroleum constituents chloride and sulfate by EPA Method 300.0 and total dissolved solids (TDS) by Standard Method 2540C. The groundwater sample achieved the COGCC Table 915-1 standards for all organic petroleum constituents analyzed and failed for inorganic constituents chloride and sulfate. The

groundwater chemistry is shown on Figure 3 and the analytical data are summarized in Tables 5 and 6. A copy of the laboratory's report is presented in Appendix B.

A total of approximately 600 cubic yards of petroleum impacted soil was removed via excavation by 4X Industrial Services Inc. from the former facility. Impacted soil was disposed of at the North Weld Landfill in Ault, Colorado, as non-hazardous waste. Prior to backfilling the excavation, approximately 300 bbls of groundwater were removed from the excavation and transported to Republic Waste Services in Commerce City, Colorado.

4.0 DISCUSSION

As demonstrated by the soil sampling, the petroleum impacted soil was removed from the Hoshiko AST location by excavation. This was confirmed by the analyses of the soil samples collected from the exterior sidewalls and a groundwater sample collected in the floor which were below the COGCC Table 915-1 standards for petroleum constituents upon completion of the excavation. Approximately 600 cubic yards of impacted soil and 300 bbls of groundwater were removed and transported to the landfill and water disposal facility, respectively. A quarterly groundwater monitoring program, including sampling for dissolved barium, will be implemented to confirm residual groundwater impacts are addressed. The soil and groundwater data are illustrated and summarized in the attached tables and figures.

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.**

4/8/22

_____ Date_____

Ethan D. Black

Geologist

Reviewed by:

4/8/22

_____ Date_____

Paul V. Henehan, P.E.

Senior Consultant

TABLES

TABLE 1
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
CPC HOSHIKO 35-1, HOSHIKO B 35-14 (AST PIT), WELD COUNTY, COLORADO
FREMONT PROJECT NO. C020-049

Sample	Depth (ft)	Date Sampled	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)	Naphth-alene (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)
Waste Char	0	2/9/2022	**0.004**	<0.005	4.8	11	**46**	**4.5**	**2.2**	**2000**	**740**	**<50**
SW Wall 5 Ft	5	2/9/2022	<0.002	<0.005	<0.005	<0.010	<0.005	<0.005	<0.0038	41	79	<50
SE Wall 5 Ft	5	2/9/2022	<0.002	<0.005	<0.005	<0.010	<0.005	<0.005	<0.0038	<0.50	<50	<50
E Wall 6 Ft	6	2/9/2022	<0.002	<0.005	<0.005	<0.010	<0.005	<0.005	<0.0038	<0.50	<50	<50
E-N Wall 6 Ft	6	2/10/2022	<0.002	<0.005	<0.005	<0.010	<0.005	<0.005	<0.0038	<0.50	<50	<50
N-E Wall 6 Ft	6	2/10/2022	<0.002	<0.005	0.022	0.12	**0.14**	**0.068**	<0.0038	12	110	<50
N-C Wall 6 Ft	6	2/14/2022	<0.002	<0.005	0.24	0.16	**0.20**	<0.005	<0.0038	250	<50	<50
SWW Wall 6 Ft	6	2/14/2022	<0.002	<0.005	<0.005	<0.010	<0.005	<0.005	<0.0038	<0.50	<50	<50
N-C-2 Wall 6 Ft	6	2/15/2022	<0.002	<0.005	<0.005	<0.010	<0.005	<0.005	<0.0038	<0.50	<50	<50
N-E-2 Wall 6 Ft	6	2/15/2022	<0.002	<0.005	<0.005	<0.010	<0.005	<0.005	<0.0038	<0.50	<50	<50
PL Backfill 4 Ft	4	2/15/2022	<0.002	<0.005	0.012	0.14	0.054	**0.019**	**0.0063**	0.96	<50	<50
W-N Wall 5 Ft	5	2/16/2022	<0.002	<0.005	<0.005	<0.010	<0.005	<0.005	<0.0038	<0.50	<50	<50
W-S Wall 6 Ft	6	2/16/2022	<0.002	<0.005	<0.005	<0.010	<0.005	<0.005	<0.0038	<0.50	<50	<50
Backfill 1	0	3/23/2022	<0.002	<0.005	<0.005	<0.010	<0.005	<0.005	<0.0038	<0.50	<50	<50
Backfill 2	0	3/23/2022	<0.002	<0.005	<0.005	<0.010	<0.005	<0.005	<0.0038	<0.50	<50	<50
COGCC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500	500	500
COGCC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500*	500*	500*

Bold faced values exceed the COGCC Table 915-1 concentrations

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

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

NA - Not analyzed

TABLE 2
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
CPC HOSHIKO 35-1, HOSHIKO B 35-14 (AST PIT), WELD COUNTY, COLORADO
FREMONT PROJECT NO. C020-049

Sample	Depth (ft)	Date Sampled	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) anthracene (mg/kg)	Benzo (b) fluoranthene (mg/kg)	Benzo (k) fluoranthene (mg/kg)	Benzo (a) pyrene (mg/kg)	Chrysene (mg/kg)	Dibenz (a,h) anthracene (mg/kg)	Fluor-anthene (mg/kg)	Fluorene (mg/kg)	Indeno pyrene (mg/kg)	1-Methyl - naphthalene (mg/kg)	2-Methyl-naphthalene (mg/kg)	Pyrene (mg/kg)
Waste Char	0	2/9/2022	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0418	<0.00500	<0.00500	0.116	<0.00500	**1.37**	**4.17**	<0.00500
SW Wall 5 Ft	5	2/9/2022	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0143	<0.00500	<0.00500	0.0425	<0.00500	<0.00500	<0.00500	<0.00500
SE Wall 5 Ft	5	2/9/2022	<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
E Wall 6 Ft	6	2/9/2022	<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
E-N Wall 6 Ft	6	2/10/2022	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
N-E Wall 6 Ft	6	2/10/2022	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0130	<0.00500	**0.0595**	**0.128**	<0.00500
N-C Wall 6 Ft	6	2/14/2022	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0212	<0.00500	<0.00500	0.0657	<0.00500	<0.00500	<0.00500	<0.00500
SWW Wall 6 Ft	6	2/14/2022	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
N-C-2 Wall 6 Ft	6	2/15/2022	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
N-E-2 Wall 6 Ft	6	2/15/2022	<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
PL Backfill 4Ft	4	2/15/2022	<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
W-N Wall 5 Ft	5	2/16/2022	<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
W-S Wall 6 Ft	6	2/16/2022	<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
Backfill 1	0	3/23/2022	<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
Backfill 2	0	3/23/2022	<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
COGCC Table 915-1 Limits (Residential SSL)			360	1800	1.1	1.1	11	0.11	110	0.11	240	240	1.1	18	24	180
COGCC Table 915-1 Limits (Protection of Groundwater SSL)			0.55	5.8	0.011	0.3	2.9	0.24	9	0.096	8.9	0.54	0.98	0.006	0.019	1.3

Bold faced values exceed the COGCC Table 915-1 concentrations

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

TABLE 3
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
CPC HOSHIKO 35-1, HOSHIKO B 35-14 (AST PIT), WELD COUNTY, COLORADO
FREMONT PROJECT NO. C020-049

Sample	Depth (ft)	Date Sampled	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)	Chromium (mg/kg)
Waste Char	0	2/9/2022	**1.20**	31.2	<0.165	2.64	3.02	3.68	**0.457**	<0.124	12.9	<0.30
SW Wall 5 Ft	5	2/9/2022	**2.76**	**83.1**	<0.171	5.56	5.77	7.85	**0.947**	<0.128	26.3	<0.30
SE Wall 5 Ft	5	2/9/2022	**8.98**	**176**	<0.168	10.1	10.4	13.1	**1.45**	<0.126	44.6	<0.30
E Wall 6 Ft	6	2/9/2022	**2.06**	52.1	<0.149	3.70	3.80	4.62	**0.880**	<0.112	16.5	<0.30
BG-1 1 Ft	1	2/9/2022	**2.92**	76.8	<0.188	8.35	7.43	7.62	**1.17**	<0.141	39.4	<0.30
E-N Wall 6 Ft	6	2/10/2022	**8.08**	57.5	<0.364	12.4	11.8	11.5	**1.71**	<0.273	51.5	<0.30
N-E Wall 6 Ft	6	2/10/2022	**9.14**	78.8	<0.375	12.2	12.0	13.8	**1.81**	<0.281	50.7	<0.30
N-C Wall 6 Ft	6	2/14/2022	**1.63**	35.6	<0.364	3.41	4.35	4.00	0.935	<0.273	15.7	<0.30
SWW Wall 6 Ft	6	2/14/2022	2.75	80.7	<0.390	6.45	6.66	8.29	1.52	<0.293	29.2	<0.30
N-C-2 Wall 6 Ft	6	2/15/2022	**5.29**	59.7	<0.890	8.31	9.02	9.13	**1.10**	<0.667	35.8	<0.30
N-E-2 Wall 6 Ft	6	2/15/2022	**1.62**	37.8	<0.886	<4.43	4.10	4.08	**1.30**	<0.665	15.7	<0.30
W-N Wall 5 Ft	5	2/16/2022	**6.50**	45.4	<0.334	9.27	8.37	10.9	**1.14**	<0.250	41.5	<0.30
W-S Wall 6 Ft	6	2/16/2022	**2.60**	53.8	<0.350	3.25	3.89	3.76	**0.850**	<0.262	15.9	<0.30
Background 1 Ft	1	2/17/2022	**1.70**	70.1	0.124	7.7	8.10	7.09	**0.332**	0.315	37.6	<0.30
Backfill 1	0	3/23/2022	**1.66**	50.8	<0.204	5.11	5.20	4.07	**0.501**	<0.0204	20.8	<0.30
Backfill 2	0	3/23/2022	**1.07**	34.9	<0.206	3.56	3.45	2.84	**0.305**	<0.0206	14.5	<0.30
COGCC Table 915-1 Limits (Residential SSL)			0.68	15000	71	3100	400	1500	390	390	23000	0.3
COGCC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	46	14	26	0.26	0.8	370	0.00067

Bold faced values exceed the COGCC Table 915-1 concentrations

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

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

NA- Not applicable

TABLE 4
SUMMARY OF INORGANIC SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
CPC HOSHIKO 35-1, HOSHIKO B 35-14 (AST PIT), WELD COUNTY, COLORADO
FREMONT PROJECT NO. C020-049

SAMPLE LOCATION	DATE SAMPLED	DEPTH ft	EC mmhos/cm	pH pH units	SAR units	BORON mg/L
Waste Char	2/9/2022	0	0.0713	**8.6**	0.151	0.0238
SW Wall 5 Ft	2/9/2022	5	0.0696	**9.3**	0.125	0.0290
SE Wall 5 Ft	2/9/2022	5	0.0539	**9.6**	0.307	0.138
E Wall 6 Ft	2/9/2022	6	0.0455	**9.8**	0.136	0.115
BG-1 1 Ft	2/9/2022	1	0.0371	7.4	0.284	0.173
E-N Wall 6 Ft	2/10/2022	6	0.0516	**9.7**	0.322	0.00989
N-E Wall 6 Ft	2/10/2022	6	0.0558	**9.4**	0.542	0.148
N-C Wall 6 Ft	2/14/2022	6	0.1	**9.5**	0.0982	0.0356
SWW Wall 6 Ft	2/14/2022	6	0.059	**9.6**	0.236	0.3560
N-C-2 Wall 6 Ft	2/15/2022	6	0.0477	**9.7**	0.192	0.147
N-E-2 Wall 6 Ft	2/15/2022	6	0.043	**9.8**	0.142	0.0716
W-N Wall 5 Ft	2/16/2022	5	0.510	**8.96**	0.0720	0.108
W-S Wall 6 Ft	2/16/2022	6	1.120	**8.44**	0.264	0.0860
Background 1 Ft	2/17/2022	1	**6.14**	7.71	**8.75**	1.49
Backfill 1	3/23/2022	0	1.75	7.89	1.48	0.0960
Backfill 2	3/23/2022	0	0.444	8.02	0.586	0.0435
Table 915-1 Limits			<4	6-8.3	<6	2

Bold face values exceed the COGCC Limits
NA - Not Analyzed

TABLE 5
SUMMARY OF ORGANIC GROUNDWATER CHEMISTRY DATA
NOBLE ENERGY INC.
CPC HOSHIKO 35-1, HOSHIKO B 35-14 (AST PIT), WELD COUNTY, COLORADO
FREMONT PROJECT NO. C020-049

SAMPLE LOCATION	DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	NAPH-THALENE (µg/L)	1,2,4 TMB (µg/L)	1,3,5 TMB (µg/L)
W1	02/10/22	<1.0	<1.0	4.6	59	4.4	46	27
Table 915-1 Limits		5	560	700	1,400	140	67	67

Bold face values exceed the COGCC limits

TABLE 6
SUMMARY OF INORGANIC GROUNDWATER CHEMISTRY DATA
NOBLE ENERGY INC.
CPC HOSHIKO 35-1, HOSHIKO B 35-14 (AST PIT), WELD COUNTY, COLORADO
FREMONT PROJECT NO. C020-049

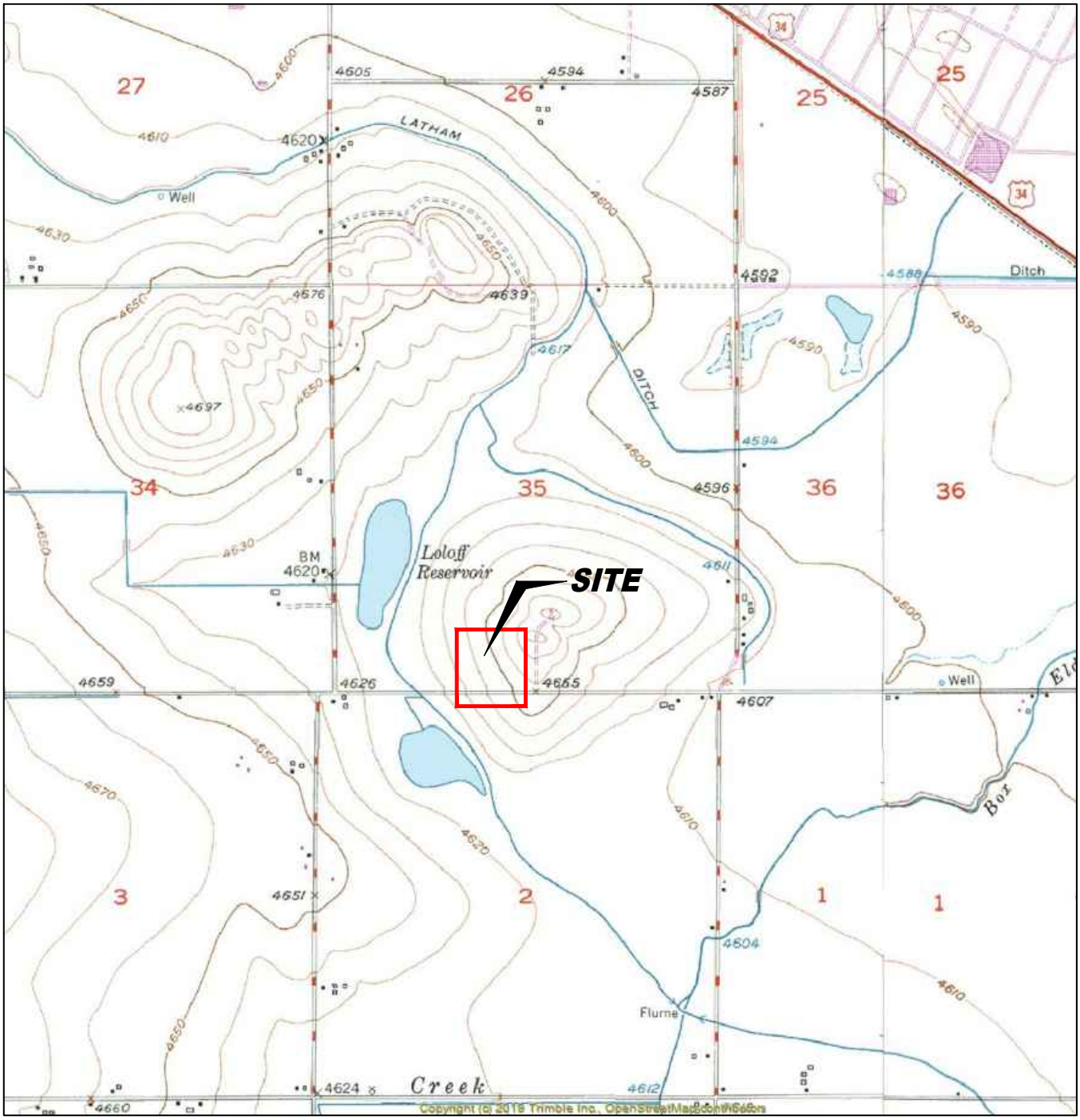
SAMPLE LOCATION	DATE	TDS (mg/L)	CHLORIDE ION (mg/L)	SULFATE ION (mg/L)
W1	02/10/22	3950	489	1400
Table 915-1 Limits		<1.25 x local background	250 or 1.25x background	250 or 1.25x background

Bold face values exceed the COGCC limits

NA - Not Analyzed

NAP - Not Applicable

FIGURES



N

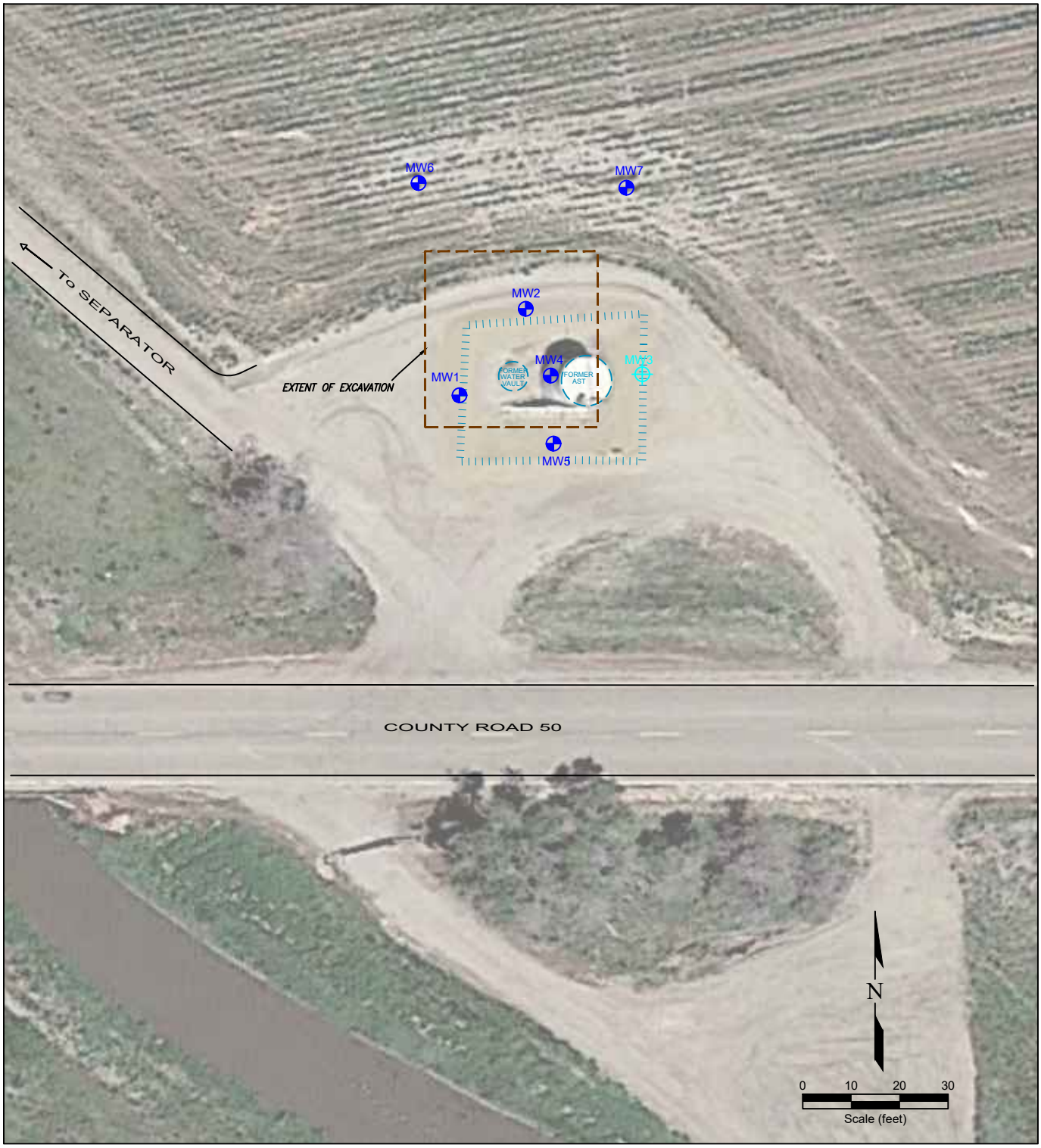
Scale (miles)
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
0 1000 2000 3000 4000 5000
Scale (feet)

USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

NOBLE ENERGY, INC.
CPC HOSHIKO 35-1, HOSHIKO 35-14 (AST Pit)
SESW Sec. 35 T5N, R64W, 40.348855°, -104.521793°
Weld County, Colorado

Project No.	Prepared by	Drawn by	FREMONT ENVIRONMENTAL
C020-049		**TA**	
Date	Reviewed by	Filename	
4/8/22	**EB**	**20049T**	



LEGEND

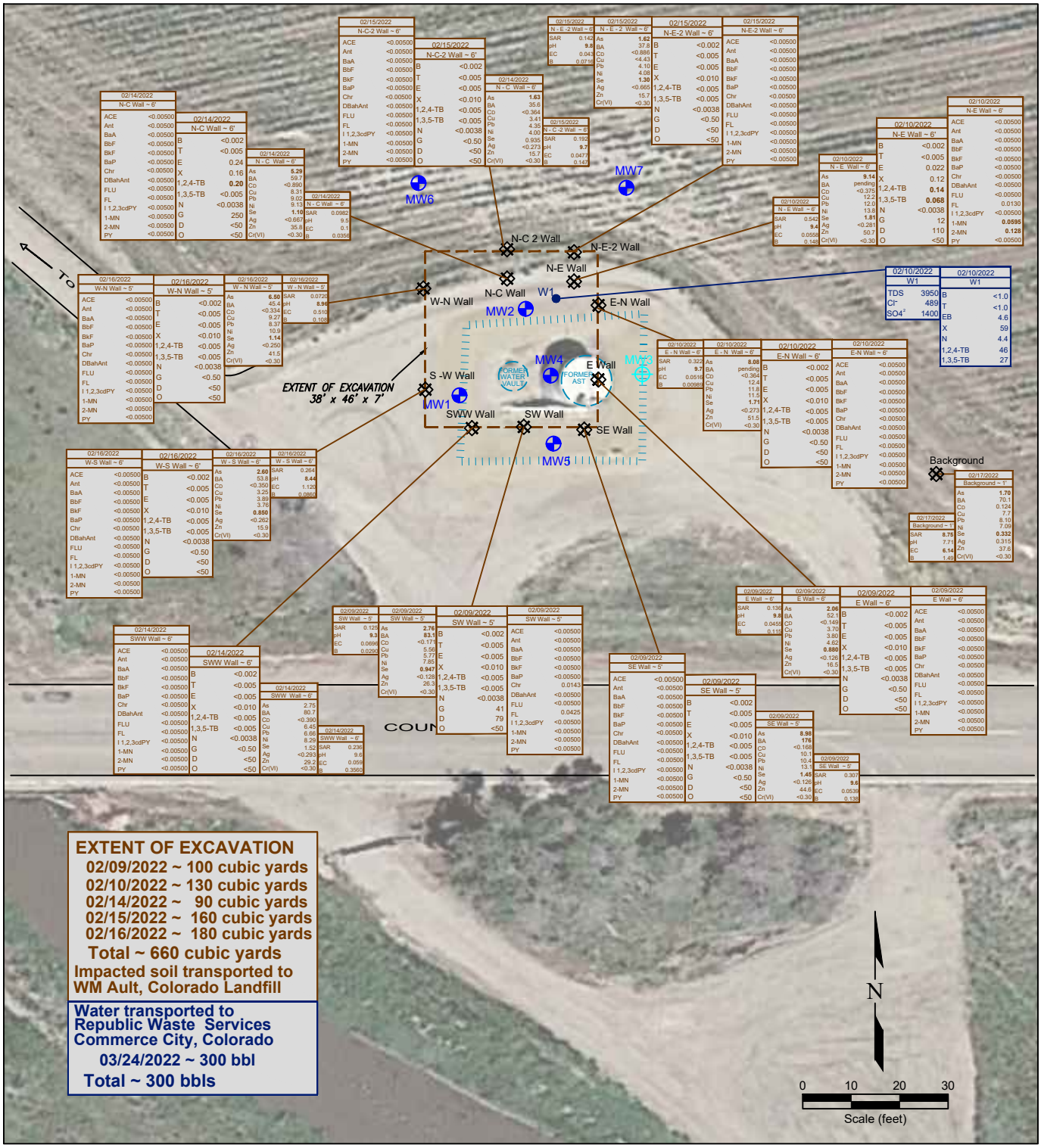
MONITORING WELL
DESTROYED MONITORING WELL
ABOVE GROUND STORAGE TANK
FORMER FACILITY
EXTENT OF EXCAVATION
CONTAINMENT BERM

Figure 2
SITE MAP

NOBLE ENERGY, INC.
CPC HOSHIKO 35-1, HOSHIKO 35-14
SESW Sec. 35 T5N, R64W, 40.348855°, -104.521793°
Weld County, Colorado

Project No.	Prepared by	Drawn by
C020-049		**TA**
Date	Reviewed by	Filename
4/8/22	**EB**	**20049QQ**

FREMONT ENVIRONMENTAL



LEGEND

MONITORING WELL
DESTROYED MONITORING WELL
SOIL SAMPLE LOCATION
WATER SAMPLE LOCATION ABOVE GROUND STORAGE TANK
FORMER FACILITY
EXTENT OF EXCAVATION
CONTAINMENT BERM

NA NOT ANALYZED

02/09/2022 SW Wall ~ 5'	
	DATE SAMPLED
	SAMPLE ID and DEPTH (ft)
ACE	ACENAPHTHENE (mg/kg)
Ant	ANTHRACENE (mg/kg)
BaA	BENZO (A) ANTHRACENE (mg/kg)
BbF	BENZO (B) FLUORANTHENE (mg/kg)
BkF	BENZO (K) FLUORANTHENE(mg/kg)
BaP	BENZO (A) PYRENE (mg/kg)
Chr	CHRYSENE (mg/kg)
DBahAnt	DIBENZ (A,H) ANTHRACENE (mg/kg)
FLU	FLUORANTHENE (mg/kg)
FL	FLUORENE (mg/kg)
I 1,2,3cdPY	INDENO (1,2,3-CD) PYRENE(mg/kg)
1-MN	1-METHYLNAPHTHALENE (mg/kg)
2-MN	2-METHYLNAPHTHALENE (mg/kg)
PY	PYRENE (mg/kg)

02/09/2022 SW Wall ~ 5'	
	DATE SAMPLED
	SAMPLE ID and DEPTH (ft)
B	BENZENE (mg/kg)
T	TOLUENE (mg/kg)
E	ETHYLBENZENE (mg/kg)
X	TOTAL XYLENES (mg/kg)
1,2,4-TB	1,2,4-TRIMETHYLBENZENE (mg/kg)
1,3,5-TB	1,3,5-TRIMETHYLBENZENE (mg/kg)
N	NAPHTHALENE (mg/kg)
G	TPH-GRO (mg/kg)
D	TPH-DRO (mg/kg)
O	TPH-ORO (mg/kg)

02/17/2022 Background ~ 1'	
	DATE SAMPLED
	SAMPLE ID & DEPTH (ft)
SAR	SAR (units)
pH	pH (pH units)
EC	EC (mmhos/cm)
B	BORON (mg/L)

02/09/2022 SW Wall ~ 5'	
	DATE SAMPLED
	SAMPLE ID & DEPTH (ft)
As	ARSENIC (mg/kg)
BA	BARIUM (mg/kg)
Cd	CADMIUM (mg/kg)
Cu	COPPER (mg/kg)
Pb	LEAD (mg/kg)
Ni	NICKEL (mg/kg)
Se	SELENIUM (mg/kg)
Ag	SILVER (mg/kg)
Zn	ZINC (mg/kg)
Cr(VI)	HEXAVALENT CHROMIUM (mg/kg)

02/10/2022 W1	
	DATE SAMPLED
	SAMPLE ID
TDS	TOTAL DISSOLVED SOLIDS (mg/L)
Cl⁻	CHLORIDE ION (mg/L)
SO4²⁻	SULFATE ION (mg/L)

02/10/2022 W1	
	DATE SAMPLED
	SAMPLE ID
B	BENZENE (ug/L)
T	TOLUENE (ug/L)
EB	ETHYLBENZENE (ug/L)
X	TOTAL XYLENES (ug/L)
N	NAPHTHALENE (ug/L)
1,2,4-TB	1,2,4-TRIMETHYLBENZENE (ug/L)
1,3,5-TB	1,3,5-TRIMETHYLBENZENE (ug/L)

Figure 3

SOIL & GROUNDWATER CHEMISTRY MAP

Feb. 9, 2022; Feb. 10, 2022; Feb. 14, 2022; Feb. 15, 2022; Feb. 16, 2022

NOBLE ENERGY, INC.

CPC HOSHIKO 35-1, HOSHIKO 35-14

SESW Sec. 35 T5N, R64W, 40.348855°, -104.521793°

Weld County, Colorado

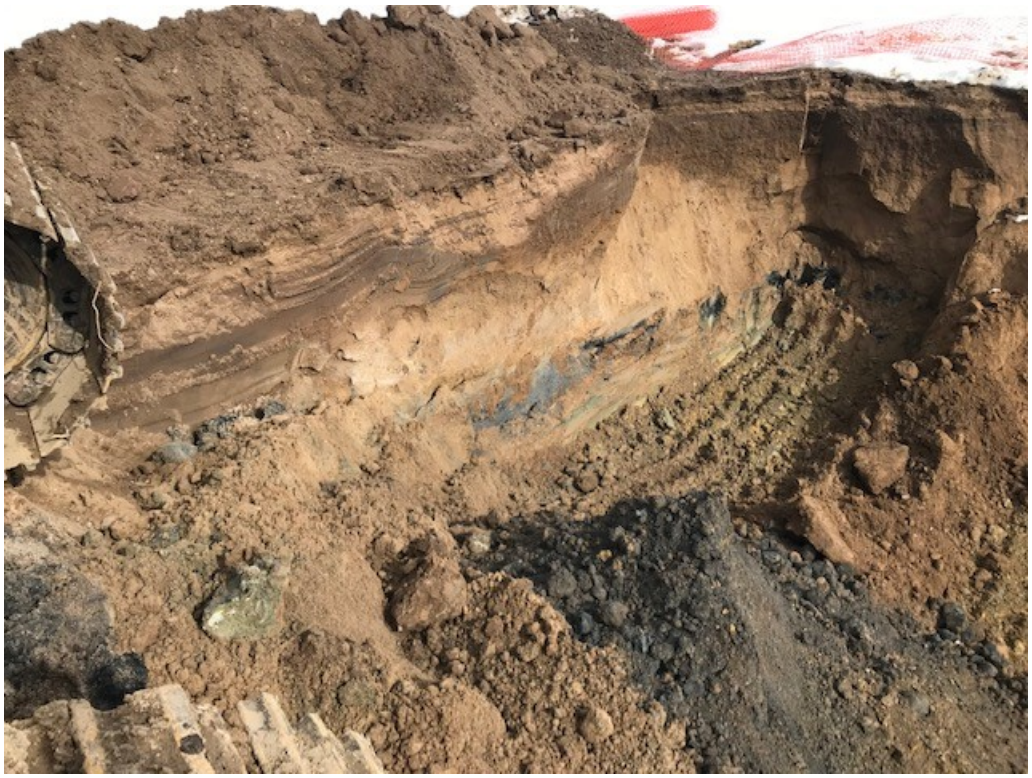
Project No.	Prepared by	Drawn by
C020-049		**TA**
Date	**Reviewed by**	**Filename**
4/8/22	**EB**	**20049QQ**

FREMONT ENVIRONMENTAL

APPENDIX A

PHOTO LOG

#1- South Wall of Former Produced Water Vault



#2 – Looking Northeast at Excavation

#3 - Looking Northwest at Monitoring Well MW-2

#4 – Looking Northwest at Excavation

#5 – Looking Southwest at Excavation

#6 – Looking Southeast at Excavation

APPENDIX B

LABORATORY DOCUMENTATION

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 22, 2022

Paul Henehan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - Hoshiko-AST
Work Order #2202109

Enclosed are the results of analyses for samples received by Summit Scientific on 02/09/22 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Shrewsbury
President

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:32

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WASTE CHAR.	2202109-01	Soil	02/09/22 00:00	02/09/22 17:30
SW WALL 5FT	2202109-02	Soil	02/09/22 00:00	02/09/22 17:30
SE WALL 5FT	2202109-03	Soil	02/09/22 00:00	02/09/22 17:30
E WALL 6FT	2202109-04	Soil	02/09/22 00:00	02/09/22 17:30
BG-1 1FT	2202109-05	Soil	02/09/22 00:00	02/09/22 17:30

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.

2202109

Summit Scientific

S2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: Fremont Environmental Inc.
Project Manager: Paul Henehan
Address:
E-Mail:
City/State/Zip:
BILL TO: JACOB HOSHIKO
Phone:
Project Name: NOBLE - ~~HOSHIKO~~ / AST
Sampler Name: HENEHAN
Project Number: CO20-049

					Preservative				Matrix				Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ___	Water	Soil	Air-Canister #	Other ___	GBTEXN+TMBs	DRO,RRO	PAHs	pH, EC, SAR	Boron	915-1 metals	Arsenic	BTEXN + TMBs	TDS, Cl, Su	
1	WASTE CHAR.	2/9/22		3			✓			✓			✓	✓	✓	✓	✓	✓				
2	SW WALL 5 FT	(		2									✓	✓	✓	✓	✓	✓				
3	SE WALL 5 FT			2									✓	✓	✓	✓	✓	✓				
4	E WALL 6 FT			3									✓	✓	✓	✓	✓	✓				
5	BG-1 1 FT	↓		2			↓			↓						✓	✓	✓				
6																						
7																						
8																						
9																						
10																						

Relinquished by:	Date/Time:	Received by:	Date/Time:
PAH/FE	2/9/22 1730		2922 1730
Relinquished by:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ✓ 72 hours ___
24 hours ___ Standard ___
48 hours ___

Sample Integrity:
Temperature Upon Receipt: 5.9
Samples Intact: (Yes) No

Notes:

S2

2202109

S2 Work Order#_____

Sample Receipt Checklist

Client: Fremont Client Project ID: Noble - 1 AST

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

Matrix (check all that apply): ☐ Air ☑ Soil/Solid ☐ Water ☐ Other:_____ (Describe)

Temp (°C)	5.9

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C (1)? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	–			on ICE
Were all samples received intact (1)?	–			
Was adequate sample volume provided (1)?	–			
If custody seals are present, are they intact (1)?	–			
Are samples with holding times due within 48 hours sample due within 48 hours present?	–			Sameday
Is a chain-of-custody (COC) form present and filled out completely (1)?	–			
Does the COC agree with the number and type of sample bottles received (1)?	–			
Do the sample IDs on the bottle labels match the COC (1)?	–			
Is the COC properly relinquished by the client w/ date and time recorded (1)?	–			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**			–	
Are samples preserved that require preservation **(excluding cooling)** (1)? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, etc.			–	
If samples are acid preserved for metals, is the pH ≤ 2(1)? Record the pH in Comments.			–	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

Custodian Printed Name or Initials

2922

Date/Time

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:32

WASTE CHAR.

2202109-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	**0.0040**	0.0020	mg/kg	1	BFB0095	02/09/22	02/10/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	**4.8**	0.50	"	100	"	"	"	"	
Xylenes (total)	**11**	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**46**	0.50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	**4.5**	0.50	"	"	"	"	"	"	
Naphthalene	**2.2**	0.38	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**2000**	50	"	"	"	"	"	"	

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*110 %*	*70-130*		"	"	"	"	
Surrogate: Toluene-d8		*82.2 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*124 %*	*70-130*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	**740**	50	mg/kg	1	BFB0096	02/09/22	02/09/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*92.9 %*	*30-150*		"	"	"	"	

PAH by EPA Method 8270D SIM

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:32

WASTE CHAR.

2202109-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFB0097	02/10/22	02/11/22	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	**0.0418**	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	**0.116**	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	**1.37**	0.0500	"	10	"	"	"	"	
2-Methylnaphthalene	**4.17**	0.500	"	100	"	"	"	"	

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		*72.0 %*	*40-150*		"	"	"	"	
Surrogate: Fluoranthene-d10		*75.9 %*	*40-150*		"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFB0294	02/24/22	02/24/22	EPA 7196A	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:32

SW WALL 5FT

2202109-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFB0095	02/09/22	02/10/22	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	**41**	0.50	"	"	"	"	"	"	

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*70-130*		"	"	"	"	
Surrogate: Toluene-d8		*95.4 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*165 %*	*70-130*		"	"	"	"	*S-02*

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	**79**	50	mg/kg	1	BFB0096	02/09/22	02/09/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*84.5 %*	*30-150*		"	"	"	"	

PAH by EPA Method 8270D SIM

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:32

SW WALL 5FT

2202109-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFB0097	02/10/22	02/11/22	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	**0.0143**	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	**0.0425**	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: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		*68.9 %*	*40-150*		"	"	"	"	
Surrogate: Fluoranthene-d10		*75.4 %*	*40-150*		"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFB0294	02/24/22	02/24/22	EPA 7196A	

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 - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:32

SE WALL 5FT

2202109-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFB0095	02/09/22	02/09/22	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: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*105 %*	*70-130*		"	"	"	"	
Surrogate: Toluene-d8		*99.5 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*	*70-130*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFB0096	02/09/22	02/09/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*92.6 %*	*30-150*		"	"	"	"	

PAH by EPA Method 8270D SIM

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:32

SE WALL 5FT

2202109-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFB0097	02/10/22	02/11/22	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: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		*66.0 %*	*40-150*		"	"	"	"	
Surrogate: Fluoranthene-d10		*61.7 %*	*40-150*		"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFB0294	02/24/22	02/24/22	EPA 7196A	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:32

E WALL 6FT

2202109-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFB0095	02/09/22	02/10/22	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: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*98.0 %*	*70-130*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*103 %*	*70-130*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

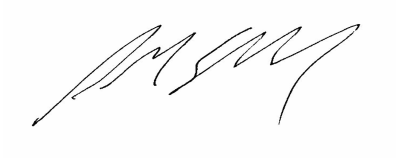
Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFB0096	02/09/22	02/10/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/09/22 00:00**

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

PAH by EPA Method 8270D SIM



Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:32

E WALL 6FT

2202109-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFB0097	02/10/22	02/11/22	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: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		*78.2 %*	*40-150*		"	"	"	"	
Surrogate: Fluoranthene-d10		*75.2 %*	*40-150*		"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFB0294	02/24/22	02/24/22	EPA 7196A	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:32

BG-1 1FT

2202109-05 (Soil)

Summit Scientific

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/09/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFB0294	02/24/22	02/24/22	EPA 7196A	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:32

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0095 - EPA 5030 Soil MS										
Blank (BFB0095-BLK1)				Prepared: 02/09/22 Analyzed: 02/11/22						
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	*0.0392*		*"*	*0.0400*		*97.9*	*70-130*			
Surrogate: Toluene-d8	*0.0404*		*"*	*0.0400*		*101*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0422*		*"*	*0.0400*		*105*	*70-130*			
LCS (BFB0095-BS1)				Prepared: 02/09/22 Analyzed: 02/11/22						
Benzene	0.111	0.0020	mg/kg	0.100		111	70-130			
Toluene	0.104	0.0050	"	0.100		104	70-130			
Ethylbenzene	0.114	0.0050	"	0.100		114	70-130			
m,p-Xylene	0.206	0.010	"	0.200		103	70-130			
o-Xylene	0.103	0.0050	"	0.100		103	70-130			
1,2,4-Trimethylbenzene	0.124	0.0050	"	0.100		124	70-130			
1,3,5-Trimethylbenzene	0.129	0.0050	"	0.100		129	70-130			
Naphthalene	0.0988	0.0038	"	0.100		98.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0409*		*"*	*0.0400*		*102*	*70-130*			
Surrogate: Toluene-d8	*0.0405*		*"*	*0.0400*		*101*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0426*		*"*	*0.0400*		*107*	*70-130*			
Matrix Spike (BFB0095-MS1)		**Source: 2202106-01**		Prepared: 02/09/22 Analyzed: 02/11/22						
Benzene	0.113	0.0020	mg/kg	0.100	ND	113	70-130			
Toluene	0.111	0.0050	"	0.100	ND	111	70-130			
Ethylbenzene	0.117	0.0050	"	0.100	ND	117	70-130			
m,p-Xylene	0.208	0.010	"	0.200	ND	104	70-130			
o-Xylene	0.110	0.0050	"	0.100	ND	110	70-130			
1,2,4-Trimethylbenzene	0.111	0.0050	"	0.100	ND	111	70-130			
1,3,5-Trimethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130			
Naphthalene	0.0864	0.0038	"	0.100	ND	86.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0404*		*"*	*0.0400*		*101*	*70-130*			
Surrogate: Toluene-d8	*0.0412*		*"*	*0.0400*		*103*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0419*		*"*	*0.0400*		*105*	*70-130*			

Summit Scientific

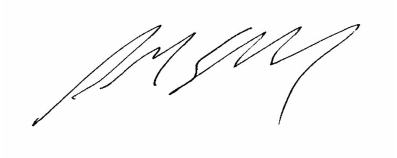
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:32

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

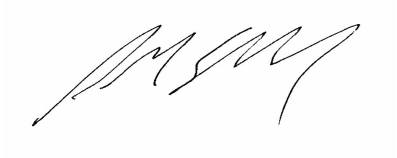
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0095 - EPA 5030 Soil MS										
Matrix Spike Dup (BFB0095-MSD1)	**Source: 2202106-01**			Prepared: 02/09/22 Analyzed: 02/11/22						
Benzene	0.120	0.0020	mg/kg	0.100	ND	120	70-130	6.31	30	
Toluene	0.118	0.0050	"	0.100	ND	118	70-130	6.28	30	
Ethylbenzene	0.0965	0.0050	"	0.100	ND	96.5	70-130	19.5	30	
m,p-Xylene	0.173	0.010	"	0.200	ND	86.4	70-130	18.4	30	
o-Xylene	0.0914	0.0050	"	0.100	ND	91.4	70-130	18.7	30	
1,2,4-Trimethylbenzene	0.0927	0.0050	"	0.100	ND	92.7	70-130	17.8	30	
1,3,5-Trimethylbenzene	0.0880	0.0050	"	0.100	ND	88.0	70-130	18.3	30	
Naphthalene	0.0851	0.0038	"	0.100	ND	85.1	70-130	1.47	30	
Surrogate: 1,2-Dichloroethane-d4	*0.0440*		"	*0.0400*		*110*	*70-130*			
Surrogate: Toluene-d8	*0.0419*		"	*0.0400*		*105*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0418*		"	*0.0400*		*104*	*70-130*			



Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

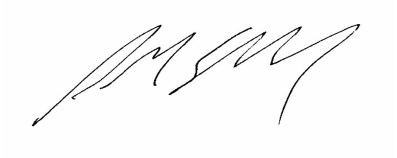
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0096 - EPA 3550A										
Blank (BFB0096-BLK1)				Prepared: 02/09/22 Analyzed: 02/10/22						
C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
LCS (BFB0096-BS1)				Prepared: 02/09/22 Analyzed: 02/10/22						
C10-C28 (DRO)	453	50	mg/kg	500		90.7	70-130			
Matrix Spike (BFB0096-MS1)	**Source: 2202106-01**			Prepared: 02/09/22 Analyzed: 02/10/22						
C10-C28 (DRO)	453	50	mg/kg	500	35.6	83.4	70-130			
Matrix Spike Dup (BFB0096-MSD1)	**Source: 2202106-01**			Prepared: 02/09/22 Analyzed: 02/10/22						
C10-C28 (DRO)	473	50	mg/kg	500	35.6	87.4	70-130	4.36	20	



PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0097 - EPA 5030 Soil MS										
Blank (BFB0097-BLK1)				Prepared & Analyzed: 02/10/22						
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	*0.0297*		*"*	*0.0333*		*89.2*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0275*		*"*	*0.0333*		*82.5*	*40-150*			
LCS (BFB0097-BS1)				Prepared & Analyzed: 02/10/22						
Acenaphthene	0.0366	0.00500	mg/kg	0.0333		110	31-137			
Anthracene	0.0361	0.00500	"	0.0333		108	30-120			
Benzo (a) anthracene	0.0332	0.00500	"	0.0333		99.7	30-120			
Benzo (a) pyrene	0.0339	0.00500	"	0.0333		102	30-120			
Benzo (b) fluoranthene	0.0330	0.00500	"	0.0333		99.0	30-120			
Benzo (k) fluoranthene	0.0370	0.00500	"	0.0333		111	30-120			
Chrysene	0.0360	0.00500	"	0.0333		108	30-120			
Dibenz (a,h) anthracene	0.0363	0.00500	"	0.0333		109	30-120			
Fluoranthene	0.0383	0.00500	"	0.0333		115	30-120			
Fluorene	0.0384	0.00500	"	0.0333		115	30-120			
Indeno (1,2,3-cd) pyrene	0.0333	0.00500	"	0.0333		99.8	30-120			
Pyrene	0.0358	0.00500	"	0.0333		107	35-142			
1-Methylnaphthalene	0.0355	0.00500	"	0.0333		106	35-142			
2-Methylnaphthalene	0.0373	0.00500	"	0.0333		112	35-142			
Surrogate: 2-Methylnaphthalene-d10	*0.0345*		*"*	*0.0333*		*104*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0336*		*"*	*0.0333*		*101*	*40-150*			



Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:32

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0097 - EPA 5030 Soil MS										
Matrix Spike (BFB0097-MS1)		**Source: 2202106-01**		Prepared & Analyzed: 02/10/22						
Acenaphthene	0.0228	0.00500	mg/kg	0.0333	ND	68.5	31-137			
Anthracene	0.0245	0.00500	"	0.0333	ND	73.4	30-120			
Benzo (a) anthracene	0.0218	0.00500	"	0.0333	ND	65.3	30-120			
Benzo (a) pyrene	0.0221	0.00500	"	0.0333	ND	66.2	30-120			
Benzo (b) fluoranthene	0.0216	0.00500	"	0.0333	ND	64.8	30-120			
Benzo (k) fluoranthene	0.0244	0.00500	"	0.0333	ND	73.3	30-120			
Chrysene	0.0242	0.00500	"	0.0333	ND	72.6	30-120			
Dibenz (a,h) anthracene	0.0246	0.00500	"	0.0333	ND	73.8	30-120			
Fluoranthene	0.0250	0.00500	"	0.0333	ND	74.9	30-120			
Fluorene	0.0253	0.00500	"	0.0333	ND	75.8	30-120			
Indeno (1,2,3-cd) pyrene	0.0291	0.00500	"	0.0333	ND	87.3	30-120			
Pyrene	0.0244	0.00500	"	0.0333	ND	73.1	35-142			
1-Methylnaphthalene	0.0215	0.00500	"	0.0333	ND	64.6	15-130			
2-Methylnaphthalene	0.0218	0.00500	"	0.0333	ND	65.5	15-130			
Surrogate: 2-Methylnaphthalene-d10	*0.0224*		*"*	*0.0333*		*67.1*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0225*		*"*	*0.0333*		*67.6*	*40-150*			
Matrix Spike Dup (BFB0097-MSD1)		**Source: 2202106-01**		Prepared: 02/10/22 Analyzed: 02/11/22						
Acenaphthene	0.0253	0.00500	mg/kg	0.0333	ND	75.9	31-137	10.3	30	
Anthracene	0.0259	0.00500	"	0.0333	ND	77.8	30-120	5.89	30	
Benzo (a) anthracene	0.0246	0.00500	"	0.0333	ND	73.8	30-120	12.2	30	
Benzo (a) pyrene	0.0245	0.00500	"	0.0333	ND	73.4	30-120	10.3	30	
Benzo (b) fluoranthene	0.0247	0.00500	"	0.0333	ND	74.1	30-120	13.4	30	
Benzo (k) fluoranthene	0.0276	0.00500	"	0.0333	ND	82.7	30-120	12.1	30	
Chrysene	0.0255	0.00500	"	0.0333	ND	76.4	30-120	5.12	30	
Dibenz (a,h) anthracene	0.0260	0.00500	"	0.0333	ND	77.9	30-120	5.46	30	
Fluoranthene	0.0264	0.00500	"	0.0333	ND	79.3	30-120	5.72	30	
Fluorene	0.0265	0.00500	"	0.0333	ND	79.5	30-120	4.73	30	
Indeno (1,2,3-cd) pyrene	0.0326	0.00500	"	0.0333	ND	97.7	30-120	11.2	30	
Pyrene	0.0266	0.00500	"	0.0333	ND	79.7	35-142	8.73	30	
1-Methylnaphthalene	0.0253	0.00500	"	0.0333	ND	76.0	15-130	16.3	50	
2-Methylnaphthalene	0.0257	0.00500	"	0.0333	ND	77.0	15-130	16.2	50	
Surrogate: 2-Methylnaphthalene-d10	*0.0242*		*"*	*0.0333*		*72.5*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0254*		*"*	*0.0333*		*76.3*	*40-150*			

Hexavalent Chromium by EPA Method 7196 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0294 - 3060A_Mod										
Blank (BFB0294-BLK1)				Prepared & Analyzed: 02/24/22						
Chromium, Hexavalent	ND	0.30	mg/kg wet							
LCS (BFB0294-BS1)				Prepared & Analyzed: 02/24/22						
Chromium, Hexavalent	25.8	0.30	mg/kg wet	25.0		103	80-120			
Duplicate (BFB0294-DUP1)		**Source: 2202109-01**		Prepared & Analyzed: 02/24/22						
Chromium, Hexavalent	ND	0.30	mg/kg dry		ND				20	
Matrix Spike (BFB0294-MS1)		**Source: 2202109-01**		Prepared & Analyzed: 02/24/22						
Chromium, Hexavalent	30.5	0.30	mg/kg dry	27.5	ND	111	75-125			
Matrix Spike Dup (BFB0294-MSD1)		**Source: 2202109-01**		Prepared & Analyzed: 02/24/22						
Chromium, Hexavalent	36.1	0.30	mg/kg dry	27.5	ND	131	75-125	17.0	20	QR-03

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Summit Scientific
Paul Shrewsbury
4653 Table Mountain Dr
Golden, CO 80403

RE: 2202109
Work Order Number: 2202267

March 21, 2022

Attention Paul Shrewsbury:

Fremont Analytical, Inc. received 5 sample(s) on 2/11/2022 for the analyses presented in the following report.

Conductivity by SM 2510B
pH by SM 4500H+B
Sample Moisture (Percent Moisture)
Sodium Adsorption Ratio
Total Metals by EPA Method 6020B

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

CC:
Muri Premer

Date: *03/21/2022*

CLIENT: Summit Scientific
Project: 2202109
Work Order: 2202267

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2202267-001	Waste Char	02/09/2022 12:00 AM	02/11/2022 11:26 AM
2202267-001	Waste Char	02/09/2022 12:00 AM	02/11/2022 11:26 AM
2202267-002	SW Wall 5ft	02/09/2022 12:00 AM	02/11/2022 11:26 AM
2202267-003	SE Wall 5ft	02/09/2022 12:00 AM	02/11/2022 11:26 AM
2202267-004	E Wall 6ft	02/09/2022 12:00 AM	02/11/2022 11:26 AM
2202267-005	BG-1 1ft	02/09/2022 12:00 AM	02/11/2022 11:26 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2202267**
Date: **3/21/2022**

CLIENT: Summit Scientific
Project: 2202109

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

The following preparation methods were performed per client request:

Boron was prepared using Hot Water Soluble Method provided by client.

Conductivity, Sodium Adsorption Ratio, and pH were prepared using Saturated Paste Method provided by client.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2202267**
Date Reported: **3/21/2022**

Client: Summit Scientific
Collection Date: 2/9/2022
Project: 2202109
Lab ID: 2202267-001
Matrix: Soil
Client Sample ID: **Waste Char**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020B				Batch ID: 35494		Analyst: EH
Arsenic	1.20	0.0989		mg/Kg-dry	1	2/28/2022 6:35:49 PM
Barium	31.2	0.494		mg/Kg-dry	1	2/28/2022 6:35:49 PM
Cadmium	ND	0.165		mg/Kg-dry	1	2/28/2022 6:35:49 PM
Copper	2.64	0.824		mg/Kg-dry	1	2/28/2022 6:35:49 PM
Lead	3.02	0.165		mg/Kg-dry	1	2/28/2022 6:35:49 PM
Nickel	3.68	0.412	Q	mg/Kg-dry	1	2/28/2022 6:35:49 PM
Selenium	0.457	0.165		mg/Kg-dry	1	2/28/2022 6:35:49 PM
Silver	ND	0.124		mg/Kg-dry	1	2/28/2022 6:35:49 PM
Zinc	12.9	1.44		mg/Kg-dry	1	2/28/2022 6:35:49 PM

NOTES:
Q - Associated calibration verification is above acceptance criteria. Result may be high-biased.

Total Metals by EPA Method 6020B				Batch ID: 35534		Analyst: EH
Boron	0.0238	0.00965		mg/L	1	3/16/2022 12:25:44 PM
Sodium Adsorption Ratio				Batch ID: 35732		Analyst: WC
Sodium Adsorption Ratio (SAR)	0.151	0		mEq/L	1	3/15/2022 10:30:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R73389		Analyst: MCH
Percent Moisture	10.1	0.500		wt%	1	2/17/2022 2:03:58 PM
Conductivity by SM 2510B				Batch ID: R73989		Analyst: ALT
Specific Conductance (Conductivity)	71.3	1.00		µS/cm	1	3/14/2022 2:44:00 PM
pH by SM 4500H+B				Batch ID: R74164		Analyst: SS
Hydrogen Ion (pH)	8.6			pH	1	3/15/2022 3:35:00 PM

Analytical Report

Work Order: **2202267**
Date Reported: **3/21/2022**

Client: Summit Scientific
Collection Date: 2/9/2022
Project: 2202109
Lab ID: 2202267-002
Matrix: Soil
Client Sample ID: SW Wall 5ft

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020B				Batch ID: 35494		Analyst: EH
Arsenic	2.76	0.102		mg/Kg-dry	1	2/28/2022 6:38:33 PM
Barium	83.1	0.512		mg/Kg-dry	1	2/28/2022 6:38:33 PM
Cadmium	ND	0.171		mg/Kg-dry	1	2/28/2022 6:38:33 PM
Copper	5.56	0.854		mg/Kg-dry	1	2/28/2022 6:38:33 PM
Lead	5.77	0.171		mg/Kg-dry	1	2/28/2022 6:38:33 PM
Nickel	7.85	0.427	Q	mg/Kg-dry	1	2/28/2022 6:38:33 PM
Selenium	0.947	0.171		mg/Kg-dry	1	2/28/2022 6:38:33 PM
Silver	ND	0.128		mg/Kg-dry	1	2/28/2022 6:38:33 PM
Zinc	26.3	1.49		mg/Kg-dry	1	2/28/2022 6:38:33 PM

NOTES:
Q - Associated calibration verification is above acceptance criteria. Result may be high-biased.

Total Metals by EPA Method 6020B				Batch ID: 35534		Analyst: EH
Boron	0.0290	0.00898		mg/L	1	3/16/2022 12:32:56 PM
Sodium Adsorption Ratio				Batch ID: 35732		Analyst: WC
Sodium Adsorption Ratio (SAR)	0.125	0		mEq/L	1	3/15/2022 10:34:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R73389		Analyst: MCH
Percent Moisture	12.6	0.500		wt%	1	2/17/2022 2:03:58 PM
Conductivity by SM 2510B				Batch ID: R73989		Analyst: ALT
Specific Conductance (Conductivity)	69.6	1.00		µS/cm	1	3/14/2022 2:44:00 PM
pH by SM 4500H+B				Batch ID: R74164		Analyst: SS
Hydrogen Ion (pH)	9.3			pH	1	3/15/2022 3:35:00 PM

Analytical Report

Work Order: **2202267**
Date Reported: **3/21/2022**

Client: Summit Scientific
Collection Date: 2/9/2022
Project: 2202109
Lab ID: 2202267-003
Matrix: Soil
Client Sample ID: SE Wall 5ft

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020B				Batch ID: 35494		Analyst: EH
Arsenic	8.98	0.101		mg/Kg-dry	1	2/28/2022 6:41:17 PM
Barium	176	0.505		mg/Kg-dry	1	2/28/2022 6:41:17 PM
Cadmium	ND	0.168		mg/Kg-dry	1	2/28/2022 6:41:17 PM
Copper	10.1	0.842		mg/Kg-dry	1	2/28/2022 6:41:17 PM
Lead	10.4	0.168		mg/Kg-dry	1	2/28/2022 6:41:17 PM
Nickel	13.1	0.421	Q	mg/Kg-dry	1	2/28/2022 6:41:17 PM
Selenium	1.45	0.168		mg/Kg-dry	1	2/28/2022 6:41:17 PM
Silver	ND	0.126		mg/Kg-dry	1	2/28/2022 6:41:17 PM
Zinc	44.6	1.47		mg/Kg-dry	1	2/28/2022 6:41:17 PM

NOTES:
Q - Associated calibration verification is above acceptance criteria. Result may be high-biased.

Total Metals by EPA Method 6020B				Batch ID: 35534		Analyst: EH
Boron	0.138	0.00911		mg/L	1	3/16/2022 12:34:06 PM
Sodium Adsorption Ratio				Batch ID: 35732		Analyst: WC
Sodium Adsorption Ratio (SAR)	0.307	0		mEq/L	1	3/15/2022 10:37:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R73389		Analyst: MCH
Percent Moisture	14.6	0.500		wt%	1	2/17/2022 2:03:58 PM
Conductivity by SM 2510B				Batch ID: R73989		Analyst: ALT
Specific Conductance (Conductivity)	53.9	1.00		µS/cm	1	3/14/2022 2:44:00 PM
pH by SM 4500H+B				Batch ID: R74164		Analyst: SS
Hydrogen Ion (pH)	9.6			pH	1	3/15/2022 3:35:00 PM

Analytical Report

Work Order: **2202267**
Date Reported: **3/21/2022**

Client: Summit Scientific
Collection Date: 2/9/2022
Project: 2202109
Lab ID: 2202267-004
Matrix: Soil
Client Sample ID: **E Wall 6ft**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020B				Batch ID: 35494		Analyst: EH
Arsenic	2.06	0.0892		mg/Kg-dry	1	2/28/2022 6:44:01 PM
Barium	52.1	0.446		mg/Kg-dry	1	2/28/2022 6:44:01 PM
Cadmium	ND	0.149		mg/Kg-dry	1	2/28/2022 6:44:01 PM
Copper	3.70	0.744		mg/Kg-dry	1	2/28/2022 6:44:01 PM
Lead	3.80	0.149		mg/Kg-dry	1	2/28/2022 6:44:01 PM
Nickel	4.62	0.372	Q	mg/Kg-dry	1	2/28/2022 6:44:01 PM
Selenium	0.880	0.149		mg/Kg-dry	1	2/28/2022 6:44:01 PM
Silver	ND	0.112		mg/Kg-dry	1	2/28/2022 6:44:01 PM
Zinc	16.5	1.30		mg/Kg-dry	1	2/28/2022 6:44:01 PM

NOTES:
Q - Associated calibration verification is above acceptance criteria. Result may be high-biased.

Total Metals by EPA Method 6020B				Batch ID: 35534		Analyst: EH
Boron	0.115	0.00941		mg/L	1	3/16/2022 12:35:16 PM
Sodium Adsorption Ratio				Batch ID: 35732		Analyst: WC
Sodium Adsorption Ratio (SAR)	0.136	0		mEq/L	1	3/15/2022 10:40:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R73389		Analyst: MCH
Percent Moisture	10.3	0.500		wt%	1	2/17/2022 2:03:58 PM
Conductivity by SM 2510B				Batch ID: R73989		Analyst: ALT
Specific Conductance (Conductivity)	45.5	1.00		µS/cm	1	3/14/2022 2:44:00 PM
pH by SM 4500H+B				Batch ID: R74164		Analyst: SS
Hydrogen Ion (pH)	9.8			pH	1	3/15/2022 3:35:00 PM

Analytical Report

Work Order: **2202267**
Date Reported: **3/21/2022**

Client: Summit Scientific
Collection Date: 2/9/2022
Project: 2202109
Lab ID: 2202267-005
Matrix: Soil
Client Sample ID: BG-1 1ft

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020B				Batch ID: 35494		Analyst: EH
Arsenic	2.92	0.113		mg/Kg-dry	1	2/28/2022 6:46:45 PM
Barium	76.8	0.564		mg/Kg-dry	1	2/28/2022 6:46:45 PM
Cadmium	ND	0.188		mg/Kg-dry	1	2/28/2022 6:46:45 PM
Copper	8.35	0.941		mg/Kg-dry	1	2/28/2022 6:46:45 PM
Lead	7.43	0.188		mg/Kg-dry	1	2/28/2022 6:46:45 PM
Nickel	7.62	0.470	Q	mg/Kg-dry	1	2/28/2022 6:46:45 PM
Selenium	1.17	0.188		mg/Kg-dry	1	2/28/2022 6:46:45 PM
Silver	ND	0.141		mg/Kg-dry	1	2/28/2022 6:46:45 PM
Zinc	39.4	1.65		mg/Kg-dry	1	2/28/2022 6:46:45 PM

NOTES:
Q - Associated calibration verification is above acceptance criteria. Result may be high-biased.

Total Metals by EPA Method 6020B				Batch ID: 35534		Analyst: EH
Boron	0.173	0.00898		mg/L	1	3/16/2022 12:36:26 PM
Sodium Adsorption Ratio				Batch ID: 35732		Analyst: WC
Sodium Adsorption Ratio (SAR)	0.284	0		mEq/L	1	3/15/2022 10:43:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R73389		Analyst: MCH
Percent Moisture	15.6	0.500		wt%	1	2/17/2022 2:03:58 PM
Conductivity by SM 2510B				Batch ID: R73989		Analyst: ALT
Specific Conductance (Conductivity)	37.1	1.00		µS/cm	1	3/14/2022 2:44:00 PM
pH by SM 4500H+B				Batch ID: R74164		Analyst: SS
Hydrogen Ion (pH)	7.4			pH	1	3/15/2022 3:35:00 PM

Work Order: 2202267
CLIENT: Summit Scientific
Project: 2202109

QC SUMMARY REPORT

Conductivity by SM 2510B

Sample ID: **MB-R73989**	SampType: **MBLK**			Units: **µS/cm**		Prep Date: **3/14/2022**			RunNo: **73989**		
Client ID: **MBLKW**	Batch ID: **R73989**					Analysis Date: **3/14/2022**			SeqNo: **1516047**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance (Conductivity)	ND	1.00									

Sample ID: **LCS-R73989**	SampType: **LCS**			Units: **µS/cm**		Prep Date: **3/14/2022**			RunNo: **73989**		
Client ID: **LCSW**	Batch ID: **R73989**					Analysis Date: **3/14/2022**			SeqNo: **1516048**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance (Conductivity)	985	1.00	1,000	0	98.5	98	104				

Sample ID: **2202513-001ADUP**	SampType: **DUP**			Units: **µS/cm**		Prep Date: **3/14/2022**			RunNo: **73989**		
Client ID: **BATCH**	Batch ID: **R73989**					Analysis Date: **3/14/2022**			SeqNo: **1516050**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance (Conductivity)	49.9	1.00						47.80	4.30	20	

Sample ID: **LCSD-R73989**	SampType: **LCSD**			Units: **µS/cm**		Prep Date: **3/14/2022**			RunNo: **73989**		
Client ID: **LCSW02**	Batch ID: **R73989**					Analysis Date: **3/14/2022**			SeqNo: **1516065**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance (Conductivity)	985	1.00	1,000	0	98.5	98	104	985.0	0	20	

Work Order: 2202267
CLIENT: Summit Scientific
Project: 2202109

QC SUMMARY REPORT

pH by SM 4500H+B

Sample ID: **MB-R74164**	SampType: **MBLK**	Units: **pH**	Prep Date:	RunNo: **74164**
Client ID: **MBLKW**	Batch ID: **R74164**		Analysis Date: **3/15/2022**	SeqNo: **1520958**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrogen Ion (pH)	8.2										

Sample ID: **LCS-R74164**	SampType: **LCS**	Units: **pH**	Prep Date:	RunNo: **74164**
Client ID: **LCSW**	Batch ID: **R74164**		Analysis Date: **3/15/2022**	SeqNo: **1520959**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrogen Ion (pH)	7.0		7.000	0	100	95	105				

Sample ID: **2202513-001ADUP**	SampType: **DUP**	Units: **pH**	Prep Date:	RunNo: **74164**
Client ID: **BATCH**	Batch ID: **R74164**		Analysis Date: **3/15/2022**	SeqNo: **1520961**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrogen Ion (pH)	9.6							9.500	0.943	10	

Sample ID: **LCSD-R74164**	SampType: **LCSD**	Units: **pH Units**	Prep Date:	RunNo: **74164**
Client ID: **LCSW02**	Batch ID: **R74164**		Analysis Date: **3/15/2022**	SeqNo: **1520976**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrogen Ion (pH)	7.1		7.000	0	101	95	105	7.030	0.426	10	

Work Order: 2202267
CLIENT: Summit Scientific
Project: 2202109

QC SUMMARY REPORT

Total Metals by EPA Method 6020B

Sample ID: **MB-35494** SampType: **MBLK** Units: **mg/Kg** Prep Date: **2/24/2022** RunNo: **73632**
Client ID: **MBLKS** Batch ID: **35494** Analysis Date: **2/28/2022** SeqNo: **1506060**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.0863									
Barium	ND	0.432									
Cadmium	ND	0.144									
Copper	ND	0.719									
Lead	ND	0.144									
Nickel	ND	0.360									
Selenium	ND	0.144									
Silver	ND	0.108									
Zinc	ND	1.26									

Sample ID: **2202208-002AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **2/24/2022** RunNo: **73632**
Client ID: **BATCH** Batch ID: **35494** Analysis Date: **2/28/2022** SeqNo: **1506064**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	54.5	0.112	46.63	3.758	109	75	125				
Barium	737	0.560	46.63	115.0	1,330	75	125				ES
Cadmium	2.63	0.187	2.331	0.1416	107	75	125				
Copper	55.1	0.933	46.63	6.882	103	75	125				
Lead	32.3	0.187	23.31	9.431	97.9	75	125				
Nickel	67.0	0.466	46.63	15.30	111	75	125				
Selenium	6.27	0.187	4.663	1.290	107	75	125				
Silver	2.36	0.140	2.331	0	101	75	125				
Zinc	119	1.63	46.63	78.61	86.4	75	125				

NOTES:
S - Spike recovery indicates a possible matrix effect, refer to PDS.

Work Order: 2202267
CLIENT: Summit Scientific
Project: 2202109

QC SUMMARY REPORT

Total Metals by EPA Method 6020B

Sample ID: **2202208-002AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **2/24/2022** RunNo: **73632**
Client ID: **BATCH** Batch ID: **35494** Analysis Date: **2/28/2022** SeqNo: **1506067**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	56.5	0.113	46.99	3.758	112	75	125	54.48	3.66	20	
Barium	101	0.564	46.99	115.0	-29.4	75	125	737.3	152	20	RS
Cadmium	2.73	0.188	2.349	0.1416	110	75	125	2.632	3.61	20	
Copper	56.4	0.940	46.99	6.882	105	75	125	55.09	2.38	20	
Lead	32.9	0.188	23.49	9.431	99.7	75	125	32.26	1.87	20	
Nickel	69.1	0.470	46.99	15.30	114	75	125	66.99	3.07	20	
Selenium	6.52	0.188	4.699	1.290	111	75	125	6.267	3.91	20	
Silver	2.45	0.141	2.349	0	104	75	125	2.358	3.74	20	
Zinc	129	1.64	46.99	78.61	107	75	125	118.9	7.92	20	

NOTES:
S,R - Spike recovery indicates a possible matrix effect, refer to PDS.

Sample ID: **2202208-002APDS** SampType: **PDS** Units: **mg/Kg-dry** Prep Date: **2/24/2022** RunNo: **73632**
Client ID: **BATCH** Batch ID: **35494** Analysis Date: **2/28/2022** SeqNo: **1506068**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	162	0.555	46.3	115	102	75	125				

Sample ID: **LCS-35494** SampType: **LCS** Units: **mg/Kg** Prep Date: **2/24/2022** RunNo: **73632**
Client ID: **LCSS** Batch ID: **35494** Analysis Date: **3/1/2022** SeqNo: **1506309**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	40.7	0.0909	37.88	0	108	80	120				
Barium	42.2	0.455	37.88	0	111	80	120				
Cadmium	2.07	0.152	1.894	0	109	80	120				
Copper	41.5	0.758	37.88	0	109	80	120				
Lead	22.7	0.152	18.94	0	120	80	120				
Nickel	44.4	0.379	37.88	0	117	80	120				
Selenium	4.10	0.152	3.788	0	108	80	120				
Silver	2.10	0.114	1.894	0	111	80	120				

Work Order: 2202267
CLIENT: Summit Scientific
Project: 2202109

QC SUMMARY REPORT

Total Metals by EPA Method 6020B

Sample ID: **LCS-35494**	SampType: **LCS**			Units: **mg/Kg**		Prep Date: **2/24/2022**		RunNo: **73632**			
Client ID: **LCSS**	Batch ID: **35494**					Analysis Date: **3/1/2022**		SeqNo: **1506309**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	40.5	1.33	37.88	0	107	80	120				

Sample ID: **MB-35534**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **2/28/2022**		RunNo: **74024**			
Client ID: **MBLKS**	Batch ID: **35534**					Analysis Date: **3/16/2022**		SeqNo: **1517180**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.0100									

Sample ID: **LCS-35534**	SampType: **LCS**			Units: **mg/L**		Prep Date: **2/28/2022**		RunNo: **74024**			
Client ID: **LCSS**	Batch ID: **35534**					Analysis Date: **3/16/2022**		SeqNo: **1517181**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4.73	0.0100	5.000	0	94.5	80	120				

Sample ID: **2202051-008ADUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **2/28/2022**		RunNo: **74024**			
Client ID: **BATCH**	Batch ID: **35534**					Analysis Date: **3/16/2022**		SeqNo: **1517183**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.0975	0.00964						0.08775	10.5	20	

Sample ID: **2202051-008AMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **2/28/2022**		RunNo: **74024**			
Client ID: **BATCH**	Batch ID: **35534**					Analysis Date: **3/16/2022**		SeqNo: **1517184**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.12	0.00955	4.776	0.08775	21.7	75	125				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2202267
CLIENT: Summit Scientific
Project: 2202109

QC SUMMARY REPORT

Total Metals by EPA Method 6020B

Sample ID: **2202051-008AMSD** SampType: **MSD** Units: **mg/L** Prep Date: **2/28/2022** RunNo: **74024**
Client ID: **BATCH** Batch ID: **35534** Analysis Date: **3/16/2022** SeqNo: **1517187**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.935	0.00947	4.735	0.08775	17.9	75	125	1.123	18.3	20	S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2202267
CLIENT: Summit Scientific
Project: 2202109

QC SUMMARY REPORT

Sodium Adsorption Ratio

Sample ID: **MB-35732**	SampType: **MBLK**	Units: **µg/L**	Prep Date: **3/15/2022**	RunNo: **74010**
Client ID: **MBLKW**	Batch ID: **35732**		Analysis Date: **3/15/2022**	SeqNo: **1516615**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	200									
Magnesium	ND	100									
Sodium	ND	200									

Sample ID: **LCS-35732**	SampType: **LCS**	Units: **µg/L**	Prep Date: **3/15/2022**	RunNo: **74010**
Client ID: **LCSW**	Batch ID: **35732**		Analysis Date: **3/15/2022**	SeqNo: **1516616**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	1,100	200	1,000	0	110	50	150				
Magnesium	987	100	1,000	0	98.7	50	150				
Sodium	1,090	200	1,000	0	109	50	150				

Sample ID: **2202513-001ADUP**	SampType: **DUP**	Units: **mEq/L**	Prep Date: **3/15/2022**	RunNo: **74010**
Client ID: **BATCH**	Batch ID: **35732**		Analysis Date: **3/15/2022**	SeqNo: **1518035**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio (SAR)	0.158	0						0.1430	9.97	30	

Sample Log-In Check List

Client Name:	**SUMSCI**	Work Order Number:	**2202267**
Logged by:	**Gabrielle Coeuille**	Date Received:	**2/11/2022 11:26:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No ☐	Not Present	☐
2.	How was the sample delivered?	FedEx				

Log In

3.	Coolers are present?	Yes	☑	No ☐	NA	☐
4.	Shipping container/cooler in good condition?	Yes	☑	No ☐		
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☐	No ☐	Not Present	☑
6.	Was an attempt made to cool the samples?	Yes	☐	No ☑	NA	☐
		Unknown prior to receipt				
7.	Were all items received at a temperature of >2°C to 6°C *	Yes	☐	No ☐	NA	☑
8.	Sample(s) in proper container(s)?	Yes	☑	No ☐		
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No ☐		
10.	Are samples properly preserved?	Yes	☑	No ☐		
11.	Was preservative added to bottles?	Yes	☐	No ☑	NA	☐
12.	Is there headspace in the VOA vials?	Yes	☐	No ☐	NA	☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No ☐		
14.	Does paperwork match bottle labels?	Yes	☑	No ☐		
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No ☐		
16.	Is it clear what analyses were requested?	Yes	☑	No ☐		
17.	Were all holding times able to be met?	Yes	☑	No ☐		

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☐	No ☐	NA	☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample 1	12.3

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 2-10-22 Page: 1 of: 1
Laboratory Project No (internal): 2202267
Project Name: 2202109
Special Remarks:
Client: Summit Scientific
Project No:
Address: 4653 Table Mountain Drive
Collected by:
City, State, Zip: Golden, CO. 80403
Location:
Telephone: 303-277-9310
Report To (PM):
Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)
Fax:
PM Email: mpremer@s2scientific.com, pshrewsbury@s2scientific.com

#	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	SAR, EC, pH	Boron	Metals															Comments
1	Waste Char.	2-9-22		S	x	x	x															B by Hot Water Soluble
2	SW wall 5ft	↓		↓	↓	↓	↓															SAR, EC, pH by Saturated Paste
3	SE wall 5ft	↓		↓	↓	↓	↓															
4	E wall 6ft	↓		↓	↓	↓	↓															
5	BG-1 1Ft	↓		↓	↓	↓	↓															
6																						
7																						
8																						
9																						
10																						

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): Individual:

***Anions (Circle): ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ O-Phosphate ☐ Fluoride ☐ Nitrate+Nitrite

Turn-around Time: ☒ Standard ☐ 3 Day ☐ 2 Day ☐ Next Day ☐ Same Day (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x [signature]	2-10-22 1400	x [signature]	2/11/22 1126
x		x	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:32

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-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.
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

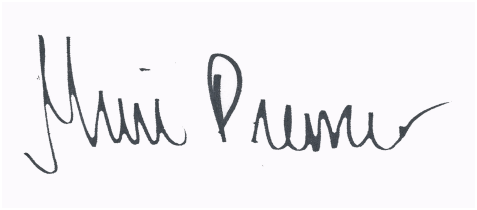
March 21, 2022

Paul Henehan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - Hoshiko-AST
Work Order #2202199

Enclosed are the results of analyses for samples received by Summit Scientific on 02/16/22 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Muri Premer For Paul Shrewsbury
President

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/21/22 17:17

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
W-N WALL 5FT	2202199-01	Soil	02/16/22 00:00	02/16/22 17:00
W-S WALL 6FT	2202199-02	Soil	02/16/22 00:00	02/16/22 17:00

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.

2202199

Summit Scientific

S2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Client: Fremont Environmental Inc.
Address:
City/State/Zip:
Phone:
Sampler Name: HENEHAN

Project Manager: Paul Henehan
E-Mail:
BILL TO: JACOBS
Project Name: HOSHIKO 1ST
Project Number: C020-049

					Preservative				Matrix				Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	GBTEXN+TMBs	DRO,RRO	PAHs	pH, EC, SAR	Boron	915-1 metals	Arsenic	BTEXN + TMBs	TDS, Cl, Su	
1	W-N WALL 5 FT	2/16/22		3			✓			✓			✓	✓	✓	✓	✓	✓				
2	W-S WALL 6 FT	"		3			✓			✓			✓	✓	✓	✓	✓	✓				
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by: MH/FE Date/Time: 2/16/22 1700
Received by: Date/Time: 21622 1700

Relinquished by: Date/Time:
Received by: Date/Time:

Relinquished by: Date/Time:
Received by: Date/Time:

Turn Around Time (Check)
Same Day ✓ 72 hours ___
24 hours ___ Standard ___
48 hours ___

Sample Integrity:
Temperature Upon Receipt: 4.4
Samples Intact: (Yes) No

Notes:

S2

Sample Receipt Checklist

S2 Work Order# 2202199

Client: Fremont Client Project ID: HOSHIKO AST

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other [ ] [-] [ ] [ ] [ ] Airbill #: _____

Matrix (check all that apply): [ ] Air [-] Soil/Solid [ ] Water [ ] Other: _____ (Describe)

Temp (°C)	4.4

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C (1)? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	-			on ICE
Were all samples received intact (1)?	-			
Was adequate sample volume provided (1)?	-			
If custody seals are present, are they intact (1)?	-			
Are samples with holding times due within 48 hours sample due within 48 hours present?	-			Sameday
Is a chain-of-custody (COC) form present and filled out completely (1)?	-			
Does the COC agree with the number and type of sample bottles received (1)?	-			
Do the sample IDs on the bottle labels match the COC (1)?	-			
Is the COC properly relinquished by the client w/ date and time recorded (1)?	-			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**			-	
Are samples preserved that require preservation **(excluding cooling)** (1)? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, etc.			-	
If samples are acid preserved for metals, is the pH ≤ 2(1)? Record the pH in Comments.			-	
If dissolved metals are requested, were samples field filtered?			-	
Additional Comments (if any):				

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

[signature] 2.16.22

Custodian Printed Name or Initials **Date/Time**

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/21/22 17:17

W-N WALL 5FT

2202199-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFB0182	02/16/22	02/16/22	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: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*70-130*		"	"	"	"	
Surrogate: Toluene-d8		*111 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.1 %*	*70-130*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

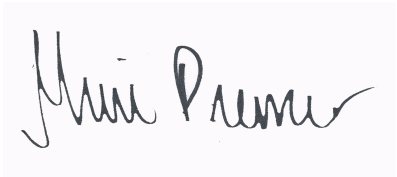
Date Sampled: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFB0183	02/16/22	02/16/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*140 %*	*30-150*		"	"	"	"	

PAH by EPA Method 8270D SIM



S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/21/22 17:17

W-N WALL 5FT

2202199-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFB0187	02/17/22	02/18/22	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: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		*75.1 %*	*40-150*		"	"	"	"	
Surrogate: Fluoranthene-d10		*77.2 %*	*40-150*		"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0033	03/02/22	03/02/22	EPA 7196A	

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

Date Sampled: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

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.

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/21/22 17:17

W-N WALL 5FT

2202199-01 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**10.2**	0.0591	mg/L dry	1	BFC0378	03/18/22	03/21/22	EPA 6020B	
Magnesium	**2.13**	0.0591	"	"	"	"	"	"	
Sodium	**0.968**	0.0591	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.0720**	0.00100	units	1	BFC0441	03/21/22	03/21/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**84.6**		%	1	BFB0184	02/17/22	02/17/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**0.510**	0.0100	mmhos/cm	1	BFC0409	03/18/22	03/18/22	EPA 120.1	

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

Date Sampled: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.96**		pH Units	1	BFC0410	03/18/22	03/18/22	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.

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/21/22 17:17

W-S WALL 6FT

2202199-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFB0182	02/16/22	02/16/22	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: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*91.2 %*	*70-130*		"	"	"	"	
Surrogate: Toluene-d8		*102 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.5 %*	*70-130*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFB0183	02/16/22	02/16/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*118 %*	*30-150*		"	"	"	"	

PAH by EPA Method 8270D SIM

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/21/22 17:17

W-S WALL 6FT

2202199-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFB0187	02/17/22	02/19/22	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: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		*61.4 %*	*40-150*		"	"	"	"	
Surrogate: Fluoranthene-d10		*64.9 %*	*40-150*		"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0033	03/02/22	03/02/22	EPA 7196A	

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

Date Sampled: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

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.

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/21/22 17:17

W-S WALL 6FT

2202199-02 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**3.68**	0.0619	mg/L dry	1	BFC0378	03/18/22	03/21/22	EPA 6020B	
Magnesium	**1.91**	0.0619	"	"	"	"	"	"	
Sodium	**2.51**	0.0619	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.264**	0.00100	units	1	BFC0441	03/21/22	03/21/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**80.8**		%	1	BFB0184	02/17/22	02/17/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**1.12**	0.0100	mmhos/cm	1	BFC0409	03/18/22	03/18/22	EPA 120.1	

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

Date Sampled: **02/16/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.44**		pH Units	1	BFC0410	03/18/22	03/18/22	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.

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/21/22 17:17

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0182 - EPA 5030 Soil MS										
Blank (BFB0182-BLK1)				Prepared: 02/16/22 Analyzed: 02/17/22						
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	*0.0337*		"	*0.0400*		*84.2*	*70-130*			
Surrogate: Toluene-d8	*0.0408*		"	*0.0400*		*102*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0369*		"	*0.0400*		*92.2*	*70-130*			
LCS (BFB0182-BS1)				Prepared: 02/16/22 Analyzed: 02/17/22						
Benzene	0.0600	0.0020	mg/kg	0.0750		80.0	70-130			
Toluene	0.0666	0.0050	"	0.0750		88.8	70-130			
Ethylbenzene	0.0648	0.0050	"	0.0750		86.4	70-130			
m,p-Xylene	0.136	0.010	"	0.150		90.8	70-130			
o-Xylene	0.0691	0.0050	"	0.0750		92.1	70-130			
1,2,4-Trimethylbenzene	0.0676	0.0050	"	0.0750		90.2	70-130			
1,3,5-Trimethylbenzene	0.0666	0.0050	"	0.0750		88.8	70-130			
Naphthalene	0.0536	0.0038	"	0.0750		71.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0311*		"	*0.0400*		*77.8*	*70-130*			
Surrogate: Toluene-d8	*0.0403*		"	*0.0400*		*101*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0384*		"	*0.0400*		*96.0*	*70-130*			
Matrix Spike (BFB0182-MS1)	**Source: 2202198-01**			Prepared: 02/16/22 Analyzed: 02/17/22						
Benzene	0.0595	0.0020	mg/kg	0.0750	ND	79.4	70-130			
Toluene	0.0685	0.0050	"	0.0750	ND	91.4	70-130			
Ethylbenzene	0.0678	0.0050	"	0.0750	ND	90.4	70-130			
m,p-Xylene	0.142	0.010	"	0.150	ND	94.6	70-130			
o-Xylene	0.0713	0.0050	"	0.0750	ND	95.0	70-130			
1,2,4-Trimethylbenzene	0.0702	0.0050	"	0.0750	ND	93.6	70-130			
1,3,5-Trimethylbenzene	0.0709	0.0050	"	0.0750	ND	94.5	70-130			
Naphthalene	0.0624	0.0038	"	0.0750	ND	83.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0328*		"	*0.0400*		*82.1*	*70-130*			
Surrogate: Toluene-d8	*0.0398*		"	*0.0400*		*99.4*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0391*		"	*0.0400*		*97.8*	*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.

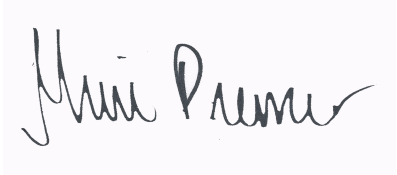
S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/21/22 17:17

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0182 - EPA 5030 Soil MS										
Matrix Spike Dup (BFB0182-MSD1)	**Source: 2202198-01**			Prepared: 02/16/22 Analyzed: 02/17/22						
Benzene	0.0623	0.0020	mg/kg	0.0750	ND	83.1	70-130	4.58	30	
Toluene	0.0698	0.0050	"	0.0750	ND	93.1	70-130	1.87	30	
Ethylbenzene	0.0632	0.0050	"	0.0750	ND	84.3	70-130	6.96	30	
m,p-Xylene	0.134	0.010	"	0.150	ND	89.1	70-130	5.90	30	
o-Xylene	0.0694	0.0050	"	0.0750	ND	92.6	70-130	2.60	30	
1,2,4-Trimethylbenzene	0.0696	0.0050	"	0.0750	ND	92.8	70-130	0.773	30	
1,3,5-Trimethylbenzene	0.0680	0.0050	"	0.0750	ND	90.6	70-130	4.24	30	
Naphthalene	0.0691	0.0038	"	0.0750	ND	92.1	70-130	10.2	30	
Surrogate: 1,2-Dichloroethane-d4	*0.0343*		*"*	*0.0400*		*85.6*	*70-130*			
Surrogate: Toluene-d8	*0.0400*		*"*	*0.0400*		*99.9*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0400*		*"*	*0.0400*		*100*	*70-130*			



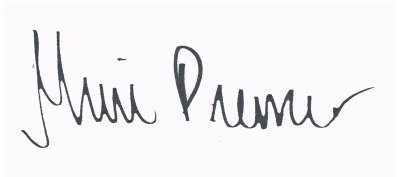
S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/21/22 17:17

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0183 - EPA 3550A										
Blank (BFB0183-BLK1)				Prepared: 02/16/22 Analyzed: 02/17/22						
C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
LCS (BFB0183-BS1)				Prepared: 02/16/22 Analyzed: 02/17/22						
C10-C28 (DRO)	495	50	mg/kg	500		98.9	70-130			
Matrix Spike (BFB0183-MS1)	**Source: 2202198-01**			Prepared: 02/16/22 Analyzed: 02/17/22						
C10-C28 (DRO)	427	50	mg/kg	500	ND	85.5	70-130			
Matrix Spike Dup (BFB0183-MSD1)	**Source: 2202198-01**			Prepared: 02/16/22 Analyzed: 02/17/22						
C10-C28 (DRO)	462	50	mg/kg	500	ND	92.3	70-130	7.71	20	



S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/21/22 17:17

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0187 - EPA 5030 Soil MS										
Blank (BFB0187-BLK1)				Prepared: 02/17/22 Analyzed: 02/18/22						
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	*0.0256*		*"*	*0.0333*		*76.9*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0232*		*"*	*0.0333*		*69.5*	*40-150*			
LCS (BFB0187-BS1)				Prepared: 02/17/22 Analyzed: 02/18/22						
Acenaphthene	0.0371	0.00500	mg/kg	0.0333		111	31-137			
Anthracene	0.0396	0.00500	"	0.0333		119	30-120			
Benzo (a) anthracene	0.0329	0.00500	"	0.0333		98.8	30-120			
Benzo (a) pyrene	0.0331	0.00500	"	0.0333		99.4	30-120			
Benzo (b) fluoranthene	0.0327	0.00500	"	0.0333		98.2	30-120			
Benzo (k) fluoranthene	0.0327	0.00500	"	0.0333		98.0	30-120			
Chrysene	0.0346	0.00500	"	0.0333		104	30-120			
Dibenz (a,h) anthracene	0.0361	0.00500	"	0.0333		108	30-120			
Fluoranthene	0.0397	0.00500	"	0.0333		119	30-120			
Fluorene	0.0362	0.00500	"	0.0333		108	30-120			
Indeno (1,2,3-cd) pyrene	0.0276	0.00500	"	0.0333		82.8	30-120			
Pyrene	0.0335	0.00500	"	0.0333		101	35-142			
1-Methylnaphthalene	0.0342	0.00500	"	0.0333		103	35-142			
2-Methylnaphthalene	0.0364	0.00500	"	0.0333		109	35-142			
Surrogate: 2-Methylnaphthalene-d10	*0.0318*		*"*	*0.0333*		*95.3*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0334*		*"*	*0.0333*		*100*	*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.

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/21/22 17:17

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0187 - EPA 5030 Soil MS										
Matrix Spike (BFB0187-MS1)	**Source: 2202199-01**			Prepared: 02/17/22 Analyzed: 02/18/22						
Acenaphthene	0.0279	0.00500	mg/kg	0.0333	ND	83.6	31-137			
Anthracene	0.0292	0.00500	"	0.0333	ND	87.7	30-120			
Benzo (a) anthracene	0.0262	0.00500	"	0.0333	ND	78.6	30-120			
Benzo (a) pyrene	0.0290	0.00500	"	0.0333	ND	87.1	30-120			
Benzo (b) fluoranthene	0.0259	0.00500	"	0.0333	ND	77.8	30-120			
Benzo (k) fluoranthene	0.0255	0.00500	"	0.0333	ND	76.6	30-120			
Chrysene	0.0271	0.00500	"	0.0333	ND	81.3	30-120			
Dibenz (a,h) anthracene	0.0343	0.00500	"	0.0333	ND	103	30-120			
Fluoranthene	0.0317	0.00500	"	0.0333	ND	95.0	30-120			
Fluorene	0.0302	0.00500	"	0.0333	ND	90.5	30-120			
Indeno (1,2,3-cd) pyrene	0.0399	0.00500	"	0.0333	ND	120	30-120			
Pyrene	0.0279	0.00500	"	0.0333	ND	83.6	35-142			
1-Methylnaphthalene	0.0255	0.00500	"	0.0333	ND	76.5	15-130			
2-Methylnaphthalene	0.0269	0.00500	"	0.0333	ND	80.6	15-130			
Surrogate: 2-Methylnaphthalene-d10	*0.0273*		*"*	*0.0333*		*81.9*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0281*		*"*	*0.0333*		*84.3*	*40-150*			
Matrix Spike Dup (BFB0187-MSD1)	**Source: 2202199-01**			Prepared: 02/17/22 Analyzed: 02/18/22						
Acenaphthene	0.0270	0.00500	mg/kg	0.0333	ND	80.9	31-137	3.25	30	
Anthracene	0.0268	0.00500	"	0.0333	ND	80.4	30-120	8.72	30	
Benzo (a) anthracene	0.0260	0.00500	"	0.0333	ND	78.0	30-120	0.770	30	
Benzo (a) pyrene	0.0250	0.00500	"	0.0333	ND	75.1	30-120	14.8	30	
Benzo (b) fluoranthene	0.0251	0.00500	"	0.0333	ND	75.3	30-120	3.26	30	
Benzo (k) fluoranthene	0.0246	0.00500	"	0.0333	ND	73.7	30-120	3.85	30	
Chrysene	0.0263	0.00500	"	0.0333	ND	78.9	30-120	3.01	30	
Dibenz (a,h) anthracene	0.0298	0.00500	"	0.0333	ND	89.5	30-120	14.0	30	
Fluoranthene	0.0280	0.00500	"	0.0333	ND	83.9	30-120	12.4	30	
Fluorene	0.0281	0.00500	"	0.0333	ND	84.3	30-120	7.08	30	
Indeno (1,2,3-cd) pyrene	0.0350	0.00500	"	0.0333	ND	105	30-120	13.3	30	
Pyrene	0.0261	0.00500	"	0.0333	ND	78.4	35-142	6.34	30	
1-Methylnaphthalene	0.0272	0.00500	"	0.0333	ND	81.5	15-130	6.22	50	
2-Methylnaphthalene	0.0273	0.00500	"	0.0333	ND	82.0	15-130	1.73	50	
Surrogate: 2-Methylnaphthalene-d10	*0.0263*		*"*	*0.0333*		*78.9*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0261*		*"*	*0.0333*		*78.4*	*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.

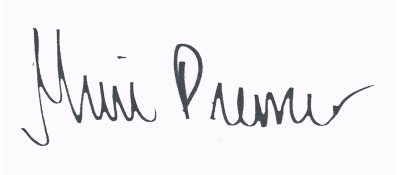
S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/21/22 17:17

Hexavalent Chromium by EPA Method 7196 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFC0033 - 3060A_Mod										
Blank (BFC0033-BLK1)				Prepared & Analyzed: 03/02/22						
Chromium, Hexavalent	ND	0.30	mg/kg wet							
LCS (BFC0033-BS1)				Prepared & Analyzed: 03/02/22						
Chromium, Hexavalent	27.4	0.30	mg/kg wet	25.0		109	80-120			
Duplicate (BFC0033-DUP1)	**Source: 2202196-01**			Prepared & Analyzed: 03/02/22						
Chromium, Hexavalent	ND	0.30	mg/kg dry		ND				20	
Matrix Spike (BFC0033-MS1)	**Source: 2202196-01**			Prepared & Analyzed: 03/02/22						
Chromium, Hexavalent	31.4	0.30	mg/kg dry	30.1	ND	104	75-125			
Matrix Spike Dup (BFC0033-MSD1)	**Source: 2202196-01**			Prepared & Analyzed: 03/02/22						
Chromium, Hexavalent	36.2	0.30	mg/kg dry	30.1	ND	120	75-125	14.3	20	



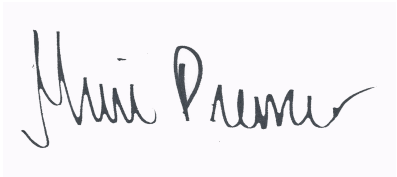
S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/21/22 17:17

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFC0378 - General Preparation										
Blank (BFC0378-BLK1)				Prepared: 03/18/22 Analyzed: 03/21/22						
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							
LCS (BFC0378-BS1)				Prepared: 03/18/22 Analyzed: 03/21/22						
Calcium	5.85	0.0500	mg/L wet	5.00		117	70-130			
Magnesium	6.14	0.0500	"	5.00		123	70-130			
Sodium	5.10	0.0500	"	5.00		102	70-130			



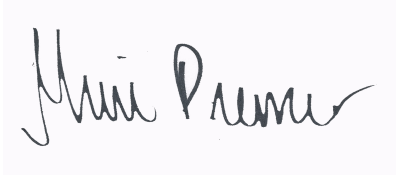
S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/21/22 17:17

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0184 - General Preparation										
Duplicate (BFB0184-DUP1)		**Source: 2202196-01**		Prepared & Analyzed: 02/17/22						
% Solids	83.9		%		82.9			1.15	20	



S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/21/22 17:17

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFC0409 - General Preparation										
Blank (BFC0409-BLK1)				Prepared & Analyzed: 03/18/22						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (BFC0409-BS1)				Prepared & Analyzed: 03/18/22						
Specific Conductance (EC)	0.150	0.0100	mmhos/cm	0.150		100	95-105			
Duplicate (BFC0409-DUP1)		**Source: 2202121-01**		Prepared & Analyzed: 03/18/22						
Specific Conductance (EC)	5.55	0.0100	mmhos/cm		5.54			0.0901	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.

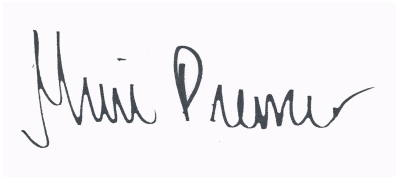
S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/21/22 17:17

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFC0410 - General Preparation										
LCS (BFC0410-BS1)				Prepared & Analyzed: 03/18/22						
pH	9.11		pH Units	9.18		99.2	95-105			
Duplicate (BFC0410-DUP1)		**Source: 2202121-01**		Prepared & Analyzed: 03/18/22						
pH	8.20		pH Units		8.20			0.00	20	



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Summit Scientific
Paul Shrewsbury
4653 Table Mountain Dr
Golden, CO 80403

RE: 2202199
Work Order Number: 2202461

March 19, 2022

Attention Paul Shrewsbury:

Fremont Analytical, Inc. received 2 sample(s) on 2/18/2022 for the analyses presented in the following report.

Sample Moisture (Percent Moisture)
Total Metals by EPA Method 6020B

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

CC:
Muri Premer

Date: *03/19/2022*

CLIENT: Summit Scientific
Project: 2202199
Work Order: 2202461

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2202461-001	W-N Wall 5FT	02/16/2022 12:00 AM	02/18/2022 4:39 PM
2202461-001	W-N Wall 5FT	02/16/2022 12:00 AM	02/18/2022 4:39 PM
2202461-002	W-S Wall 6FT	02/16/2022 12:00 AM	02/18/2022 4:39 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Original

Case Narrative

WO#: **2202461**
Date: **3/19/2022**

CLIENT: Summit Scientific
Project: 2202199

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Metals by EPA Method 6020 data is presented in this report. The remaining analyses have been placed on hold and will be analyzed by Summit Scientific.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2202461**
Date Reported: **3/19/2022**

Client: Summit Scientific
Collection Date: 2/16/2022
Project: 2202199
Lab ID: 2202461-001
Matrix: Soil
Client Sample ID: W-N Wall 5FT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020B				Batch ID: 35562		Analyst: EH
Arsenic	6.50	0.200	D	mg/Kg-dry	2	3/14/2022 4:33:14 PM
Barium	45.4	1.00	D	mg/Kg-dry	2	3/14/2022 4:33:14 PM
Cadmium	ND	0.334	D	mg/Kg-dry	2	3/14/2022 4:33:14 PM
Copper	9.27	1.67	D	mg/Kg-dry	2	3/14/2022 4:33:14 PM
Lead	8.37	0.334	D	mg/Kg-dry	2	3/14/2022 4:33:14 PM
Nickel	10.9	0.835	D	mg/Kg-dry	2	3/14/2022 4:33:14 PM
Selenium	1.14	0.334	D	mg/Kg-dry	2	3/14/2022 4:33:14 PM
Silver	ND	0.250	D	mg/Kg-dry	2	3/14/2022 4:33:14 PM
Zinc	41.5	2.92	D	mg/Kg-dry	2	3/14/2022 4:33:14 PM
Total Metals by EPA Method 6020B				Batch ID: 35668		Analyst: EH
Boron	0.108	0.00951	B	mg/L	1	3/16/2022 10:31:39 AM
Sample Moisture (Percent Moisture)				Batch ID: R73514		Analyst: MCH
Percent Moisture	15.6	0.500		wt%	1	2/22/2022 4:59:51 PM

Analytical Report

Work Order: **2202461**
Date Reported: **3/19/2022**

Client: Summit Scientific
Collection Date: 2/16/2022
Project: 2202199
Lab ID: 2202461-002
Matrix: Soil
Client Sample ID: W-S Wall 6FT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020B				Batch ID: 35562		Analyst: EH
Arsenic	2.60	0.210	D	mg/Kg-dry	2	3/14/2022 4:35:58 PM
Barium	53.8	1.05	D	mg/Kg-dry	2	3/14/2022 4:35:58 PM
Cadmium	ND	0.350	D	mg/Kg-dry	2	3/14/2022 4:35:58 PM
Copper	3.25	1.75	D	mg/Kg-dry	2	3/14/2022 4:35:58 PM
Lead	3.89	0.350	D	mg/Kg-dry	2	3/14/2022 4:35:58 PM
Nickel	3.76	0.874	D	mg/Kg-dry	2	3/14/2022 4:35:58 PM
Selenium	0.850	0.350	D	mg/Kg-dry	2	3/14/2022 4:35:58 PM
Silver	ND	0.262	D	mg/Kg-dry	2	3/14/2022 4:35:58 PM
Zinc	15.9	3.06	D	mg/Kg-dry	2	3/14/2022 4:35:58 PM
Total Metals by EPA Method 6020B				Batch ID: 35668		Analyst: EH
Boron	0.0860	0.00974	B	mg/L	1	3/16/2022 10:32:50 AM
Sample Moisture (Percent Moisture)				Batch ID: R73514		Analyst: MCH
Percent Moisture	9.89	0.500		wt%	1	2/22/2022 4:59:51 PM

Work Order: 2202461
CLIENT: Summit Scientific
Project: 2202199

QC SUMMARY REPORT

Total Metals by EPA Method 6020B

Sample ID: **MB-35562** SampType: **MBLK** Units: **mg/Kg** Prep Date: **3/2/2022** RunNo: **73966**
Client ID: **MBLKS** Batch ID: **35562** Analysis Date: **3/14/2022** SeqNo: **1515491**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.198									D
Barium	ND	0.992									D
Cadmium	ND	0.331									D
Copper	ND	1.65									D
Lead	ND	0.331									D
Nickel	ND	0.826									D
Selenium	ND	0.331									D
Silver	ND	0.248									D
Zinc	ND	2.89									D

Sample ID: **LCS-35562** SampType: **LCS** Units: **mg/Kg** Prep Date: **3/2/2022** RunNo: **73966**
Client ID: **LCSS** Batch ID: **35562** Analysis Date: **3/14/2022** SeqNo: **1515492**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	35.5	0.162	33.78	0	105	80	120				D
Barium	35.5	0.811	33.78	0	105	80	120				D
Cadmium	1.91	0.270	1.689	0	113	80	120				D
Copper	36.6	1.35	33.78	0	108	80	120				D
Lead	17.4	0.270	16.89	0	103	80	120				D
Nickel	35.2	0.676	33.78	0	104	80	120				D
Selenium	3.33	0.270	3.378	0	98.6	80	120				D
Silver	1.86	0.203	1.689	0	110	80	120				D
Zinc	35.5	2.36	33.78	0	105	80	120				D

Sample ID: **2202270-003AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **3/2/2022** RunNo: **73966**
Client ID: **BATCH** Batch ID: **35562** Analysis Date: **3/14/2022** SeqNo: **1515497**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	41.3	0.184	38.40	2.191	102	75	125				D

Work Order: 2202461
CLIENT: Summit Scientific
Project: 2202199

QC SUMMARY REPORT

Total Metals by EPA Method 6020B

Sample ID: **2202270-003AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **3/2/2022** RunNo: **73966**
Client ID: **BATCH** Batch ID: **35562** Analysis Date: **3/14/2022** SeqNo: **1515497**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	138	0.922	38.40	83.49	142	75	125				DS
Cadmium	2.06	0.307	1.920	0.04687	105	75	125				D
Copper	40.2	1.54	38.40	1.731	100	75	125				D
Lead	22.8	0.307	19.20	3.583	99.8	75	125				D
Nickel	41.2	0.768	38.40	2.491	101	75	125				D
Selenium	4.76	0.307	3.840	0.8034	103	75	125				D
Silver	2.00	0.230	1.920	0	104	75	125				D
Zinc	50.9	2.69	38.40	12.32	101	75	125				D

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.

Sample ID: **2202270-003AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **3/2/2022** RunNo: **73966**
Client ID: **BATCH** Batch ID: **35562** Analysis Date: **3/14/2022** SeqNo: **1515498**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	41.8	0.191	39.86	2.191	99.3	75	125	41.25	1.30	20	D
Barium	127	0.957	39.86	83.49	109	75	125	137.8	8.27	20	D
Cadmium	2.12	0.319	1.993	0.04687	104	75	125	2.058	2.88	20	D
Copper	41.9	1.59	39.86	1.731	101	75	125	40.17	4.15	20	D
Lead	23.2	0.319	19.93	3.583	98.4	75	125	22.75	1.95	20	D
Nickel	42.6	0.797	39.86	2.491	101	75	125	41.24	3.36	20	D
Selenium	4.62	0.319	3.986	0.8034	95.8	75	125	4.764	2.99	20	D
Silver	2.10	0.239	1.993	0	105	75	125	2.000	4.77	20	D
Zinc	52.2	2.79	39.86	12.32	99.9	75	125	50.92	2.41	20	D

Sample ID: **MB-35668** SampType: **MBLK** Units: **mg/L** Prep Date: **3/9/2022** RunNo: **74021**
Client ID: **MBLKS** Batch ID: **35668** Analysis Date: **3/16/2022** SeqNo: **1516832**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.0131	0.0100									

Work Order: 2202461
CLIENT: Summit Scientific
Project: 2202199

QC SUMMARY REPORT

Total Metals by EPA Method 6020B

Sample ID: **MB-35668**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **3/9/2022**		RunNo: **74021**			
Client ID: **MBLKS**	Batch ID: **35668**					Analysis Date: **3/16/2022**		SeqNo: **1516832**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: **LCS-35668**	SampType: **LCS**			Units: **mg/L**		Prep Date: **3/9/2022**		RunNo: **74021**			
Client ID: **LCSS**	Batch ID: **35668**					Analysis Date: **3/16/2022**		SeqNo: **1516833**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4.50	0.0100	5.000	0	89.9	80	120				

Sample ID: **2202513-001BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **3/9/2022**		RunNo: **74021**			
Client ID: **BATCH**	Batch ID: **35668**					Analysis Date: **3/16/2022**		SeqNo: **1516835**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.701	0.00939	4.695	0.04807	13.9	75	125				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2202513-001BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **3/9/2022**		RunNo: **74021**			
Client ID: **BATCH**	Batch ID: **35668**					Analysis Date: **3/16/2022**		SeqNo: **1516838**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.752	0.00916	4.579	0.04807	15.4	75	125	0.7013	6.93	20	S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample Log-In Check List

Client Name:	**SUMSCI**	Work Order Number:	**2202461**
Logged by:	**Gabrielle Coeuille**	Date Received:	**2/18/2022 4:39:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No ☐	Not Present	☐
2.	How was the sample delivered?	FedEx				

Log In

3.	Coolers are present?	Yes	☑	No ☐	NA	☐
4.	Shipping container/cooler in good condition?	Yes	☑	No ☐		
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☐	No ☐	Not Present	☑
6.	Was an attempt made to cool the samples?	Yes	☐	No ☑	NA	☐
		Unknown prior to receipt				
7.	Were all items received at a temperature of >2°C to 6°C *	Yes	☐	No ☐	NA	☑
8.	Sample(s) in proper container(s)?	Yes	☑	No ☐		
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No ☐		
10.	Are samples properly preserved?	Yes	☑	No ☐		
11.	Was preservative added to bottles?	Yes	☐	No ☑	NA	☐
12.	Is there headspace in the VOA vials?	Yes	☐	No ☐	NA	☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No ☐		
14.	Does paperwork match bottle labels?	Yes	☑	No ☐		
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No ☐		
16.	Is it clear what analyses were requested?	Yes	☑	No ☐		
17.	Were all holding times able to be met?	Yes	☑	No ☐		

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes	☐	No ☐	NA	☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample 1	13.8

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 2.17.22 | Page: 1 of: 1 | Laboratory Project No (internal): 2202461

Project Name: 220199 | Special Remarks:

Client: Summit Scientific

Project No:

Address: 4653 Table Mountain Drive

Collected by:

City, State, Zip: Golden, CO. 80403

Location:

Telephone: 303-277-9310

Report To (PM):

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax:

PM Email: mpremer@s2scientific.com, pshrewsbury@s2scientific.com

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	SAR, EC, pH	B	Metals	Comments
1	W-N Wall 5FT	2.16.22	N/A	S	x	x	x	B by Hot Water Soluble
2	W-S wall 4FT	↓	N/A	S	x	x	x	SAR, EC, pH by Saturated Paste
3								Metals: As, Ba, Cd, Cu, Pb, Ni, Se, Ag, Zn
4								
5								
6								
7								
8								
9								
10								

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): Individual:

***Anions (Circle): ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ O-Phosphate ☐ Fluoride ☐ Nitrate+Nitrite

Turn-around Time:
- ☒ Standard
- ☐ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day ☐ (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x [signature]	2.17.22 1430	x [signature]	2/18/22 16:39
Relinquished	Date/Time	Received	Date/Time
x		x	

Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 2.17.22 | Page: 1 of: 1 | Laboratory Project No (internal): 2202461

Project Name: 220199

Special Remarks: Report metals only per P.S. 3/17/22 –BB

Client: Summit Scientific

Project No:

Address: 4653 Table Mountain Drive

Collected by:

City, State, Zip: Golden, CO. 80403

Location:

Telephone: 303-277-9310

Report To (PM):

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax:

PM Email: mpremer@s2scientific.com, pshrewsbury@s2scientific.com

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	SAR, EC, pH	B	Metals	Comments
1	W-N Wall 5FT	2.16.22	N/A	S	x	x	x	B by Hot Water Soluble
2	W-S wall 4FT	↓	N/A	S	x	x	x	SAR, EC, pH by Saturated Paste
3								Metals: As, Ba, Cd, Cu, Pb, Ni, Se, Ag, Zn
4								
5								
6								
7								
8								
9								
10								

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): Individual:

***Anions (Circle): ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ O-Phosphate ☐ Fluoride ☐ Nitrate+Nitrite

Turn-around Time:
- ☒ Standard
- ☐ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day ☐ (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x [signature]	2.17.22 1430	x [signature]	2/18/22 16:39
Relinquished	Date/Time	Received	Date/Time
x		x	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/21/22 17:17

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 80403

303.277.9310

March 28, 2022

Paul Henehan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - Hoshiko-AST
Work Order #2202120

Enclosed are the results of analyses for samples received by Summit Scientific on 02/10/22 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Shrewsbury
President

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/28/22 10:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E-N WALL 6FT	2202120-01	Soil	02/10/22 00:00	02/10/22 17:00
N-E WALL 6FT	2202120-02	Soil	02/10/22 00:00	02/10/22 17:00
W1	2202120-03	Water	02/10/22 00:00	02/10/22 17:00

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.

2202120

Summit Scientific

S2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: Fremont Environmental Inc.
Project Manager: Paul Henehan
Address:
E-Mail:
City/State/Zip:
BILL: JACOB
Phone:
Project Name: NOBLE - HOSHIKO AST
Sampler Name: HENEHAN
Project Number:

					Preservative				Matrix				Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	GBTEXN+TMBs	DRO,RRO	PAHs	pH, EC, SAR	Boron	915-1 metals	Arsenic	BTEXN + TMBs	TDS, Cl, Su	
1	E-N WALL 6 FT	2/10/22		3			✓			✓			✓	✓	✓	✓	✓	✓				
2	N-E WALL 6 FT	"		3			✓			✓			✓	✓	✓	✓	✓	✓				
3	W1	"		4			✓		✓											✓	✓	
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by:	Date/Time:	Received by:	Date/Time:
PM/KE	2/10/22 1700		21022 1700
Relinquished by:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ✓ 72 hours —
24 hours — Standard —
48 hours —

Sample Integrity:
Temperature Upon Receipt: 5.2
Samples Intact: (Yes) No

Notes:

S2

S2 Work Order# 2202120

Sample Receipt Checklist

Client: Fremont Client Project ID: Noble-Hoshiko AST

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

Matrix (check all that apply): [ ] Air [–] Soil/Solid [–] Water [ ] Other: [ ] (Describe)

Temp (°C)	5.2

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C (1)? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	–			on ICE
Were all samples received intact (1)?	–			
Was adequate sample volume provided (1)?	–			
If custody seals are present, are they intact (1)?	–			
Are samples with holding times due within 48 hours sample due within 48 hours present?	–			Sameday
Is a chain-of-custody (COC) form present and filled out completely (1)?	–			
Does the COC agree with the number and type of sample bottles received (1)?	–			
Do the sample IDs on the bottle labels match the COC (1)?	–			
Is the COC properly relinquished by the client w/ date and time recorded (1)?	–			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**		–		
Are samples preserved that require preservation **(excluding cooling)** (1)? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, etc.			–	
If samples are acid preserved for metals, is the pH ≤ 2(1)? Record the pH in Comments.			–	
If dissolved metals are requested, were samples field filtered?			–	
Additional Comments (if any):				

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

[signature] 21022

Custodian Printed Name or Initials **Date/Time**

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/28/22 10:24

E-N WALL 6FT

2202120-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/10/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFB0112	02/10/22	02/10/22	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: **02/10/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*96.6 %*	*70-130*		"	"	"	"	
Surrogate: Toluene-d8		*102 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.9 %*	*70-130*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/10/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFB0113	02/10/22	02/10/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/10/22 00:00**

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

PAH by EPA Method 8270D SIM

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/28/22 10:24

E-N WALL 6FT

2202120-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/10/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFB0117	02/11/22	02/12/22	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: **02/10/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		*72.1 %*	*40-150*		"	"	"	"	
Surrogate: Fluoranthene-d10		*58.7 %*	*40-150*		"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/10/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFB0294	02/24/22	02/24/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/10/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

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.

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/28/22 10:24

E-N WALL 6FT

2202120-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**82.7**		%	1	BFB0114	02/11/22	02/11/22	Calculation	

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

Date Sampled: **02/10/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.39**		pH Units	1	BFC0572	03/24/22	03/24/22	EPA 9045D	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/28/22 10:24

N-E WALL 6FT

2202120-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/10/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFB0112	02/10/22	02/10/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	**0.022**	0.0050	"	"	"	"	"	"	
Xylenes (total)	**0.12**	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**0.14**	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	**0.068**	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**12**	0.50	"	"	"	"	"	"	

Date Sampled: **02/10/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*98.2 %*	*70-130*		"	"	"	"	
Surrogate: Toluene-d8		*97.3 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*125 %*	*70-130*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

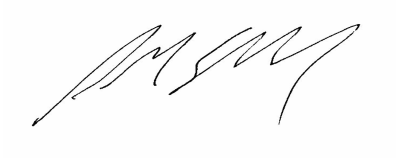
Date Sampled: **02/10/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	**110**	50	mg/kg	1	BFB0113	02/10/22	02/10/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/10/22 00:00**

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

PAH by EPA Method 8270D SIM



Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/28/22 10:24

N-E WALL 6FT

2202120-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/10/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFB0117	02/11/22	02/12/22	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	**0.0130**	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	**0.0595**	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	**0.128**	0.00500	"	"	"	"	"	"	

Date Sampled: **02/10/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		*47.6 %*	*40-150*		"	"	"	"	
Surrogate: Fluoranthene-d10		*61.6 %*	*40-150*		"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/10/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFB0294	02/24/22	02/24/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/10/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

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 - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/28/22 10:24

N-E WALL 6FT

2202120-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**83.6**		%	1	BFB0114	02/11/22	02/11/22	Calculation	

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

Date Sampled: **02/10/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.71**		pH Units	1	BFC0572	03/24/22	03/24/22	EPA 9045D	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/28/22 10:24

W1

2202120-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/10/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	BFB0108	02/10/22	02/10/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	**4.6**	1.0	"	"	"	"	"	"	
Xylenes (total)	**59**	2.0	"	"	"	"	"	"	
Naphthalene	**4.4**	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**46**	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	**27**	1.0	"	"	"	"	"	"	

Date Sampled: **02/10/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*113 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*95.9 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*	*21-167*		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **02/10/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**489**	12.0	mg/L	200	BFB0126	02/11/22	02/11/22	EPA 300.0	
Sulfate	**1400**	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **02/10/22 00:00**

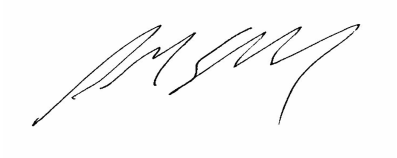
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**3950**	10.0	mg/L	1	BFB0116	02/11/22	02/11/22	SM2540C	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/28/22 10:24

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

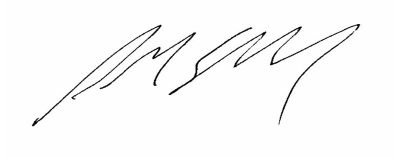
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0108 - EPA 5030 Water MS										
Blank (BFB0108-BLK1)				Prepared & Analyzed: 02/10/22						
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	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	*15.2*		*"*	*13.3*		*114*	*23-173*			
Surrogate: Toluene-d8	*12.6*		*"*	*13.3*		*94.7*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*12.0*		*"*	*13.3*		*90.2*	*21-167*			
LCS (BFB0108-BS1)				Prepared & Analyzed: 02/10/22						
Benzene	39.0	1.0	ug/l	41.7		93.6	51-132			
Toluene	39.8	1.0	"	41.7		95.6	51-138			
Ethylbenzene	41.7	1.0	"	41.7		100	58-146			
m,p-Xylene	82.0	2.0	"	83.3		98.4	57-144			
o-Xylene	41.4	1.0	"	41.7		99.3	53-146			
Naphthalene	39.3	1.0	"	41.7		94.3	70-130			
1,2,4-Trimethylbenzene	34.8	1.0	"	41.7		83.5	70-130			
1,3,5-Trimethylbenzene	44.6	1.0	"	41.7		107	70-130			
Surrogate: 1,2-Dichloroethane-d4	*15.5*		*"*	*13.3*		*116*	*23-173*			
Surrogate: Toluene-d8	*12.9*		*"*	*13.3*		*97.1*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*12.9*		*"*	*13.3*		*97.0*	*21-167*			
Matrix Spike (BFB0108-MS1)		**Source: 2202110-01**		Prepared & Analyzed: 02/10/22						
Benzene	39.2	1.0	ug/l	41.7	ND	94.2	34-141			
Toluene	39.1	1.0	"	41.7	ND	93.9	27-151			
Ethylbenzene	40.9	1.0	"	41.7	ND	98.2	29-160			
m,p-Xylene	81.2	2.0	"	83.3	ND	97.5	20-166			
o-Xylene	40.6	1.0	"	41.7	ND	97.4	33-159			
Naphthalene	43.2	1.0	"	41.7	ND	104	70-130			
1,2,4-Trimethylbenzene	34.3	1.0	"	41.7	ND	82.3	70-130			
1,3,5-Trimethylbenzene	44.2	1.0	"	41.7	ND	106	70-130			
Surrogate: 1,2-Dichloroethane-d4	*15.6*		*"*	*13.3*		*117*	*23-173*			
Surrogate: Toluene-d8	*13.0*		*"*	*13.3*		*97.5*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*12.4*		*"*	*13.3*		*93.1*	*21-167*			



Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0108 - EPA 5030 Water MS										
Matrix Spike Dup (BFB0108-MSD1)	**Source: 2202110-01**			Prepared & Analyzed: 02/10/22						
Benzene	39.3	1.0	ug/l	41.7	ND	94.3	34-141	0.127	30	
Toluene	40.1	1.0	"	41.7	ND	96.3	27-151	2.60	30	
Ethylbenzene	42.0	1.0	"	41.7	ND	101	29-160	2.53	30	
m,p-Xylene	82.2	2.0	"	83.3	ND	98.7	20-166	1.25	30	
o-Xylene	41.7	1.0	"	41.7	ND	100	33-159	2.63	30	
Naphthalene	44.8	1.0	"	41.7	ND	108	70-130	3.68	30	
1,2,4-Trimethylbenzene	35.5	1.0	"	41.7	ND	85.2	70-130	3.44	30	
1,3,5-Trimethylbenzene	44.9	1.0	"	41.7	ND	108	70-130	1.68	30	
Surrogate: 1,2-Dichloroethane-d4	*16.4*		*"*	*13.3*		*123*	*23-173*			
Surrogate: Toluene-d8	*13.2*		*"*	*13.3*		*99.4*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*12.6*		*"*	*13.3*		*94.7*	*21-167*			
Batch BFB0112 - EPA 5030 Soil MS										
Blank (BFB0112-BLK1)				Prepared: 02/10/22 Analyzed: 02/11/22						
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	*0.0413*		*"*	*0.0400*		*103*	*70-130*			
Surrogate: Toluene-d8	*0.0426*		*"*	*0.0400*		*107*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0401*		*"*	*0.0400*		*100*	*70-130*			



Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/28/22 10:24

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0112 - EPA 5030 Soil MS										
LCS (BFB0112-BS1)				Prepared: 02/10/22 Analyzed: 02/11/22						
Benzene	0.0730	0.0020	mg/kg	0.0750		97.3	70-130			
Toluene	0.0785	0.0050	"	0.0750		105	70-130			
Ethylbenzene	0.0781	0.0050	"	0.0750		104	70-130			
m,p-Xylene	0.158	0.010	"	0.150		105	70-130			
o-Xylene	0.0772	0.0050	"	0.0750		103	70-130			
1,2,4-Trimethylbenzene	0.0740	0.0050	"	0.0750		98.7	70-130			
1,3,5-Trimethylbenzene	0.0752	0.0050	"	0.0750		100	70-130			
Naphthalene	0.0793	0.0038	"	0.0750		106	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0405*		*"*	*0.0400*		*101*	*70-130*			
Surrogate: Toluene-d8	*0.0412*		*"*	*0.0400*		*103*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0411*		*"*	*0.0400*		*103*	*70-130*			
Matrix Spike (BFB0112-MS1)		**Source: 2202119-01**		Prepared: 02/10/22 Analyzed: 02/11/22						
Benzene	0.0715	0.0020	mg/kg	0.0750	ND	95.3	70-130			
Toluene	0.0774	0.0050	"	0.0750	ND	103	70-130			
Ethylbenzene	0.0750	0.0050	"	0.0750	ND	100	70-130			
m,p-Xylene	0.154	0.010	"	0.150	ND	103	70-130			
o-Xylene	0.0751	0.0050	"	0.0750	ND	100	70-130			
1,2,4-Trimethylbenzene	0.0734	0.0050	"	0.0750	ND	97.9	70-130			
1,3,5-Trimethylbenzene	0.0737	0.0050	"	0.0750	ND	98.3	70-130			
Naphthalene	0.0884	0.0038	"	0.0750	ND	118	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0404*		*"*	*0.0400*		*101*	*70-130*			
Surrogate: Toluene-d8	*0.0401*		*"*	*0.0400*		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0406*		*"*	*0.0400*		*102*	*70-130*			
Matrix Spike Dup (BFB0112-MSD1)		**Source: 2202119-01**		Prepared: 02/10/22 Analyzed: 02/11/22						
Benzene	0.0719	0.0020	mg/kg	0.0750	ND	95.8	70-130	0.544	30	
Toluene	0.0776	0.0050	"	0.0750	ND	103	70-130	0.310	30	
Ethylbenzene	0.0774	0.0050	"	0.0750	ND	103	70-130	3.11	30	
m,p-Xylene	0.157	0.010	"	0.150	ND	105	70-130	1.64	30	
o-Xylene	0.0759	0.0050	"	0.0750	ND	101	70-130	1.15	30	
1,2,4-Trimethylbenzene	0.0726	0.0050	"	0.0750	ND	96.8	70-130	1.15	30	
1,3,5-Trimethylbenzene	0.0747	0.0050	"	0.0750	ND	99.6	70-130	1.25	30	
Naphthalene	0.0865	0.0038	"	0.0750	ND	115	70-130	2.20	30	
Surrogate: 1,2-Dichloroethane-d4	*0.0392*		*"*	*0.0400*		*98.1*	*70-130*			
Surrogate: Toluene-d8	*0.0408*		*"*	*0.0400*		*102*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0392*		*"*	*0.0400*		*98.0*	*70-130*			

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/28/22 10:24

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

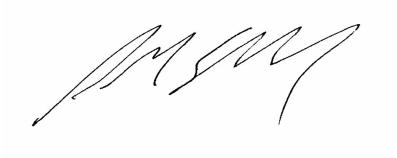
Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0113 - EPA 3550A										
Blank (BFB0113-BLK1)				Prepared & Analyzed: 02/10/22						
C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
LCS (BFB0113-BS1)				Prepared & Analyzed: 02/10/22						
C10-C28 (DRO)	404	50	mg/kg	500		80.8	70-130			
Matrix Spike (BFB0113-MS1)	**Source: 2202119-01**			Prepared & Analyzed: 02/10/22						
C10-C28 (DRO)	462	50	mg/kg	500	ND	92.3	70-130			
Matrix Spike Dup (BFB0113-MSD1)	**Source: 2202119-01**			Prepared & Analyzed: 02/10/22						
C10-C28 (DRO)	406	50	mg/kg	500	ND	81.2	70-130	12.8	20	

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

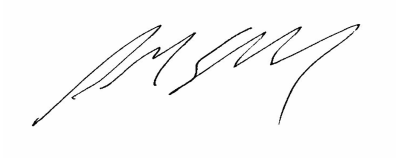
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0117 - EPA 5030 Soil MS										
Blank (BFB0117-BLK1)				Prepared: 02/11/22 Analyzed: 02/12/22						
Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	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	*0.0296*		*"*	*0.0333*		*88.8*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0194*		*"*	*0.0333*		*58.3*	*40-150*			
LCS (BFB0117-BS1)				Prepared: 02/11/22 Analyzed: 02/12/22						
Acenaphthene	0.0280	0.00500	mg/kg	0.0333		84.0	31-137			
Anthracene	0.0277	0.00500	"	0.0333		83.0	30-120			
Benzo (a) anthracene	0.0290	0.00500	"	0.0333		86.9	30-120			
Benzo (a) pyrene	0.0309	0.00500	"	0.0333		92.7	30-120			
Benzo (b) fluoranthene	0.0300	0.00500	"	0.0333		90.1	30-120			
Benzo (k) fluoranthene	0.0337	0.00500	"	0.0333		101	30-120			
Chrysene	0.0290	0.00500	"	0.0333		87.1	30-120			
Dibenz (a,h) anthracene	0.0334	0.00500	"	0.0333		100	30-120			
Fluoranthene	0.0286	0.00500	"	0.0333		85.9	30-120			
Fluorene	0.0305	0.00500	"	0.0333		91.5	30-120			
Indeno (1,2,3-cd) pyrene	0.0305	0.00500	"	0.0333		91.6	30-120			
Pyrene	0.0312	0.00500	"	0.0333		93.5	35-142			
1-Methylnaphthalene	0.0307	0.00500	"	0.0333		92.1	35-142			
2-Methylnaphthalene	0.0324	0.00500	"	0.0333		97.2	35-142			
Surrogate: 2-Methylnaphthalene-d10	*0.0318*		*"*	*0.0333*		*95.4*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0267*		*"*	*0.0333*		*80.2*	*40-150*			



PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0117 - EPA 5030 Soil MS										
Matrix Spike (BFB0117-MS1)	**Source: 2202071-01**			Prepared: 02/11/22 Analyzed: 02/12/22						
Acenaphthene	0.0218	0.00500	mg/kg	0.0333	ND	65.4	31-137			
Anthracene	0.0200	0.00500	"	0.0333	ND	59.9	30-120			
Benzo (a) anthracene	0.0230	0.00500	"	0.0333	ND	69.0	30-120			
Benzo (a) pyrene	0.0255	0.00500	"	0.0333	ND	76.5	30-120			
Benzo (b) fluoranthene	0.0253	0.00500	"	0.0333	ND	76.0	30-120			
Benzo (k) fluoranthene	0.0285	0.00500	"	0.0333	ND	85.5	30-120			
Chrysene	0.0235	0.00500	"	0.0333	ND	70.4	30-120			
Dibenz (a,h) anthracene	0.0274	0.00500	"	0.0333	ND	82.1	30-120			
Fluoranthene	0.0194	0.00500	"	0.0333	ND	58.3	30-120			
Fluorene	0.0245	0.00500	"	0.0333	ND	73.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0359	0.00500	"	0.0333	ND	108	30-120			
Pyrene	0.0229	0.00500	"	0.0333	ND	68.8	35-142			
1-Methylnaphthalene	0.0240	0.00500	"	0.0333	ND	72.0	15-130			
2-Methylnaphthalene	0.0256	0.00500	"	0.0333	ND	76.8	15-130			
Surrogate: 2-Methylnaphthalene-d10	*0.0234*		"	*0.0333*		*70.1*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0212*		"	*0.0333*		*63.5*	*40-150*			
Matrix Spike Dup (BFB0117-MSD1)	**Source: 2202071-01**			Prepared: 02/11/22 Analyzed: 02/12/22						
Acenaphthene	0.0252	0.00500	mg/kg	0.0333	ND	75.6	31-137	14.4	30	
Anthracene	0.0231	0.00500	"	0.0333	ND	69.4	30-120	14.7	30	
Benzo (a) anthracene	0.0246	0.00500	"	0.0333	ND	73.9	30-120	6.92	30	
Benzo (a) pyrene	0.0271	0.00500	"	0.0333	ND	81.4	30-120	6.23	30	
Benzo (b) fluoranthene	0.0268	0.00500	"	0.0333	ND	80.4	30-120	5.55	30	
Benzo (k) fluoranthene	0.0313	0.00500	"	0.0333	ND	93.8	30-120	9.30	30	
Chrysene	0.0252	0.00500	"	0.0333	ND	75.5	30-120	6.99	30	
Dibenz (a,h) anthracene	0.0276	0.00500	"	0.0333	ND	82.7	30-120	0.759	30	
Fluoranthene	0.0229	0.00500	"	0.0333	ND	68.8	30-120	16.5	30	
Fluorene	0.0274	0.00500	"	0.0333	ND	82.1	30-120	11.2	30	
Indeno (1,2,3-cd) pyrene	0.0369	0.00500	"	0.0333	ND	111	30-120	2.86	30	
Pyrene	0.0248	0.00500	"	0.0333	ND	74.4	35-142	7.79	30	
1-Methylnaphthalene	0.0282	0.00500	"	0.0333	ND	84.5	15-130	16.0	50	
2-Methylnaphthalene	0.0303	0.00500	"	0.0333	ND	90.8	15-130	16.8	50	
Surrogate: 2-Methylnaphthalene-d10	*0.0278*		"	*0.0333*		*83.4*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0236*		"	*0.0333*		*70.7*	*40-150*			

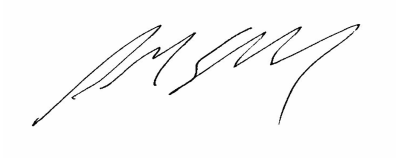


Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/28/22 10:24

Hexavalent Chromium by EPA Method 7196 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0294 - 3060A_Mod										
Blank (BFB0294-BLK1)				Prepared & Analyzed: 02/24/22						
Chromium, Hexavalent	ND	0.30	mg/kg wet							
LCS (BFB0294-BS1)				Prepared & Analyzed: 02/24/22						
Chromium, Hexavalent	25.8	0.30	mg/kg wet	25.0		103	80-120			
Duplicate (BFB0294-DUP1)	**Source: 2202109-01**			Prepared & Analyzed: 02/24/22						
Chromium, Hexavalent	ND	0.30	mg/kg dry		ND				20	
Matrix Spike (BFB0294-MS1)	**Source: 2202109-01**			Prepared & Analyzed: 02/24/22						
Chromium, Hexavalent	30.5	0.30	mg/kg dry	27.5	ND	111	75-125			
Matrix Spike Dup (BFB0294-MSD1)	**Source: 2202109-01**			Prepared & Analyzed: 02/24/22						
Chromium, Hexavalent	36.1	0.30	mg/kg dry	27.5	ND	131	75-125	17.0	20	QR-03



Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/28/22 10:24

Anions by EPA Method 300.0 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0126 - General Preparation										
Blank (BFB0126-BLK1)				Prepared & Analyzed: 02/11/22						
Chloride	ND	0.0600	mg/L							
Sulfate	ND	0.300	"							
LCS (BFB0126-BS1)				Prepared & Analyzed: 02/11/22						
Chloride	3.15	0.0600	mg/L	3.00		105	90-110			
Sulfate	13.7	0.300	"	15.0		91.1	90-110			
Duplicate (BFB0126-DUP1)	**Source: 2202091-01**			Prepared & Analyzed: 02/11/22						
Chloride	48.4	12.0	mg/L		42.4			13.2	20	
Sulfate	154	60.0	"		152			1.17	20	
Matrix Spike (BFB0126-MS1)	**Source: 2202091-01**			Prepared & Analyzed: 02/11/22						
Chloride	665	12.0	mg/L	600	42.4	104	80-120			
Sulfate	2630	60.0	"	3000	152	82.4	80-120			

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/28/22 10:24

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0114 - General Preparation										
Duplicate (BFB0114-DUP1)		**Source: 2202118-01**		Prepared & Analyzed: 02/11/22						
% Solids	86.7		%		87.0			0.430	20	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/28/22 10:24

Total Dissolved Solids by SM2540C - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0116 - General Preparation										
Blank (BFB0116-BLK1)				Prepared & Analyzed: 02/11/22						
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (BFB0116-DUP1)		**Source: 2202120-03**		Prepared & Analyzed: 02/11/22						
Total Dissolved Solids	3960	10.0	mg/L		3950			0.0759	20	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/28/22 10:24

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFC0572 - General Preparation										
LCS (BFC0572-BS1)				Prepared & Analyzed: 03/24/22						
pH	9.11		pH Units	9.18		99.2	95-105			
Duplicate (BFC0572-DUP1)		**Source: 2202120-01**		Prepared & Analyzed: 03/24/22						
pH	8.41		pH Units		8.39			0.238	20	

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Summit Scientific
Paul Shrewsbury
4653 Table Mountain Dr
Golden, CO 80403

RE: 2202120
Work Order Number: 2202304

March 26, 2022

Attention Paul Shrewsbury:

Fremont Analytical, Inc. received 2 sample(s) on 2/14/2022 for the analyses presented in the following report.

Conductivity by SM 2510B
Sample Moisture (Percent Moisture)
Sodium Adsorption Ratio
Total Metals by EPA Method 6020B

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

CC:
Muri Premer

Date: *03/26/2022*

CLIENT: Summit Scientific
Project: 2202120
Work Order: 2202304

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2202304-001	E-N Wall 6FT	02/10/2022 12:00 AM	02/14/2022 10:46 AM
2202304-001	E-N Wall 6FT	02/10/2022 12:00 AM	02/14/2022 10:46 AM
2202304-002	N-E Wall 6FT	02/10/2022 12:00 AM	02/14/2022 10:46 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2202304**
Date: **3/26/2022**

CLIENT: Summit Scientific
Project: 2202120

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

The following preparation methods were performed per client request:

Boron was prepared using Hot Water Soluble Method provided by client.

Conductivity, Sodium Adsorption Ratio, and pH were prepared using Saturated Paste Method provided by client.

3/26/2022: Revision 1 reflects client request to place pH on hold, as well additional barium data.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2202304**
Date Reported: **3/26/2022**

Client: Summit Scientific
Collection Date: 2/10/2022
Project: 2202120
Lab ID: 2202304-001
Matrix: Soil
Client Sample ID: E-N Wall 6FT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020B				Batch ID: 35519		Analyst: EH
Arsenic	8.08	0.219	D	mg/Kg-dry	2	3/8/2022 3:54:47 PM
Barium	57.5	1.09	DQ	mg/Kg-dry	2	3/8/2022 3:54:47 PM
Cadmium	ND	0.364	D	mg/Kg-dry	2	3/8/2022 3:54:47 PM
Copper	12.4	1.82	D	mg/Kg-dry	2	3/8/2022 3:54:47 PM
Lead	11.8	0.364	D	mg/Kg-dry	2	3/8/2022 3:54:47 PM
Nickel	11.5	0.911	D	mg/Kg-dry	2	3/8/2022 3:54:47 PM
Selenium	1.71	0.364	D	mg/Kg-dry	2	3/8/2022 3:54:47 PM
Silver	ND	0.273	D	mg/Kg-dry	2	3/8/2022 3:54:47 PM
Zinc	51.5	3.19	D	mg/Kg-dry	2	3/8/2022 3:54:47 PM

NOTES:
Diluted due to matrix.
Q - Associated calibration verification is above acceptance criteria (113% recovery). Result may be high-biased.

Total Metals by EPA Method 6020B				Batch ID: 35535		Analyst: EH
Boron	0.0980	0.00989		mg/L	1	3/16/2022 1:08:38 PM
Sodium Adsorption Ratio				Batch ID: 35732		Analyst: WC
Sodium Adsorption Ratio (SAR)	0.322	0		mEq/L	1	3/15/2022 10:47:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R73397		Analyst: MCH
Percent Moisture	15.5	0.500		wt%	1	2/17/2022 2:53:05 PM
Conductivity by SM 2510B				Batch ID: R73989		Analyst: ALT
Specific Conductance (Conductivity)	51.6	1.00		µS/cm	1	3/14/2022 2:44:00 PM

Analytical Report

Work Order: **2202304**
Date Reported: **3/26/2022**

Client: Summit Scientific
Collection Date: 2/10/2022
Project: 2202120
Lab ID: 2202304-002
Matrix: Soil
Client Sample ID: N-E Wall 6FT

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020B				Batch ID: 35519		Analyst: EH
Arsenic	9.14	0.225	D	mg/Kg-dry	2	3/8/2022 3:57:31 PM
Barium	78.8	1.13	DQ	mg/Kg-dry	2	3/8/2022 3:57:31 PM
Cadmium	ND	0.375	D	mg/Kg-dry	2	3/8/2022 3:57:31 PM
Copper	12.2	1.88	D	mg/Kg-dry	2	3/8/2022 3:57:31 PM
Lead	12.0	0.375	D	mg/Kg-dry	2	3/8/2022 3:57:31 PM
Nickel	13.8	0.938	D	mg/Kg-dry	2	3/8/2022 3:57:31 PM
Selenium	1.81	0.375	D	mg/Kg-dry	2	3/8/2022 3:57:31 PM
Silver	ND	0.281	D	mg/Kg-dry	2	3/8/2022 3:57:31 PM
Zinc	50.7	3.28	D	mg/Kg-dry	2	3/8/2022 3:57:31 PM

NOTES:
Diluted due to matrix.
Q - Associated calibration verification is above acceptance criteria (113% recovery). Result may be high-biased.

Total Metals by EPA Method 6020B				Batch ID: 35535		Analyst: EH
Boron	0.148	0.00963		mg/L	1	3/16/2022 1:09:48 PM
Sodium Adsorption Ratio				Batch ID: 35732		Analyst: WC
Sodium Adsorption Ratio (SAR)	0.542	0		mEq/L	1	3/15/2022 10:50:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R73397		Analyst: MCH
Percent Moisture	16.0	0.500		wt%	1	2/17/2022 2:53:05 PM
Conductivity by SM 2510B				Batch ID: R73989		Analyst: ALT
Specific Conductance (Conductivity)	55.8	1.00		µS/cm	1	3/14/2022 2:44:00 PM

Work Order: 2202304
CLIENT: Summit Scientific
Project: 2202120

QC SUMMARY REPORT

Conductivity by SM 2510B

Sample ID: **MB-R73989**	SampType: **MBLK**	Units: **µS/cm**	Prep Date: **3/14/2022**	RunNo: **73989**
Client ID: **MBLKW**	Batch ID: **R73989**		Analysis Date: **3/14/2022**	SeqNo: **1516047**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance (Conductivity)	ND	1.00									

Sample ID: **LCS-R73989**	SampType: **LCS**	Units: **µS/cm**	Prep Date: **3/14/2022**	RunNo: **73989**
Client ID: **LCSW**	Batch ID: **R73989**		Analysis Date: **3/14/2022**	SeqNo: **1516048**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance (Conductivity)	985	1.00	1,000	0	98.5	98	104				

Sample ID: **2202513-001ADUP**	SampType: **DUP**	Units: **µS/cm**	Prep Date: **3/14/2022**	RunNo: **73989**
Client ID: **BATCH**	Batch ID: **R73989**		Analysis Date: **3/14/2022**	SeqNo: **1516050**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance (Conductivity)	49.9	1.00						47.80	4.30	20	

Sample ID: **LCSD-R73989**	SampType: **LCSD**	Units: **µS/cm**	Prep Date: **3/14/2022**	RunNo: **73989**
Client ID: **LCSW02**	Batch ID: **R73989**		Analysis Date: **3/14/2022**	SeqNo: **1516065**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance (Conductivity)	985	1.00	1,000	0	98.5	98	104	985.0	0	20	

Work Order: 2202304
CLIENT: Summit Scientific
Project: 2202120

QC SUMMARY REPORT

Total Metals by EPA Method 6020B

Sample ID: **MB-35519**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **2/25/2022**	RunNo: **73630**
Client ID: **MBLKS**	Batch ID: **35519**		Analysis Date: **2/28/2022**	SeqNo: **1505555**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.0952									
Barium	ND	0.476									
Cadmium	ND	0.159									
Copper	ND	0.794									
Lead	ND	0.159									
Nickel	ND	0.397									
Selenium	ND	0.159									
Silver	ND	0.119									
Zinc	ND	1.39									

Sample ID: **LCS-35519**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **2/25/2022**	RunNo: **73630**
Client ID: **LCSS**	Batch ID: **35519**		Analysis Date: **2/28/2022**	SeqNo: **1505556**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	37.7	0.0938	39.06	0	96.5	80	120				
Barium	39.7	0.469	39.06	0	102	80	120				
Cadmium	1.95	0.156	1.953	0	99.9	80	120				
Copper	37.2	0.781	39.06	0	95.2	80	120				
Lead	19.1	0.156	19.53	0	97.8	80	120				
Nickel	39.5	0.391	39.06	0	101	80	120				
Selenium	4.01	0.156	3.906	0	103	80	120				
Silver	2.18	0.117	1.953	0	112	80	120				
Zinc	36.2	1.37	39.06	0	92.6	80	120				

Sample ID: **2202495-001AMS**	SampType: **MS**	Units: **mg/Kg-dry**	Prep Date: **2/25/2022**	RunNo: **73630**
Client ID: **BATCH**	Batch ID: **35519**		Analysis Date: **2/28/2022**	SeqNo: **1505559**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	42.9	0.107	44.45	1.745	92.6	75	125				

Work Order: 2202304
CLIENT: Summit Scientific
Project: 2202120

QC SUMMARY REPORT

Total Metals by EPA Method 6020B

Sample ID: **2202495-001AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **2/25/2022** RunNo: **73630**
Client ID: **BATCH** Batch ID: **35519** Analysis Date: **2/28/2022** SeqNo: **1505559**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	67.1	0.533	44.45	26.63	91.1	75	125				
Cadmium	2.13	0.178	2.222	0.03071	94.5	75	125				
Copper	46.5	0.889	44.45	8.810	84.9	75	125				
Lead	21.0	0.178	22.22	1.575	87.6	75	125				
Nickel	48.7	0.444	44.45	7.143	93.4	75	125				
Selenium	4.49	0.178	4.445	0.4703	90.4	75	125				
Silver	2.04	0.133	2.222	0	91.7	75	125				
Zinc	55.3	1.56	44.45	17.47	85.1	75	125				

Sample ID: **2202495-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **2/25/2022** RunNo: **73630**
Client ID: **BATCH** Batch ID: **35519** Analysis Date: **2/28/2022** SeqNo: **1505560**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	48.1	0.107	44.79	1.745	103	75	125	42.90	11.3	20	
Barium	76.7	0.537	44.79	26.63	112	75	125	67.10	13.3	20	
Cadmium	2.40	0.179	2.240	0.03071	106	75	125	2.132	12.0	20	
Copper	52.9	0.896	44.79	8.810	98.5	75	125	46.54	12.9	20	
Lead	25.5	0.179	22.40	1.575	107	75	125	21.04	19.3	20	
Nickel	56.6	0.448	44.79	7.143	110	75	125	48.66	15.1	20	
Selenium	5.17	0.179	4.479	0.4703	105	75	125	4.490	14.0	20	
Silver	2.31	0.134	2.240	0	103	75	125	2.039	12.3	20	
Zinc	69.0	1.57	44.79	17.47	115	75	125	55.30	22.1	20	R

NOTES:
R - High RPD observed, spike recovery is within range.

Sample ID: **MB-35535** SampType: **MBLK** Units: **mg/L** Prep Date: **2/28/2022** RunNo: **74025**
Client ID: **MBLKS** Batch ID: **35535** Analysis Date: **3/16/2022** SeqNo: **1517245**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.0100									

Work Order: 2202304
CLIENT: Summit Scientific
Project: 2202120

QC SUMMARY REPORT

Total Metals by EPA Method 6020B

Sample ID: **MB-35535**	SampType: **MBLK**			Units: **mg/L**		Prep Date: **2/28/2022**		RunNo: **74025**			
Client ID: **MBLKS**	Batch ID: **35535**					Analysis Date: **3/16/2022**		SeqNo: **1517245**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: **LCS-35535**	SampType: **LCS**			Units: **mg/L**		Prep Date: **2/28/2022**		RunNo: **74025**			
Client ID: **LCSS**	Batch ID: **35535**					Analysis Date: **3/16/2022**		SeqNo: **1517246**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4.50	0.0100	5.000	0	90.1	80	120				

Sample ID: **2202268-007BDUP**	SampType: **DUP**			Units: **mg/L**		Prep Date: **2/28/2022**		RunNo: **74025**			
Client ID: **BATCH**	Batch ID: **35535**					Analysis Date: **3/16/2022**		SeqNo: **1517248**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.0343	0.00986						0.03721	8.12	20	

Sample ID: **2202268-007BMS**	SampType: **MS**			Units: **mg/L**		Prep Date: **2/28/2022**		RunNo: **74025**			
Client ID: **BATCH**	Batch ID: **35535**					Analysis Date: **3/16/2022**		SeqNo: **1517249**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.19	0.00978	4.892	0.03721	23.5	75	125				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2202268-007BMSD**	SampType: **MSD**			Units: **mg/L**		Prep Date: **2/28/2022**		RunNo: **74025**			
Client ID: **BATCH**	Batch ID: **35535**					Analysis Date: **3/16/2022**		SeqNo: **1517250**			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	1.12	0.00978	4.888	0.03721	22.2	75	125	1.189	5.77	20	S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2202304
CLIENT: Summit Scientific
Project: 2202120

QC SUMMARY REPORT

Sodium Adsorption Ratio

Sample ID: **MB-35732** SampType: **MBLK** Units: **µg/L** Prep Date: **3/15/2022** RunNo: **74010**
Client ID: **MBLKW** Batch ID: **35732** Analysis Date: **3/15/2022** SeqNo: **1516615**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	200									
Magnesium	ND	100									
Sodium	ND	200									

Sample ID: **LCS-35732** SampType: **LCS** Units: **µg/L** Prep Date: **3/15/2022** RunNo: **74010**
Client ID: **LCSW** Batch ID: **35732** Analysis Date: **3/15/2022** SeqNo: **1516616**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	1,100	200	1,000	0	110	50	150				
Magnesium	987	100	1,000	0	98.7	50	150				
Sodium	1,090	200	1,000	0	109	50	150				

Sample ID: **2202513-001ADUP** SampType: **DUP** Units: **mEq/L** Prep Date: **3/15/2022** RunNo: **74010**
Client ID: **BATCH** Batch ID: **35732** Analysis Date: **3/15/2022** SeqNo: **1518035**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio (SAR)	0.158	0						0.1430	9.97	30	

Sample Log-In Check List

Client Name:	**SUMSCI**	Work Order Number:	**2202304**
Logged by:	**Gabrielle Coeuille**	Date Received:	**2/14/2022 10:46:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	FedEx		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
6.	Was an attempt made to cool the samples?	Yes ☐	No ☑	NA ☐
		Unknown prior to receipt		
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☐	No ☐	NA ☑
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample 1	13.5

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 2.11.22 | Page: 1 of: 1 | Laboratory Project No (internal): 2202304

Project Name: 2202120

Special Remarks:

Client: Summit Scientific

Project No:

Address: 4653 Table Mountain Drive

Collected by:

City, State, Zip: Golden, CO. 80403

Location:

Telephone: 303-277-9310

Report To (PM):

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax:

PM Email: mpremer@s2scientific.com, pshrewsbury@s2scientific.com

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	SAR, EC, pH	Boron	Metals	Comments
1	E-N Wall 6FT	2.10.22	N/A	S	x	x	x	B by Hot Water Soluble SAR, EC, pH by Saturated Paste Metals: As, Cd, Cu, Pb, Ni, Se, Ag, Zn
2	N-E Wall 6FT	2.10.22	N/A	S	x	x	x	
3								
4								
5								
6								
7								
8								
9								
10								

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): Individual:

***Anions (Circle): ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ O-Phosphate ☐ Fluoride ☐ Nitrate+Nitrite

Turn-around Time:
- ■ Standard
- ☐ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day ☐ (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x [signature]	2.11.22 1400	x [signature]	2/14/22 10:46
Relinquished x	Date/Time	Received x	Date/Time

Fremont Analytical

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 2.11.22 | Page: 1 of: 1 | Laboratory Project No (internal): 2202304

Project Name: 2202120

Special Remarks: Add barium to each sample per P.S. 3/22/22-BB

Client: Summit Scientific

Address: 4653 Table Mountain Drive

City, State, Zip: Golden, CO. 80403

Telephone: 303-277-9310

Fax:

Project No:

Collected by:

Location:

Report To (PM):

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

PM Email: mpremer@s2scientific.com, pshrewsbury@s2scientific.com

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	SAR, EC, pH	Boron	Metals
1	E-N Wall 6FT	2.10.22	N/A	S	x	x	x
2	N-E Wall 6FT	2.10.22	N/A	S	x	x	x
3							
4							
5							
6							
7							
8							
9							
10							

Comments: B by Hot Water Soluble SAR, EC, pH by Saturated Paste
Metals: As, Cd, Cu, Pb, Ni, Se, Ag, Zn

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): Individual:

***Anions (Circle): ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ O-Phosphate ☐ Fluoride ☐ Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x [signature]	2.11.22 1400	x [signature]	2/14/22 10:46
Relinquished	Date/Time	Received	Date/Time
x		x	

Turn-around Time:
- ■ Standard
- ☐ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day ☐ (specify)

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 2·11·22 | Page: 1 of: 1 | Laboratory Project No (internal): 2202304

Project Name: 2202120

Special Remarks:
Add barium to each sample per P.S. 3/22/22-BB
Hold pH per P.S. 3/23/2022 -BB

Client: Summit Scientific
Address: 4653 Table Mountain Drive
City, State, Zip: Golden, CO. 80403
Telephone: 303-277-9310
Fax:

Project No:
Collected by:
Location:
Report To (PM):
Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)
PM Email: mpremer@s2scientific.com, pshrewsbury@s2scientific.com

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	SAR, EC, pH	Boron	Metals	Comments
1	E-N Wall 6FT	2·10·22	N/A	S	x	x	x	B by Hot Water Soluble SAR, EC, pH by Saturated Paste Metals: As, Cd, Cu, Pb, Ni, Se, Ag, Zn
2	N-E Wall 6FT	2·10·22	N/A	S	x	x	x	
3								
4								
5								
6								
7								
8								
9								
10								

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): Individual:

***Anions (Circle): ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ O-Phosphate ☐ Fluoride ☐ Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x	2·11·22 14:00	x	2/14/22 10:46
Relinquished	Date/Time	Received	Date/Time
x		x	

Turn-around Time:
■ Standard
☐ 3 Day
☐ 2 Day
☐ Next Day
☐ Same Day (specify)

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 03/28/22 10:24

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.
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

March 22, 2022

Paul Henehan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - Hoshiko-AST
Work Order #2202175

Enclosed are the results of analyses for samples received by Summit Scientific on 02/15/22 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Shrewsbury
President

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N-C-2 WALL 6FT	2202175-01	Soil	02/15/22 00:00	02/15/22 17:00
N-E-2 WALL 6FT	2202175-02	Soil	02/15/22 00:00	02/15/22 17:00
PL BACKFILL 4FT	2202175-03	Soil	02/15/22 00:00	02/15/22 17:00

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.

2202175

Summit Scientific

S2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Client: Fremont Environmental Inc. | Project Manager: Paul Henehan
Address: | E-Mail:
City/State/Zip: | BILL TO: JACOB
Phone: | Project Name: HOSHIKO AST
Sampler Name: HENEHAN | Project Number: C020-049

					Preservative				Matrix				Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	GBTEXN+TMBs	DRO,RRO	PAHs	pH, EC, SAR	Boron	915-1 metals	Arsenic	BTEXN + TMBs	TDS, Cl, Su	
1	N-C-2 WALL 6FT	2/15/22		3			✓			✓			✓	✓	✓	✓	✓	✓				
2	N-E-2 WALL 6FT	"		3			✓			✓			✓	✓	✓	✓	✓	✓				
3	PL BACKFILL 4 FT	"		2			✓			✓			✓	✓	✓							
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by:	Date/Time:	Received by:	Date/Time:
[signature] / FE	2/15/22 1700	[signature]	21522 1700
Relinquished by:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ✓ (circled)
24 hours ___
48 hours ___
72 hours ___
Standard ___

Sample Integrity:
Temperature Upon Receipt: 5.1
Samples Intact: (Yes) No

Notes:

S2

2202175

S2 Work Order#_____

Sample Receipt Checklist

Client: Fremont Client Project ID: HOSHIKO AST

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

Matrix (check all that apply): ___Air – Soil/Solid ___Water ___Other:_____ (Describe)

Temp (°C)	5.1

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C [1]? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	–			ON ICE
Were all samples received intact [1]?	–			
Was adequate sample volume provided [1]?	–			
If custody seals are present, are they intact [1]?	–			
Are samples with holding times due within 48 hours sample due within 48 hours present?	–			Sameday
Is a chain-of-custody (COC) form present and filled out completely [1]?	–			
Does the COC agree with the number and type of sample bottles received [1]?	–			
Do the sample IDs on the bottle labels match the COC [1]?	–			
Is the COC properly relinquished by the client w/ date and time recorded [1]?	–			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**			–	
Are samples preserved that require preservation **(excluding cooling)** [1]? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, etc.			–	
If samples are acid preserved for metals, is the pH ≤ 2[1]? Record the pH in Comments.			–	
If dissolved metals are requested, were samples field filtered?			–	
Additional Comments (if any):				

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

Custodian Printed Name or Initials

2.15.22

Date/Time

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:42

N-C-2 WALL 6FT

2202175-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/15/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFB0170	02/15/22	02/15/22	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: **02/15/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*70-130*		"	"	"	"	
Surrogate: Toluene-d8		*102 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*104 %*	*70-130*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/15/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFB0171	02/15/22	02/16/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/15/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*69.4 %*	*30-150*		"	"	"	"	

PAH by EPA Method 8270D SIM

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:42

N-C-2 WALL 6FT

2202175-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/15/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFB0180	02/16/22	02/17/22	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: **02/15/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		*51.7 %*	*40-150*		"	"	"	"	
Surrogate: Fluoranthene-d10		*55.8 %*	*40-150*		"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/15/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFB0330	02/28/22	02/28/22	EPA 7196A	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:42

N-E-2 WALL 6FT

2202175-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/15/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFB0170	02/15/22	02/15/22	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: **02/15/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*104 %*	*70-130*		"	"	"	"	
Surrogate: Toluene-d8		*101 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*	*70-130*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

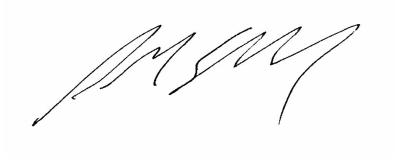
Date Sampled: **02/15/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFB0171	02/15/22	02/16/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/15/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*82.9 %*	*30-150*		"	"	"	"	

PAH by EPA Method 8270D SIM



Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:42

N-E-2 WALL 6FT

2202175-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/15/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFB0180	02/16/22	02/17/22	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: **02/15/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		*71.8 %*	*40-150*		"	"	"	"	
Surrogate: Fluoranthene-d10		*66.5 %*	*40-150*		"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/15/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFB0330	02/28/22	02/28/22	EPA 7196A	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:42

PL BACKFILL 4FT

2202175-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/15/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFB0170	02/15/22	02/16/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	**0.012**	0.0050	"	"	"	"	"	"	
Xylenes (total)	**0.14**	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	**0.054**	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	**0.019**	0.0050	"	"	"	"	"	"	
Naphthalene	**0.0063**	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	**0.96**	0.50	"	"	"	"	"	"	

Date Sampled: **02/15/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*70-130*		"	"	"	"	
Surrogate: Toluene-d8		*102 %*	*70-130*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*105 %*	*70-130*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/15/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFB0171	02/15/22	02/15/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/15/22 00:00**

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

PAH by EPA Method 8270D SIM

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:42

PL BACKFILL 4FT

2202175-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/15/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFB0180	02/16/22	02/17/22	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: **02/15/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		*68.2 %*	*40-150*		"	"	"	"	
Surrogate: Fluoranthene-d10		*70.8 %*	*40-150*		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0170 - EPA 5030 Soil MS										
Blank (BFB0170-BLK1)				Prepared: 02/15/22 Analyzed: 02/16/22						
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	*0.0414*		*"*	*0.0400*		*104*	*70-130*			
Surrogate: Toluene-d8	*0.0420*		*"*	*0.0400*		*105*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0508*		*"*	*0.0400*		*127*	*70-130*			
LCS (BFB0170-BS1)				Prepared: 02/15/22 Analyzed: 02/16/22						
Benzene	0.0720	0.0020	mg/kg	0.0750		96.0	70-130			
Toluene	0.0910	0.0050	"	0.0750		121	70-130			
Ethylbenzene	0.0772	0.0050	"	0.0750		103	70-130			
m,p-Xylene	0.162	0.010	"	0.150		108	70-130			
o-Xylene	0.0800	0.0050	"	0.0750		107	70-130			
1,2,4-Trimethylbenzene	0.0802	0.0050	"	0.0750		107	70-130			
1,3,5-Trimethylbenzene	0.0806	0.0050	"	0.0750		107	70-130			
Naphthalene	0.0810	0.0038	"	0.0750		108	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0509*		*"*	*0.0400*		*127*	*70-130*			
Surrogate: Toluene-d8	*0.0479*		*"*	*0.0400*		*120*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0430*		*"*	*0.0400*		*108*	*70-130*			
Matrix Spike (BFB0170-MS1)	**Source: 2202173-01**			Prepared: 02/15/22 Analyzed: 02/16/22						
Benzene	0.0683	0.0020	mg/kg	0.0750	ND	91.0	70-130			
Toluene	0.0836	0.0050	"	0.0750	ND	112	70-130			
Ethylbenzene	0.0818	0.0050	"	0.0750	ND	109	70-130			
m,p-Xylene	0.165	0.010	"	0.150	ND	110	70-130			
o-Xylene	0.0807	0.0050	"	0.0750	ND	108	70-130			
1,2,4-Trimethylbenzene	0.0803	0.0050	"	0.0750	ND	107	70-130			
1,3,5-Trimethylbenzene	0.0818	0.0050	"	0.0750	ND	109	70-130			
Naphthalene	0.0952	0.0038	"	0.0750	ND	127	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0424*		*"*	*0.0400*		*106*	*70-130*			
Surrogate: Toluene-d8	*0.0426*		*"*	*0.0400*		*106*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0410*		*"*	*0.0400*		*102*	*70-130*			

Summit Scientific

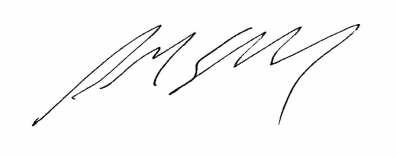
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:42

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0170 - EPA 5030 Soil MS										
Matrix Spike Dup (BFB0170-MSD1)	**Source: 2202173-01**			Prepared: 02/15/22 Analyzed: 02/16/22						
Benzene	0.0696	0.0020	mg/kg	0.0750	ND	92.8	70-130	1.87	30	
Toluene	0.0877	0.0050	"	0.0750	ND	117	70-130	4.73	30	
Ethylbenzene	0.0808	0.0050	"	0.0750	ND	108	70-130	1.14	30	
m,p-Xylene	0.167	0.010	"	0.150	ND	111	70-130	1.03	30	
o-Xylene	0.0803	0.0050	"	0.0750	ND	107	70-130	0.559	30	
1,2,4-Trimethylbenzene	0.0806	0.0050	"	0.0750	ND	107	70-130	0.298	30	
1,3,5-Trimethylbenzene	0.0822	0.0050	"	0.0750	ND	110	70-130	0.585	30	
Naphthalene	0.0978	0.0038	"	0.0750	ND	130	70-130	2.64	30	
Surrogate: 1,2-Dichloroethane-d4	*0.0456*		"	*0.0400*		*114*	*70-130*			
Surrogate: Toluene-d8	*0.0440*		"	*0.0400*		*110*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0414*		"	*0.0400*		*103*	*70-130*			



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.

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

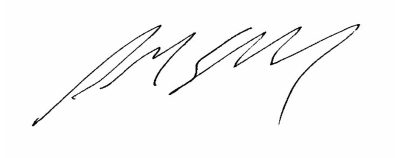
Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0171 - EPA 3550A										
Blank (BFB0171-BLK1)				Prepared: 02/15/22 Analyzed: 02/16/22						
C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
LCS (BFB0171-BS1)				Prepared: 02/15/22 Analyzed: 02/16/22						
C10-C28 (DRO)	440	50	mg/kg	500		88.0	70-130			
Matrix Spike (BFB0171-MS1)	**Source: 2202173-01**			Prepared: 02/15/22 Analyzed: 02/16/22						
C10-C28 (DRO)	450	50	mg/kg	500	42.8	81.5	70-130			
Matrix Spike Dup (BFB0171-MSD1)	**Source: 2202173-01**			Prepared: 02/15/22 Analyzed: 02/16/22						
C10-C28 (DRO)	412	50	mg/kg	500	42.8	73.8	70-130	8.91	20	

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0180 - EPA 5030 Soil MS										
Blank (BFB0180-BLK1)				Prepared & Analyzed: 02/16/22						
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	*0.0296*		*"*	*0.0333*		*88.9*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0273*		*"*	*0.0333*		*82.0*	*40-150*			
LCS (BFB0180-BS1)				Prepared & Analyzed: 02/16/22						
Acenaphthene	0.0314	0.00500	mg/kg	0.0333		94.1	31-137			
Anthracene	0.0323	0.00500	"	0.0333		96.8	30-120			
Benzo (a) anthracene	0.0299	0.00500	"	0.0333		89.6	30-120			
Benzo (a) pyrene	0.0310	0.00500	"	0.0333		92.9	30-120			
Benzo (b) fluoranthene	0.0291	0.00500	"	0.0333		87.3	30-120			
Benzo (k) fluoranthene	0.0286	0.00500	"	0.0333		85.9	30-120			
Chrysene	0.0329	0.00500	"	0.0333		98.6	30-120			
Dibenz (a,h) anthracene	0.0334	0.00500	"	0.0333		100	30-120			
Fluoranthene	0.0344	0.00500	"	0.0333		103	30-120			
Fluorene	0.0321	0.00500	"	0.0333		96.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0298	0.00500	"	0.0333		89.5	30-120			
Pyrene	0.0334	0.00500	"	0.0333		100	35-142			
1-Methylnaphthalene	0.0304	0.00500	"	0.0333		91.3	35-142			
2-Methylnaphthalene	0.0331	0.00500	"	0.0333		99.2	35-142			
Surrogate: 2-Methylnaphthalene-d10	*0.0308*		*"*	*0.0333*		*92.3*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0288*		*"*	*0.0333*		*86.5*	*40-150*			



Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:42

PAH by EPA Method 8270D SIM - Quality Control

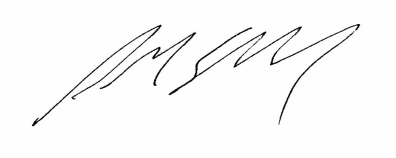
Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0180 - EPA 5030 Soil MS										
Matrix Spike (BFB0180-MS1)	**Source: 2202169-03**			Prepared & Analyzed: 02/16/22						
Acenaphthene	0.0220	0.00500	mg/kg	0.0333	ND	66.1	31-137			
Anthracene	0.0239	0.00500	"	0.0333	ND	71.8	30-120			
Benzo (a) anthracene	0.0220	0.00500	"	0.0333	ND	66.1	30-120			
Benzo (a) pyrene	0.0234	0.00500	"	0.0333	ND	70.1	30-120			
Benzo (b) fluoranthene	0.0226	0.00500	"	0.0333	ND	67.8	30-120			
Benzo (k) fluoranthene	0.0224	0.00500	"	0.0333	ND	67.1	30-120			
Chrysene	0.0237	0.00500	"	0.0333	ND	71.2	30-120			
Dibenz (a,h) anthracene	0.0265	0.00500	"	0.0333	ND	79.6	30-120			
Fluoranthene	0.0255	0.00500	"	0.0333	ND	76.6	30-120			
Fluorene	0.0220	0.00500	"	0.0333	ND	65.9	30-120			
Indeno (1,2,3-cd) pyrene	0.0312	0.00500	"	0.0333	ND	93.7	30-120			
Pyrene	0.0242	0.00500	"	0.0333	ND	72.5	35-142			
1-Methylnaphthalene	0.0231	0.00500	"	0.0333	ND	69.4	15-130			
2-Methylnaphthalene	0.0243	0.00500	"	0.0333	ND	72.8	15-130			
Surrogate: 2-Methylnaphthalene-d10	*0.0218*		*"*	*0.0333*		*65.5*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0232*		*"*	*0.0333*		*69.5*	*40-150*			
Matrix Spike Dup (BFB0180-MSD1)	**Source: 2202169-03**			Prepared & Analyzed: 02/16/22						
Acenaphthene	0.0223	0.00500	mg/kg	0.0333	ND	66.9	31-137	1.30	30	
Anthracene	0.0222	0.00500	"	0.0333	ND	66.6	30-120	7.43	30	
Benzo (a) anthracene	0.0217	0.00500	"	0.0333	ND	65.0	30-120	1.64	30	
Benzo (a) pyrene	0.0234	0.00500	"	0.0333	ND	70.1	30-120	0.0428	30	
Benzo (b) fluoranthene	0.0225	0.00500	"	0.0333	ND	67.6	30-120	0.301	30	
Benzo (k) fluoranthene	0.0220	0.00500	"	0.0333	ND	66.1	30-120	1.43	30	
Chrysene	0.0237	0.00500	"	0.0333	ND	71.0	30-120	0.294	30	
Dibenz (a,h) anthracene	0.0246	0.00500	"	0.0333	ND	73.9	30-120	7.44	30	
Fluoranthene	0.0250	0.00500	"	0.0333	ND	75.1	30-120	2.06	30	
Fluorene	0.0226	0.00500	"	0.0333	ND	67.8	30-120	2.83	30	
Indeno (1,2,3-cd) pyrene	0.0300	0.00500	"	0.0333	ND	90.0	30-120	4.00	30	
Pyrene	0.0239	0.00500	"	0.0333	ND	71.7	35-142	1.18	30	
1-Methylnaphthalene	0.0234	0.00500	"	0.0333	ND	70.3	15-130	1.23	50	
2-Methylnaphthalene	0.0246	0.00500	"	0.0333	ND	73.7	15-130	1.30	50	
Surrogate: 2-Methylnaphthalene-d10	*0.0208*		*"*	*0.0333*		*62.5*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0228*		*"*	*0.0333*		*68.4*	*40-150*			

Hexavalent Chromium by EPA Method 7196 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFB0330 - 3060A_Mod										
Blank (BFB0330-BLK1)				Prepared & Analyzed: 02/28/22						
Chromium, Hexavalent	ND	0.30	mg/kg wet							
LCS (BFB0330-BS1)				Prepared & Analyzed: 02/28/22						
Chromium, Hexavalent	26.6	0.30	mg/kg wet	25.0		106	80-120			
Duplicate (BFB0330-DUP1)	**Source: 2202148-02**			Prepared & Analyzed: 02/28/22						
Chromium, Hexavalent	ND	0.30	mg/kg dry		ND				20	
Matrix Spike (BFB0330-MS1)	**Source: 2202148-02**			Prepared & Analyzed: 02/28/22						
Chromium, Hexavalent	31.1	0.30	mg/kg dry	26.5	ND	118	75-125			
Matrix Spike Dup (BFB0330-MSD1)	**Source: 2202148-02**			Prepared & Analyzed: 02/28/22						
Chromium, Hexavalent	29.1	0.30	mg/kg dry	26.5	ND	110	75-125	6.86	20	



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Summit Scientific
Paul Shrewsbury
4653 Table Mountain Dr
Golden, CO 80403

RE: 2202175
Work Order Number: 2202399

March 21, 2022

Attention Paul Shrewsbury:

Fremont Analytical, Inc. received 2 sample(s) on 2/17/2022 for the analyses presented in the following report.

Conductivity by SM 2510B
pH by SM 4500H+B
Sample Moisture (Percent Moisture)
Sodium Adsorption Ratio
Total Metals by EPA Method 6020B

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

CC:
Muri Premer

Date: *03/21/2022*

CLIENT: Summit Scientific
Project: 2202175
Work Order: 2202399

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2202399-001	N-C-2 Wall 6FT	02/15/2022 12:00 AM	02/17/2022 2:37 PM
2202399-001	N-C-2 Wall 6FT	02/15/2022 12:00 AM	02/17/2022 2:37 PM
2202399-002	N-E-2 Wall 6FT	02/15/2022 12:00 AM	02/17/2022 2:37 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2202399**
Date: **3/21/2022**

CLIENT: Summit Scientific
Project: 2202175

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

The following preparation methods were performed per client request:

Boron was prepared using Hot Water Soluble Method provided by client.

Conductivity, Sodium Adsorption Ratio, and pH were prepared using Saturated Paste Method provided by client.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2202399**
Date Reported: **3/21/2022**

Client: Summit Scientific
Collection Date: 2/15/2022
Project: 2202175
Lab ID: 2202399-001
Matrix: Soil
Client Sample ID: **N-C-2 Wall 6FT**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020B				Batch ID: 35536		Analyst: EH
Arsenic	5.29	0.534	D	mg/Kg-dry	5	3/14/2022 5:52:36 PM
Barium	59.7	2.67	D	mg/Kg-dry	5	3/14/2022 5:52:36 PM
Cadmium	ND	0.890	D	mg/Kg-dry	5	3/14/2022 5:52:36 PM
Copper	8.31	4.45	D	mg/Kg-dry	5	3/14/2022 5:52:36 PM
Lead	9.02	0.890	D	mg/Kg-dry	5	3/14/2022 5:52:36 PM
Nickel	9.13	2.22	D	mg/Kg-dry	5	3/14/2022 5:52:36 PM
Selenium	1.10	0.890	D	mg/Kg-dry	5	3/14/2022 5:52:36 PM
Silver	ND	0.667	D	mg/Kg-dry	5	3/14/2022 5:52:36 PM
Zinc	35.8	7.79	D	mg/Kg-dry	5	3/14/2022 5:52:36 PM
Total Metals by EPA Method 6020B				Batch ID: 35668		Analyst: EH
Boron	0.147	0.00926		mg/L	1	3/16/2022 10:26:58 AM
Sodium Adsorption Ratio				Batch ID: 35732		Analyst: WC
Sodium Adsorption Ratio (SAR)	0.192	0		mEq/L	1	3/15/2022 11:07:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R73434		Analyst: KJ
Percent Moisture	10.8	0.500		wt%	1	2/18/2022 2:57:33 PM
Conductivity by SM 2510B				Batch ID: R73989		Analyst: ALT
Specific Conductance (Conductivity)	47.7	1.00		µS/cm	1	3/14/2022 2:44:00 PM
pH by SM 4500H+B				Batch ID: R74164		Analyst: SS
Hydrogen Ion (pH)	9.7			pH	1	3/15/2022 3:35:00 PM

Analytical Report

Work Order: **2202399**
Date Reported: **3/21/2022**

Client: Summit Scientific
Collection Date: 2/15/2022
Project: 2202175
Lab ID: 2202399-002
Matrix: Soil
Client Sample ID: **N-E-2 Wall 6FT**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Metals by EPA Method 6020B				Batch ID: 35536		Analyst: EH
Arsenic	1.62	0.532	D	mg/Kg-dry	5	3/14/2022 6:00:50 PM
Barium	37.8	2.66	D	mg/Kg-dry	5	3/14/2022 6:00:50 PM
Cadmium	ND	0.886	D	mg/Kg-dry	5	3/14/2022 6:00:50 PM
Copper	ND	4.43	D	mg/Kg-dry	5	3/14/2022 6:00:50 PM
Lead	4.10	0.886	D	mg/Kg-dry	5	3/14/2022 6:00:50 PM
Nickel	4.08	2.22	D	mg/Kg-dry	5	3/14/2022 6:00:50 PM
Selenium	1.30	0.886	D	mg/Kg-dry	5	3/14/2022 6:00:50 PM
Silver	ND	0.665	D	mg/Kg-dry	5	3/14/2022 6:00:50 PM
Zinc	15.7	7.76	D	mg/Kg-dry	5	3/14/2022 6:00:50 PM
Total Metals by EPA Method 6020B				Batch ID: 35668		Analyst: EH
Boron	0.0716	0.00959	B	mg/L	1	3/16/2022 10:30:30 AM
Sodium Adsorption Ratio				Batch ID: 35732		Analyst: WC
Sodium Adsorption Ratio (SAR)	0.142	0		mEq/L	1	3/15/2022 11:10:00 AM
Sample Moisture (Percent Moisture)				Batch ID: R73434		Analyst: KJ
Percent Moisture	11.9	0.500		wt%	1	2/18/2022 2:57:33 PM
Conductivity by SM 2510B				Batch ID: R73989		Analyst: ALT
Specific Conductance (Conductivity)	42.7	1.00		µS/cm	1	3/14/2022 2:44:00 PM
pH by SM 4500H+B				Batch ID: R74164		Analyst: SS
Hydrogen Ion (pH)	9.8			pH	1	3/15/2022 3:35:00 PM

Work Order: 2202399
CLIENT: Summit Scientific
Project: 2202175

QC SUMMARY REPORT

Conductivity by SM 2510B

Sample ID: **MB-R73989** SampType: **MBLK** Units: **µS/cm** Prep Date: **3/14/2022** RunNo: **73989**
Client ID: **MBLKW** Batch ID: **R73989** Analysis Date: **3/14/2022** SeqNo: **1516047**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance (Conductivity)	ND	1.00									

Sample ID: **LCS-R73989** SampType: **LCS** Units: **µS/cm** Prep Date: **3/14/2022** RunNo: **73989**
Client ID: **LCSW** Batch ID: **R73989** Analysis Date: **3/14/2022** SeqNo: **1516048**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance (Conductivity)	985	1.00	1,000	0	98.5	98	104				

Sample ID: **2202513-001ADUP** SampType: **DUP** Units: **µS/cm** Prep Date: **3/14/2022** RunNo: **73989**
Client ID: **BATCH** Batch ID: **R73989** Analysis Date: **3/14/2022** SeqNo: **1516050**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance (Conductivity)	49.9	1.00						47.80	4.30	20	

Sample ID: **LCSD-R73989** SampType: **LCSD** Units: **µS/cm** Prep Date: **3/14/2022** RunNo: **73989**
Client ID: **LCSW02** Batch ID: **R73989** Analysis Date: **3/14/2022** SeqNo: **1516065**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance (Conductivity)	985	1.00	1,000	0	98.5	98	104	985.0	0	20	

Work Order: 2202399
CLIENT: Summit Scientific
Project: 2202175

QC SUMMARY REPORT

pH by SM 4500H+B

Sample ID: **MB-R74164**	SampType: **MBLK**	Units: **pH**	Prep Date:	RunNo: **74164**
Client ID: **MBLKW**	Batch ID: **R74164**		Analysis Date: **3/15/2022**	SeqNo: **1520958**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrogen Ion (pH)	8.2										

Sample ID: **LCS-R74164**	SampType: **LCS**	Units: **pH**	Prep Date:	RunNo: **74164**
Client ID: **LCSW**	Batch ID: **R74164**		Analysis Date: **3/15/2022**	SeqNo: **1520959**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrogen Ion (pH)	7.0		7.000	0	100	95	105				

Sample ID: **2202513-001ADUP**	SampType: **DUP**	Units: **pH**	Prep Date:	RunNo: **74164**
Client ID: **BATCH**	Batch ID: **R74164**		Analysis Date: **3/15/2022**	SeqNo: **1520961**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrogen Ion (pH)	9.6							9.500	0.943	10	

Sample ID: **LCSD-R74164**	SampType: **LCSD**	Units: **pH Units**	Prep Date:	RunNo: **74164**
Client ID: **LCSW02**	Batch ID: **R74164**		Analysis Date: **3/15/2022**	SeqNo: **1520976**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydrogen Ion (pH)	7.1		7.000	0	101	95	105	7.030	0.426	10	

Work Order: 2202399
CLIENT: Summit Scientific
Project: 2202175

QC SUMMARY REPORT

Total Metals by EPA Method 6020B

Sample ID: **MB-35536**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **2/28/2022**	RunNo: **73967**
Client ID: **MBLKS**	Batch ID: **35536**		Analysis Date: **3/14/2022**	SeqNo: **1515545**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.120									
Barium	ND	0.600									
Cadmium	ND	0.200									
Copper	ND	1.00									
Lead	ND	0.200									
Nickel	ND	0.500									
Selenium	ND	0.200									
Silver	ND	0.150									
Zinc	ND	1.75									

Sample ID: **LCS-35536**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **2/28/2022**	RunNo: **73967**
Client ID: **LCSS**	Batch ID: **35536**		Analysis Date: **3/14/2022**	SeqNo: **1515546**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	50.7	0.120	50.00	0	101	80	120				
Barium	52.7	0.600	50.00	0	105	80	120				
Cadmium	2.68	0.200	2.500	0	107	80	120				
Copper	52.2	1.00	50.00	0	104	80	120				
Lead	25.8	0.200	25.00	0	103	80	120				
Nickel	51.5	0.500	50.00	0	103	80	120				
Selenium	4.65	0.200	5.000	0	93.0	80	120				
Silver	2.66	0.150	2.500	0	106	80	120				
Zinc	49.2	1.75	50.00	0	98.4	80	120				

Sample ID: **2202398-001AMS**	SampType: **MS**	Units: **mg/Kg-dry**	Prep Date: **2/28/2022**	RunNo: **73967**
Client ID: **BATCH**	Batch ID: **35536**		Analysis Date: **3/14/2022**	SeqNo: **1515549**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	57.3	0.606	50.48	4.928	104	75	125				D

Work Order: 2202399
CLIENT: Summit Scientific
Project: 2202175

QC SUMMARY REPORT

Total Metals by EPA Method 6020B

Sample ID: **2202398-001AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **2/28/2022** RunNo: **73967**
Client ID: **BATCH** Batch ID: **35536** Analysis Date: **3/14/2022** SeqNo: **1515549**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	171	3.03	50.48	117.3	107	75	125				D
Cadmium	3.06	1.01	2.524	0.1193	117	75	125				D
Copper	60.5	5.05	50.48	9.760	100	75	125				D
Lead	35.7	1.01	25.24	9.592	103	75	125				D
Nickel	66.5	2.52	50.48	14.21	104	75	125				D
Selenium	6.58	1.01	5.048	1.330	104	75	125				D
Silver	2.48	0.757	2.524	0	98.2	75	125				D
Zinc	95.9	8.83	50.48	46.56	97.8	75	125				D

Sample ID: **2202398-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **2/28/2022** RunNo: **73967**
Client ID: **BATCH** Batch ID: **35536** Analysis Date: **3/14/2022** SeqNo: **1515552**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	56.3	0.601	50.08	4.928	103	75	125	57.30	1.73	20	D
Barium	174	3.00	50.08	117.3	114	75	125	171.4	1.63	20	D
Cadmium	3.04	1.00	2.504	0.1193	116	75	125	3.063	0.902	20	D
Copper	60.8	5.01	50.08	9.760	102	75	125	60.47	0.554	20	D
Lead	36.4	1.00	25.04	9.592	107	75	125	35.71	1.90	20	D
Nickel	66.1	2.50	50.08	14.21	104	75	125	66.54	0.697	20	D
Selenium	6.80	1.00	5.008	1.330	109	75	125	6.575	3.34	20	D
Silver	2.44	0.751	2.504	0	97.6	75	125	2.478	1.43	20	D
Zinc	97.7	8.76	50.08	46.56	102	75	125	95.94	1.87	20	D

Sample ID: **MB-35668** SampType: **MBLK** Units: **mg/L** Prep Date: **3/9/2022** RunNo: **74021**
Client ID: **MBLKS** Batch ID: **35668** Analysis Date: **3/16/2022** SeqNo: **1516832**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.0131	0.0100									

Work Order: 2202399
CLIENT: Summit Scientific
Project: 2202175

QC SUMMARY REPORT

Total Metals by EPA Method 6020B

Sample ID: **LCS-35668**	SampType: **LCS**	Units: **mg/L**	Prep Date: **3/9/2022**	RunNo: **74021**
Client ID: **LCSS**	Batch ID: **35668**		Analysis Date: **3/16/2022**	SeqNo: **1516833**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	4.50	0.0100	5.000	0	89.9	80	120				

Sample ID: **2202513-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **3/9/2022**	RunNo: **74021**
Client ID: **BATCH**	Batch ID: **35668**		Analysis Date: **3/16/2022**	SeqNo: **1516835**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.701	0.00939	4.695	0.04807	13.9	75	125				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Sample ID: **2202513-001BMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **3/9/2022**	RunNo: **74021**
Client ID: **BATCH**	Batch ID: **35668**		Analysis Date: **3/16/2022**	SeqNo: **1516838**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.752	0.00916	4.579	0.04807	15.4	75	125	0.7013	6.93	20	S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

Work Order: 2202399
CLIENT: Summit Scientific
Project: 2202175

QC SUMMARY REPORT

Sodium Adsorption Ratio

Sample ID: **MB-35732** SampType: **MBLK** Units: **µg/L** Prep Date: **3/15/2022** RunNo: **74010**
Client ID: **MBLKW** Batch ID: **35732** Analysis Date: **3/15/2022** SeqNo: **1516615**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	200									
Magnesium	ND	100									
Sodium	ND	200									

Sample ID: **LCS-35732** SampType: **LCS** Units: **µg/L** Prep Date: **3/15/2022** RunNo: **74010**
Client ID: **LCSW** Batch ID: **35732** Analysis Date: **3/15/2022** SeqNo: **1516616**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	1,100	200	1,000	0	110	50	150				
Magnesium	987	100	1,000	0	98.7	50	150				
Sodium	1,090	200	1,000	0	109	50	150				

Sample ID: **2202513-001ADUP** SampType: **DUP** Units: **mEq/L** Prep Date: **3/15/2022** RunNo: **74010**
Client ID: **BATCH** Batch ID: **35732** Analysis Date: **3/15/2022** SeqNo: **1518035**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio (SAR)	0.158	0						0.1430	9.97	30	

Sample Log-In Check List

Client Name:	**SUMSCI**	Work Order Number:	**2202399**
Logged by:	**Gabrielle Coeuille**	Date Received:	**2/17/2022 2:37:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	FedEx		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
6.	Was an attempt made to cool the samples?	Yes ☐	No ☑	NA ☐
		Unknown prior to receipt		
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☐	No ☐	NA ☑
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample 1	12.7

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 2.16.22 | Page: 1 of: 1 | Laboratory Project No (internal): 2202399

Project Name: 2202175 | Special Remarks:

Client: Summit Scientific

Project No:

Address: 4653 Table Mountain Drive

Collected by:

City, State, Zip: Golden, CO. 80403

Location:

Telephone: 303-277-9310

Report To (PM):

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax:

PM Email: mpremer@s2scientific.com, pshrewsbury@s2scientific.com

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	SAR, EC, pH	Boron	Metals	Comments
1	N-C-2 Wall 6FT	2.15.22	N/A	S	x	x	x	B by Hot Water Soluble
2	N-E-2 Wall 6FT	↓	N/A	S	x	x	x	SAR, EC, pH by Saturated Paste
3								Metals: As, Ba, Cd, Cu, Pb, Ni, Se, Ag, Zn
4								
5								
6								
7								
8								
9								
10								

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): Individual:

***Anions (Circle): ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ O-Phosphate ☐ Fluoride ☐ Nitrate+Nitrite

Turn-around Time:

- ☒ Standard (NT)
- ☒ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day ☐ (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x [signature]	2.16.22 1400	x [signature]	2/17/22 14:37
Relinquished	Date/Time	Received	Date/Time
x		x	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: CO20-049 Project Manager: Paul Henehan	**Reported:** 03/22/22 07:42

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 80403

303.277.9310

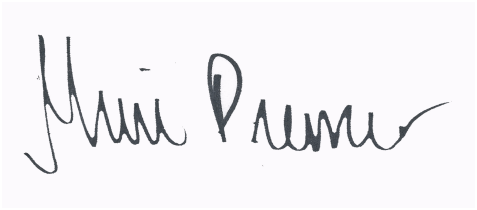
April 03, 2022

Paul Henehan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - Hoshiko-AST
Work Order #2203427

Enclosed are the results of analyses for samples received by Summit Scientific on 03/25/22 13:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Muri Premer For Paul Shrewsbury
President

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Backfill 1	2203427-01	Soil	03/23/22 00:00	03/25/22 13:00
Backfill 2	2203427-02	Soil	03/23/22 00:00	03/25/22 13:00

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

S2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Page 1 of 1

Client: Fremont Environmental
Address: P.O Box 1289
City/State/Zip: Wellington, CO 80549
Phone: 303-956-8714
Sampler Name: Bleek

Project Manager: Paul Henehan
E-Mail: paulh@fremontenv.com, ethanb@fremontenv.com
Bill to: Jacob
Project Name: Noble - Hoshiko - AST
Project Number:

					Preservative				Matrix				Analysis Requested									Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	GBTEXN - 915	BTEX - 910 TMB's	GRO 915 methods	DRO/ORO	SAR	EC	pH	Boron	PAH - 915	
1	Back fill 1	3/23/22		3			X			X			X	X	X	X	X	X	X	X	X	
2	Back-fill 2	1		3			X			X			X	X	X	X	X	X	X	X	X	
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by:	Date/Time:	Received by:	Date/Time:
Ethan Bleek	3/25/22		32522 1300
Relinquished by:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)
Same Day ___ 72 hours ___
24 hours X Standard ___
48 hours ___

Sample Integrity:
Temperature Upon Receipt: 2.8
Samples Intact: (Yes) No

Notes:

223437

S2

Sample Receipt Checklist

S2 Work Order# 2203427

Client: Fremont Client Project ID: Noble-HISHIKO-AST

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

Matrix (check all that apply): [ ] Air [-] Soil/Solid [ ] Water [ ] Other:_____ (Describe)

Temp (°C)	2.8

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C (1)? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	-			ONICE
Were all samples received intact (1)?	-			
Was adequate sample volume provided (1)?	-			
If custody seals are present, are they intact (1)?	-			
Are samples with holding times due within 48 hours sample due within 48 hours present?	-			24 hrs
Is a chain-of-custody (COC) form present and filled out completely (1)?	-			
Does the COC agree with the number and type of sample bottles received (1)?	-			
Do the sample IDs on the bottle labels match the COC (1)?	-			
Is the COC properly relinquished by the client w/ date and time recorded (1)?	-			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**			-	
Are samples preserved that require preservation **(excluding cooling)** (1)? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, etc.			-	
If samples are acid preserved for metals, is the pH ≤ 2(1)? Record the pH in Comments.			-	
If dissolved metals are requested, were samples field filtered?			-	
Additional Comments (if any):				
(1) **If NO, then contact the client before proceeding with analysis and note in case narrative.**				

Custodian Printed Name or Initials

3.25.22
Date/Time

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

Backfill 1

2203427-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0615	03/25/22	03/26/22	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: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*127 %*	*50-150*		"	"	"	"	
Surrogate: Toluene-d8		*89.3 %*	*50-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.5 %*	*50-150*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0616	03/25/22	03/26/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*104 %*	*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.

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

Backfill 1

2203427-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFC0625	03/28/22	03/30/22	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: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		*50.7 %*	*40-150*		"	"	"	"	
Surrogate: Fluoranthene-d10		*51.5 %*	*40-150*		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/23/22 00:00**

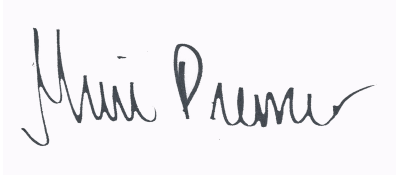
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	**0.0960**	0.0100	mg/L	1	BFC0273	03/25/22	03/31/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

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.

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

Backfill 1

2203427-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**1.66**	0.204	mg/kg dry	1	BFC0730	03/31/22	03/31/22	EPA 6020B	
Barium	**50.8**	0.408	"	"	"	"	"	"	
Cadmium	ND	0.204	"	"	"	"	"	"	
Copper	**5.11**	0.408	"	"	"	"	"	"	
Lead	**5.20**	0.204	"	"	"	"	"	"	
Nickel	**4.07**	0.408	"	"	"	"	"	"	
Selenium	**0.501**	0.265	"	"	"	"	"	"	
Silver	ND	0.0204	"	"	"	"	"	"	
Zinc	**20.8**	0.408	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0631	03/28/22	03/28/22	EPA 7196A	

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

Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**108**	0.0510	mg/L dry	1	BFC0714	03/30/22	04/01/22	EPA 6020B	
Magnesium	**30.5**	0.0510	"	"	"	"	"	"	
Sodium	**67.6**	0.0510	"	"	"	"	"	"	

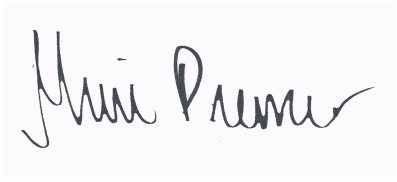
Calculated Analysis

Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**1.48**	0.00100	units	1	BFD0017	04/01/22	04/01/22	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.

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

Backfill 1

2203427-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**98.0**		%	1	BFC0628	03/28/22	03/28/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

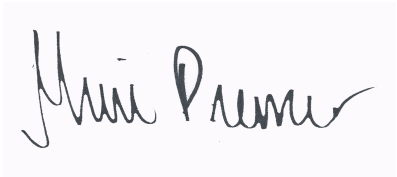
Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**1.75**	0.0100	mmhos/cm	1	BFC0754	03/31/22	03/31/22	EPA 120.1	

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

Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**7.89**		pH Units	1	BFC0753	03/31/22	03/31/22	EPA 9045D	



S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

Backfill 2

2203427-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0615	03/25/22	03/26/22	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: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*127 %*	*50-150*		"	"	"	"	
Surrogate: Toluene-d8		*89.6 %*	*50-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.0 %*	*50-150*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

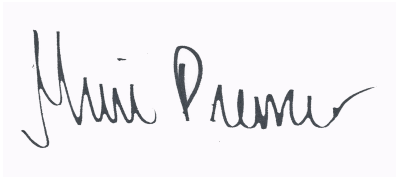
Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0616	03/25/22	03/26/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/23/22 00:00**

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

PAH by EPA Method 8270D SIM



S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

Backfill 2

2203427-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFC0625	03/28/22	03/30/22	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: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		*44.0 %*	*40-150*		"	"	"	"	
Surrogate: Fluoranthene-d10		*44.8 %*	*40-150*		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/23/22 00:00**

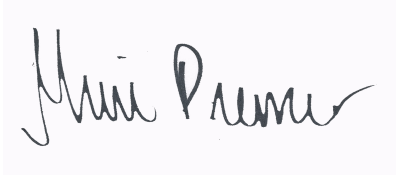
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	**0.0435**	0.0100	mg/L	1	BFC0273	03/25/22	03/31/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

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.

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

Backfill 2

2203427-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**1.07**	0.206	mg/kg dry	1	BFC0730	03/31/22	03/31/22	EPA 6020B	
Barium	**34.9**	0.412	"	"	"	"	"	"	
Cadmium	ND	0.206	"	"	"	"	"	"	
Copper	**3.56**	0.412	"	"	"	"	"	"	
Lead	**3.45**	0.206	"	"	"	"	"	"	
Nickel	**2.84**	0.412	"	"	"	"	"	"	
Selenium	**0.305**	0.268	"	"	"	"	"	"	
Silver	ND	0.0206	"	"	"	"	"	"	
Zinc	**14.5**	0.412	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0631	03/28/22	03/28/22	EPA 7196A	

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

Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**28.6**	0.0515	mg/L dry	1	BFC0714	03/30/22	04/01/22	EPA 6020B	
Magnesium	**8.13**	0.0515	"	"	"	"	"	"	
Sodium	**13.8**	0.0515	"	"	"	"	"	"	

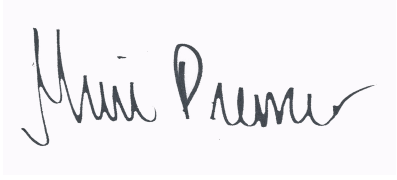
Calculated Analysis

Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.586**	0.00100	units	1	BFD0017	04/01/22	04/01/22	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.

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

Backfill 2

2203427-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**97.1**		%	1	BFC0628	03/28/22	03/28/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

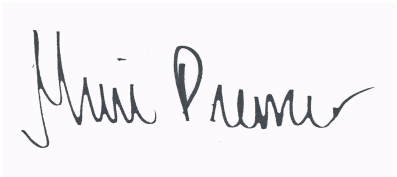
Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**0.444**	0.0100	mmhos/cm	1	BFC0754	03/31/22	03/31/22	EPA 120.1	

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

Date Sampled: **03/23/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.02**		pH Units	1	BFC0753	03/31/22	03/31/22	EPA 9045D	



S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFC0615 - EPA 5030 Soil MS										
Blank (BFC0615-BLK1)				Prepared: 03/25/22 Analyzed: 03/26/22						
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	*0.0527*		*"*	*0.0400*		*132*	*50-150*			
Surrogate: Toluene-d8	*0.0364*		*"*	*0.0400*		*91.0*	*50-150*			
Surrogate: 4-Bromofluorobenzene	*0.0367*		*"*	*0.0400*		*91.6*	*50-150*			
LCS (BFC0615-BS1)				Prepared: 03/25/22 Analyzed: 03/26/22						
Benzene	0.136	0.0020	mg/kg	0.150		90.3	70-130			
Toluene	0.131	0.0050	"	0.150		87.2	70-130			
Ethylbenzene	0.151	0.0050	"	0.150		100	70-130			
m,p-Xylene	0.284	0.010	"	0.300		94.8	70-130			
o-Xylene	0.143	0.0050	"	0.150		95.6	70-130			
1,2,4-Trimethylbenzene	0.143	0.0050	"	0.150		95.0	70-130			
1,3,5-Trimethylbenzene	0.143	0.0050	"	0.150		95.2	70-130			
Naphthalene	0.184	0.0038	"	0.150		123	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0484*		*"*	*0.0400*		*121*	*50-150*			
Surrogate: Toluene-d8	*0.0362*		*"*	*0.0400*		*90.4*	*50-150*			
Surrogate: 4-Bromofluorobenzene	*0.0362*		*"*	*0.0400*		*90.4*	*50-150*			
Matrix Spike (BFC0615-MS1)		**Source: 2203426-01**		Prepared: 03/25/22 Analyzed: 03/26/22						
Benzene	0.134	0.0020	mg/kg	0.150	ND	89.7	70-130			
Toluene	0.135	0.0050	"	0.150	ND	89.9	70-130			
Ethylbenzene	0.144	0.0050	"	0.150	ND	96.2	70-130			
m,p-Xylene	0.269	0.010	"	0.300	ND	89.8	70-130			
o-Xylene	0.138	0.0050	"	0.150	ND	91.8	70-130			
1,2,4-Trimethylbenzene	0.129	0.0050	"	0.150	ND	85.7	70-130			
1,3,5-Trimethylbenzene	0.130	0.0050	"	0.150	ND	86.4	70-130			
Naphthalene	0.158	0.0038	"	0.150	ND	105	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0484*		*"*	*0.0400*		*121*	*50-150*			
Surrogate: Toluene-d8	*0.0361*		*"*	*0.0400*		*90.2*	*50-150*			
Surrogate: 4-Bromofluorobenzene	*0.0360*		*"*	*0.0400*		*89.9*	*50-150*			

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.

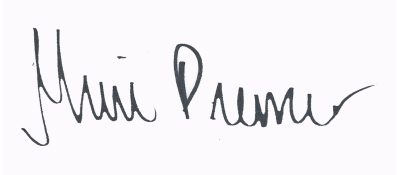
S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFC0615 - EPA 5030 Soil MS										
Matrix Spike Dup (BFC0615-MSD1)	**Source: 2203426-01**			Prepared: 03/25/22 Analyzed: 03/26/22						
Benzene	0.132	0.0020	mg/kg	0.150	ND	87.8	70-130	2.14	30	
Toluene	0.126	0.0050	"	0.150	ND	84.0	70-130	6.78	30	
Ethylbenzene	0.140	0.0050	"	0.150	ND	93.2	70-130	3.15	30	
m,p-Xylene	0.264	0.010	"	0.300	ND	88.1	70-130	1.93	30	
o-Xylene	0.135	0.0050	"	0.150	ND	89.7	70-130	2.34	30	
1,2,4-Trimethylbenzene	0.127	0.0050	"	0.150	ND	84.4	70-130	1.48	30	
1,3,5-Trimethylbenzene	0.127	0.0050	"	0.150	ND	84.4	70-130	2.34	30	
Naphthalene	0.160	0.0038	"	0.150	ND	107	70-130	1.28	30	
Surrogate: 1,2-Dichloroethane-d4	*0.0470*		"	*0.0400*		*117*	*50-150*			
Surrogate: Toluene-d8	*0.0358*		"	*0.0400*		*89.6*	*50-150*			
Surrogate: 4-Bromofluorobenzene	*0.0356*		"	*0.0400*		*88.9*	*50-150*			



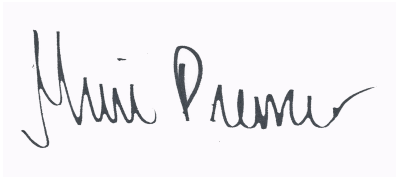
S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFC0616 - EPA 3550A										
Blank (BFC0616-BLK1)				Prepared: 03/25/22 Analyzed: 03/26/22						
C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
LCS (BFC0616-BS1)				Prepared: 03/25/22 Analyzed: 03/26/22						
C10-C28 (DRO)	364	50	mg/kg	500		72.8	70-130			
Matrix Spike (BFC0616-MS1)	**Source: 2203427-01**			Prepared: 03/25/22 Analyzed: 03/26/22						
C10-C28 (DRO)	462	50	mg/kg	500	28.2	86.8	70-130			
Matrix Spike Dup (BFC0616-MSD1)	**Source: 2203427-01**			Prepared: 03/25/22 Analyzed: 03/26/22						
C10-C28 (DRO)	486	50	mg/kg	500	28.2	91.6	70-130	5.10	20	



S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFC0625 - EPA 5030 Soil MS										
Blank (BFC0625-BLK1)				Prepared: 03/28/22 Analyzed: 03/30/22						
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	*0.0172*		*"*	*0.0333*		*51.5*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0174*		*"*	*0.0333*		*52.1*	*40-150*			
LCS (BFC0625-BS1)				Prepared: 03/28/22 Analyzed: 03/30/22						
Acenaphthene	0.0201	0.00500	mg/kg	0.0333		60.2	31-137			
Anthracene	0.0262	0.00500	"	0.0333		78.7	30-120			
Benzo (a) anthracene	0.0232	0.00500	"	0.0333		69.5	30-120			
Benzo (a) pyrene	0.0251	0.00500	"	0.0333		75.4	30-120			
Benzo (b) fluoranthene	0.0253	0.00500	"	0.0333		75.8	30-120			
Benzo (k) fluoranthene	0.0146	0.00500	"	0.0333		43.8	30-120			
Chrysene	0.0254	0.00500	"	0.0333		76.2	30-120			
Dibenz (a,h) anthracene	0.0191	0.00500	"	0.0333		57.4	30-120			
Fluoranthene	0.0267	0.00500	"	0.0333		80.1	30-120			
Fluorene	0.0230	0.00500	"	0.0333		68.9	30-120			
Indeno (1,2,3-cd) pyrene	0.0243	0.00500	"	0.0333		72.9	30-120			
Pyrene	0.0266	0.00500	"	0.0333		79.8	35-142			
1-Methylnaphthalene	0.0237	0.00500	"	0.0333		71.0	35-142			
2-Methylnaphthalene	0.0248	0.00500	"	0.0333		74.4	35-142			
Surrogate: 2-Methylnaphthalene-d10	*0.0258*		*"*	*0.0333*		*77.4*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0255*		*"*	*0.0333*		*76.6*	*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.

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFC0625 - EPA 5030 Soil MS										
Matrix Spike (BFC0625-MS1)	**Source: 2203427-01**			Prepared: 03/28/22 Analyzed: 03/30/22						
Acenaphthene	0.0136	0.00500	mg/kg	0.0333	ND	40.7	31-137			
Anthracene	0.0205	0.00500	"	0.0333	ND	61.4	30-120			
Benzo (a) anthracene	0.0195	0.00500	"	0.0333	ND	58.6	30-120			
Benzo (a) pyrene	0.0209	0.00500	"	0.0333	ND	62.6	30-120			
Benzo (b) fluoranthene	0.0137	0.00500	"	0.0333	ND	41.0	30-120			
Benzo (k) fluoranthene	0.0191	0.00500	"	0.0333	ND	57.3	30-120			
Chrysene	0.0209	0.00500	"	0.0333	ND	62.7	30-120			
Dibenz (a,h) anthracene	0.0156	0.00500	"	0.0333	ND	46.8	30-120			
Fluoranthene	0.0220	0.00500	"	0.0333	ND	65.9	30-120			
Fluorene	0.0152	0.00500	"	0.0333	ND	45.6	30-120			
Indeno (1,2,3-cd) pyrene	0.0209	0.00500	"	0.0333	ND	62.8	30-120			
Pyrene	0.0213	0.00500	"	0.0333	ND	64.0	35-142			
1-Methylnaphthalene	0.0185	0.00500	"	0.0333	ND	55.4	15-130			
2-Methylnaphthalene	0.0214	0.00500	"	0.0333	ND	64.3	15-130			
Surrogate: 2-Methylnaphthalene-d10	*0.0204*		*"*	*0.0333*		*61.3*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0211*		*"*	*0.0333*		*63.3*	*40-150*			
Matrix Spike Dup (BFC0625-MSD1)	**Source: 2203427-01**			Prepared: 03/28/22 Analyzed: 03/30/22						
Acenaphthene	0.0151	0.00500	mg/kg	0.0333	ND	45.2	31-137	10.4	30	
Anthracene	0.0197	0.00500	"	0.0333	ND	59.2	30-120	3.63	30	
Benzo (a) anthracene	0.0193	0.00500	"	0.0333	ND	57.9	30-120	1.24	30	
Benzo (a) pyrene	0.0179	0.00500	"	0.0333	ND	53.6	30-120	15.5	30	
Benzo (b) fluoranthene	0.0152	0.00500	"	0.0333	ND	45.5	30-120	10.5	30	
Benzo (k) fluoranthene	0.0201	0.00500	"	0.0333	ND	60.3	30-120	5.12	30	
Chrysene	0.0196	0.00500	"	0.0333	ND	58.9	30-120	6.16	30	
Dibenz (a,h) anthracene	0.0186	0.00500	"	0.0333	ND	55.7	30-120	17.3	30	
Fluoranthene	0.0217	0.00500	"	0.0333	ND	65.2	30-120	1.07	30	
Fluorene	0.0153	0.00500	"	0.0333	ND	46.0	30-120	1.03	30	
Indeno (1,2,3-cd) pyrene	0.0197	0.00500	"	0.0333	ND	59.0	30-120	6.33	30	
Pyrene	0.0222	0.00500	"	0.0333	ND	66.7	35-142	4.19	30	
1-Methylnaphthalene	0.0159	0.00500	"	0.0333	ND	47.7	15-130	15.0	50	
2-Methylnaphthalene	0.0340	0.00500	"	0.0333	ND	102	15-130	45.3	50	
Surrogate: 2-Methylnaphthalene-d10	*0.0347*		*"*	*0.0333*		*104*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0356*		*"*	*0.0333*		*107*	*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.

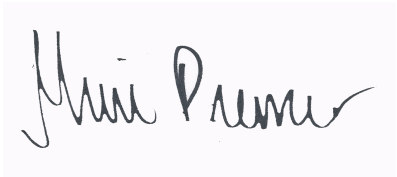
S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFC0273 - EPA 3050B										
Blank (BFC0273-BLK1)				Prepared: 03/25/22 Analyzed: 03/31/22						
Boron	ND	0.0100	mg/L							
LCS (BFC0273-BS1)				Prepared: 03/25/22 Analyzed: 03/31/22						
Boron	4.69	0.0100	mg/L	5.00		93.8	80-120			
Duplicate (BFC0273-DUP1)		**Source: 2203162-04**		Prepared: 03/25/22 Analyzed: 03/31/22						
Boron	0.609	0.0100	mg/L		0.587			3.65	20	
Matrix Spike (BFC0273-MS1)		**Source: 2203162-04**		Prepared: 03/25/22 Analyzed: 03/31/22						
Boron	5.42	0.0100	mg/L	5.00	0.587	96.6	75-125			
Matrix Spike Dup (BFC0273-MSD1)		**Source: 2203162-04**		Prepared: 03/25/22 Analyzed: 03/31/22						
Boron	5.71	0.0100	mg/L	5.00	0.587	102	75-125	5.24	25	



S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFC0730 - EPA 3050B										
Blank (BFC0730-BLK1)				Prepared & Analyzed: 03/31/22						
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 (BFC0730-BS1)				Prepared & Analyzed: 03/31/22						
Arsenic	33.9	0.200	mg/kg wet	40.0		84.6	80-120			
Barium	34.9	0.400	"	40.0		87.1	80-120			
Cadmium	1.81	0.200	"	2.00		90.4	80-120			
Copper	33.4	0.400	"	40.0		83.6	80-120			
Lead	17.4	0.200	"	20.0		87.1	80-120			
Nickel	35.1	0.400	"	40.0		87.8	80-120			
Selenium	3.23	0.260	"	4.00		80.7	80-120			
Silver	1.75	0.0200	"	2.00		87.4	80-120			
Zinc	35.9	0.400	"	40.0		89.8	80-120			
Duplicate (BFC0730-DUP1)		**Source: 2203461-01**		Prepared & Analyzed: 03/31/22						
Arsenic	1.27	0.222	mg/kg dry		1.37			7.27	20	
Barium	75.6	0.444	"		95.9			23.7	20	QR-03
Cadmium	0.0914	0.222	"		0.107			15.4	20	
Copper	7.40	0.444	"		8.09			8.91	20	
Lead	6.20	0.222	"		6.85			10.1	20	
Nickel	6.47	0.444	"		6.88			6.25	20	
Selenium	0.713	0.288	"		0.693			2.81	20	
Silver	0.0498	0.0222	"		0.0480			3.70	20	
Zinc	27.2	0.444	"		31.5			14.6	20	

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFC0730 - EPA 3050B										
Matrix Spike (BFC0730-MS1)	**Source: 2203461-01**			Prepared & Analyzed: 03/31/22						
Arsenic	38.3	0.222	mg/kg dry	44.4	1.37	83.2	75-125			
Barium	146	0.444	"	44.4	95.9	114	75-125			
Cadmium	2.36	0.222	"	2.22	0.107	102	75-125			
Copper	43.3	0.444	"	44.4	8.09	79.3	75-125			
Lead	25.7	0.222	"	22.2	6.85	85.1	75-125			
Nickel	40.4	0.444	"	44.4	6.88	75.5	75-125			
Selenium	3.82	0.288	"	4.44	0.693	70.4	75-125			QM-05
Silver	2.18	0.0222	"	2.22	0.0480	96.3	75-125			
Zinc	66.6	0.444	"	44.4	31.5	79.2	75-125			
Matrix Spike Dup (BFC0730-MSD1)	**Source: 2203461-01**			Prepared & Analyzed: 03/31/22						
Arsenic	39.2	0.222	mg/kg dry	44.4	1.37	85.4	75-125	2.44	25	
Barium	134	0.444	"	44.4	95.9	86.3	75-125	8.67	25	
Cadmium	2.14	0.222	"	2.22	0.107	91.5	75-125	10.2	25	
Copper	44.0	0.444	"	44.4	8.09	81.0	75-125	1.75	25	
Lead	23.4	0.222	"	22.2	6.85	74.8	75-125	9.26	25	QM-05
Nickel	41.7	0.444	"	44.4	6.88	78.5	75-125	3.25	25	
Selenium	3.88	0.288	"	4.44	0.693	71.8	75-125	1.58	25	QM-05
Silver	1.96	0.0222	"	2.22	0.0480	86.2	75-125	10.8	25	
Zinc	69.1	0.444	"	44.4	31.5	84.7	75-125	3.60	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.

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

Hexavalent Chromium by EPA Method 7196 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFC0631 - 3060A_Mod										
Blank (BFC0631-BLK1)				Prepared & Analyzed: 03/28/22						
Chromium, Hexavalent	ND	0.30	mg/kg wet							
LCS (BFC0631-BS1)				Prepared & Analyzed: 03/28/22						
Chromium, Hexavalent	26.6	0.30	mg/kg wet	25.0		106	80-120			
Duplicate (BFC0631-DUP1)	**Source: 2203357-01**			Prepared & Analyzed: 03/28/22						
Chromium, Hexavalent	ND	0.30	mg/kg dry		ND				20	
Matrix Spike (BFC0631-MS1)	**Source: 2203357-01**			Prepared & Analyzed: 03/28/22						
Chromium, Hexavalent	28.3	0.30	mg/kg dry	29.8	ND	95.0	75-125			
Matrix Spike Dup (BFC0631-MSD1)	**Source: 2203357-01**			Prepared & Analyzed: 03/28/22						
Chromium, Hexavalent	29.7	0.30	mg/kg dry	29.8	ND	99.8	75-125	4.93	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.

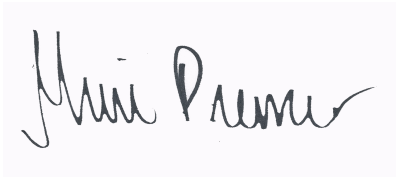
S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFC0714 - General Preparation										
Blank (BFC0714-BLK1)				Prepared: 03/30/22 Analyzed: 04/01/22						
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							
LCS (BFC0714-BS1)				Prepared: 03/30/22 Analyzed: 04/01/22						
Calcium	5.16	0.0500	mg/L wet	5.00		103	70-130			
Magnesium	5.03	0.0500	"	5.00		101	70-130			
Sodium	4.56	0.0500	"	5.00		91.3	70-130			



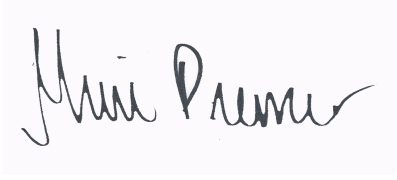
S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFC0628 - General Preparation										
Duplicate (BFC0628-DUP1)		**Source: 2203095-06**		Prepared & Analyzed: 03/28/22						
% Solids	85.7		%		85.7			0.0328	20	



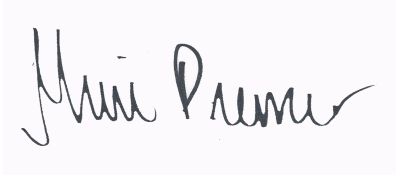
S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFC0754 - General Preparation										
Blank (BFC0754-BLK1)				Prepared & Analyzed: 03/31/22						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (BFC0754-BS1)				Prepared & Analyzed: 03/31/22						
Specific Conductance (EC)	0.154	0.0100	mmhos/cm	0.150		103	95-105			
Duplicate (BFC0754-DUP1)		**Source: 2203401-01**		Prepared & Analyzed: 03/31/22						
Specific Conductance (EC)	0.268	0.0100	mmhos/cm		0.270			0.781	20	



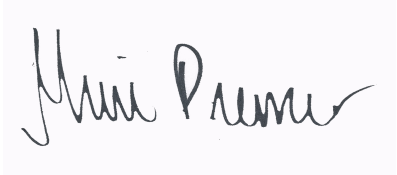
S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFC0753 - General Preparation										
LCS (BFC0753-BS1)				Prepared & Analyzed: 03/31/22						
pH	9.02		pH Units	9.18		98.3	95-105			
Duplicate (BFC0753-DUP1)		**Source: 2203401-01**		Prepared & Analyzed: 03/31/22						
pH	7.76		pH Units		7.57			2.48	20	



Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Hoshiko-AST Project Number: [none] Project Manager: Paul Henehan	**Reported:** 04/03/22 11:49

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.
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