



FLOWLINE ABANDONMENT FORM

SITE NAME: ARENS G26-19 FLOWLINE							DATE: 8/6/2024	REM. PROJECT #: 34770	WEATHER: SUNNY 80S		
SITE DIRECTIONS: CR45 and CR42, E on 42 for 0.3mi, SE for 0.26mi, W 500' into							CLIENT: Noble				
LEGALS AND LAT/LONG: 40.286500, -104.635360							TASMAN PERSONNEL: LB, KH				
SOIL TYPES: Silty Sand - SM							SURFACE GRADIENT: South				
SOIL SAMPLING							FACILITY INFRASTRUCTURE				
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo?	Grab or Lab Sample?	EQUIPMENT		Quantity	Photo?	
							Above Ground Storage Tank (AST)				
8/7/2024 09:37	FL01R-W@2'	0.1	No Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel				
8/7/2024 09:34	FL01-01@3'	0.2	No Staining	No Odor	Yes	Grab	Separator				
8/7/2024 09:31	FL01-02@3'	0.1	No Staining	No Odor	Yes	Grab	Emission Control Device (ECD)				
8/7/2024 09:29	FL01-03@2'	0.1	No Staining	No Odor	Yes	Grab	Dump Line				
8/7/2024 09:27	FL01-04@4'	0.2	No Staining	No Odor	Yes	Lab	Wellhead		1		
							Flowline		2		
							Other:				
							Soil Loads Removed				
							IMPACTED SOIL IDENTIFIED?				
							ESTIMATED VOLUME OF IMPACTS:				
8/7/2024 08:32	FL01-5@2'	0.1	No Staining	No Odor	Yes	Lab	Date	Number	CY		
8/7/2024 10:17	BKG01@2'	0.2	No Staining	No Odor	Yes	Lab					
8/7/2024 10:20	BKG01@3'	0.2	No Staining	No Odor	Yes	Lab					
8/7/2024 10:21	BKG01@4'	0.1	No Staining	No Odor	Yes	Lab	Total Removed		0	0	
							Disposal Facility:				
							Groundwater Recovery				
							DATE GW ENCOUNTERED:		DEPTH:		
							GROUNDWATER IN CONTACT WITH IMPACTED SOIL?				
							LNAPL OR SHEEN OBSERVED ON GW?				
GROUNDWATER SAMPLING							Date		BBLs		
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?					
							Total Removed		0		
							Disposal Facility:				

GENERAL OBSERVATION FORM

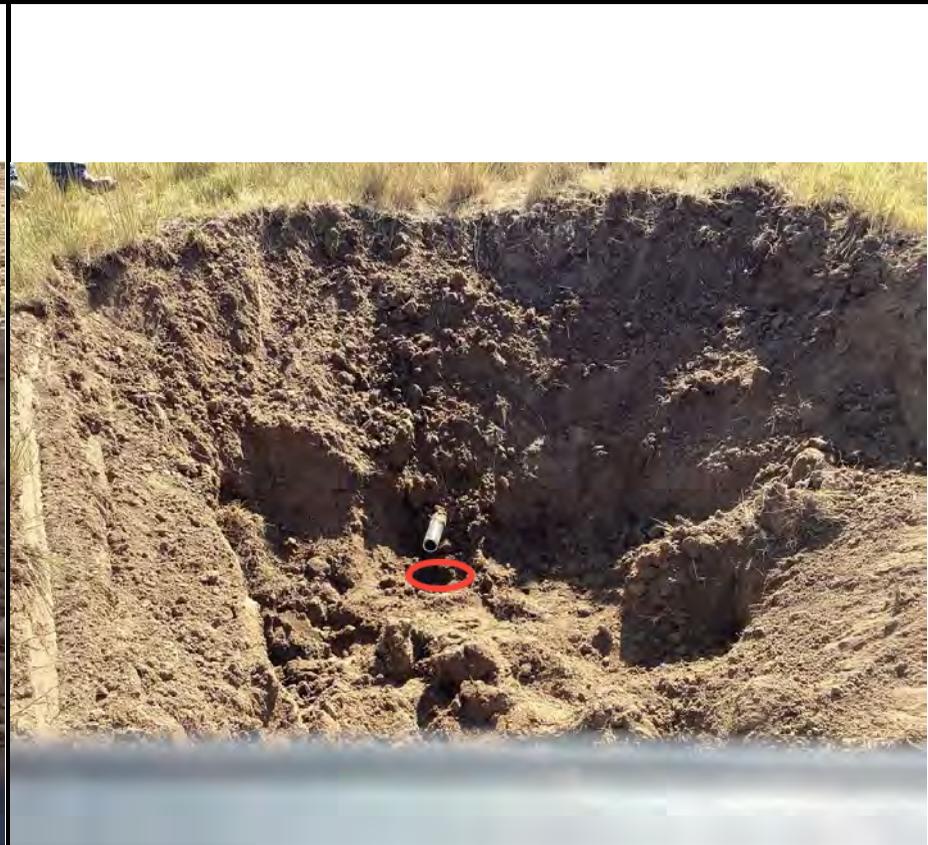
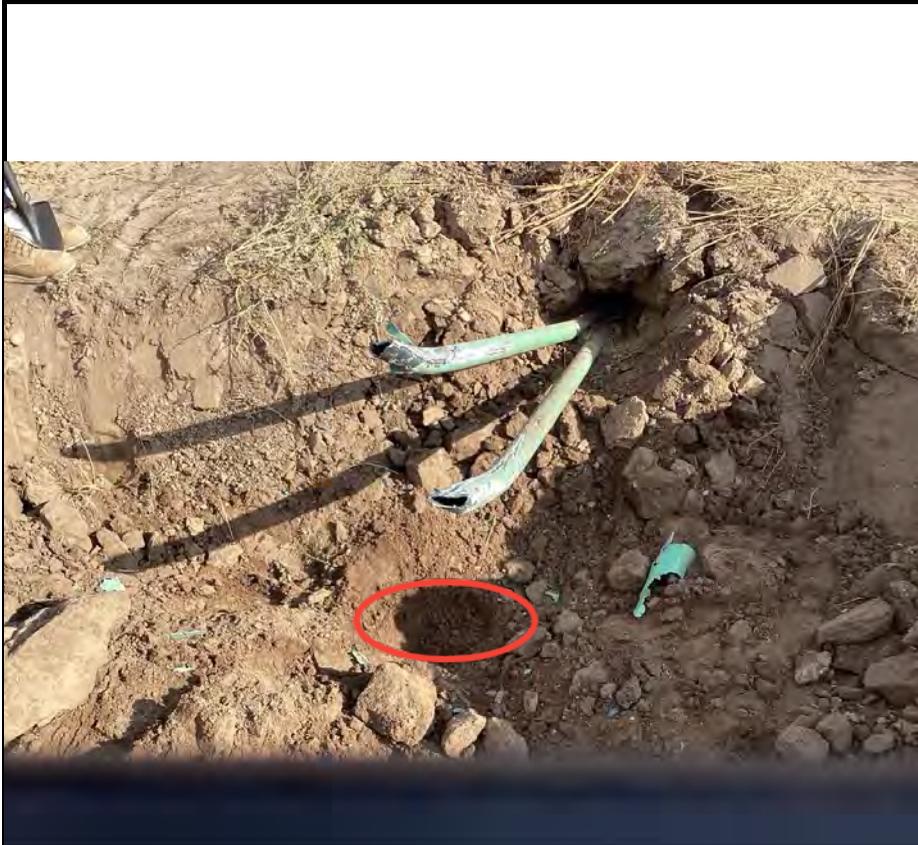
 Site Area/AOC: ARENS G26-19 FLOWLINE Client: Noble

 Daily Forecast/Weather: SUNNY 80S Personnel: LB, KH

 Task/Location Description: FLOWLINE DECOMMISSIONING

Time	Description
08:03	ON SITE (8/6/24)
08:26	JSA DONE
11:15	Off Site
07:25	On Site (8/7/24)
	FL01R-S is saved under Beebe Draw T4N R65W S26 L04 Tank Battery (REM: 34682) as SEP01-FL
07:39	Hydrovac on site
08:08	JSA finished, met with crew, ABIP the majority of the line- details below
	Common trenched with Dupper R G26-6, will take samples for both Flowlines
08:38	Land Owner on site, worried about underground lines, spoke with Antonio
09:27	Sampled FL near wellhead
10:13	Took backgrounds w/ hand auger
	BKG LITHOLOGY: dark brown, silty sand, ws, fg, moist @2', no stain/odor, clayey sand at 3', low plast.
	Flowline was ABIP from FL01-04 to FL01-05 due to underground conflicts with third party lines
	Landowner expressed concerns for his waterlines, Miguel Barron decided to leave whole area in place
	Will not take samples for Dupper RG26-6 due to entire line being ABIP

 Need photo log?

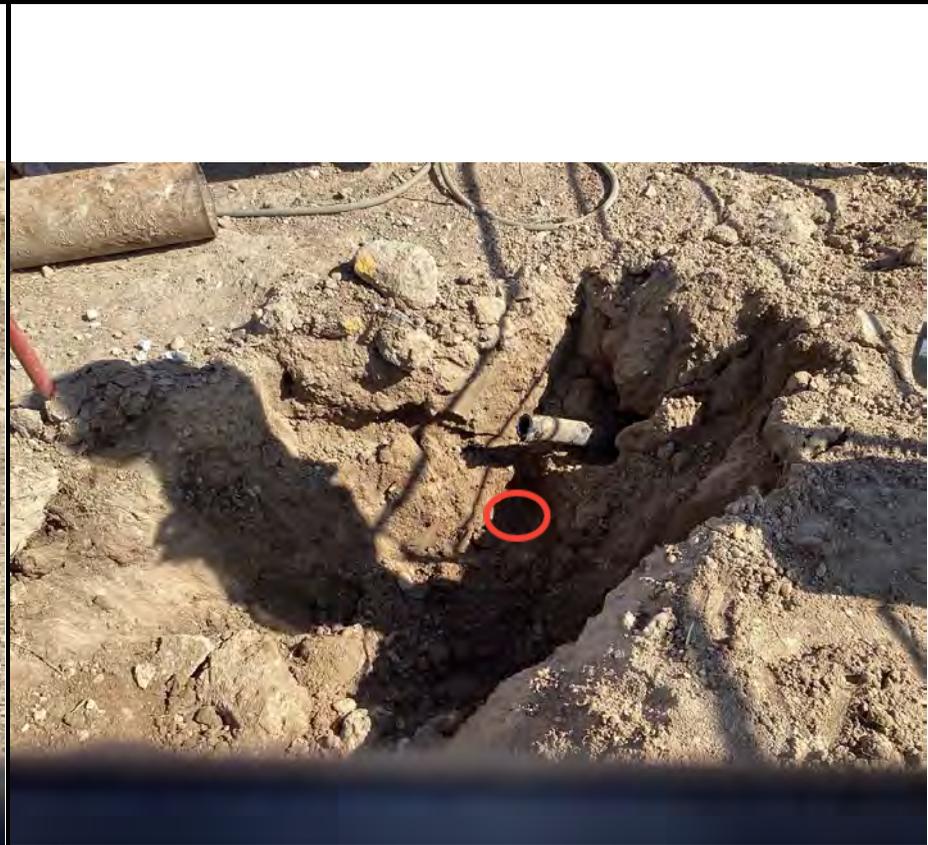
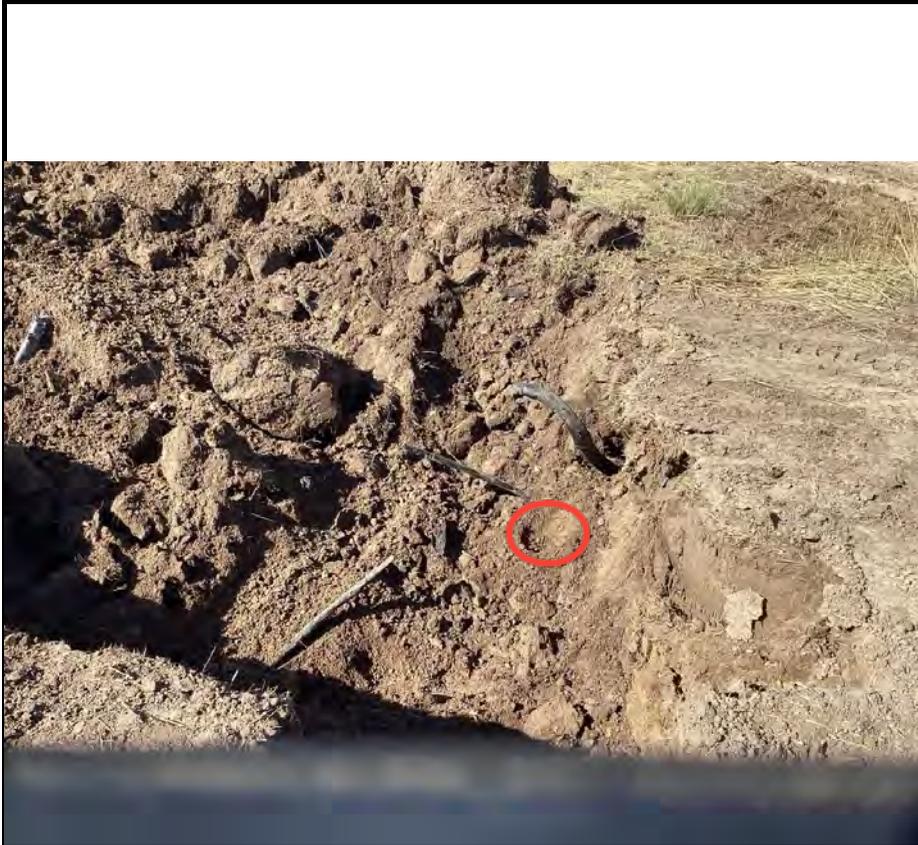


Equipment ID: F01-7@2		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: FACING N			

Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: FACING E			



Equipment ID: FL01-03@2		Equipment Type:		Equipment ID: FL01-02@3		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: FACING SW				Notes/Conditions: FACING W			



Equipment ID: FL01-02@3		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: FACING SW			

Equipment ID: FL01R-W@2		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: FACING NE			

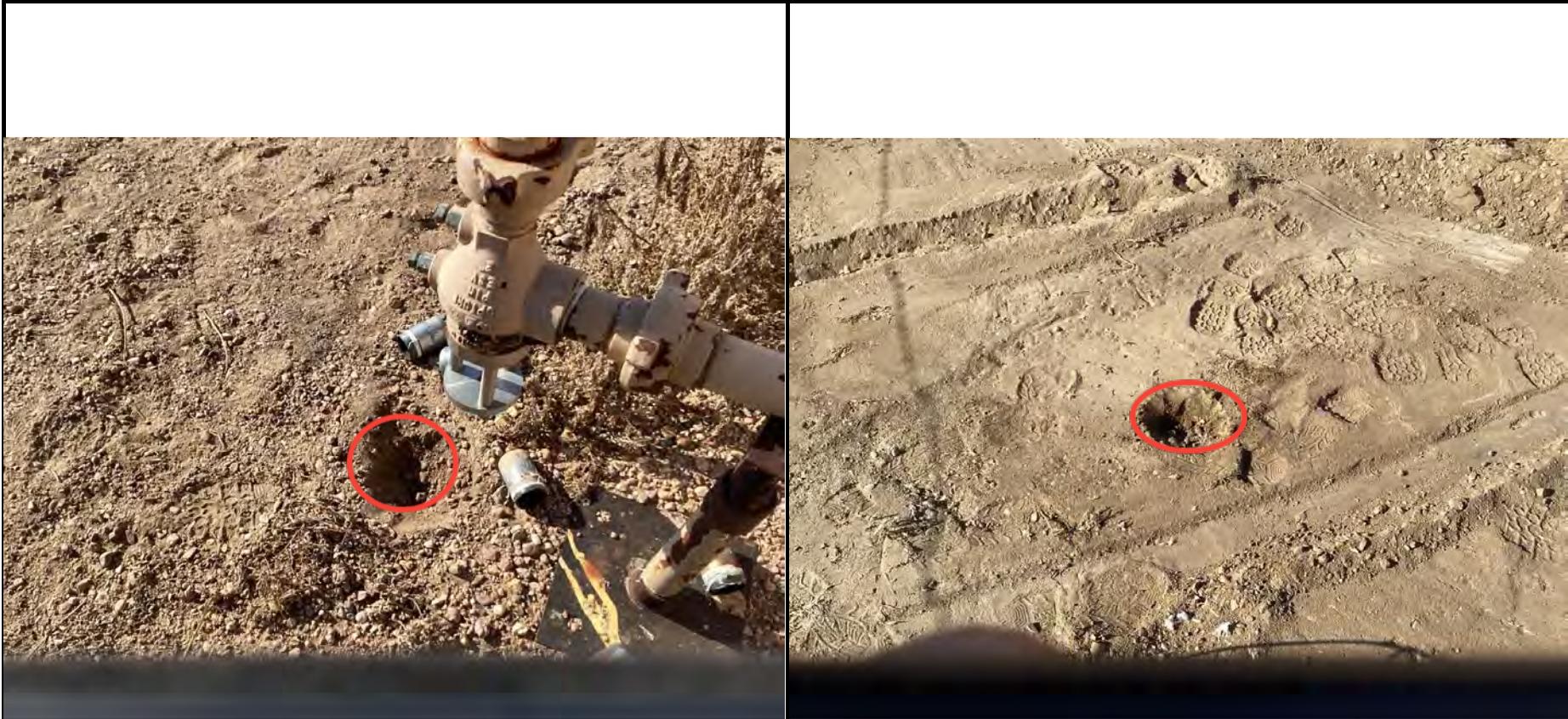


Equipment ID: BKG01@2,3,4		Equipment Type:		Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: FACINGSW				Notes/Conditions:			



TANK BATTERY DECOMMISSIONING FORM

SITE NAME: Beebe Draw T4N R65W S26 L04 Tank Battery							DATE: 8/6/2024	REM. PROJECT #: 34682	WEATHER: SUNNY, 80S		
SITE DIRECTIONS: CR42 AND CR45, S ON 45 0.5MI, E 0.275 INTO							CLIENT: Noble				
LEGALS AND LAT/LONG: 40.282976, -104.634200							TASMAN PERSONNEL: LB, JG				
SOIL TYPES: Poorly Graded Sand - SP							SURFACE GRADIENT: Northwest				
SOIL SAMPLING							FACILITY INFRASTRUCTURE				
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo?	Grab or Lab Sample?	EQUIPMENT	Quantity	Photo?		
8/6/2024 09:01	AST01@0-6"	5.8	No Staining	No Odor	Yes	Lab	Above Ground Storage Tank (AST)	2			
8/6/2024 09:05	AST02@0-6"	40.6	No Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel	1			
8/6/2024 09:05	AST02@0-6"	40.6	No Staining	No Odor	Yes	Lab	Separator	1			
8/6/2024 08:46	PWV01-B@4.5'	127.2	HC Staining	HC Odor	Yes	Lab	Emission Control Device (ECD)				
8/6/2024 08:51	PWV01-N@2'	1168	HC Staining	HC Odor	Yes	Lab	Dump Line	1			
8/6/2024 08:54	PWV01-S@2'	34.0	HC Staining	HC Odor	Yes	On-hold	Wellhead	1			
8/6/2024 08:53	PWV01-E@2'	549	HC Staining	HC Odor	Yes	On-hold	Flowline	1			
8/6/2024 08:48	PWV01-W@2'	194.3	HC Staining	HC Odor	Yes	On-hold	Other: FLARE	2			
8/6/2024 09:28	SEP01-DL@3'	26.3	No Staining	No Odor	Yes	Lab	Soil Loads Removed				
8/6/2024 09:25	SEP01-FL@3'	0.8	No Staining	No Odor	Yes	Lab	IMPACTED SOIL IDENTIFIED?				
8/6/2024 08:40	FLARE01@0-6"	0.5	No Staining	No Odor	Yes	Grab	ESTIMATED VOLUME OF IMPACTS:				
8/6/2024 08:42	FLARE02@0-6"	4.4	No Staining	No Odor	Yes	Grab	Date	Number	CY		
8/6/2024 08:39	MH01@0-6"	0.7	No Staining	No Odor	Yes	Grab					
8/6/2024 09:31	GS01@0-6"	0.6	No Staining	No Odor	Yes	Grab					
8/6/2024 10:42	GS02@0-6"	2.6	No Staining	No Odor	Yes	Grab					
8/6/2024 09:45	BKG01@0-6"	2.5	No Staining	No Odor	Yes	Lab					
8/6/2024 09:50	BKG01@2'	0.3	No Staining	No Odor	Yes	Lab	Total Removed	0	0		
8/6/2024 09:52	BKG01@3'	0.1	No Staining	No Odor	Yes	Lab	Disposal Facility:				
8/6/2024 09:56	BKG01@4.5'	0.2	No Staining	No Odor	Yes	Lab	Groundwater Recovery				
							DATE GW ENCOUNTERED:		DEPTH:		
							GROUNDWATER IN CONTACT WITH IMPACTED SOIL?				
							LNAPL OR SHEEN OBSERVED ON GW?				
GROUNDWATER SAMPLING							Date	BBLs			
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?					
							Total Removed	0			
							Disposal Facility:				

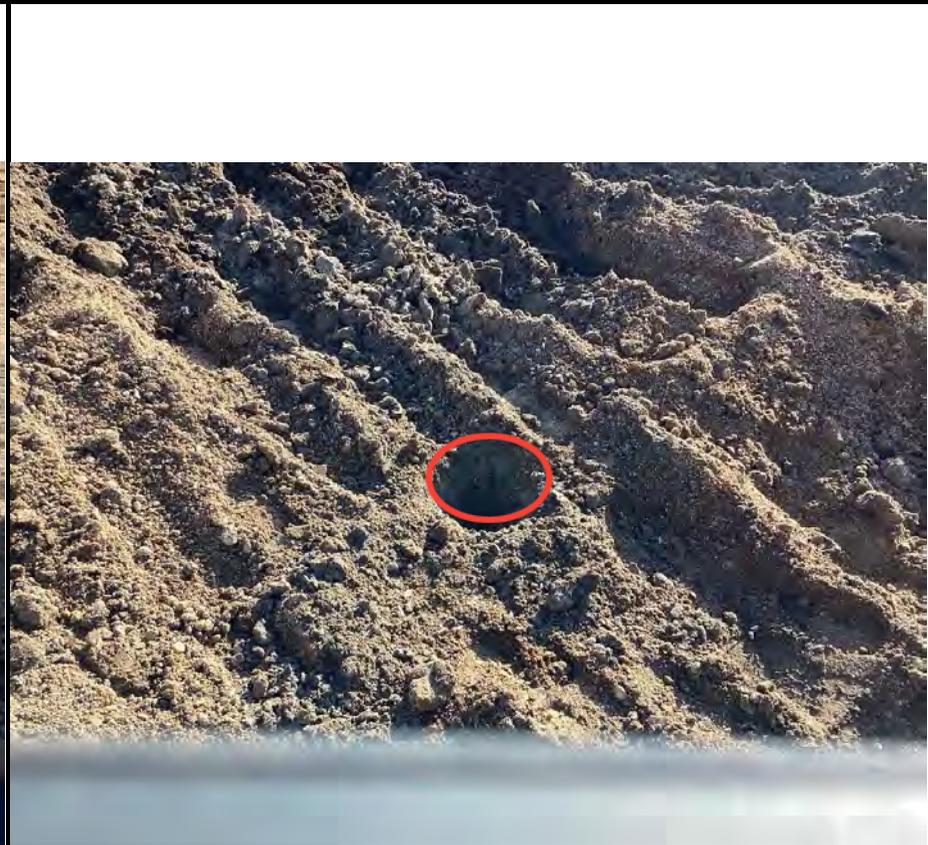
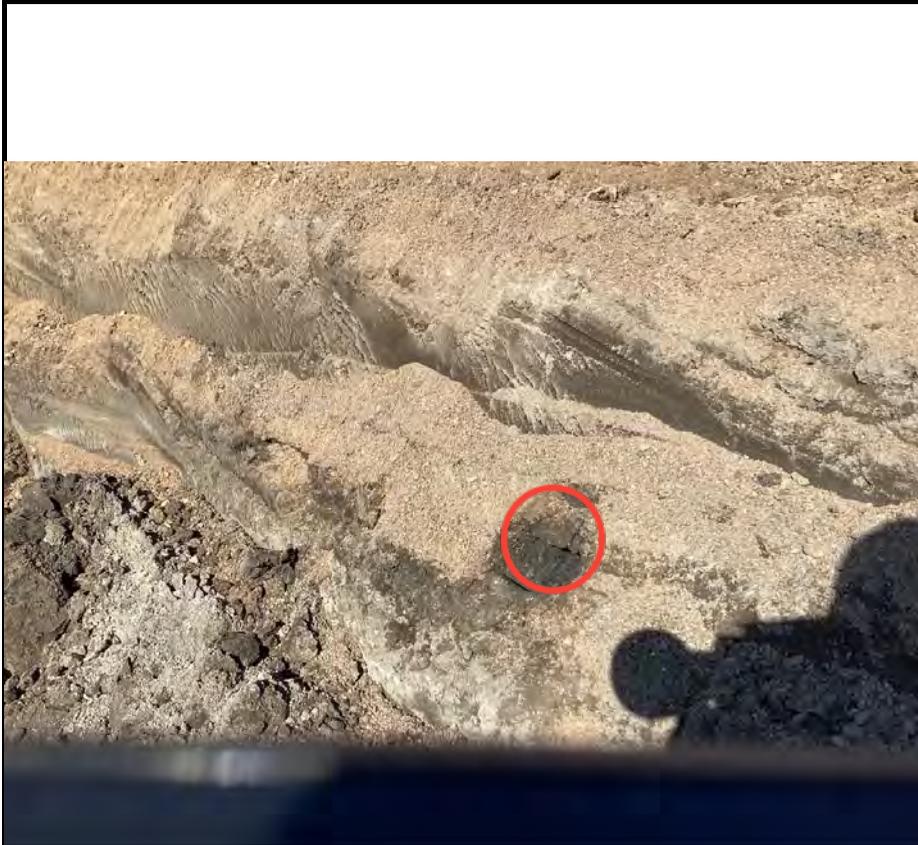


Equipment ID: MH01@0-6		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: FACING SE			

Equipment ID: FLARE01@0-6		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: FACING SW			



Equipment ID: FLARE02@0-6		Equipment Type:		Equipment ID: PWV01-B@4.5		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: FACING SE				Notes/Conditions: FACING S			



Equipment ID: PWV01-W@2		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: FACING SW			

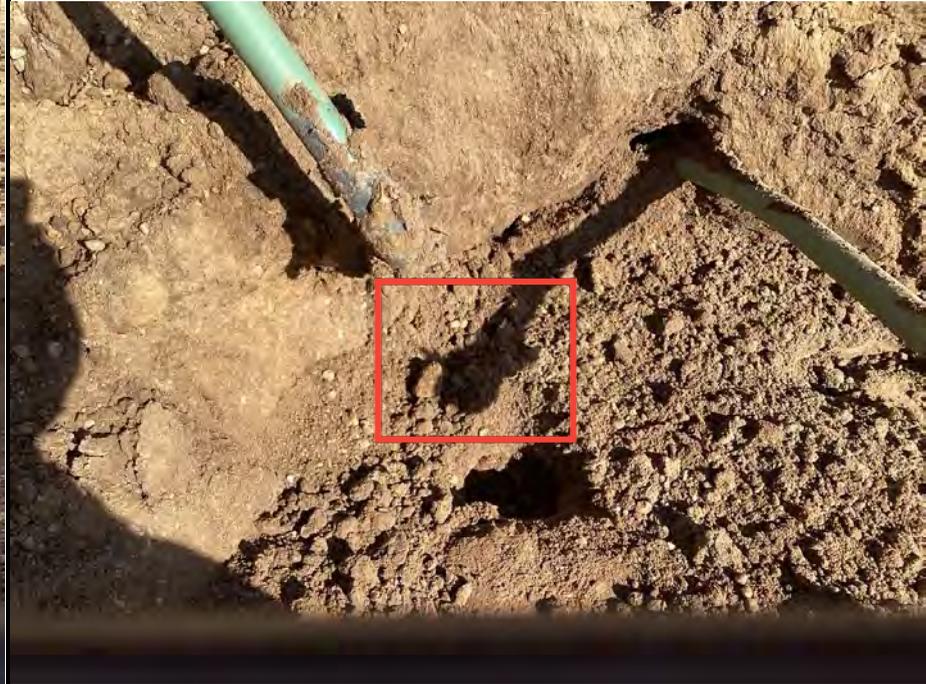
Equipment ID: PWV01-N@2		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions:			



Equipment ID: PWV01-E@2		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: FACING SE			

Equipment ID: PWV01-S@2		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: FACING S			

									
						Equipment ID: AST02@0-6 Equipment Type:			Equipment ID: AST01@0-6 Equipment Type:
Material:		Volume:	Contents:		Material:		Volume:	Contents:	
Notes/Conditions: FACING N					Notes/Conditions: FACING N				

					
Material:	Volume:	Contents:	Material:	Volume:	Contents:
Notes/Conditions: FACING N			Notes/Conditions: FACING N		



Equipment ID: GS01 @0-6"		Equipment Type:		Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: FACING S				Notes/Conditions: Dump lines removed			



Equipment ID: BKG01		Equipment Type:		Equipment ID: GS02@0-6"		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: FACING N				Notes/Conditions: FACING W			

TABLE 1
FIELD DATA SUMMARY TABLE
NOBLE ENERGY, INC - 100322
ARENS G26-19 FLOWLINE, WELD COUNTY, COLORADO
REM # 34770

Sample ID	Sample Date	Depth (ft. bgs)	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
FL01R-W@2'	08/07/24	2	40.286506	-104.635328	0.8	0.1
FL01-01@3'	08/07/24	3	40.286533	-104.634759	0.8	0.2
FL01-02@3'	08/07/24	3	40.286517	-104.634301	0.8	0.1
FL01-03@2'	08/07/24	2	40.286510	-104.633969	0.8	0.1
FL01-04@4'	08/07/24	4	40.286524	-104.633572	0.7	0.2
FL01-05@2'	08/07/24	2	40.283141	-104.634148	0.8	0.1
SEP01-FL@3'	08/06/24	3	40.282971	-104.634147	0.8	0.8
BKG01@2'	08/07/24	2	40.286695	-104.635278	0.9	0.2
BKG01@3'	08/07/24	3	40.286695	-104.635278	0.9	0.2
BKG01@4'	08/07/24	4	40.286695	-104.635278	0.9	0.1

Notes:

1. Global Positioning System (GPS) data is provided in decimal degrees using North American Datum (NAD) 83 UTMZone 13 North.
2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).

PDOP = Position Dilution of Precision

ppm = Parts per million

ft. = Feet

bgs = Below ground surface

TABLE 2
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE ENERGY, INC - 100322
ARENS G26-19 FLOWLINE, WELD COUNTY, COLORADO
REM # 34770

Sample ID	Sample Date	Depth (ft. bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)	1,2,4-Trimethyl-Benzene (mg/kg)	1,3,5-Trimethyl-Benzene (mg/kg)	Naphthalene (mg/kg)	TPH (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500	500**		
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	500**		
FL01R-W@2'	08/07/24	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL01-04@4'	08/07/24	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL01-05@2'	08/07/24	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP01-FL@3'	08/06/24	3	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50

Notes:

1. **Bold** values exceed the ECMC Table 915-1 limit(s).
2. Pink & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL).
3. * Indicates laboratory minimum detection limit in excess of SSL.
4. ** Summation of GRO+DRO+ORO must be less than 500 mg/kg.

ECMC = Energy & Carbon Management Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

TPH-ORO = Total petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

TABLE 3
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE ENERGY, INC - 100322
ARENS G26-19 FLOWLINE, WELD COUNTY, COLORADO
REM # 34770

Sample ID	Sample Date	Depth (ft. bgs)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Benzo (b) Fluoranthene (mg/kg)	Benzo (k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3-cd) Pyrene (mg/kg)	Pyrene (mg/kg)	1-Methyl - Naphthalene (mg/kg)	2-Methyl- Naphthalene (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
FL01R-W@2'	08/07/24	2	0.0265	0.105	0.154	0.104	0.151	0.0499	0.135	0.0138	0.303	0.0373	0.116	0.392	<0.00500	<0.00500
FL01-04@4'	08/07/24	4	0.0238	0.0805	0.0660	0.0408	0.0585	0.0193	0.0591	<0.00500	0.138	0.0347	0.0480	0.186	<0.00500	<0.00500
FL01-05@2'	08/07/24	2	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP01-FL@3'	08/06/24	3	<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

Notes:

1. **Bold** values exceed the ECMC Table 915-1 limit(s).
2. Pink & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL).
3. * Indicates laboratory minimum detection limit in excess of SSL.

ECMC = Colorado Energy & Carbon Management Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

ft. = Feet

bgs = Below ground surface

mg/kg = Milligrams per kilogram

NA = Constituent not analyzed

TABLE 4
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE ENERGY, INC - 100322
ARENS G26-19 FLOWLINE, WELD COUNTY, COLORADO
REM # 34770

Sample ID	Sample Date	Depth (ft. bgs)	pH (Standard Units)	EC (mmhos/cm)	SAR (Standard Units)	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
FL01R-W@2'	08/07/24	2	8.15	1.86	4.98	<2.00
FL01-04@4'	08/07/24	4	7.81	8.01	13.6	<2.00
FL01-05@2'	08/07/24	2	8.26	0.547	0.472	<2.00
SEP01-FL@3'	08/06/24	3	8.44	0.169	0.0684	<2.00
BKG01@2'	08/07/24	2	8.14	2.67	7.62	<2.00
BKG01@3'	08/07/24	3	8.08	0.250	7.57	<2.00
BKG01@4'	08/07/24	4	8.02	1.97	5.43	<2.00
Maximum Root Background Concentration (0 - 3 ft)			8.14	2.67	7.62	-
Mean Root Background Concentration (0 - 3 ft)			8.11	1.46	7.60	-
Maximum Background Concentration			8.14	2.67	7.62	-
Mean Background Concentration			8.08	1.63	6.87	-

Notes:

1. **Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within background concentrations.
2. **Bold** faced values exceed the ECMC Table 915-1 limit(s) and native background concentrations.
3. Brown highlighted soil analytical values indicate a regulatory exceedance.

ECMC = Colorado Energy & Carbon Management Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligram per liter

(<) = Analytical result is less than the indicated laboratory reporting limit.

ft. = Feet

bgs = Below ground surface

TABLE 5
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE ENERGY, INC - 100322
ARENS G26-19 FLOWLINE, WELD COUNTY, COLORADO
REM # 34770

Sample ID	Sample Date	Depth (ft. bgs)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) ^[4] (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FL01R-W@2'	08/07/24	2	1.78	52.8	<0.200	<0.30 ^[4]	4.74	6.85	4.63	<0.260	0.0213	19.3
FL01-04@4'	08/07/24	4	1.38	35.7	<0.200	<0.30 ^[4]	4.78	4.74	3.70	<0.260	<0.0200	20.8
FL01-05@2'	08/07/24	2	1.72	49.3	<0.200	<0.30 ^[4]	4.70	4.52	4.64	<0.260	<0.0200	20.0
SEP01-FL@3'	08/06/24	3	0.855	39.4	0.324	<0.30 ^[4]	2.06	4.86	1.61	<0.260	<0.0200	6.51
BKG01@2'	08/07/24	2	1.45	48.4	<0.200	<0.30 ^[4]	3.29	2.88	3.69	<0.260	0.0323	13.6
BKG01@3'	08/07/24	3	1.35	47.6	<0.200	<0.30 ^[4]	2.73	3.32	3.54	<0.260	<0.0200	14.0
BKG01@4'	08/07/24	4	1.69	42.2	<0.200	<0.30 ^[4]	2.92	3.17	3.46	<0.260	<0.0200	14.2
Maximum Background Concentration			1.69	-	-	-	-	-	-	-	-	-
Maximum Background Concentration X 1.25			2.11	-	-	-	-	-	-	-	-	-
Mean Background Concentration			1.50	-	-	-	-	-	-	-	-	-
Mean Background Concentration X 1.25			1.87	-	-	-	-	-	-	-	-	-

Notes:

- Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
- Bold** faced values exceed the ECMC Table 915-1 limit(s) and native background concentrations.
- Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL).
- Compound falls within ECMC Table 915-1 Footnote 9.
- Non-detect background results accounted for in the highest background concentration by using the reporting limit.

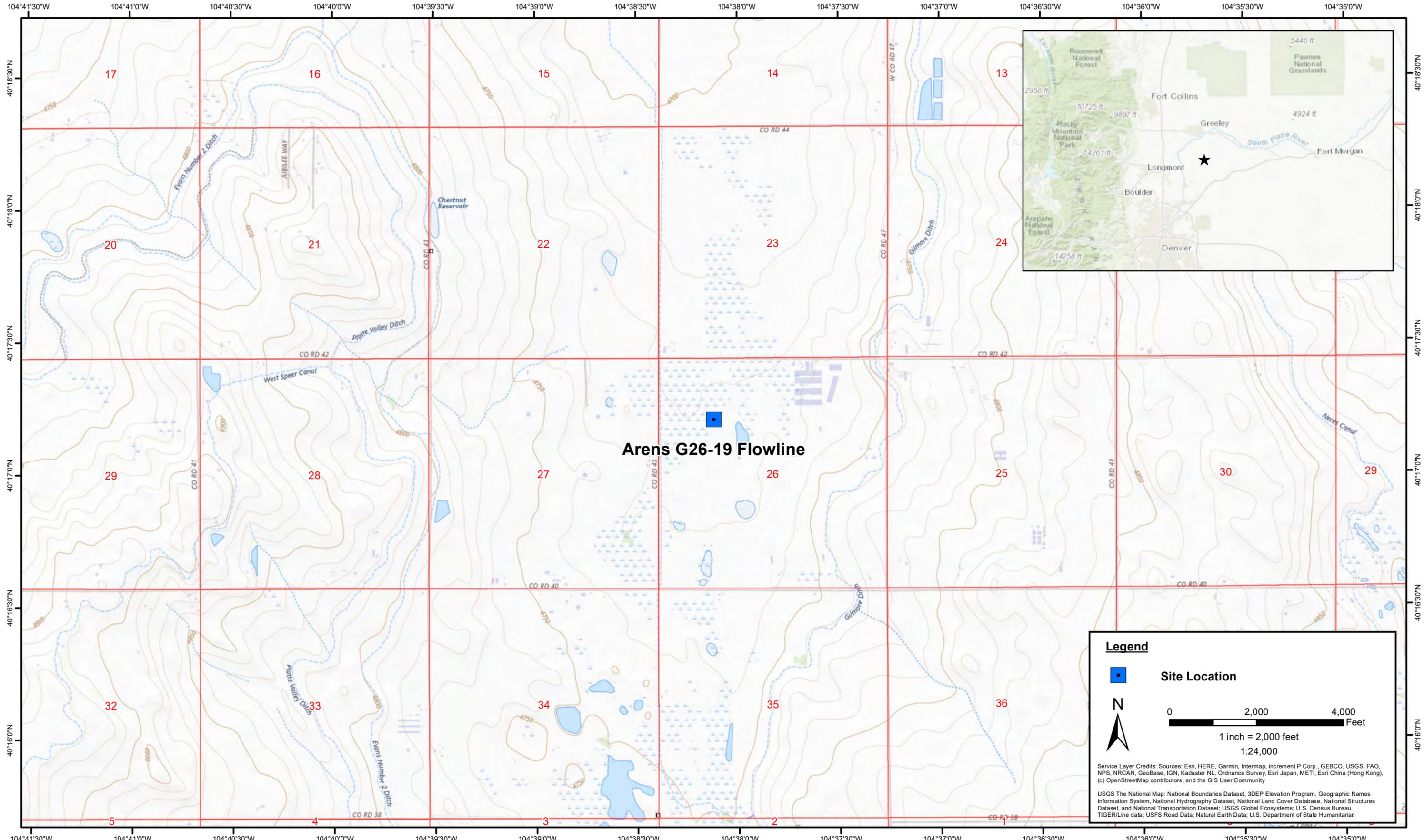
ECMC = Energy & Carbon Management Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface



Legend

 **Site Location**

 N

0 2,000 4,000 Feet

1 inch = 2,000 feet
1:24,000

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian

DATE:	August 2024
DESIGNED BY:	B. Nelson
DRAWN BY:	J. Clonts



Tasman, Inc.
6855 W. 119th Ave
Broomfield, CO 80020

Noble Energy Inc. - 100322 - DJ Basin
Arens G26-19 Flowline
SENW, Section 26, Township 4 North, Range 65 West
Weld County, Colorado

Site Location Map

Figure
1

BKG01@2' (08/07/2024) PID = 0.2 ppm	FL01R-W@2' (08/07/2024) PID = 0.1 ppm	FL01-01@3' (08/07/2024) PID = 0.2 ppm	FL01-02@3' (08/07/2024) PID = 0.1 ppm	FL01-03@2' (08/07/2024) PID = 0.1 ppm	FL01-04@4' (08/07/2024) PID = 0.2 ppm
BKG01@3' (08/07/2024) PID = 0.2 ppm					
BKG01@4' (08/07/2024) PID = 0.1 ppm					

FL01-05@2'
(08/07/2024)
PID = 0.1 ppm

SEP01-FL@3'
(08/06/2024)
PID = 0.8 ppm

Legend

- Flowline Location (Collected via Trimble GPS)
- Flowline Location – Abandoned in Place
- Soil Sample Location – Field Screen (Collected via Trimble GPS)
- Soil Sample Location – Lab Analyzed (Collected via Trimble GPS)
- Soil Sample Location – GSSL Exceedance (Collected via Trimble GPS)

Notes

- 1) All locations are approximate unless otherwise noted.
- 2) Buried infrastructure has been spatially projected.
- 3) Color coded sample exceedances are in reference to ECMC Table 915-1 Organic Compounds in Soil.

GPS – Global Positioning System
 PID – Photoionization Detector
 ppm – Parts per million
 GSSL – Protection of Groundwater Soil Screening Levels

0 ft. 150 ft. 300 ft.

Image Source: Google Earth; Google 2021
 Projection: WGS 1984, UTM Zone 13 North

DATE: August 14, 2024

DESIGNED BY: J. Whritenour

DRAWN BY: M. Liston



**Noble Energy, Inc. – 100322 – DJ Basin
 Arens G26-19 Flowline**
 SWNW, Section 26, Township 4 North, Range 65 West
 Weld County, Colorado

Flowline Closure & Soil
 Analytical Map
 (08/06/2024 & 08/07/2024)

FIGURE
 2

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 14, 2024

Jacob Whritenour
Tasman Geosciences
6855 W. 119th Ave.
Broomfield, CO 80020

RE: Noble - Arens G26-19 Flowline
Work Order #2408065

Enclosed are the results of analyses for samples received by Summit Scientific on 08/07/24 17:52. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Natalie Tessier For Paul Shrewsbury
President



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01R-W@2'	2408065-01	Soil	08/07/24 09:37	08/07/24 17:52
FL01-04@4'	2408065-02	Soil	08/07/24 09:27	08/07/24 17:52
FL01-05@2'	2408065-03	Soil	08/07/24 08:32	08/07/24 17:52
BKG01@2'	2408065-04	Soil	08/07/24 10:17	08/07/24 17:52
BKG01@3'	2408065-05	Soil	08/07/24 10:20	08/07/24 17:52
BKG01@4'	2408065-06	Soil	08/07/24 10:21	08/07/24 17:52

Summit Scientific

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S₂

Sample Receipt Checklist

S2 Work Order# 2408005

Client: Noble Tasman Client Project ID: Arens G26-19 Flowline

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

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

Temp (°C) Thermometer #

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

Additional Comments (if any):

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

AS
Custodian Printed Name

8/7/24
Date/Time



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

FL01R-W@2'
2408065-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/07/24 09:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHH0229	08/08/24	08/09/24	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: **08/07/24 09:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0343	85.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0390	97.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0428	107 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/07/24 09:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHH0230	08/08/24	08/12/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **08/07/24 09:37**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

FL01R-W@2'
2408065-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/07/24 09:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0265	0.00500	mg/kg	1	BHH0205	08/08/24	08/09/24	EPA 8270D SIM	
Anthracene	0.105	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.154	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.104	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.151	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0499	0.00500	"	"	"	"	"	"	
Chrysene	0.135	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	0.0138	0.00500	"	"	"	"	"	"	
Fluoranthene	0.303	0.00500	"	"	"	"	"	"	E
Fluorene	0.0373	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.116	0.00500	"	"	"	"	"	"	
Pyrene	0.392	0.00500	"	"	"	"	"	"	E
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **08/07/24 09:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0187	56.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0182	54.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/07/24 09:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0212	08/08/24	08/09/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/07/24 09:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.78	0.200	mg/kg dry	1	BHH0207	08/08/24	08/09/24	EPA 6020B	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

FL01R-W@2'
2408065-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	52.8	0.400	mg/kg dry	1	BHH0207	08/08/24	08/09/24	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.74	0.400	"	"	"	"	"	"	
Lead	6.85	0.200	"	"	"	"	"	"	
Nickel	4.63	0.400	"	"	"	"	"	"	
Silver	0.0213	0.0200	"	"	"	"	"	"	
Zinc	19.3	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/07/24 09:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0213	08/08/24	08/08/24	EPA 7196A	

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

Date Sampled: **08/07/24 09:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	90.3	0.0500	mg/L dry	1	BHH0223	08/08/24	08/10/24	EPA 6020B	
Magnesium	34.9	0.0500	"	"	"	"	"	"	
Sodium	220	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/07/24 09:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.98	0.00100	units	1	BHH0289	08/12/24	08/12/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/07/24 09:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

FL01R-W@2'
2408065-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	91.5	%	1	BHH0201	08/08/24	08/08/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/07/24 09:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.86	0.0100	mmhos/cm	1	BHH0226	08/08/24	08/09/24	EPA 120.1	

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

Date Sampled: **08/07/24 09:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.15		pH Units	1	BHH0227	08/08/24	08/09/24	EPA 9045D	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

FL01-04@4'
2408065-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/07/24 09:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHH0229	08/08/24	08/09/24	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: **08/07/24 09:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0363	90.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	96.9 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0398	99.4 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/07/24 09:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHH0230	08/08/24	08/09/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **08/07/24 09:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.46	67.7 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

FL01-04@4'
2408065-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/07/24 09:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0238	0.00500	mg/kg	1	BHH0205	08/08/24	08/09/24	EPA 8270D SIM	
Anthracene	0.0805	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.0660	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0408	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0585	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0193	0.00500	"	"	"	"	"	"	
Chrysene	0.0591	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.138	0.00500	"	"	"	"	"	"	
Fluorene	0.0347	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0480	0.00500	"	"	"	"	"	"	
Pyrene	0.186	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **08/07/24 09:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0166	49.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0151	45.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/07/24 09:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0212	08/08/24	08/09/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/07/24 09:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.38	0.200	mg/kg dry	1	BHH0207	08/08/24	08/09/24	EPA 6020B	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

FL01-04@4'
2408065-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	35.7	0.400	mg/kg dry	1	BHH0207	08/08/24	08/09/24	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.78	0.400	"	"	"	"	"	"	
Lead	4.74	0.200	"	"	"	"	"	"	
Nickel	3.70	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	20.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/07/24 09:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0213	08/08/24	08/08/24	EPA 7196A	

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

Date Sampled: **08/07/24 09:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	256	0.0500	mg/L dry	1	BHH0223	08/08/24	08/10/24	EPA 6020B	
Magnesium	172	0.0500	"	"	"	"	"	"	
Sodium	1150	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/07/24 09:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	13.6	0.00100	units	1	BHH0289	08/12/24	08/12/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/07/24 09:27**

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

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

FL01-04@4'
2408065-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	90.3	%	1	BHH0201	08/08/24	08/08/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/07/24 09:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	8.01	0.0100	mmhos/cm	1	BHH0226	08/08/24	08/09/24	EPA 120.1	

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

Date Sampled: **08/07/24 09:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.81		pH Units	1	BHH0227	08/08/24	08/09/24	EPA 9045D	

Summit Scientific

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Project: Noble - Arens G26-19 Flowline
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

FL01-05@2'
2408065-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/07/24 08:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHH0229	08/08/24	08/09/24	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: **08/07/24 08:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0445	111 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0422	106 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0418	105 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/07/24 08:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHH0230	08/08/24	08/09/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **08/07/24 08:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.1	88.5 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

FL01-05@2'
2408065-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/07/24 08:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0205	08/08/24	08/09/24	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: **08/07/24 08:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0161	48.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0150	44.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/07/24 08:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0212	08/08/24	08/09/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/07/24 08:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

FL01-05@2'
2408065-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.72	0.200	mg/kg dry	1	BHH0207	08/08/24	08/09/24	EPA 6020B	
Barium	49.3	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.70	0.400	"	"	"	"	"	"	
Lead	4.52	0.200	"	"	"	"	"	"	
Nickel	4.64	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	20.0	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/07/24 08:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0213	08/08/24	08/08/24	EPA 7196A	

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

Date Sampled: **08/07/24 08:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	860	0.0500	mg/L dry	1	BHH0223	08/08/24	08/10/24	EPA 6020B	
Magnesium	169	0.0500	"	"	"	"	"	"	
Sodium	57.9	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/07/24 08:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.472	0.00100	units	1	BHH0289	08/12/24	08/12/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

FL01-05@2'
2408065-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/07/24 08:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	90.8			%	1	BHH0201	08/08/24	08/08/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/07/24 08:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.547	0.0100		mmhos/cm	1	BHH0226	08/08/24	08/09/24	EPA 120.1	

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

Date Sampled: **08/07/24 08:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.26			pH Units	1	BHH0227	08/08/24	08/09/24	EPA 9045D	

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Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

BKG01@2'
2408065-04 (Soil)

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Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/07/24 10:17**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHH0212	08/08/24	08/09/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/07/24 10:17**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.45	0.200	mg/kg dry	1	BHH0207	08/08/24	08/09/24	EPA 6020B	
Barium	48.4	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.29	0.400	"	"	"	"	"	"	
Lead	2.88	0.200	"	"	"	"	"	"	
Nickel	3.69	0.400	"	"	"	"	"	"	
Silver	0.0323	0.0200	"	"	"	"	"	"	
Zinc	13.6	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/07/24 10:17**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0213	08/08/24	08/08/24	EPA 7196A	

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

Date Sampled: **08/07/24 10:17**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	110	0.0500	mg/L dry	1	BHH0223	08/08/24	08/10/24	EPA 6020B	
Magnesium	52.0	0.0500	"	"	"	"	"	"	
Sodium	387	0.0500	"	"	"	"	"	"	

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Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

BKG01@2'
2408065-04 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/07/24 10:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	7.62	0.00100	units	1	BHH0289	08/12/24	08/12/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/07/24 10:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.4		%	1	BHH0201	08/08/24	08/08/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/07/24 10:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.67	0.0100	mmhos/cm	1	BHH0226	08/08/24	08/09/24	EPA 120.1	

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

Date Sampled: **08/07/24 10:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.14		pH Units	1	BHH0227	08/08/24	08/09/24	EPA 9045D	

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Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

BKG01@3'
2408065-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/07/24 10:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHH0212	08/08/24	08/09/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/07/24 10:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.35	0.200	mg/kg dry	1	BHH0207	08/08/24	08/09/24	EPA 6020B	
Barium	47.6	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.73	0.400	"	"	"	"	"	"	
Lead	3.32	0.200	"	"	"	"	"	"	
Nickel	3.54	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	14.0	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/07/24 10:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0213	08/08/24	08/08/24	EPA 7196A	

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

Date Sampled: **08/07/24 10:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	124	0.0500	mg/L dry	1	BHH0223	08/08/24	08/10/24	EPA 6020B	
Magnesium	41.4	0.0500	"	"	"	"	"	"	
Sodium	381	0.0500	"	"	"	"	"	"	

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Project: Noble - Arens G26-19 Flowline
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

BKG01@3'
2408065-05 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/07/24 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	7.57	0.00100	units	1	BHH0289	08/12/24	08/12/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/07/24 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.4		%	1	BHH0201	08/08/24	08/08/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/07/24 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.250	0.0100	mmhos/cm	1	BHH0226	08/08/24	08/09/24	EPA 120.1	

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

Date Sampled: **08/07/24 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.08		pH Units	1	BHH0227	08/08/24	08/09/24	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

BKG01@4'
2408065-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/07/24 10:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHH0212	08/08/24	08/09/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/07/24 10:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.69	0.200	mg/kg dry	1	BHH0207	08/08/24	08/09/24	EPA 6020B	
Barium	42.2	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.92	0.400	"	"	"	"	"	"	
Lead	3.17	0.200	"	"	"	"	"	"	
Nickel	3.46	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	14.2	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/07/24 10:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0213	08/08/24	08/08/24	EPA 7196A	

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

Date Sampled: **08/07/24 10:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	113	0.0500	mg/L dry	1	BHH0223	08/08/24	08/10/24	EPA 6020B	
Magnesium	42.6	0.0500	"	"	"	"	"	"	
Sodium	267	0.0500	"	"	"	"	"	"	

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Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

BKG01@4'
2408065-06 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/07/24 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.43	0.00100	units	1	BHH0289	08/12/24	08/12/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/07/24 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.3		%	1	BHH0201	08/08/24	08/08/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/07/24 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.97	0.0100	mmhos/cm	1	BHH0226	08/08/24	08/09/24	EPA 120.1	

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

Date Sampled: **08/07/24 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.02		pH Units	1	BHH0227	08/08/24	08/09/24	EPA 9045D	

Summit Scientific

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Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHH0229 - EPA 5030 Soil MS

Blank (BHH0229-BLK1)

Prepared & Analyzed: 08/08/24

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0509</i>		<i>"</i>	<i>0.0400</i>		<i>127</i>		<i>50-150</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0398</i>		<i>"</i>	<i>0.0400</i>		<i>99.5</i>		<i>50-150</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0432</i>		<i>"</i>	<i>0.0400</i>		<i>108</i>		<i>50-150</i>		

LCS (BHH0229-BS1)

Prepared & Analyzed: 08/08/24

Benzene	0.0906	0.0020	mg/kg	0.100		90.6		70-130		
Toluene	0.103	0.0050	"	0.100		103		70-130		
Ethylbenzene	0.102	0.0050	"	0.100		102		70-130		
m,p-Xylene	0.200	0.010	"	0.200		100		70-130		
o-Xylene	0.0962	0.0050	"	0.100		96.2		70-130		
1,2,4-Trimethylbenzene	0.0907	0.0050	"	0.100		90.7		70-130		
1,3,5-Trimethylbenzene	0.0901	0.0050	"	0.100		90.1		70-130		
Naphthalene	0.0908	0.0038	"	0.100		90.8		70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0441</i>		<i>"</i>	<i>0.0400</i>		<i>110</i>		<i>50-150</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0417</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>		<i>50-150</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0391</i>		<i>"</i>	<i>0.0400</i>		<i>97.8</i>		<i>50-150</i>		

Matrix Spike (BHH0229-MS1)

Source: 2408051-01

Prepared & Analyzed: 08/08/24

Benzene	0.0782	0.0020	mg/kg	0.100	ND	78.2		70-130		
Toluene	0.0911	0.0050	"	0.100	ND	91.1		70-130		
Ethylbenzene	0.0930	0.0050	"	0.100	ND	93.0		70-130		
m,p-Xylene	0.182	0.010	"	0.200	ND	91.0		70-130		
o-Xylene	0.0918	0.0050	"	0.100	ND	91.8		70-130		
1,2,4-Trimethylbenzene	0.0840	0.0050	"	0.100	ND	84.0		70-130		
1,3,5-Trimethylbenzene	0.0815	0.0050	"	0.100	ND	81.5		70-130		
Naphthalene	0.0849	0.0038	"	0.100	ND	84.9		70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0374</i>		<i>"</i>	<i>0.0400</i>		<i>93.6</i>		<i>50-150</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>		<i>50-150</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0379</i>		<i>"</i>	<i>0.0400</i>		<i>94.8</i>		<i>50-150</i>		

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHH0229 - EPA 5030 Soil MS

Matrix Spike Dup (BHH0229-MSD1)	Source: 2408051-01			Prepared & Analyzed: 08/08/24						
Benzene	0.0804	0.0020	mg/kg	0.100	ND	80.4	70-130	2.84	30	
Toluene	0.0911	0.0050	"	0.100	ND	91.1	70-130	0.0659	30	
Ethylbenzene	0.0938	0.0050	"	0.100	ND	93.8	70-130	0.931	30	
m,p-Xylene	0.179	0.010	"	0.200	ND	89.6	70-130	1.59	30	
o-Xylene	0.0899	0.0050	"	0.100	ND	89.9	70-130	2.08	30	
1,2,4-Trimethylbenzene	0.0832	0.0050	"	0.100	ND	83.2	70-130	0.861	30	
1,3,5-Trimethylbenzene	0.0833	0.0050	"	0.100	ND	83.3	70-130	2.26	30	
Naphthalene	0.0824	0.0038	"	0.100	ND	82.4	70-130	3.08	30	
Surrogate: 1,2-Dichloroethane-d4	0.0441		"	0.0400		110	50-150			
Surrogate: Toluene-d8	0.0406		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.3	50-150			

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Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BHH0230 - EPA 3550A

Blank (BHH0230-BLK1)

Prepared: 08/08/24 Analyzed: 08/09/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	12.5		"	12.5		100		30-150			

LCS (BHH0230-BS1)

Prepared: 08/08/24 Analyzed: 08/09/24

C10-C28 (DRO)	522	50	mg/kg	500		104		70-130			
Surrogate: <i>o</i> -Terphenyl	11.5		"	12.5		92.0		30-150			

Matrix Spike (BHH0230-MS1)

Source: 2408051-01

Prepared: 08/08/24 Analyzed: 08/09/24

C10-C28 (DRO)	446	50	mg/kg	500	ND	89.2		70-130			
Surrogate: <i>o</i> -Terphenyl	10.8		"	12.5		86.1		30-150			

Matrix Spike Dup (BHH0230-MSD1)

Source: 2408051-01

Prepared: 08/08/24 Analyzed: 08/09/24

C10-C28 (DRO)	510	50	mg/kg	500	ND	102		70-130	13.4	20	
Surrogate: <i>o</i> -Terphenyl	13.1		"	12.5		105		30-150			

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHH0205 - EPA 5030 Soil MS

Blank (BHH0205-BLK1)

Prepared & Analyzed: 08/08/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0186</i>		"	<i>0.0333</i>		<i>55.9</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0174</i>		"	<i>0.0333</i>		<i>52.3</i>	<i>40-150</i>			

LCS (BHH0205-BS1)

Prepared & Analyzed: 08/08/24

Acenaphthene	0.0259	0.00500	mg/kg	0.0333		77.8	31-137			
Anthracene	0.0255	0.00500	"	0.0333		76.5	30-120			
Benzo (a) anthracene	0.0290	0.00500	"	0.0333		86.9	30-120			
Benzo (a) pyrene	0.0293	0.00500	"	0.0333		88.0	30-120			
Benzo (b) fluoranthene	0.0287	0.00500	"	0.0333		86.2	30-120			
Benzo (k) fluoranthene	0.0252	0.00500	"	0.0333		75.7	30-120			
Chrysene	0.0251	0.00500	"	0.0333		75.4	30-120			
Dibenz (a,h) anthracene	0.0322	0.00500	"	0.0333		96.6	30-120			
Fluoranthene	0.0192	0.00500	"	0.0333		57.7	30-120			
Fluorene	0.0272	0.00500	"	0.0333		81.5	30-120			
Indeno (1,2,3-cd) pyrene	0.0400	0.00500	"	0.0333		120	30-120			
Pyrene	0.0403	0.00500	"	0.0333		121	35-142			
1-Methylnaphthalene	0.0224	0.00500	"	0.0333		67.2	35-142			
2-Methylnaphthalene	0.0236	0.00500	"	0.0333		70.7	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0221</i>		"	<i>0.0333</i>		<i>66.2</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0200</i>		"	<i>0.0333</i>		<i>60.1</i>	<i>40-150</i>			

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHH0205 - EPA 5030 Soil MS

Matrix Spike (BHH0205-MS1)	Source: 2408063-01			Prepared & Analyzed: 08/08/24								
Acenaphthene	0.0247	0.00500	mg/kg	0.0333	ND	74.0	31-137					
Anthracene	0.0179	0.00500	"	0.0333	ND	53.8	30-120					
Benzo (a) anthracene	0.0202	0.00500	"	0.0333	ND	60.6	30-120					
Benzo (a) pyrene	0.0208	0.00500	"	0.0333	ND	62.3	30-120					
Benzo (b) fluoranthene	0.0209	0.00500	"	0.0333	ND	62.8	30-120					
Benzo (k) fluoranthene	0.0183	0.00500	"	0.0333	ND	55.0	30-120					
Chrysene	0.0175	0.00500	"	0.0333	ND	52.6	30-120					
Dibenz (a,h) anthracene	0.0396	0.00500	"	0.0333	ND	119	30-120					
Fluoranthene	0.0140	0.00500	"	0.0333	ND	42.1	30-120					
Fluorene	0.0258	0.00500	"	0.0333	ND	77.5	30-120					
Indeno (1,2,3-cd) pyrene	0.0348	0.00500	"	0.0333	ND	104	30-120					
Pyrene	0.0297	0.00500	"	0.0333	ND	89.2	35-142					
1-Methylnaphthalene	0.0165	0.00500	"	0.0333	ND	49.6	15-130					
2-Methylnaphthalene	0.0181	0.00500	"	0.0333	ND	54.2	15-130					
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0162</i>		<i>"</i>	<i>0.0333</i>		<i>48.5</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0144</i>		<i>"</i>	<i>0.0333</i>		<i>43.1</i>	<i>40-150</i>					

Matrix Spike Dup (BHH0205-MSD1)	Source: 2408063-01			Prepared & Analyzed: 08/08/24								
Acenaphthene	0.0220	0.00500	mg/kg	0.0333	ND	66.0	31-137	11.4	30			
Anthracene	0.0226	0.00500	"	0.0333	ND	67.8	30-120	23.0	30			
Benzo (a) anthracene	0.0251	0.00500	"	0.0333	ND	75.2	30-120	21.6	30			
Benzo (a) pyrene	0.0255	0.00500	"	0.0333	ND	76.5	30-120	20.5	30			
Benzo (b) fluoranthene	0.0262	0.00500	"	0.0333	ND	78.6	30-120	22.3	30			
Benzo (k) fluoranthene	0.0223	0.00500	"	0.0333	ND	66.9	30-120	19.4	30			
Chrysene	0.0220	0.00500	"	0.0333	ND	65.9	30-120	22.5	30			
Dibenz (a,h) anthracene	0.0398	0.00500	"	0.0333	ND	120	30-120	0.610	30			
Fluoranthene	0.0173	0.00500	"	0.0333	ND	52.0	30-120	21.0	30			
Fluorene	0.0229	0.00500	"	0.0333	ND	68.7	30-120	12.0	30			
Indeno (1,2,3-cd) pyrene	0.0392	0.00500	"	0.0333	ND	118	30-120	11.9	30			
Pyrene	0.0379	0.00500	"	0.0333	ND	114	35-142	24.2	30			
1-Methylnaphthalene	0.0167	0.00500	"	0.0333	ND	50.1	15-130	0.933	50			
2-Methylnaphthalene	0.0182	0.00500	"	0.0333	ND	54.6	15-130	0.705	50			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0167</i>		<i>"</i>	<i>0.0333</i>		<i>50.2</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0173</i>		<i>"</i>	<i>0.0333</i>		<i>52.0</i>	<i>40-150</i>					

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

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

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

Batch BHH0212 - EPA 3050B

Blank (BHH0212-BLK1)

Prepared: 08/08/24 Analyzed: 08/09/24

Boron ND 2.00 mg/L

LCS (BHH0212-BS1)

Prepared: 08/08/24 Analyzed: 08/09/24

Boron 3.98 2.00 mg/L 5.00 79.5 80-120 QM-07

Duplicate (BHH0212-DUP1)

Source: 2408048-01

Prepared: 08/08/24 Analyzed: 08/09/24

Boron 0.0922 2.00 mg/L 0.126 30.9 20 QR-01

Matrix Spike (BHH0212-MS1)

Source: 2408048-01

Prepared: 08/08/24 Analyzed: 08/09/24

Boron 3.95 2.00 mg/L 4.98 0.126 76.8 75-125

Matrix Spike Dup (BHH0212-MSD1)

Source: 2408048-01

Prepared: 08/08/24 Analyzed: 08/09/24

Boron 4.14 2.00 mg/L 4.98 0.126 80.6 75-125 4.60 25

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHH0207 - EPA 3050B

Blank (BHH0207-BLK1)

Prepared: 08/08/24 Analyzed: 08/09/24

Arsenic	ND	0.181	mg/kg wet							
Barium	ND	0.362	"							
Cadmium	ND	0.181	"							
Copper	ND	0.362	"							
Lead	ND	0.181	"							
Nickel	ND	0.362	"							
Silver	ND	0.0181	"							
Zinc	ND	0.362	"							
Selenium	ND	0.236	"							

LCS (BHH0207-BS1)

Prepared: 08/08/24 Analyzed: 08/09/24

Arsenic	38.2	0.200	mg/kg wet	38.8	98.6	80-120
Barium	41.5	0.400	"	38.8	107	80-120
Cadmium	1.76	0.200	"	1.94	90.6	80-120
Copper	37.0	0.400	"	38.8	95.3	80-120
Lead	17.1	0.200	"	19.4	88.1	80-120
Nickel	37.3	0.400	"	38.8	96.1	80-120
Silver	1.75	0.0200	"	1.94	90.3	80-120
Zinc	37.0	0.400	"	38.8	95.5	80-120
Selenium	3.79	0.260	"	3.88	97.9	80-120

Duplicate (BHH0207-DUP1)

Source: 2408044-03

Prepared: 08/08/24 Analyzed: 08/09/24

Arsenic	3.64	0.200	mg/kg dry	3.79	4.16	20
Barium	219	0.400	"	230	4.93	20
Cadmium	0.321	0.200	"	0.296	8.11	20
Copper	4.54	0.400	"	4.51	0.645	20
Lead	11.9	0.200	"	12.9	7.81	20
Nickel	3.75	0.400	"	3.69	1.69	20
Silver	0.0260	0.0200	"	0.0273	4.85	20
Zinc	14.7	0.400	"	14.9	1.29	20
Selenium	ND	0.260	"	ND		20

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHH0207 - EPA 3050B

Matrix Spike (BHH0207-MS1)

Source: 2408044-03

Prepared: 08/08/24 Analyzed: 08/09/24

Arsenic	46.8	0.200	mg/kg dry	45.1	3.79	95.4	75-125			
Barium	343	0.400	"	45.1	230	250	75-125			QM-05
Cadmium	2.53	0.200	"	2.26	0.296	99.1	75-125			
Copper	49.2	0.400	"	45.1	4.51	99.0	75-125			
Lead	29.5	0.200	"	22.6	12.9	73.6	75-125			QM-07
Nickel	48.7	0.400	"	45.1	3.69	99.7	75-125			
Silver	2.16	0.0200	"	2.26	0.0273	94.3	75-125			
Zinc	68.7	0.400	"	45.1	14.9	119	75-125			
Selenium	3.55	0.260	"	4.51	ND	78.7	75-125			

Matrix Spike Dup (BHH0207-MSD1)

Source: 2408044-03

Prepared: 08/08/24 Analyzed: 08/09/24

Arsenic	45.4	0.200	mg/kg dry	44.4	3.79	93.6	75-125	3.09	25	
Barium	322	0.400	"	44.4	230	208	75-125	6.08	25	QM-05
Cadmium	2.41	0.200	"	2.22	0.296	95.1	75-125	4.93	25	
Copper	47.8	0.400	"	44.4	4.51	97.3	75-125	2.95	25	
Lead	28.2	0.200	"	22.2	12.9	68.8	75-125	4.57	25	QM-07
Nickel	47.2	0.400	"	44.4	3.69	97.8	75-125	3.15	25	
Silver	2.09	0.0200	"	2.22	0.0273	92.8	75-125	3.09	25	
Zinc	65.5	0.400	"	44.4	14.9	114	75-125	4.86	25	
Selenium	3.46	0.260	"	4.44	ND	77.8	75-125	2.67	25	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHH0213 - 3060A Mod

Blank (BHH0213-BLK1)

Prepared & Analyzed: 08/08/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHH0213-BS1)

Prepared & Analyzed: 08/08/24

Chromium, Hexavalent 26.0 0.30 mg/kg wet 25.0 104 80-120

Duplicate (BHH0213-DUP1)

Source: 2408044-03

Prepared & Analyzed: 08/08/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHH0213-MS1)

Source: 2408044-03

Prepared & Analyzed: 08/08/24

Chromium, Hexavalent 29.2 0.30 mg/kg dry 29.8 ND 98.2 75-125

Matrix Spike Dup (BHH0213-MSD1)

Source: 2408044-03

Prepared & Analyzed: 08/08/24

Chromium, Hexavalent 29.0 0.30 mg/kg dry 29.8 ND 97.4 75-125 0.818 20

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

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

Summit Scientific

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

Batch BHH0223 - General Preparation

Blank (BHH0223-BLK1)

Prepared: 08/08/24 Analyzed: 08/10/24

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

LCS (BHH0223-BS1)

Prepared: 08/08/24 Analyzed: 08/10/24

Calcium	5.25	0.0500	mg/L wet	5.00	105	70-130
Magnesium	5.07	0.0500	"	5.00	101	70-130
Sodium	5.02	0.0500	"	5.00	100	70-130

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 6855 W. 119th Ave.
 Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline
 Project Number: UWRWE-A3241-ABN
 Project Manager: Jacob Whritenour

Reported:
 08/14/24 08:00

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

Summit Scientific

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

Batch BHH0201 - General Preparation

Duplicate (BHH0201-DUP1)

Source: 2408012-06

Prepared & Analyzed: 08/08/24

% Solids	77.3		%		76.9			0.537		20	
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Summit Scientific

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



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

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

Summit Scientific

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

Batch BHH0226 - General Preparation

Blank (BHH0226-BLK1)

Prepared: 08/08/24 Analyzed: 08/09/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHH0226-BS1)

Prepared: 08/08/24 Analyzed: 08/09/24

Specific Conductance (EC) 0.157 0.0100 mmhos/cm 0.150 104 95-105

Duplicate (BHH0226-DUP1)

Source: 2408054-03

Prepared: 08/08/24 Analyzed: 08/09/24

Specific Conductance (EC) 0.226 0.0100 mmhos/cm 0.226 0.133 20

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

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

Summit Scientific

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

Batch BHH0227 - General Preparation

LCS (BHH0227-BS1)

Prepared: 08/08/24 Analyzed: 08/09/24

pH	9.19	pH Units	9.18	100	95-105
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Duplicate (BHH0227-DUP1)

Source: 2408054-03

Prepared: 08/08/24 Analyzed: 08/09/24

pH	8.50	pH Units	8.53	0.352	20
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Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Arens G26-19 Flowline

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/14/24 08:00

Notes and Definitions

- QR-01 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- 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.
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 12, 2024

Jacob Whritenour
Tasman Geosciences
6855 W. 119th Ave.
Broomfield, CO 80020

RE: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Work Order #2408047

Enclosed are the results of analyses for samples received by Summit Scientific on 08/06/24 17:49. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Natalie Tessier For Paul Shrewsbury
President



Tasman Geosciences
 6855 W. 119th Ave.
 Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
 Project Manager: Jacob Whritenour

Reported:
 08/12/24 07:41

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST01@0-6"	2408047-01	Soil	08/06/24 09:01	08/06/24 17:49
AST02@0-6"	2408047-02	Soil	08/06/24 09:05	08/06/24 17:49
PWV01-B@4.5'	2408047-03	Soil	08/06/24 08:46	08/06/24 17:49
PWV01-N@2'	2408047-04	Soil	08/06/24 08:51	08/06/24 17:49
PWV01-S@2'	2408047-05	Soil	08/06/24 08:54	08/06/24 17:49
PWV01-E@2'	2408047-06	Soil	08/06/24 08:53	08/06/24 17:49
PWV01-W@2'	2408047-07	Soil	08/06/24 08:48	08/06/24 17:49
SEP01-DL@3'	2408047-08	Soil	08/06/24 09:28	08/06/24 17:49
SEP01-FL@3'	2408047-09	Soil	08/06/24 09:25	08/06/24 17:49
BKG01@0-6"	2408047-10	Soil	08/06/24 09:45	08/06/24 17:49
BKG01@2'	2408047-11	Soil	08/06/24 09:50	08/06/24 17:49
BKG01@3'	2408047-12	Soil	08/06/24 09:52	08/06/24 17:49
BKG01@4.5'	2408047-13	Soil	08/06/24 09:56	08/06/24 17:49

Client: Noble/Tasman	Project Manager: Jake Whritenour	Company: Chevron
Address: 6855 W 119th Ave	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location: Beebe Draw T4NR65WS26
City/State/Zip: Broomfield / CO / 80020		AFE#: UWRWE-A3241-ABN
Phone: 970-214-7901	Project Name: Beebe Draw T4NR65WS26 ^{LO4 Tank Battery}	PO/Billing Codes:
Sampler Name: Lillian Buck	Project Number:	Contact: Dan Peterson Miguel Barron

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Air-Canister #	Other	Analysis Requested							Special Instructions
					HCl	HNO3	None	Other	Water	Soil			VOC - 915	TPH - 915	PAH - 915	pH, EC, SAR	Boron - HWS	Metals - 915	HOLD	
1	ASTO1e0-6"	8/6/24	901	3			X			X		X	X	X	X	X	X			
2	ASTO2e0-6"		905				X					X	X	X	X	X	X			
3	PWVO1-B e 4.5'		846				X					X	X	X	X	X	X		* Same day	
4	PWVO1-N e 2'		851				X					X	X	X	X	X	X		* Same day	
5	PWVO1-S e 2'		854				X					X	X	X	X	X	X		* Same day	
6	PWVO1-E e 2'		853				X					X	X	X	X	X	X		* Same day	
7	PWVO1-W e 2'		848				X					X	X	X	X	X	X		* Same day	
8	SEPO1-DL e 3'		928				X					X	X	X	X	X	X			
9	SEPO1-FL e 3'		925				X					X	X	X	X	X	X			
10	BKG01e0-6"		945	2			X					X	X	X	X	X	X			
11	BKG01e2'		950				X					X	X	X	X	X	X			
12	BKG01e3'		952				X					X	X	X	X	X	X			
13	BKG01e4.5'		956				X					X	X	X	X	X	X			
14							X					X	X	X	X	X	X			
15							X					X	X	X	X	X	X			

Relinquished by:  Date/Time: 8/6/24	Received by: Tasmanlochbox Date/Time: 8/6/24	TAT Business Days	Field DO	Notes: * Same day TAT for VOCs/TPH - Remaining on Standard TAT
Relinquished by: Tasmanlochbox Date/Time: 8/24/24	Received by:  Date/Time: 8/24/24	Same Day	Field EC	
Relinquished by:	Received by:	1 Day	Field ORP	
Relinquished by:	Received by:	2 Days	Field pH	
Relinquished by:	Received by:	3 Days	Field Temp.	
Temperature Upon Receipt: 9.9	Corrected Temperature: 9	IR gun #: 1	Field Turb. <input checked="" type="checkbox"/>	
			HNO3 lot #:	

S₂

Sample Receipt Checklist

S2 Work Order# 2408047

Client: Nobel Casman Client Project ID: Beebe Draw Tank Buttery TAN RLEWSLELO

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

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

Temp (°C) Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ZOE
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5 samples same day!
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	TAT not correctly marked!
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any): please mark TAT box for same day then write which samples/analysis in the notes				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

AS
Custodian Printed Name

8/6/24
Date/Time



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

AST01@0-6"
2408047-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/06/24 09:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHH0190	08/07/24	08/08/24	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: **08/06/24 09:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0299	74.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0407	102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0380	95.1 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/06/24 09:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHH0191	08/07/24	08/07/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **08/06/24 09:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	7.78	62.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

AST01@0-6"
2408047-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/06/24 09:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0160	08/07/24	08/08/24	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: **08/06/24 09:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0169	50.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0188	56.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/06/24 09:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0166	08/07/24	08/08/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/06/24 09:01**

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

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

AST01@0-6"
2408047-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.810	0.200	mg/kg dry	1	BHH0163	08/07/24	08/07/24	EPA 6020B	
Barium	57.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.86	0.400	"	"	"	"	"	"	
Lead	5.36	0.200	"	"	"	"	"	"	
Nickel	1.36	0.400	"	"	"	"	"	"	
Silver	0.0361	0.0200	"	"	"	"	"	"	
Zinc	7.70	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/06/24 09:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0168	08/07/24	08/07/24	EPA 7196A	

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

Date Sampled: **08/06/24 09:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	27.9	0.0500	mg/L dry	1	BHH0194	08/07/24	08/08/24	EPA 6020B	
Magnesium	18.4	0.0500	"	"	"	"	"	"	
Sodium	2.37	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/06/24 09:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0855	0.00100	units	1	BHH0237	08/09/24	08/09/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

AST01@0-6"
2408047-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/06/24 09:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	96.2			%	1	BHH0175	08/07/24	08/07/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/06/24 09:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.122	0.0100		mmhos/cm	1	BHH0199	08/07/24	08/08/24	EPA 120.1	

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

Date Sampled: **08/06/24 09:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.77			pH Units	1	BHH0197	08/07/24	08/08/24	EPA 9045D	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

AST02@0-6"
2408047-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/06/24 09:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHH0190	08/07/24	08/08/24	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: **08/06/24 09:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0322	80.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0420	105 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0436	109 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/06/24 09:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHH0191	08/07/24	08/07/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/06/24 09:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	6.46	51.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

AST02@0-6"
2408047-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/06/24 09:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0160	08/07/24	08/08/24	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: **08/06/24 09:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0168	50.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0207	62.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/06/24 09:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0166	08/07/24	08/08/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/06/24 09:05**

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

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

AST02@0-6"
2408047-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.673	0.200	mg/kg dry	1	BHH0163	08/07/24	08/07/24	EPA 6020B	
Barium	26.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	1.48	0.400	"	"	"	"	"	"	
Lead	3.64	0.200	"	"	"	"	"	"	
Nickel	1.35	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	4.31	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/06/24 09:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0168	08/07/24	08/07/24	EPA 7196A	

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

Date Sampled: **08/06/24 09:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	31.3	0.0500	mg/L dry	1	BHH0194	08/07/24	08/08/24	EPA 6020B	
Magnesium	6.98	0.0500	"	"	"	"	"	"	
Sodium	7.49	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/06/24 09:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.315	0.00100	units	1	BHH0237	08/09/24	08/09/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

AST02@0-6"
2408047-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/06/24 09:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	96.1			%	1	BHH0175	08/07/24	08/07/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/06/24 09:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.191	0.0100		mmhos/cm	1	BHH0199	08/07/24	08/08/24	EPA 120.1	

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

Date Sampled: **08/06/24 09:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.34			pH Units	1	BHH0197	08/07/24	08/08/24	EPA 9045D	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PWV01-B@4.5'
2408047-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/06/24 08:46**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.020	mg/kg	10	BHH0152	08/06/24	08/07/24	EPA 8260B	R-05
Toluene	ND	0.050	"	"	"	"	"	"	R-05
Ethylbenzene	0.17	0.050	"	"	"	"	"	"	
Xylenes (total)	2.4	0.10	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	1.3	0.050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.87	0.050	"	"	"	"	"	"	
Naphthalene	0.094	0.038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	34	5.0	"	"	"	"	"	"	

Date Sampled: **08/06/24 08:46**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.00261	6.52 %	50-150		"	"	08/06/24	"	S-02
Surrogate: Toluene-d8	0.141	352 %	50-150		"	"	"	"	S-02
Surrogate: 4-Bromofluorobenzene	0.157	392 %	50-150		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/06/24 08:46**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	58	50	mg/kg	1	BHH0144	08/06/24	08/06/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/06/24 08:46**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	5.97	47.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PWV01-B@4.5'
2408047-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/06/24 08:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.00660	0.00500	mg/kg	1	BHH0160	08/07/24	08/08/24	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	0.00686	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0488	0.00500	"	"	"	"	"	"	O-02
2-Methylnaphthalene	0.0939	0.00500	"	"	"	"	"	"	O-02

Date Sampled: **08/06/24 08:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.00833	25.0 %	40-150		"	"	"	"	S-04
Surrogate: Fluoranthene-d10	0.0155	46.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/06/24 08:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0166	08/07/24	08/08/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/06/24 08:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PWV01-B@4.5'
2408047-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.606	0.200	mg/kg dry	1	BHH0163	08/07/24	08/07/24	EPA 6020B	
Barium	41.3	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	1.71	0.400	"	"	"	"	"	"	
Lead	3.87	0.200	"	"	"	"	"	"	
Nickel	1.52	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	7.66	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/06/24 08:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0168	08/07/24	08/07/24	EPA 7196A	

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

Date Sampled: **08/06/24 08:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	124	0.0500	mg/L dry	1	BHH0194	08/07/24	08/08/24	EPA 6020B	
Magnesium	47.6	0.0500	"	"	"	"	"	"	
Sodium	16.3	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/06/24 08:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.315	0.00100	units	1	BHH0237	08/09/24	08/09/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PWV01-B@4.5'
2408047-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/06/24 08:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	89.9			%	1	BHH0175	08/07/24	08/07/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/06/24 08:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.288	0.0100		mmhos/cm	1	BHH0199	08/07/24	08/08/24	EPA 120.1	

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

Date Sampled: **08/06/24 08:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.44			pH Units	1	BHH0197	08/07/24	08/08/24	EPA 9045D	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PWV01-N@2'
2408047-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/06/24 08:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.16	0.020	mg/kg	10	BHH0152	08/06/24	08/07/24	EPA 8260B	
Toluene	ND	0.050	"	"	"	"	"	"	R-05
Ethylbenzene	2.3	0.050	"	"	"	"	"	"	
Xylenes (total)	21	0.10	"	"	"	"	"	"	E
1,2,4-Trimethylbenzene	18	0.050	"	"	"	"	"	"	E
1,3,5-Trimethylbenzene	18	0.050	"	"	"	"	"	"	E
Naphthalene	0.69	0.038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	920	5.0	"	"	"	"	"	"	

Date Sampled: **08/06/24 08:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0785	196 %	50-150		"	"	08/06/24	"	S-02
Surrogate: Toluene-d8	0.126	314 %	50-150		"	"	08/07/24	"	S-02
Surrogate: 4-Bromofluorobenzene	1.14	2840 %	50-150		"	"	08/06/24	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/06/24 08:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	2500	50	mg/kg	1	BHH0144	08/06/24	08/06/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/06/24 08:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.2	81.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PWV01-N@2'
2408047-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/06/24 08:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0863	0.00500	mg/kg	1	BHH0160	08/07/24	08/08/24	EPA 8270D SIM	O-02
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	0.00878	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.00698	0.00500	"	"	"	"	"	"	
Fluorene	0.0568	0.00500	"	"	"	"	"	"	O-02
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.0124	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.756	0.00500	"	"	"	"	"	"	E, O-02
2-Methylnaphthalene	1.15	0.00500	"	"	"	"	"	"	E, O-02

Date Sampled: **08/06/24 08:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.00739	22.2 %	40-150		"	"	"	"	S-04
Surrogate: Fluoranthene-d10	0.0172	51.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/06/24 08:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0166	08/07/24	08/08/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/06/24 08:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PWV01-N@2'
2408047-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.560	0.200	mg/kg dry	1	BHH0163	08/07/24	08/07/24	EPA 6020B	
Barium	49.0	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	1.25	0.400	"	"	"	"	"	"	
Lead	3.46	0.200	"	"	"	"	"	"	
Nickel	1.43	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	5.64	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/06/24 08:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0168	08/07/24	08/07/24	EPA 7196A	

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

Date Sampled: **08/06/24 08:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	301	0.0500	mg/L dry	1	BHH0194	08/07/24	08/08/24	EPA 6020B	
Magnesium	112	0.0500	"	"	"	"	"	"	
Sodium	9.47	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/06/24 08:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.118	0.00100	units	1	BHH0237	08/09/24	08/09/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PWV01-N@2'
2408047-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/06/24 08:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	91.6			%	1	BHH0175	08/07/24	08/07/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/06/24 08:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.387	0.0100		mmhos/cm	1	BHH0199	08/07/24	08/08/24	EPA 120.1	

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

Date Sampled: **08/06/24 08:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.36			pH Units	1	BHH0197	08/07/24	08/08/24	EPA 9045D	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PWV01-S@2'
2408047-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/06/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHH0152	08/06/24	08/07/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.057	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.014	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/06/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0377	94.3 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0402	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0373	93.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/06/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHH0144	08/06/24	08/06/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/06/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	3.96	31.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PWV01-S@2'
2408047-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/06/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0160	08/07/24	08/08/24	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: **08/06/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0166	49.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0147	44.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/06/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0166	08/07/24	08/08/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/06/24 08:54**

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

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PWV01-S@2'
2408047-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.703	0.200	mg/kg dry	1	BHH0163	08/07/24	08/07/24	EPA 6020B	
Barium	70.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.95	0.400	"	"	"	"	"	"	
Lead	5.90	0.200	"	"	"	"	"	"	
Nickel	1.85	0.400	"	"	"	"	"	"	
Silver	0.0300	0.0200	"	"	"	"	"	"	
Zinc	14.5	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/06/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0168	08/07/24	08/07/24	EPA 7196A	

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

Date Sampled: **08/06/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	134	0.0500	mg/L dry	1	BHH0194	08/07/24	08/08/24	EPA 6020B	
Magnesium	82.0	0.0500	"	"	"	"	"	"	
Sodium	1.92	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/06/24 08:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0322	0.00100	units	1	BHH0237	08/09/24	08/09/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PWV01-S@2'
2408047-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/06/24 08:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	85.2			%	1	BHH0175	08/07/24	08/07/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/06/24 08:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.261	0.0100		mmhos/cm	1	BHH0199	08/07/24	08/08/24	EPA 120.1	

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

Date Sampled: **08/06/24 08:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.02			pH Units	1	BHH0197	08/07/24	08/08/24	EPA 9045D	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PWV01-E@2'
2408047-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/06/24 08:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.78	0.020	mg/kg	10	BHH0152	08/06/24	08/07/24	EPA 8260B	
Toluene	ND	0.050	"	"	"	"	"	"	R-05
Ethylbenzene	4.8	0.050	"	"	"	"	"	"	
Xylenes (total)	98	0.10	"	"	"	"	"	"	E
1,2,4-Trimethylbenzene	30	0.050	"	"	"	"	"	"	E
1,3,5-Trimethylbenzene	29	0.050	"	"	"	"	"	"	E
Naphthalene	ND	0.038	"	"	"	"	"	"	R-05
Gasoline Range Hydrocarbons	990	5.0	"	"	"	"	"	"	

Date Sampled: **08/06/24 08:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0633	158 %	50-150		"	"	08/06/24	"	S-02
Surrogate: Toluene-d8	0.0415	104 %	50-150		"	"	08/07/24	"	
Surrogate: 4-Bromofluorobenzene	0.641	1600 %	50-150		"	"	08/06/24	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/06/24 08:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1400	50	mg/kg	1	BHH0144	08/06/24	08/06/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/06/24 08:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.38	67.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PWV01-E@2'
2408047-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/06/24 08:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0588	0.0500	mg/kg	10	BHH0160	08/07/24	08/08/24	EPA 8270D SIM	
Anthracene	ND	0.0500	"	"	"	"	"	"	R-05
Benzo (a) anthracene	ND	0.0500	"	"	"	"	"	"	R-05
Benzo (a) pyrene	ND	0.0500	"	"	"	"	"	"	R-05
Benzo (b) fluoranthene	ND	0.0500	"	"	"	"	"	"	R-05
Benzo (k) fluoranthene	ND	0.0500	"	"	"	"	"	"	R-05
Chrysene	ND	0.0500	"	"	"	"	"	"	R-05
Dibenz (a,h) anthracene	ND	0.0500	"	"	"	"	"	"	R-05
Fluoranthene	ND	0.0500	"	"	"	"	"	"	R-05
Fluorene	ND	0.0500	"	"	"	"	"	"	R-05
Indeno (1,2,3-cd) pyrene	ND	0.0500	"	"	"	"	"	"	R-05
Pyrene	ND	0.0500	"	"	"	"	"	"	R-05
1-Methylnaphthalene	0.366	0.0500	"	"	"	"	"	"	
2-Methylnaphthalene	0.443	0.0500	"	"	"	"	"	"	

Date Sampled: **08/06/24 08:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0244	73.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0131	39.2 %	40-150		"	"	"	"	S-06

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/06/24 08:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0166	08/07/24	08/08/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/06/24 08:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PWV01-E@2'
2408047-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.488	0.200	mg/kg dry	1	BHH0163	08/07/24	08/07/24	EPA 6020B	
Barium	50.5	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	1.08	0.400	"	"	"	"	"	"	
Lead	3.38	0.200	"	"	"	"	"	"	
Nickel	1.35	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	5.09	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/06/24 08:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0168	08/07/24	08/07/24	EPA 7196A	

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

Date Sampled: **08/06/24 08:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	313	0.0500	mg/L dry	1	BHH0194	08/07/24	08/08/24	EPA 6020B	
Magnesium	78.6	0.0500	"	"	"	"	"	"	
Sodium	4.18	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/06/24 08:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0547	0.00100	units	1	BHH0237	08/09/24	08/09/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PWV01-E@2'
2408047-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/06/24 08:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	89.3			%	1	BHH0175	08/07/24	08/07/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/06/24 08:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.294	0.0100		mmhos/cm	1	BHH0199	08/07/24	08/08/24	EPA 120.1	

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

Date Sampled: **08/06/24 08:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.52			pH Units	1	BHH0197	08/07/24	08/08/24	EPA 9045D	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PWV01-W@2'
2408047-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/06/24 08:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0036	0.0020	mg/kg	1	BHH0152	08/06/24	08/07/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.020	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.44	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.11	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.4	0.50	"	"	"	"	"	"	

Date Sampled: **08/06/24 08:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0394	98.6 %	50-150		"	"	"	"	
<i>Surrogate: Toluene-d8</i>	0.0393	98.2 %	50-150		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0398	99.5 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/06/24 08:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHH0144	08/06/24	08/06/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/06/24 08:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>	6.08	48.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PWV01-W@2'
2408047-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/06/24 08:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0160	08/07/24	08/08/24	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	0.00545	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0120	0.00500	"	"	"	"	"	"	

Date Sampled: **08/06/24 08:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0136	40.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0142	42.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/06/24 08:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0166	08/07/24	08/08/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/06/24 08:48**

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

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PWV01-W@2'
2408047-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.842	0.200	mg/kg dry	1	BHH0163	08/07/24	08/07/24	EPA 6020B	
Barium	72.4	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	1.80	0.400	"	"	"	"	"	"	
Lead	5.53	0.200	"	"	"	"	"	"	
Nickel	2.34	0.400	"	"	"	"	"	"	
Silver	0.0348	0.0200	"	"	"	"	"	"	
Zinc	7.81	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/06/24 08:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0168	08/07/24	08/07/24	EPA 7196A	

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

Date Sampled: **08/06/24 08:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	46.8	0.0500	mg/L dry	1	BHH0194	08/07/24	08/08/24	EPA 6020B	
Magnesium	27.9	0.0500	"	"	"	"	"	"	
Sodium	24.6	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/06/24 08:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.703	0.00100	units	1	BHH0237	08/09/24	08/09/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PWV01-W@2'
2408047-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/06/24 08:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	83.8			%	1	BHH0175	08/07/24	08/07/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/06/24 08:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.381	0.0100		mmhos/cm	1	BHH0199	08/07/24	08/08/24	EPA 120.1	

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

Date Sampled: **08/06/24 08:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.42			pH Units	1	BHH0197	08/07/24	08/08/24	EPA 9045D	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

SEP01-DL@3'
2408047-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/06/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHH0190	08/07/24	08/08/24	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: **08/06/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0333	83.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0392	98.1 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0407	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/06/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHH0191	08/07/24	08/07/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/06/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	6.72	53.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
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Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

SEP01-DL@3'
2408047-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/06/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0160	08/07/24	08/08/24	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: **08/06/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0148	44.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0167	50.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/06/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0166	08/07/24	08/08/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/06/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

SEP01-DL@3'
2408047-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.697	0.200	mg/kg dry	1	BHH0163	08/07/24	08/07/24	EPA 6020B	
Barium	61.7	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	1.41	0.400	"	"	"	"	"	"	
Lead	4.71	0.200	"	"	"	"	"	"	
Nickel	1.74	0.400	"	"	"	"	"	"	
Silver	0.0203	0.0200	"	"	"	"	"	"	
Zinc	6.96	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/06/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0168	08/07/24	08/07/24	EPA 7196A	

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

Date Sampled: **08/06/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	177	0.0500	mg/L dry	1	BHH0194	08/07/24	08/08/24	EPA 6020B	
Magnesium	157	0.0500	"	"	"	"	"	"	
Sodium	7.20	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/06/24 09:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0950	0.00100	units	1	BHH0237	08/09/24	08/09/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

SEP01-DL@3'
2408047-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/06/24 09:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	89.7			%	1	BHH0175	08/07/24	08/07/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/06/24 09:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.224	0.0100		mmhos/cm	1	BHH0199	08/07/24	08/08/24	EPA 120.1	

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

Date Sampled: **08/06/24 09:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.29			pH Units	1	BHH0197	08/07/24	08/08/24	EPA 9045D	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

SEP01-FL@3'
2408047-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/06/24 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHH0190	08/07/24	08/08/24	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: **08/06/24 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0407	102 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0391	97.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0407	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/06/24 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHH0191	08/07/24	08/07/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/06/24 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.82	62.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Tasman Geosciences
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Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

SEP01-FL@3'
2408047-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/06/24 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHH0160	08/07/24	08/08/24	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: **08/06/24 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0183	54.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0216	64.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/06/24 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHH0166	08/07/24	08/08/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/06/24 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

SEP01-FL@3'
2408047-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.855	0.200	mg/kg dry	1	BHH0163	08/07/24	08/07/24	EPA 6020B	
Barium	39.4	0.400	"	"	"	"	"	"	
Cadmium	0.324	0.200	"	"	"	"	"	"	
Copper	2.06	0.400	"	"	"	"	"	"	
Lead	4.86	0.200	"	"	"	"	"	"	
Nickel	1.61	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	6.51	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/06/24 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0168	08/07/24	08/07/24	EPA 7196A	

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

Date Sampled: **08/06/24 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	40.4	0.0500	mg/L dry	1	BHH0194	08/07/24	08/08/24	EPA 6020B	
Magnesium	27.0	0.0500	"	"	"	"	"	"	
Sodium	2.29	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/06/24 09:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0684	0.00100	units	1	BHH0237	08/09/24	08/09/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

SEP01-FL@3'
2408047-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/06/24 09:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	94.5			%	1	BHH0175	08/07/24	08/07/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/06/24 09:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.169	0.0100		mmhos/cm	1	BHH0199	08/07/24	08/08/24	EPA 120.1	

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

Date Sampled: **08/06/24 09:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.44			pH Units	1	BHH0197	08/07/24	08/08/24	EPA 9045D	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

**BKG01@0-6''
2408047-10 (Soil)**

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/06/24 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHH0166	08/07/24	08/08/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/06/24 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.537	0.200	mg/kg dry	1	BHH0163	08/07/24	08/07/24	EPA 6020B	
Barium	42.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.34	0.400	"	"	"	"	"	"	
Lead	6.90	0.200	"	"	"	"	"	"	
Nickel	1.54	0.400	"	"	"	"	"	"	
Silver	0.0277	0.0200	"	"	"	"	"	"	
Zinc	10.5	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/06/24 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0168	08/07/24	08/07/24	EPA 7196A	

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

Date Sampled: **08/06/24 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	25.4	0.0500	mg/L dry	1	BHH0194	08/07/24	08/08/24	EPA 6020B	
Magnesium	18.9	0.0500	"	"	"	"	"	"	
Sodium	13.0	0.0500	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

BKG01@0-6''
2408047-10 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/06/24 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.476	0.00100	units	1	BHH0237	08/09/24	08/09/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/06/24 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.2		%	1	BHH0175	08/07/24	08/07/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/06/24 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.380	0.0100	mmhos/cm	1	BHH0199	08/07/24	08/08/24	EPA 120.1	

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

Date Sampled: **08/06/24 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.42		pH Units	1	BHH0197	08/07/24	08/08/24	EPA 9045D	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

BKG01@2'
2408047-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/06/24 09:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHH0166	08/07/24	08/08/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/06/24 09:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.445	0.181	mg/kg dry	1	BHH0163	08/07/24	08/07/24	EPA 6020B	
Barium	45.0	0.362	"	"	"	"	"	"	
Cadmium	ND	0.181	"	"	"	"	"	"	
Copper	1.18	0.362	"	"	"	"	"	"	
Lead	5.20	0.181	"	"	"	"	"	"	
Nickel	1.23	0.362	"	"	"	"	"	"	
Silver	ND	0.0181	"	"	"	"	"	"	
Zinc	5.71	0.362	"	"	"	"	"	"	
Selenium	ND	0.236	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/06/24 09:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0168	08/07/24	08/07/24	EPA 7196A	

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

Date Sampled: **08/06/24 09:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	54.6	0.0500	mg/L dry	1	BHH0194	08/07/24	08/08/24	EPA 6020B	
Magnesium	38.8	0.0500	"	"	"	"	"	"	
Sodium	10.5	0.0500	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

BKG01@2'
2408047-11 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/06/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.266	0.00100	units	1	BHH0237	08/09/24	08/09/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/06/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.7		%	1	BHH0175	08/07/24	08/07/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/06/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.233	0.0100	mmhos/cm	1	BHH0199	08/07/24	08/08/24	EPA 120.1	

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

Date Sampled: **08/06/24 09:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.15		pH Units	1	BHH0197	08/07/24	08/08/24	EPA 9045D	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

BKG01@3'
2408047-12 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/06/24 09:52**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHH0166	08/07/24	08/08/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/06/24 09:52**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.571	0.200	mg/kg dry	1	BHH0163	08/07/24	08/07/24	EPA 6020B	
Barium	53.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	1.49	0.400	"	"	"	"	"	"	
Lead	4.47	0.200	"	"	"	"	"	"	
Nickel	1.69	0.400	"	"	"	"	"	"	
Silver	0.0205	0.0200	"	"	"	"	"	"	
Zinc	6.63	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/06/24 09:52**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0168	08/07/24	08/07/24	EPA 7196A	

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

Date Sampled: **08/06/24 09:52**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	36.3	0.0500	mg/L dry	1	BHH0194	08/07/24	08/08/24	EPA 6020B	
Magnesium	77.7	0.0500	"	"	"	"	"	"	
Sodium	6.47	0.0500	"	"	"	"	"	"	

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

BKG01@3'
2408047-12 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/06/24 09:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.139	0.00100	units	1	BHH0237	08/09/24	08/09/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/06/24 09:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.7		%	1	BHH0175	08/07/24	08/07/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/06/24 09:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.268	0.0100	mmhos/cm	1	BHH0199	08/07/24	08/08/24	EPA 120.1	

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

Date Sampled: **08/06/24 09:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.42		pH Units	1	BHH0197	08/07/24	08/08/24	EPA 9045D	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

BKG01@4.5'
2408047-13 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/06/24 09:56**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHH0166	08/07/24	08/08/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/06/24 09:56**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.99	0.200	mg/kg dry	1	BHH0163	08/07/24	08/07/24	EPA 6020B	
Barium	83.7	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	1.82	0.400	"	"	"	"	"	"	
Lead	6.08	0.200	"	"	"	"	"	"	
Nickel	2.23	0.400	"	"	"	"	"	"	
Silver	0.0302	0.0200	"	"	"	"	"	"	
Zinc	7.78	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/06/24 09:56**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHH0168	08/07/24	08/07/24	EPA 7196A	

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

Date Sampled: **08/06/24 09:56**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	62.0	0.0500	mg/L dry	1	BHH0194	08/07/24	08/08/24	EPA 6020B	
Magnesium	14.3	0.0500	"	"	"	"	"	"	
Sodium	15.5	0.0500	"	"	"	"	"	"	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

BKG01@4.5'
2408047-13 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/06/24 09:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.461	0.00100	units	1	BHH0237	08/09/24	08/09/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/06/24 09:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.0		%	1	BHH0175	08/07/24	08/07/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/06/24 09:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.368	0.0100	mmhos/cm	1	BHH0199	08/07/24	08/08/24	EPA 120.1	

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

Date Sampled: **08/06/24 09:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.14		pH Units	1	BHH0197	08/07/24	08/08/24	EPA 9045D	

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHH0152 - EPA 5030 Soil MS

Blank (BHH0152-BLK1)

Prepared & Analyzed: 08/06/24

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0354</i>		<i>"</i>	<i>0.0400</i>		<i>88.6</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0410</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>50-150</i>			

LCS (BHH0152-BS1)

Prepared & Analyzed: 08/06/24

Benzene	0.0824	0.0020	mg/kg	0.100		82.4	70-130			
Toluene	0.0946	0.0050	"	0.100		94.6	70-130			
Ethylbenzene	0.0915	0.0050	"	0.100		91.5	70-130			
m,p-Xylene	0.182	0.010	"	0.200		91.0	70-130			
o-Xylene	0.0872	0.0050	"	0.100		87.2	70-130			
1,2,4-Trimethylbenzene	0.0830	0.0050	"	0.100		83.0	70-130			
1,3,5-Trimethylbenzene	0.0834	0.0050	"	0.100		83.4	70-130			
Naphthalene	0.0805	0.0038	"	0.100		80.5	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0388</i>		<i>"</i>	<i>0.0400</i>		<i>97.0</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0415</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0388</i>		<i>"</i>	<i>0.0400</i>		<i>97.1</i>	<i>50-150</i>			

Matrix Spike (BHH0152-MS1)

Source: 2408045-01

Prepared & Analyzed: 08/06/24

Benzene	0.0949	0.0020	mg/kg	0.100	ND	94.9	70-130			
Toluene	0.0919	0.0050	"	0.100	ND	91.9	70-130			
Ethylbenzene	0.0794	0.0050	"	0.100	ND	79.4	70-130			
m,p-Xylene	0.156	0.010	"	0.200	ND	78.2	70-130			
o-Xylene	0.0782	0.0050	"	0.100	ND	78.2	70-130			
1,2,4-Trimethylbenzene	0.0707	0.0050	"	0.100	ND	70.7	70-130			
1,3,5-Trimethylbenzene	0.0696	0.0050	"	0.100	ND	69.6	70-130			QM-07
Naphthalene	0.0643	0.0038	"	0.100	ND	64.3	70-130			QM-07
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0423</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0416</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0402</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>50-150</i>			

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHH0152 - EPA 5030 Soil MS

Matrix Spike Dup (BHH0152-MSD1)

Source: 2408045-01

Prepared & Analyzed: 08/06/24

Benzene	0.0842	0.0020	mg/kg	0.100	ND	84.2	70-130	11.9	30	
Toluene	0.0860	0.0050	"	0.100	ND	86.0	70-130	6.71	30	
Ethylbenzene	0.0785	0.0050	"	0.100	ND	78.5	70-130	1.14	30	
m,p-Xylene	0.155	0.010	"	0.200	ND	77.5	70-130	0.944	30	
o-Xylene	0.0763	0.0050	"	0.100	ND	76.3	70-130	2.49	30	
1,2,4-Trimethylbenzene	0.0693	0.0050	"	0.100	ND	69.3	70-130	2.02	30	QM-07
1,3,5-Trimethylbenzene	0.0693	0.0050	"	0.100	ND	69.3	70-130	0.432	30	QM-07
Naphthalene	0.0633	0.0038	"	0.100	ND	63.3	70-130	1.55	30	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0389		"	0.0400		97.2	50-150			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		98.0	50-150			

Batch BHH0190 - EPA 5030 Soil MS

Blank (BHH0190-BLK1)

Prepared & Analyzed: 08/07/24

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	0.0371		"	0.0400		92.8	50-150			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	50-150			

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

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

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

Batch BHH0190 - EPA 5030 Soil MS

LCS (BHH0190-BS1)

Prepared & Analyzed: 08/07/24

Benzene	0.0962	0.0020	mg/kg	0.100		96.2	70-130			
Toluene	0.110	0.0050	"	0.100		110	70-130			
Ethylbenzene	0.110	0.0050	"	0.100		110	70-130			
m,p-Xylene	0.213	0.010	"	0.200		106	70-130			
o-Xylene	0.103	0.0050	"	0.100		103	70-130			
1,2,4-Trimethylbenzene	0.0941	0.0050	"	0.100		94.1	70-130			
1,3,5-Trimethylbenzene	0.0982	0.0050	"	0.100		98.2	70-130			
Naphthalene	0.0854	0.0038	"	0.100		85.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0391		"	0.0400		97.8	50-150			
Surrogate: Toluene-d8	0.0414		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0374		"	0.0400		93.4	50-150			

Matrix Spike (BHH0190-MS1)

Source: 2408043-01

Prepared & Analyzed: 08/07/24

Benzene	0.0899	0.0020	mg/kg	0.100	ND	89.9	70-130			
Toluene	0.102	0.0050	"	0.100	ND	102	70-130			
Ethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130			
m,p-Xylene	0.200	0.010	"	0.200	ND	99.8	70-130			
o-Xylene	0.0950	0.0050	"	0.100	ND	95.0	70-130			
1,2,4-Trimethylbenzene	0.0872	0.0050	"	0.100	ND	87.2	70-130			
1,3,5-Trimethylbenzene	0.0885	0.0050	"	0.100	ND	88.5	70-130			
Naphthalene	0.0825	0.0038	"	0.100	ND	82.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0390		"	0.0400		97.5	50-150			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.6	50-150			

Matrix Spike Dup (BHH0190-MSD1)

Source: 2408043-01

Prepared & Analyzed: 08/07/24

Benzene	0.0902	0.0020	mg/kg	0.100	ND	90.2	70-130	0.300	30	
Toluene	0.104	0.0050	"	0.100	ND	104	70-130	1.90	30	
Ethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130	0.0589	30	
m,p-Xylene	0.201	0.010	"	0.200	ND	100	70-130	0.465	30	
o-Xylene	0.0965	0.0050	"	0.100	ND	96.5	70-130	1.57	30	
1,2,4-Trimethylbenzene	0.0868	0.0050	"	0.100	ND	86.8	70-130	0.448	30	
1,3,5-Trimethylbenzene	0.0884	0.0050	"	0.100	ND	88.4	70-130	0.0339	30	
Naphthalene	0.0801	0.0038	"	0.100	ND	80.1	70-130	2.91	30	
Surrogate: 1,2-Dichloroethane-d4	0.0390		"	0.0400		97.4	50-150			
Surrogate: Toluene-d8	0.0419		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.6	50-150			

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BHH0144 - EPA 3550A

Blank (BHH0144-BLK1)

Prepared: 08/06/24 Analyzed: 08/07/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	5.96		"	12.5		47.7	30-150				

LCS (BHH0144-BS1)

Prepared & Analyzed: 08/06/24

C10-C28 (DRO)	407	50	mg/kg	500		81.5	70-130				
Surrogate: <i>o</i> -Terphenyl	10.0		"	12.5		80.4	30-150				

Matrix Spike (BHH0144-MS1)

Source: 2407382-08

Prepared & Analyzed: 08/06/24

C10-C28 (DRO)	412	50	mg/kg	500	ND	82.5	70-130				
Surrogate: <i>o</i> -Terphenyl	7.76		"	12.5		62.1	30-150				

Matrix Spike Dup (BHH0144-MSD1)

Source: 2407382-08

Prepared & Analyzed: 08/06/24

C10-C28 (DRO)	459	50	mg/kg	500	ND	91.8	70-130	10.7	20		
Surrogate: <i>o</i> -Terphenyl	8.36		"	12.5		66.9	30-150				

Batch BHH0191 - EPA 3550A

Blank (BHH0191-BLK1)

Prepared & Analyzed: 08/07/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	11.0		"	12.5		87.8	30-150				

LCS (BHH0191-BS1)

Prepared & Analyzed: 08/07/24

C10-C28 (DRO)	452	50	mg/kg	500		90.5	70-130				
Surrogate: <i>o</i> -Terphenyl	10.7		"	12.5		85.6	30-150				

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BHH0191 - EPA 3550A

Matrix Spike (BHH0191-MS1)		Source: 2408043-01			Prepared & Analyzed: 08/07/24					
C10-C28 (DRO)	376	50	mg/kg	500	ND	75.3	70-130			
Surrogate: <i>o</i> -Terphenyl	8.29		"	12.5		66.3	30-150			
Matrix Spike Dup (BHH0191-MSD1)		Source: 2408043-01			Prepared & Analyzed: 08/07/24					
C10-C28 (DRO)	396	50	mg/kg	500	ND	79.1	70-130	4.99	20	
Surrogate: <i>o</i> -Terphenyl	7.92		"	12.5		63.3	30-150			

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHH0160 - EPA 5030 Soil MS

Blank (BHH0160-BLK1)

Prepared: 08/07/24 Analyzed: 08/08/24

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	0.0214		"	0.0333	64.3	40-150				
Surrogate: Fluoranthene-d10	0.0251		"	0.0333	75.2	40-150				

LCS (BHH0160-BS1)

Prepared: 08/07/24 Analyzed: 08/08/24

Acenaphthene	0.0205	0.00500	mg/kg	0.0333	61.4	31-137				
Anthracene	0.0208	0.00500	"	0.0333	62.5	30-120				
Benzo (a) anthracene	0.0231	0.00500	"	0.0333	69.3	30-120				
Benzo (a) pyrene	0.0243	0.00500	"	0.0333	72.8	30-120				
Benzo (b) fluoranthene	0.0242	0.00500	"	0.0333	72.7	30-120				
Benzo (k) fluoranthene	0.0229	0.00500	"	0.0333	68.6	30-120				
Chrysene	0.0212	0.00500	"	0.0333	63.6	30-120				
Dibenz (a,h) anthracene	0.0249	0.00500	"	0.0333	74.6	30-120				
Fluoranthene	0.0206	0.00500	"	0.0333	61.9	30-120				
Fluorene	0.0216	0.00500	"	0.0333	64.7	30-120				
Indeno (1,2,3-cd) pyrene	0.0184	0.00500	"	0.0333	55.3	30-120				
Pyrene	0.0230	0.00500	"	0.0333	69.0	35-142				
1-Methylnaphthalene	0.0179	0.00500	"	0.0333	53.7	35-142				
2-Methylnaphthalene	0.0182	0.00500	"	0.0333	54.5	35-142				
Surrogate: 2-Methylnaphthalene-d10	0.0176		"	0.0333	52.9	40-150				
Surrogate: Fluoranthene-d10	0.0210		"	0.0333	63.0	40-150				

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Tasman Geosciences
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Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHH0160 - EPA 5030 Soil MS

Matrix Spike (BHH0160-MS1)	Source: 2408047-01			Prepared: 08/07/24 Analyzed: 08/08/24						
Acenaphthene	0.0201	0.00500	mg/kg	0.0333	ND	60.3	31-137			
Anthracene	0.0212	0.00500	"	0.0333	ND	63.5	30-120			
Benzo (a) anthracene	0.0240	0.00500	"	0.0333	ND	71.9	30-120			
Benzo (a) pyrene	0.0241	0.00500	"	0.0333	ND	72.4	30-120			
Benzo (b) fluoranthene	0.0261	0.00500	"	0.0333	ND	78.2	30-120			
Benzo (k) fluoranthene	0.0244	0.00500	"	0.0333	ND	73.3	30-120			
Chrysene	0.0216	0.00500	"	0.0333	ND	64.9	30-120			
Dibenz (a,h) anthracene	0.0231	0.00500	"	0.0333	ND	69.4	30-120			
Fluoranthene	0.0213	0.00500	"	0.0333	ND	63.9	30-120			
Fluorene	0.0215	0.00500	"	0.0333	ND	64.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0188	0.00500	"	0.0333	ND	56.3	30-120			
Pyrene	0.0277	0.00500	"	0.0333	ND	83.1	35-142			
1-Methylnaphthalene	0.0161	0.00500	"	0.0333	ND	48.4	15-130			
2-Methylnaphthalene	0.0171	0.00500	"	0.0333	ND	51.3	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0151</i>		<i>"</i>	<i>0.0333</i>		<i>45.3</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0215</i>		<i>"</i>	<i>0.0333</i>		<i>64.6</i>	<i>40-150</i>			

Matrix Spike Dup (BHH0160-MSD1)	Source: 2408047-01			Prepared: 08/07/24 Analyzed: 08/08/24						
Acenaphthene	0.0181	0.00500	mg/kg	0.0333	ND	54.4	31-137	10.2	30	
Anthracene	0.0187	0.00500	"	0.0333	ND	56.1	30-120	12.5	30	
Benzo (a) anthracene	0.0211	0.00500	"	0.0333	ND	63.2	30-120	12.8	30	
Benzo (a) pyrene	0.0214	0.00500	"	0.0333	ND	64.2	30-120	12.1	30	
Benzo (b) fluoranthene	0.0233	0.00500	"	0.0333	ND	69.9	30-120	11.2	30	
Benzo (k) fluoranthene	0.0214	0.00500	"	0.0333	ND	64.3	30-120	13.2	30	
Chrysene	0.0193	0.00500	"	0.0333	ND	57.9	30-120	11.4	30	
Dibenz (a,h) anthracene	0.0211	0.00500	"	0.0333	ND	63.3	30-120	9.04	30	
Fluoranthene	0.0184	0.00500	"	0.0333	ND	55.2	30-120	14.7	30	
Fluorene	0.0193	0.00500	"	0.0333	ND	58.0	30-120	10.5	30	
Indeno (1,2,3-cd) pyrene	0.0161	0.00500	"	0.0333	ND	48.2	30-120	15.5	30	
Pyrene	0.0247	0.00500	"	0.0333	ND	74.0	35-142	11.6	30	
1-Methylnaphthalene	0.0179	0.00500	"	0.0333	ND	53.8	15-130	10.7	50	
2-Methylnaphthalene	0.0198	0.00500	"	0.0333	ND	59.5	15-130	14.7	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0173</i>		<i>"</i>	<i>0.0333</i>		<i>52.0</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0187</i>		<i>"</i>	<i>0.0333</i>		<i>56.0</i>	<i>40-150</i>			

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

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

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

Batch BHH0166 - EPA 3050B

Blank (BHH0166-BLK1)

Prepared: 08/07/24 Analyzed: 08/08/24

Boron ND 2.00 mg/L

LCS (BHH0166-BS1)

Prepared: 08/07/24 Analyzed: 08/08/24

Boron 5.24 2.00 mg/L 5.00 105 80-120

Duplicate (BHH0166-DUP1)

Source: 2408047-01

Prepared: 08/07/24 Analyzed: 08/08/24

Boron 0.252 2.00 mg/L 0.289 13.6 20

Matrix Spike (BHH0166-MS1)

Source: 2408047-01

Prepared: 08/07/24 Analyzed: 08/08/24

Boron 5.28 2.00 mg/L 5.00 0.289 99.8 75-125

Matrix Spike Dup (BHH0166-MSD1)

Source: 2408047-01

Prepared: 08/07/24 Analyzed: 08/08/24

Boron 5.44 2.00 mg/L 5.00 0.289 103 75-125 2.91 25

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Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHH0163 - EPA 3050B

Blank (BHH0163-BLK1)

Prepared & Analyzed: 08/07/24

Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Cadmium	ND	0.200	"							
Copper	ND	0.400	"							
Lead	ND	0.200	"							
Nickel	ND	0.400	"							
Silver	ND	0.0200	"							
Zinc	ND	0.400	"							
Selenium	ND	0.260	"							

LCS (BHH0163-BS1)

Prepared & Analyzed: 08/07/24

Arsenic	37.6	0.200	mg/kg wet	38.5	97.8	80-120
Barium	37.2	0.400	"	38.5	96.6	80-120
Cadmium	1.86	0.200	"	1.92	96.5	80-120
Copper	37.9	0.400	"	38.5	98.5	80-120
Lead	19.3	0.200	"	19.2	100	80-120
Nickel	37.8	0.400	"	38.5	98.4	80-120
Silver	1.86	0.0200	"	1.92	96.8	80-120
Zinc	37.2	0.400	"	38.5	96.8	80-120
Selenium	4.20	0.260	"	3.85	109	80-120

Duplicate (BHH0163-DUP1)

Source: 2408047-01

Prepared & Analyzed: 08/07/24

Arsenic	1.64	0.200	mg/kg dry	0.810	68.0	20	QR-01
Barium	54.3	0.400	"	57.9	6.43	20	
Cadmium	0.0814	0.200	"	0.0966	17.1	20	
Copper	2.76	0.400	"	2.86	3.47	20	
Lead	4.59	0.200	"	5.36	15.5	20	
Nickel	1.32	0.400	"	1.36	3.13	20	
Silver	0.0520	0.0200	"	0.0361	35.9	20	QR-01
Zinc	7.01	0.400	"	7.70	9.34	20	
Selenium	ND	0.260	"	ND		20	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHH0163 - EPA 3050B

Matrix Spike (BHH0163-MS1)

Source: 2408047-01

Prepared & Analyzed: 08/07/24

Arsenic	15.3	0.200	mg/kg dry	39.4	0.810	36.8	75-125				QM-05
Barium	87.7	0.400	"	39.4	57.9	75.8	75-125				
Cadmium	1.89	0.200	"	1.97	0.0966	91.1	75-125				
Copper	19.8	0.400	"	39.4	2.86	43.1	75-125				QM-05
Lead	22.4	0.200	"	19.7	5.36	86.5	75-125				
Nickel	16.4	0.400	"	39.4	1.36	38.3	75-125				QM-05
Silver	1.80	0.0200	"	1.97	0.0361	89.7	75-125				
Zinc	22.7	0.400	"	39.4	7.70	38.1	75-125				QM-05
Selenium	3.64	0.260	"	3.94	ND	92.4	75-125				

Matrix Spike Dup (BHH0163-MSD1)

Source: 2408047-01

Prepared & Analyzed: 08/07/24

Arsenic	14.3	0.181	mg/kg dry	37.7	0.810	35.7	75-125	6.99	25		QM-05
Barium	84.5	0.362	"	37.7	57.9	70.6	75-125	3.77	25		QM-07
Cadmium	1.83	0.181	"	1.88	0.0966	92.2	75-125	3.06	25		
Copper	17.2	0.362	"	37.7	2.86	38.1	75-125	14.2	25		QM-05
Lead	22.9	0.181	"	18.8	5.36	93.0	75-125	2.17	25		
Nickel	15.2	0.362	"	37.7	1.36	36.8	75-125	7.87	25		QM-05
Silver	1.72	0.0181	"	1.88	0.0361	89.4	75-125	4.69	25		
Zinc	20.5	0.362	"	37.7	7.70	34.0	75-125	10.2	25		QM-05
Selenium	3.61	0.236	"	3.77	ND	96.0	75-125	0.633	25		

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHH0168 - 3060A Mod

Blank (BHH0168-BLK1)

Prepared & Analyzed: 08/07/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHH0168-BS1)

Prepared & Analyzed: 08/07/24

Chromium, Hexavalent 24.8 0.30 mg/kg wet 25.0 99.4 80-120

Duplicate (BHH0168-DUP1)

Source: 2408047-01

Prepared & Analyzed: 08/07/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHH0168-MS1)

Source: 2408047-01

Prepared & Analyzed: 08/07/24

Chromium, Hexavalent 25.1 0.30 mg/kg dry 26.0 ND 96.6 75-125

Matrix Spike Dup (BHH0168-MSD1)

Source: 2408047-01

Prepared & Analyzed: 08/07/24

Chromium, Hexavalent 25.5 0.30 mg/kg dry 26.0 ND 98.2 75-125 1.64 20

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

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

Summit Scientific

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

Batch BHH0194 - General Preparation

Blank (BHH0194-BLK1)

Prepared: 08/07/24 Analyzed: 08/08/24

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

LCS (BHH0194-BS1)

Prepared: 08/07/24 Analyzed: 08/08/24

Calcium	5.92	0.0500	mg/L wet	5.00	118	70-130				
Magnesium	5.65	0.0500	"	5.00	113	70-130				
Sodium	5.64	0.0500	"	5.00	113	70-130				

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery
Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

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

Summit Scientific

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

Batch BHH0175 - General Preparation

Duplicate (BHH0175-DUP2)

Source: 2408047-01

Prepared & Analyzed: 08/07/24

% Solids	95.2		%		96.2			1.02	20	
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

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

Summit Scientific

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

Batch BHH0199 - General Preparation

Blank (BHH0199-BLK1)

Prepared: 08/07/24 Analyzed: 08/08/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHH0199-BS1)

Prepared: 08/07/24 Analyzed: 08/08/24

Specific Conductance (EC) 0.157 0.0100 mmhos/cm 0.150 105 95-105

Duplicate (BHH0199-DUP1)

Source: 2408047-01

Prepared: 08/07/24 Analyzed: 08/08/24

Specific Conductance (EC) 0.118 0.0100 mmhos/cm 0.122 3.24 20

Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

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

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

Batch BHH0197 - General Preparation

LCS (BHH0197-BS1)

Prepared: 08/07/24 Analyzed: 08/08/24

pH	9.18	pH Units	9.18	100	95-105
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Duplicate (BHH0197-DUP1)

Source: 2408047-01

Prepared: 08/07/24 Analyzed: 08/08/24

pH	8.73	pH Units	8.77	0.457	20
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Summit Scientific

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



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Beebe Draw T4NR65WS26 L04 Tank Battery

Project Number: UWRWE-A3241-ABN
Project Manager: Jacob Whritenour

Reported:
08/12/24 07:41

Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interferences.
- S-04 A sample matrix effect prevented complete surrogate recovery.
- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- R-05 The sample was diluted due to the presence of high levels of non-target analytes resulting in elevated reporting limits.
- QR-01 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- QM-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.
- O-02 Due to matrix interference, the sample cannot be accurately quantitated. The reported result is qualitative.
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference