





TANK BATTERY DECOMMISSIONING FORM

SITE NAME: CPC-HARLESS-64N64W 17SWNE							DATE: 6/25/2024	REM. PROJECT #: 34516	WEATHER: Sunny 90s		
SITE DIRECTIONS: CR 53 and 46, .2 mi W, .5 mi S, 1/10 W into site area							CLIENT: Noble				
LEGALS AND LAT/LONG: 40.314345, -104.571253							TASMAN PERSONNEL: MR				
SOIL TYPES: Well Graded Sand - SW							SURFACE GRADIENT: W				
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)	2	✓		
6/26/2024 10:30	AST01@0-6"	0.5	No Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel	2	✓		
6/26/2024 10:35	AST02@0-6"	0.6	No Staining	No Odor	Yes	Lab	Separator	2	✓		
6/25/2024 10:40	FLARE01@0-6"	0.4	No Staining	No Odor	Yes	Grab	Emission Control Device (ECD)				
6/25/2024 10:45	GS01@0-6"	0.0	No Staining	No Odor	Yes	Grab	Dump Line				
6/25/2024 10:50	GS02@0-6"	0.0	No Staining	No Odor	Yes	Grab	Wellhead				
6/25/2024 10:55	MH01@0-6"	0.0	No Staining	No Odor	Yes	Grab	Flowline				
6/25/2024 11:00	MH02@0-6"	0.1	No Staining	No Odor	Yes	Grab	Other: Flare/Meter House	1/2	✓		
6/25/2024 11:05	PWV01-N@2.5'	0.3	No Staining	No Odor	Yes	On-hold	Soil Loads Removed				
6/25/2024 11:10	PWV01-E@2.5'	0.2	No Staining	No Odor	Yes	On-hold	IMPACTED SOIL IDENTIFIED?				
6/25/2024 11:15	PWV01-S@2.5'	0.8	No Staining	No Odor	Yes	Lab	ESTIMATED VOLUME OF IMPACTS:				
6/25/2024 11:20	PWV01-B@4'	5.7	No Staining	No Odor	Yes	Lab	Date	Number	CY		
6/25/2024 11:25	PWV02-N@2.5'	2.2	No Staining	No Odor	Yes	Lab					
6/25/2024 11:30	PWV02-S@2.5'	0.0	No Staining	No Odor	Yes	On-hold					
6/25/2024 11:35	PWV02-W@2.5'	0.5	No Staining	No Odor	Yes	On-hold					
6/25/2024 11:40	PWV02-B@4'	2.5	No Staining	No Odor	Yes	Lab					
6/25/2024 11:45	SEP01-DL@2.5'	0.0	No Staining	No Odor	Yes	Lab	Total Removed	0	0		
6/25/2024 11:50	SEP01-FL@2.5'	0.3	No Staining	No Odor	Yes	Lab	Disposal Facility:				
6/25/2024 11:55	SEP02-DL@2.5'	0.1	No Staining	No Odor	Yes	Lab	Groundwater Recovery				
6/25/2024 12:00	SEP02-FL@2.5'	1.2	No Staining	No Odor	Yes	Lab	DATE GW ENCOUNTERED:			DEPTH:	
6/26/2024 10:40	BKG01@0-6"	0.3	No Staining	No Odor	Yes	Lab	GROUNDWATER IN CONTACT WITH IMPACTED SOIL?				
6/26/2024 10:45	BKG01@2.5'	0.2	No Staining	No Odor	Yes	Lab					
6/26/2024 10:50	BKG01@4'	0.4	No Staining	No Odor	Yes	Lab					
GROUNDWATER SAMPLING							Date		BBLs		
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?					
							Total Removed	0			
							Disposal Facility:				

Photographic Log

					
Equipment ID: AST01@0-6"		Equipment Type: Above Ground Storage Tank	Equipment ID: AST02@0-6"		Equipment Type: Above Ground Storage Tank
Material: Steel	Volume:	Contents: Crude Oil	Material: Steel	Volume:	Contents: Crude Oil
Notes/Conditions: Facing east			Notes/Conditions: Facing south		

Photographic Log


Equipment ID: FLARE01 @0-6"	Equipment Type: Flare	
Material: Steel	Volume:	Contents: Oil/Gas/Water
Notes/Conditions: Facing north		

Equipment ID: GS01 @0-6"	Equipment Type:	
Material:	Volume:	Contents:
Notes/Conditions: Facing north		

Photographic Log


Equipment ID: GS02@0-6*		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: Facing east			

Equipment ID: MH01 @0-6*		Equipment Type: Meter House	
Material: Steel	Volume:	Contents:	
Notes/Conditions: Facing east			

Photographic Log


Equipment ID: MH02@0-6"		Equipment Type: Meter House	
Material: Steel	Volume:	Contents:	
Notes/Conditions: Facing north			

Equipment ID: PWV01-N@2.5'		Equipment Type: Partially Buried Vault	
Material: Concrete	Volume:	Contents: Produced Water	
Notes/Conditions: Facing north			

Photographic Log


Equipment ID: PWV01-E@2.5'	Equipment Type: Partially Buried Vault	
Material: Concrete	Volume:	Contents: Produced Water
Notes/Conditions: Facing east		

Equipment ID: PWV01-S@2.5'	Equipment Type: Partially Buried Vault	
Material: Concrete	Volume:	Contents: Produced Water
Notes/Conditions: Facing south		

Photographic Log




Equipment ID: PWV01-B@4'		Equipment Type: Partially Buried Vault		Equipment ID: PWV02-N@2.5'		Equipment Type: Partially Buried Vault	
Material: Concrete	Volume:	Contents: Produced Water		Material: Fiberglass	Volume:	Contents: Produced Water	
Notes/Conditions: Facing north				Notes/Conditions: Facing north			

Photographic Log


Equipment ID: PWV02-S@2.5'	Equipment Type: Partially Buried Vault	
Material: Fiberglass	Volume:	Contents: Produced Water
Notes/Conditions: Facing south		

Equipment ID: PWV02-W@2.5'	Equipment Type: Partially Buried Vault	
Material: Concrete	Volume:	Contents: Produced Water
Notes/Conditions: Facing west		

Photographic Log

					
Equipment ID: PWV02-B@4'		Equipment Type: Partially Buried Vault	Equipment ID: SEP01-DL@2.5'		Equipment Type: Separator
Material: Concrete	Volume:	Contents: Produced Water	Material: Steel	Volume:	Contents: Production Fluids
Notes/Conditions: Facing north			Notes/Conditions: Facing north		

Photographic Log


Equipment ID: SEP01-FL@2.5'	Equipment Type: Separator	
Material: Steel	Volume:	Contents: Production Fluids
Notes/Conditions: Facing north		

Equipment ID: SEP02-DL@2.5'	Equipment Type: Separator	
Material: Steel	Volume:	Contents: Production Fluids
Notes/Conditions: Facing south		

Photographic Log


Equipment ID: SEP02-FL@2.5'	Equipment Type: Separator	
Material: Steel	Volume:	Contents: Production Fluids
Notes/Conditions: Facing south		

Equipment ID: BKG01	Equipment Type:	
Material:	Volume:	Contents:
Notes/Conditions: Facing west @0-6", 2.5', & 4' 0-2': Well graded sand with silt, soft, light tan, m-fg, dry, no staining/odor 2-4': AA, moist, tan		

Photographic Log


Equipment ID:		Equipment Type:		Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: Dumplines after removal Facing west				Notes/Conditions:			

TABLES

TABLE 1
FIELD DATA SUMMARY TABLE
NOBLE 100322
CPC-HARLESS-64N64W 17SWNE, WELD COUNTY, COLORADO
REM # 34516

Sample ID	Sample Date	Depth (ft. bgs)	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
AST01@0-6"	6/26/2024	0-0.5	40.314340	-104.570786	1.1	0.5
AST02@0-6"	6/26/2024	0-0.5	40.314343	-104.570824	1.1	0.6
FLARE01@0-6"	6/25/2024	0-0.5	40.314364	-104.571298	0.9	0.4
GS01@0-6"	6/25/2024	0-0.5	40.314338	-104.570664	0.9	0.0
GS02@0-6"	6/25/2024	0-0.5	40.314319	-104.570663	0.9	0.0
MH01@0-6"	6/25/2024	0-0.5	40.314323	-104.571315	1.0	0.0
MH02@0-6"	6/25/2024	0-0.5	40.314283	-104.571252	0.9	0.1
PWV01-N@2.5'	6/25/2024	2.5	40.314369	-104.570867	0.8	0.3
PWV01-E@2.5'	6/25/2024	2.5	40.314344	-104.570846	0.8	0.2
PWV01-S@2.5'	6/25/2024	2.5	40.314318	-104.570875	0.8	0.8
PWV01-B@4'	6/25/2024	4	40.314345	-104.570872	0.8	5.7
PWV02-N@2.5'	6/25/2024	2.5	40.314371	-104.570915	0.8	2.2
PWV02-S@2.5'	6/25/2024	2.5	40.314316	-104.570917	0.8	0.0
PWV02-W@2.5'	6/25/2024	2.5	40.314344	-104.570949	0.8	0.5
PWV02-B@4'	6/25/2024	4	40.314344	-104.570918	0.8	2.5
SEP01-DL@2.5'	6/25/2024	2.5	40.314343	-104.571259	0.9	0.0
SEP01-FL@2.5'	6/25/2024	2.5	40.314354	-104.571219	0.9	0.3
SEP02-DL@2.5'	6/25/2024	2.5	40.314316	-104.571256	1.0	0.1
SEP02-FL@2.5'	6/25/2024	2.5	40.314322	-104.571219	1.1	1.2
BKG01@0-6"	6/26/2024	0-0.5	40.314507	-104.570815	0.8	0.3
BKG01@2.5'	6/26/2024	2.5	40.314507	-104.570815	0.8	0.2
BKG01@4'	6/26/2024	4	40.314507	-104.570815	0.8	0.4

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

in. = Inches

ft. = Feet

bgs = Below ground surface

TABLE 2
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE 100322
CPC-HARLESS-64N64W 17SWNE, WELD COUNTY, COLORADO
REM # 34516

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**		
AST01@0-6"	6/26/2024	0-0.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
AST02@0-6"	6/26/2024	0-0.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV01-B@4'	6/25/2024	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	74	<0.50	74	<50
PWV01-S@2.5'	6/25/2024	2.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV02-B@4'	6/25/2024	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV02-N @ 2.5'	6/25/2024	2.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP01-DL@2.5'	6/25/2024	2.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP01-FL@2.5'	6/25/2024	2.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP02-DL@2.5'	6/25/2024	2.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP02-FL@2.5'	6/25/2024	2.5	<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 100322
CPC-HARLESS-64N64W 17SWNE, WELD COUNTY, COLORADO
REM # 34516

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
AST01@0-6"	6/26/2024	0-0.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
AST02@0-6"	6/26/2024	0-0.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
PWV01-B@4'	6/25/2024	4	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00751	<0.00500	<0.00500	<0.00500	<0.00500
PWV01-S@2.5'	6/25/2024	2.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
PWV02-B@4'	6/25/2024	4	<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
PWV02-N@2.5'	6/25/2024	2.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP01-DL@2.5'	6/25/2024	2.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP01-FL@2.5'	6/25/2024	2.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP02-DL@2.5'	6/25/2024	2.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP02-FL@2.5'	6/25/2024	2.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

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

TABLE 4
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE 100322
CPC-HARLESS-64N64W 17SWNE, WELD COUNTY, COLORADO
REM # 34516

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
AST01@0-6"	6/26/2024	0-0.5	7.79	0.795	0.758	<2.00
AST02@0-6"	6/26/2024	0-0.5	8.00	0.989	0.840	<2.00
PWV01-B@4'	6/25/2024	4	8.47	0.269	0.370	<2.00
PWV01-S@2.5'	6/25/2024	2.5	8.65	0.347	0.796	<2.00
PWV02-B@4'	6/25/2024	4	8.59	0.316	0.586	<2.00
PWV02-N@2.5'	6/25/2024	2.5	8.12	0.393	0.172	<2.00
SEP01-DL@2.5'	6/25/2024	2.5	8.67	0.115	0.0416	<2.00
SEP01-FL@2.5'	6/25/2024	2.5	8.81	0.141	0.0579	<2.00
SEP02-DL@2.5'	6/25/2024	2.5	8.70	0.117	0.0427	<2.00
SEP02-FL@2.5'	6/25/2024	2.5	8.76	0.0930	0.0538	<2.00
BKG01@0-6"	6/26/2024	0-0.5	7.52	0.849	1.19	<2.00
BKG01@2.5'	6/26/2024	2.5	7.72	0.843	3.61	<2.00
BKG01@4'	6/26/2024	4	7.50	4.99	2.60	<2.00
Maximum Root Background Concentration (0-3 ft)			7.72	-	-	-
Mean Root Background Concentration (0-3 ft)			7.62	-	-	-
Maximum Background Concentration			7.72	-	-	-
Mean Background Concentration			7.58	-	-	-

Notes:

- 1. Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
- 2. Bold** faced values exceed the ECMC Table 915-1 limit(s) above native background concentrations.
- 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 100322
CPC-HARLESS-64N64W 17SWNE, WELD COUNTY, COLORADO
REM # 34516

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
AST01@0-6"	6/26/2024	0-0.5	3.62	39.8	<0.179	<0.30*	4.12	6.19	3.60	<0.232	0.0286	18.9
AST02@0-6"	6/26/2024	0-0.5	1.78	15.9	<0.200	<0.30*	3.04	2.73	2.09	<0.260	<0.0200	9.59
PWV01-B@4'	6/25/2024	4	1.98	40.6	<0.200	<0.30*	5.93	5.56	5.04	<0.260	0.0228	42.8
PWV01-S@2.5'	6/25/2024	2.5	3.28	65.6	0.222	<0.30*	8.71	9.36	8.60	0.269	0.0382	45.4
PWV02-B@4'	6/25/2024	4	2.11	44.5	<0.200	<0.30*	6.15	5.80	5.63	<0.260	0.0233	28.7
PWV02-N@2.5'	6/25/2024	2.5	2.35	50.1	0.205	<0.30*	6.11	5.69	5.20	<0.260	0.0224	30.5
SEP01-DL@2.5'	6/25/2024	2.5	1.88	43.0	<0.200	<0.30*	6.01	5.73	4.65	<0.260	0.0451	26.8
SEP01-FL@2.5'	6/25/2024	2.5	3.51	47.3	<0.200	<0.30*	6.42	7.51	4.84	<0.260	<0.0200	26.8
SEP02-DL@2.5'	6/25/2024	2.5	2.03	41.1	<0.200	<0.30*	6.24	8.12	4.64	<0.260	0.0205	25.5
SEP02-FL@2.5'	6/25/2024	2.5	2.09	43.0	<0.200	<0.30*	6.85	5.40	4.70	<0.260	0.0207	28.4
BKG01@0-6"	6/26/2024	0-0.5	1.62	39.9	<0.200	<0.30*	3.76	5.18	3.22	<0.260	0.020	14.5
BKG01@2.5'	6/26/2024	2.5	2.34	43.4	<0.180	<0.30*	3.25	5.12	3.71	<0.234	0.029	13.5
BKG01@4'	6/26/2024	4	1.98	42.4	<0.200	<0.30*	3.13	4.33	3.98	<0.260	0.027	12.9
Maximum Background Concentration			2.34	-	-	-	-	-	-	-	-	-
Maximum Background Concentration X 1.25			2.93	-	-	-	-	-	-	-	-	-
Mean Background Concentration			1.98	-	-	-	-	-	-	-	-	-
Mean Background Concentration X 1.25			2.48	-	-	-	-	-	-	-	-	-

Notes:

- 1. Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
- 2. Bold** faced values exceed the ECMC Table 915-1 limit(s) above 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.

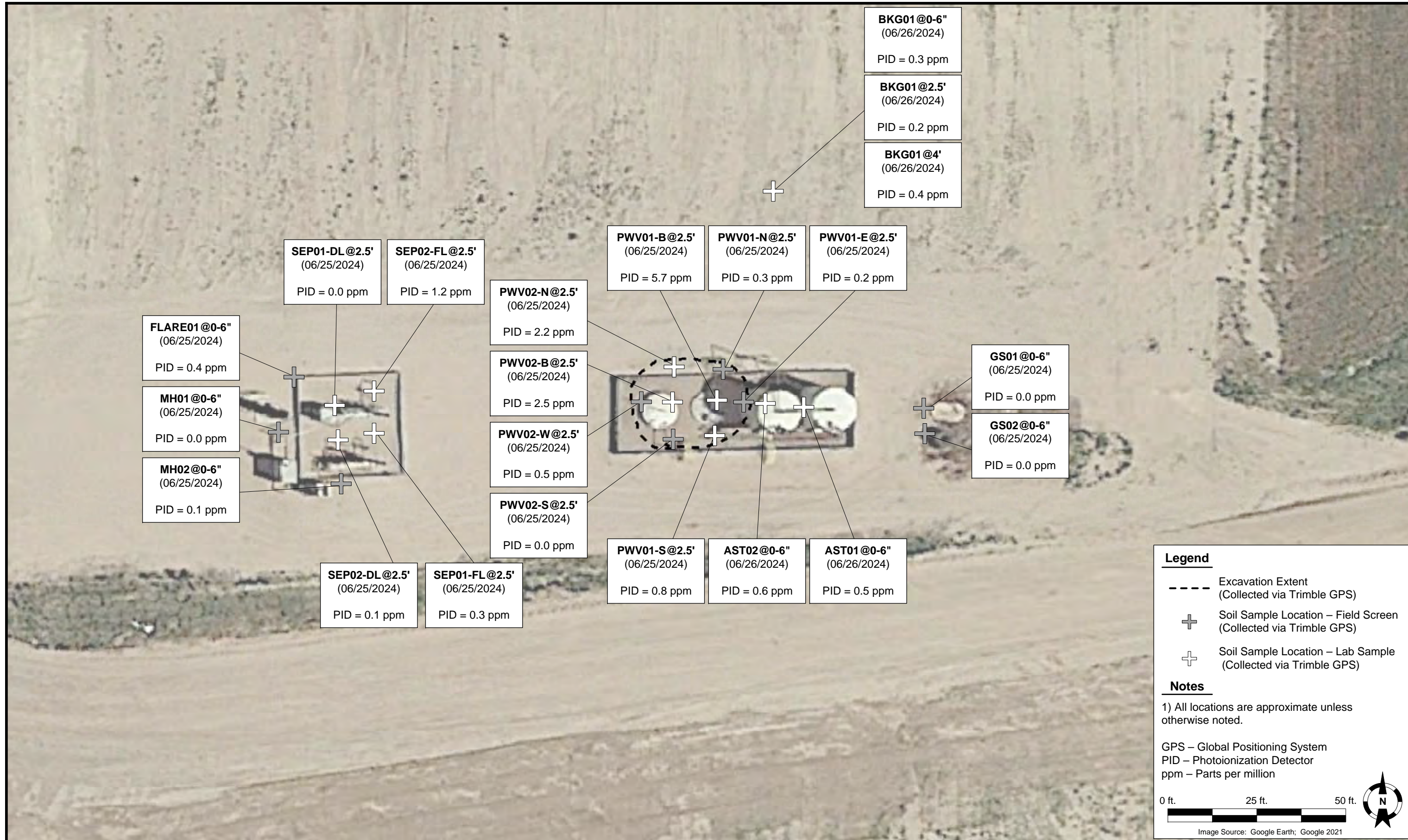
mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

* Indicates laboratory minimum detection limit in excess of SSL

FIGURES



Legend

- Excavation Extent (Collected via Trimble GPS)
- + Soil Sample Location – Field Screen (Collected via Trimble GPS)
- + Soil Sample Location – Lab Sample (Collected via Trimble GPS)

Notes

1) All locations are approximate unless otherwise noted.

GPS – Global Positioning System
 PID – Photoionization Detector
 ppm – Parts per million

0 ft. 25 ft. 50 ft.

Image Source: Google Earth; Google 2021

DATE: 8/15/2024

DESIGNED BY: JW

DRAWN BY: LH

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

Noble Energy, Inc. (100322) – DJ Basin
CPC-HARLESS 64N64W 17SWNE Tank Battery
 SWNE, Section 17, Township 4 North, Range 64 West
 Weld County, Colorado

Tank Battery Closure & Soil
 Analytical Results Map
 (06/25/2024 & 06/26/2024)

FIGURE
 1

ATTACHMENT A
LABORATORY SOIL ANALYTICAL DATA REPORTS

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 09, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - CPC-Harless 64N64W 17SWNE

Work Order #2406383

Enclosed are the results of analyses for samples received by Summit Scientific on 06/25/24 18:11. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Natalie Tessier For Paul Shrewsbury

President



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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PWV01-S@2.5'	2406383-03	Soil	06/25/24 11:15	06/25/24 18:11
PWV01-B@4'	2406383-04	Soil	06/25/24 11:20	06/25/24 18:11
PWV02-N@2.5'	2406383-05	Soil	06/25/24 11:25	06/25/24 18:11
PWV02-B@4'	2406383-08	Soil	06/25/24 11:40	06/25/24 18:11
SEP01-DL@2.5'	2406383-09	Soil	06/25/24 11:45	06/25/24 18:11
SEP01-FL@2.5'	2406383-10	Soil	06/25/24 11:50	06/25/24 18:11
SEP02-DL@2.5'	2406383-11	Soil	06/25/24 11:55	06/25/24 18:11
SEP02-FL@2.5'	2406383-12	Soil	06/25/24 12:00	06/25/24 18:11

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.



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

Lab ID	Page 1 of 1
2406383	

Send Data To:		Send Invoice To:
Client: Noble/Tasman	Project Manager: Jake Whritenour	Company: Noble Energy, Inc.
Address: 6855 W. 119th Ave.	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location: CPL-HARLESS-64N64W1750NE
City/State/Zip: Broomfield/CO/ 80020		AFE#: UWPWE-A27ue-ABN
Phone: 602-881-5716	Project Name: CPL-HARLESS-64N64W1750NE	PO/Billing Codes:
Sampler Name: McKenzie Reynolds	Project Number:	Contact: Miguel Barron

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	
1	PWV01-N@2.5'	6/25/24	1105	3			X			X			X	X	X	X	X		SAR, EC, pH by saturated paste
2	PWV01-E@2.5'		1110																
3	PWV01-S@2.5'		1115																
4	PWV01-B@4'		1120																
5	PWV02-N@2.5'		1125																
6	PWV02-S@2.5'		1130																
7	PWV02-W@2.5'		1135																
8	PWV02-B@4'		1140																
9	SEP01-PL@2.5'		1145																
10	SEP01-FL@2.5'		1150																
11	SEP02-PL@2.5'		1155																
12	SEP02-FL@2.5'		1200																
13																			
14																			
15																			

Relinquished by:	Date/Time: 6/25/2024 1100	Received by: Tasman Lock Box	Date/Time: 6/25/2024 1600	TAT Business Days	Field DO	Notes:
Relinquished by: Tasman Lock Box	Date/Time: 6/25/24 1811	Received by:	Date/Time: 6/25/24 1811	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	Field Turb. <input checked="" type="checkbox"/>	
Temperature Upon Receipt: 8.7	Corrected Temperature:	IR gun #: 1	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2406383

Client: Noble Gasman Client Project ID: CPC-HARLES-64N (HW) 175WNE

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"/>	MTJCE
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 6/25/24
Custodian Printed Name Date/Time



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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

PWV01-S@2.5'
2406383-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/25/24 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHF0886	06/26/24	06/29/24	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: **06/25/24 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0435	109 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0425	106 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0438	109 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/25/24 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHF0884	06/26/24	06/28/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **06/25/24 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.70	77.6 %		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 - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

PWV01-S@2.5'
2406383-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/25/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0864	06/26/24	06/27/24	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: **06/25/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0160	48.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0148	44.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/25/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0897	06/27/24	06/28/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/25/24 11:15**

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

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



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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

PWV01-S@2.5'
2406383-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.28	0.200	mg/kg dry	1	BHF0859	06/26/24	06/28/24	EPA 6020B	
Barium	65.6	0.400	"	"	"	"	"	"	
Cadmium	0.222	0.200	"	"	"	"	"	"	
Copper	8.71	0.400	"	"	"	"	"	"	
Lead	9.36	0.200	"	"	"	"	"	"	
Nickel	8.60	0.400	"	"	"	"	"	"	
Silver	0.0382	0.0200	"	"	"	"	"	"	
Zinc	45.4	0.400	"	"	"	"	"	"	
Selenium	0.269	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/25/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0862	06/26/24	06/26/24	EPA 7196A	

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

Date Sampled: **06/25/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	30.7	0.0500	mg/L dry	1	BHF0975	06/28/24	07/03/24	EPA 6020B	
Magnesium	8.15	0.0500	"	"	"	"	"	"	
Sodium	19.2	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/25/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.796	0.00100	units	1	BHG0119	07/03/24	07/03/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/25/24 11:15**

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 - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

PWV01-S@2.5'
2406383-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	87.5	%	1	BHF0852	06/26/24	06/27/24	Calculation
----------	------	---	---	---------	----------	----------	-------------

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/25/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.347	0.0100	mmhos/cm	1	BHF0978	06/28/24	07/02/24	EPA 120.1	

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

Date Sampled: **06/25/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.65		pH Units	1	BHF0979	06/28/24	07/02/24	EPA 9045D	

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

PWV01-B@4'
2406383-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/25/24 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHF0886	06/26/24	06/29/24	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: **06/25/24 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0416	104 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0417	104 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0426	106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/25/24 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	74	50		mg/kg	1	BHF0884	06/26/24	06/28/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **06/25/24 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.4	91.6 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

PWV01-B@4'
2406383-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/25/24 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0864	06/26/24	06/27/24	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	0.00751	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: **06/25/24 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0177	53.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0167	50.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/25/24 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0897	06/27/24	06/28/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/25/24 11:20**

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

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



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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

PWV01-B@4'
2406383-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.98	0.200	mg/kg dry	1	BHF0859	06/26/24	06/28/24	EPA 6020B	
Barium	40.6	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	5.93	0.400	"	"	"	"	"	"	
Lead	5.56	0.200	"	"	"	"	"	"	
Nickel	5.04	0.400	"	"	"	"	"	"	
Silver	0.0228	0.0200	"	"	"	"	"	"	
Zinc	42.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/25/24 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0862	06/26/24	06/26/24	EPA 7196A	

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

Date Sampled: **06/25/24 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	54.1	0.0500	mg/L dry	1	BHF0975	06/28/24	07/03/24	EPA 6020B	
Magnesium	3.52	0.0500	"	"	"	"	"	"	
Sodium	10.4	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/25/24 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.370	0.00100	units	1	BHG0119	07/03/24	07/03/24	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 - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

PWV01-B@4'
2406383-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/25/24 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	90.2			%	1	BHF0852	06/26/24	06/27/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/25/24 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.269	0.0100		mmhos/cm	1	BHF0978	06/28/24	07/02/24	EPA 120.1	

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

Date Sampled: **06/25/24 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.47			pH Units	1	BHF0979	06/28/24	07/02/24	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

PWV02-N@2.5'
2406383-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/25/24 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHF0886	06/26/24	06/29/24	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: **06/25/24 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0424	106 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0429	107 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0464	116 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/25/24 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHF0884	06/26/24	06/28/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **06/25/24 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.58	76.6 %		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 - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

PWV02-N@2.5'
2406383-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/25/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0864	06/26/24	06/27/24	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: **06/25/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0196	58.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0219	65.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/25/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0897	06/27/24	06/28/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/25/24 11:25**

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 - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

PWV02-N@2.5'
2406383-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.35	0.200	mg/kg dry	1	BHF0859	06/26/24	06/28/24	EPA 6020B	
Barium	50.1	0.400	"	"	"	"	"	"	
Cadmium	0.205	0.200	"	"	"	"	"	"	
Copper	6.11	0.400	"	"	"	"	"	"	
Lead	5.69	0.200	"	"	"	"	"	"	
Nickel	5.20	0.400	"	"	"	"	"	"	
Silver	0.0224	0.0200	"	"	"	"	"	"	
Zinc	30.5	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/25/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0862	06/26/24	06/26/24	EPA 7196A	

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

Date Sampled: **06/25/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	157	0.0500	mg/L dry	1	BHF0975	06/28/24	07/03/24	EPA 6020B	
Magnesium	3.37	0.0500	"	"	"	"	"	"	
Sodium	7.98	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/25/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.172	0.00100	units	1	BHG0119	07/03/24	07/03/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/25/24 11:25**

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 - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

PWV02-N@2.5'
2406383-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	84.1	%	1	BHF0852	06/26/24	06/27/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/25/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.393	0.0100	mmhos/cm	1	BHF0978	06/28/24	07/02/24	EPA 120.1	

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

Date Sampled: **06/25/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.12		pH Units	1	BHF0979	06/28/24	07/02/24	EPA 9045D	

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6855 W. 119th Ave.
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Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

PWV02-B@4'
2406383-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/25/24 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHF0886	06/26/24	06/29/24	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: **06/25/24 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0408	102 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0420	105 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0442	110 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/25/24 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHF0884	06/26/24	06/28/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **06/25/24 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	12.1	97.2 %		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 - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

PWV02-B@4'
2406383-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/25/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0864	06/26/24	06/27/24	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: **06/25/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0172	51.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0179	53.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/25/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0897	06/27/24	06/28/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/25/24 11:40**

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 - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

PWV02-B@4'
2406383-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.11	0.200	mg/kg dry	1	BHF0859	06/26/24	06/28/24	EPA 6020B
Barium	44.5	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	6.15	0.400	"	"	"	"	"	"
Lead	5.80	0.200	"	"	"	"	"	"
Nickel	5.63	0.400	"	"	"	"	"	"
Silver	0.0233	0.0200	"	"	"	"	"	"
Zinc	28.7	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/25/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0862	06/26/24	06/26/24	EPA 7196A	

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

Date Sampled: **06/25/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	29.0	0.0500	mg/L dry	1	BHF0975	06/28/24	07/03/24	EPA 6020B	
Magnesium	4.34	0.0500	"	"	"	"	"	"	
Sodium	12.8	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/25/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.586	0.00100	units	1	BHG0119	07/03/24	07/03/24	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 - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

PWV02-B@4'
2406383-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/25/24 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	90.7			%	1	BHF0852	06/26/24	06/27/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/25/24 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.316	0.0100		mmhos/cm	1	BHF0978	06/28/24	07/02/24	EPA 120.1	

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

Date Sampled: **06/25/24 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.59			pH Units	1	BHF0979	06/28/24	07/02/24	EPA 9045D	

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

SEP01-DL@2.5'
2406383-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/25/24 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHF0886	06/26/24	06/29/24	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: **06/25/24 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0395	98.8 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0413	103 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0422	106 %	50-150	"	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/25/24 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHF0884	06/26/24	06/28/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/25/24 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	9.53	76.3 %	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 - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

SEP01-DL@2.5'
2406383-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/25/24 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Acenaphthene	ND	0.00500	mg/kg	1	BHF0864	06/26/24	06/27/24	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: **06/25/24 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 2-Methylnaphthalene-d10	0.0198	59.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0201	60.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/25/24 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHF0897	06/27/24	06/28/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/25/24 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

SEP01-DL@2.5'
2406383-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.88	0.200	mg/kg dry	1	BHF0859	06/26/24	06/28/24	EPA 6020B	
Barium	43.0	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	6.01	0.400	"	"	"	"	"	"	
Lead	5.73	0.200	"	"	"	"	"	"	
Nickel	4.65	0.400	"	"	"	"	"	"	
Silver	0.0451	0.0200	"	"	"	"	"	"	
Zinc	26.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/25/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0862	06/26/24	06/26/24	EPA 7196A	

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

Date Sampled: **06/25/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	70.5	0.0500	mg/L dry	1	BHF0975	06/28/24	07/03/24	EPA 6020B	
Magnesium	3.57	0.0500	"	"	"	"	"	"	
Sodium	1.32	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/25/24 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0416	0.00100	units	1	BHG0119	07/03/24	07/03/24	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 - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

SEP01-DL@2.5'
2406383-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/25/24 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	90.7			%	1	BHF0852	06/26/24	06/27/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/25/24 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.115	0.0100		mmhos/cm	1	BHF0978	06/28/24	07/02/24	EPA 120.1	

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

Date Sampled: **06/25/24 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.67			pH Units	1	BHF0979	06/28/24	07/02/24	EPA 9045D	

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

SEP01-FL@2.5'
2406383-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/25/24 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHF0886	06/26/24	06/29/24	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: **06/25/24 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0406	102 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0419	105 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0415	104 %	50-150	"	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/25/24 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHF0884	06/26/24	06/28/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/25/24 11:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	9.42	75.3 %	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 - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

SEP01-FL@2.5'
2406383-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/25/24 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Acenaphthene	ND	0.00500		mg/kg	1	BHF0864	06/26/24	06/27/24	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: **06/25/24 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 2-Methylnaphthalene-d10	0.0187	56.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0194	58.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/25/24 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BHF0897	06/27/24	06/28/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/25/24 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

SEP01-FL@2.5'
2406383-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.51	0.200	mg/kg dry	1	BHF0859	06/26/24	06/28/24	EPA 6020B	
Barium	47.3	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	6.42	0.400	"	"	"	"	"	"	
Lead	7.51	0.200	"	"	"	"	"	"	
Nickel	4.84	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	26.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/25/24 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0862	06/26/24	06/26/24	EPA 7196A	

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

Date Sampled: **06/25/24 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	65.3	0.0500	mg/L dry	1	BHF0975	06/28/24	07/03/24	EPA 6020B	
Magnesium	3.80	0.0500	"	"	"	"	"	"	
Sodium	1.78	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/25/24 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0579	0.00100	units	1	BHG0119	07/03/24	07/03/24	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 - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

SEP01-FL@2.5'
2406383-10 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/25/24 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	91.0			%	1	BHF0852	06/26/24	06/27/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/25/24 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.141	0.0100		mmhos/cm	1	BHF0978	06/28/24	07/02/24	EPA 120.1	

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

Date Sampled: **06/25/24 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.81			pH Units	1	BHF0979	06/28/24	07/02/24	EPA 9045D	

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

SEP02-DL@2.5'
2406383-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/25/24 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHF0886	06/26/24	06/29/24	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: **06/25/24 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0415	104 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0426	106 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0420	105 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/25/24 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHF0884	06/26/24	06/28/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **06/25/24 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	10.7	85.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

SEP02-DL@2.5'
2406383-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/25/24 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0864	06/26/24	06/27/24	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: **06/25/24 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0179	53.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0192	57.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/25/24 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0897	06/27/24	06/28/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/25/24 11:55**

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 - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

SEP02-DL@2.5'
2406383-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.03	0.200	mg/kg dry	1	BHF0859	06/26/24	06/28/24	EPA 6020B	
Barium	41.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	6.24	0.400	"	"	"	"	"	"	
Lead	8.12	0.200	"	"	"	"	"	"	
Nickel	4.64	0.400	"	"	"	"	"	"	
Silver	0.0205	0.0200	"	"	"	"	"	"	
Zinc	25.5	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/25/24 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0862	06/26/24	06/26/24	EPA 7196A	

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

Date Sampled: **06/25/24 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	89.1	0.0500	mg/L dry	1	BHF0975	06/28/24	07/03/24	EPA 6020B	
Magnesium	4.26	0.0500	"	"	"	"	"	"	
Sodium	1.52	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/25/24 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0427	0.00100	units	1	BHG0119	07/03/24	07/03/24	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 - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

SEP02-DL@2.5'
2406383-11 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/25/24 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	84.9			%	1	BHF0852	06/26/24	06/27/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/25/24 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.117	0.0100		mmhos/cm	1	BHF0978	06/28/24	07/02/24	EPA 120.1	

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

Date Sampled: **06/25/24 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.70			pH Units	1	BHF0979	06/28/24	07/02/24	EPA 9045D	

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

SEP02-FL@2.5'
2406383-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/25/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHF0886	06/26/24	06/29/24	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: **06/25/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0424	106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0420	105 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0423	106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/25/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHF0884	06/26/24	06/28/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/25/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.6	84.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

SEP02-FL@2.5'
2406383-12 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **06/25/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0864	06/26/24	06/27/24	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: **06/25/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0162	48.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0181	54.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/25/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0897	06/27/24	06/28/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/25/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.
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SEP02-FL@2.5'
2406383-12 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.09	0.200	mg/kg dry	1	BHF0859	06/26/24	06/28/24	EPA 6020B
Barium	43.0	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	6.85	0.400	"	"	"	"	"	"
Lead	5.40	0.200	"	"	"	"	"	"
Nickel	4.70	0.400	"	"	"	"	"	"
Silver	0.0207	0.0200	"	"	"	"	"	"
Zinc	28.4	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/25/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0862	06/26/24	06/26/24	EPA 7196A	

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

Date Sampled: **06/25/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	57.7	0.0500	mg/L dry	1	BHF0975	06/28/24	07/03/24	EPA 6020B	
Magnesium	3.11	0.0500	"	"	"	"	"	"	
Sodium	1.55	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/25/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0538	0.00100	units	1	BHG0119	07/03/24	07/03/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project Number: [none]
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07/09/24 10:54

SEP02-FL@2.5'
2406383-12 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/25/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.4		%	1	BHF0852	06/26/24	06/27/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/25/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0930	0.0100	mmhos/cm	1	BHF0978	06/28/24	07/02/24	EPA 120.1	

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

Date Sampled: **06/25/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.76		pH Units	1	BHF0979	06/28/24	07/02/24	EPA 9045D	

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Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

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 BHF0886 - EPA 5030 Soil MS

Blank (BHF0886-BLK1)

Prepared: 06/26/24 Analyzed: 06/29/24

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	0.0390		"	0.0400		97.4	50-150				
Surrogate: Toluene-d8	0.0413		"	0.0400		103	50-150				
Surrogate: 4-Bromofluorobenzene	0.0419		"	0.0400		105	50-150				

LCS (BHF0886-BS1)

Prepared: 06/26/24 Analyzed: 06/29/24

Benzene	0.0979	0.0020	mg/kg	0.100		97.9	70-130				
Toluene	0.0977	0.0050	"	0.100		97.7	70-130				
Ethylbenzene	0.102	0.0050	"	0.100		102	70-130				
m,p-Xylene	0.188	0.010	"	0.200		94.0	70-130				
o-Xylene	0.0882	0.0050	"	0.100		88.2	70-130				
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100		101	70-130				
1,3,5-Trimethylbenzene	0.0994	0.0050	"	0.100		99.4	70-130				
Naphthalene	0.101	0.0038	"	0.100		101	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0400		99.6	50-150				
Surrogate: Toluene-d8	0.0424		"	0.0400		106	50-150				
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.4	50-150				

Matrix Spike (BHF0886-MS1)

Source: 2406363-01

Prepared: 06/26/24 Analyzed: 06/29/24

Benzene	0.0741	0.0020	mg/kg	0.100	ND	74.1	70-130				
Toluene	0.0751	0.0050	"	0.100	ND	75.1	70-130				
Ethylbenzene	0.0896	0.0050	"	0.100	ND	89.6	70-130				
m,p-Xylene	0.158	0.010	"	0.200	ND	79.1	70-130				
o-Xylene	0.0758	0.0050	"	0.100	ND	75.8	70-130				
1,2,4-Trimethylbenzene	0.0787	0.0050	"	0.100	ND	78.7	70-130				
1,3,5-Trimethylbenzene	0.0907	0.0050	"	0.100	ND	90.7	70-130				
Naphthalene	0.0495	0.0038	"	0.100	ND	49.5	70-130				QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0400		"	0.0400		100	50-150				
Surrogate: Toluene-d8	0.0418		"	0.0400		105	50-150				
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.7	50-150				

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Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

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 BHF0886 - EPA 5030 Soil MS

Matrix Spike Dup (BHF0886-MSD1)	Source: 2406363-01			Prepared: 06/26/24 Analyzed: 06/29/24						
Benzene	0.0760	0.0020	mg/kg	0.100	ND	76.0	70-130	2.52	30	
Toluene	0.0758	0.0050	"	0.100	ND	75.8	70-130	0.994	30	
Ethylbenzene	0.0885	0.0050	"	0.100	ND	88.5	70-130	1.21	30	
m,p-Xylene	0.158	0.010	"	0.200	ND	79.1	70-130	0.00	30	
o-Xylene	0.0767	0.0050	"	0.100	ND	76.7	70-130	1.10	30	
1,2,4-Trimethylbenzene	0.0796	0.0050	"	0.100	ND	79.6	70-130	1.10	30	
1,3,5-Trimethylbenzene	0.0873	0.0050	"	0.100	ND	87.3	70-130	3.81	30	
Naphthalene	0.0498	0.0038	"	0.100	ND	49.8	70-130	0.483	30	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0400		99.5	50-150			
Surrogate: Toluene-d8	0.0423		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	50-150			

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Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BHF0884 - EPA 3550A

Blank (BHF0884-BLK1)

Prepared: 06/26/24 Analyzed: 06/28/24

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: <i>o</i> -Terphenyl	15.7		"	12.5		126		30-150		

LCS (BHF0884-BS1)

Prepared: 06/26/24 Analyzed: 06/28/24

C10-C28 (DRO)	646	50	mg/kg	500		129		70-130		
Surrogate: <i>o</i> -Terphenyl	16.9		"	12.5		136		30-150		

Matrix Spike (BHF0884-MS1)

Source: 2406363-01

Prepared: 06/26/24 Analyzed: 06/28/24

C10-C28 (DRO)	617	50	mg/kg	500	14.8	120		70-130		
Surrogate: <i>o</i> -Terphenyl	13.3		"	12.5		107		30-150		

Matrix Spike Dup (BHF0884-MSD1)

Source: 2406363-01

Prepared: 06/26/24 Analyzed: 06/28/24

C10-C28 (DRO)	653	50	mg/kg	500	14.8	128		70-130	5.60	20
Surrogate: <i>o</i> -Terphenyl	12.6		"	12.5		101		30-150		

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Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

PAH by EPA Method 8270D SIM - Quality Control

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

Batch BHF0864 - EPA 5030 Soil MS

Blank (BHF0864-BLK1)

Prepared: 06/26/24 Analyzed: 06/27/24

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	0.0200		"	0.0333	60.0	40-150				
Surrogate: Fluoranthene-d10	0.0209		"	0.0333	62.6	40-150				

LCS (BHF0864-BS1)

Prepared: 06/26/24 Analyzed: 06/27/24

Acenaphthene	0.0182	0.00500	mg/kg	0.0333	54.7	31-137				
Anthracene	0.0183	0.00500	"	0.0333	55.0	30-120				
Benzo (a) anthracene	0.0220	0.00500	"	0.0333	66.0	30-120				
Benzo (a) pyrene	0.0193	0.00500	"	0.0333	57.8	30-120				
Benzo (b) fluoranthene	0.0208	0.00500	"	0.0333	62.3	30-120				
Benzo (k) fluoranthene	0.0202	0.00500	"	0.0333	60.5	30-120				
Chrysene	0.0206	0.00500	"	0.0333	61.9	30-120				
Dibenz (a,h) anthracene	0.0137	0.00500	"	0.0333	41.2	30-120				
Fluoranthene	0.0187	0.00500	"	0.0333	56.2	30-120				
Fluorene	0.0215	0.00500	"	0.0333	64.6	30-120				
Indeno (1,2,3-cd) pyrene	0.0228	0.00500	"	0.0333	68.4	30-120				
Pyrene	0.0210	0.00500	"	0.0333	62.9	35-142				
1-Methylnaphthalene	0.0200	0.00500	"	0.0333	60.0	35-142				
2-Methylnaphthalene	0.0173	0.00500	"	0.0333	52.0	35-142				
Surrogate: 2-Methylnaphthalene-d10	0.0194		"	0.0333	58.2	40-150				
Surrogate: Fluoranthene-d10	0.0194		"	0.0333	58.2	40-150				

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Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

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 BHF0864 - EPA 5030 Soil MS

Matrix Spike (BHF0864-MS1)	Source: 2406347-01			Prepared: 06/26/24 Analyzed: 06/27/24						
Acenaphthene	0.0251	0.00500	mg/kg	0.0333	ND	75.3	31-137			
Anthracene	0.0248	0.00500	"	0.0333	ND	74.4	30-120			
Benzo (a) anthracene	0.0283	0.00500	"	0.0333	ND	85.0	30-120			
Benzo (a) pyrene	0.0254	0.00500	"	0.0333	ND	76.1	30-120			
Benzo (b) fluoranthene	0.0271	0.00500	"	0.0333	ND	81.3	30-120			
Benzo (k) fluoranthene	0.0263	0.00500	"	0.0333	ND	78.8	30-120			
Chrysene	0.0271	0.00500	"	0.0333	ND	81.2	30-120			
Dibenz (a,h) anthracene	0.0180	0.00500	"	0.0333	ND	53.9	30-120			
Fluoranthene	0.0251	0.00500	"	0.0333	ND	75.4	30-120			
Fluorene	0.0264	0.00500	"	0.0333	ND	79.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0178	0.00500	"	0.0333	ND	53.3	30-120			
Pyrene	0.0279	0.00500	"	0.0333	ND	83.8	35-142			
1-Methylnaphthalene	0.0249	0.00500	"	0.0333	ND	74.6	15-130			
2-Methylnaphthalene	0.0225	0.00500	"	0.0333	ND	67.6	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0263</i>		<i>"</i>	<i>0.0333</i>		<i>79.0</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0267</i>		<i>"</i>	<i>0.0333</i>		<i>80.1</i>	<i>40-150</i>			

Matrix Spike Dup (BHF0864-MSD1)	Source: 2406347-01			Prepared: 06/26/24 Analyzed: 06/27/24						
Acenaphthene	0.0197	0.00500	mg/kg	0.0333	ND	59.0	31-137	24.4	30	
Anthracene	0.0195	0.00500	"	0.0333	ND	58.4	30-120	24.2	30	
Benzo (a) anthracene	0.0230	0.00500	"	0.0333	ND	69.0	30-120	20.8	30	
Benzo (a) pyrene	0.0206	0.00500	"	0.0333	ND	61.8	30-120	20.8	30	
Benzo (b) fluoranthene	0.0220	0.00500	"	0.0333	ND	66.1	30-120	20.6	30	
Benzo (k) fluoranthene	0.0214	0.00500	"	0.0333	ND	64.3	30-120	20.3	30	
Chrysene	0.0220	0.00500	"	0.0333	ND	66.1	30-120	20.5	30	
Dibenz (a,h) anthracene	0.0153	0.00500	"	0.0333	ND	45.9	30-120	16.1	30	
Fluoranthene	0.0201	0.00500	"	0.0333	ND	60.2	30-120	22.4	30	
Fluorene	0.0234	0.00500	"	0.0333	ND	70.3	30-120	11.8	30	
Indeno (1,2,3-cd) pyrene	0.0153	0.00500	"	0.0333	ND	45.8	30-120	15.1	30	
Pyrene	0.0236	0.00500	"	0.0333	ND	70.8	35-142	16.8	30	
1-Methylnaphthalene	0.0210	0.00500	"	0.0333	ND	63.1	15-130	16.7	50	
2-Methylnaphthalene	0.0186	0.00500	"	0.0333	ND	55.8	15-130	19.2	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0214</i>		<i>"</i>	<i>0.0333</i>		<i>64.2</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0206</i>		<i>"</i>	<i>0.0333</i>		<i>61.9</i>	<i>40-150</i>			

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 - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

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 BHF0897 - EPA 3050B

Blank (BHF0897-BLK1)

Prepared: 06/27/24 Analyzed: 06/28/24

Boron ND 2.00 mg/L

LCS (BHF0897-BS1)

Prepared: 06/27/24 Analyzed: 06/28/24

Boron 4.81 2.00 mg/L 5.00 96.1 80-120

Duplicate (BHF0897-DUP1)

Source: 2406383-03

Prepared: 06/27/24 Analyzed: 07/01/24

Boron 0.197 2.00 mg/L 0.0708 94.2 20 QR-01

Matrix Spike (BHF0897-MS1)

Source: 2406383-03

Prepared: 06/27/24 Analyzed: 07/01/24

Boron 5.53 2.00 mg/L 4.98 0.0708 110 75-125

Matrix Spike Dup (BHF0897-MSD1)

Source: 2406383-03

Prepared: 06/27/24 Analyzed: 07/01/24

Boron 5.91 2.00 mg/L 4.98 0.0708 117 75-125 6.74 25

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

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 BHF0859 - EPA 3050B

Blank (BHF0859-BLK1)

Prepared: 06/26/24 Analyzed: 06/28/24

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 (BHF0859-BS1)

Prepared: 06/26/24 Analyzed: 06/28/24

Arsenic	37.5	0.200	mg/kg wet	40.0	93.8	80-120
Barium	38.6	0.400	"	40.0	96.4	80-120
Cadmium	1.93	0.200	"	2.00	96.4	80-120
Copper	38.0	0.400	"	40.0	94.9	80-120
Lead	19.2	0.200	"	20.0	95.9	80-120
Nickel	37.7	0.400	"	40.0	94.3	80-120
Silver	1.94	0.0200	"	2.00	97.1	80-120
Zinc	37.6	0.400	"	40.0	94.0	80-120
Selenium	4.34	0.260	"	4.00	109	80-120

Duplicate (BHF0859-DUP1)

Source: 2406380-01

Prepared: 06/26/24 Analyzed: 06/28/24

Arsenic	1.94	0.200	mg/kg dry	1.45	29.0	20	QR-01
Barium	63.7	0.400	"	54.4	15.9	20	
Cadmium	0.123	0.200	"	0.0949	25.6	20	QR-01
Copper	4.90	0.400	"	3.07	45.8	20	QR-04
Lead	4.94	0.200	"	3.37	37.9	20	QR-04
Nickel	5.52	0.400	"	3.73	38.6	20	QR-04
Silver	0.0153	0.0200	"	0.0136	12.3	20	
Zinc	20.0	0.400	"	13.3	40.1	20	QR-04
Selenium	ND	0.260	"	ND		20	

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

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 BHF0859 - EPA 3050B

Matrix Spike (BHF0859-MS1)

Source: 2406380-01

Prepared: 06/26/24 Analyzed: 06/28/24

Arsenic	40.0	0.179	mg/kg dry	40.9	1.45	94.2	75-125		
Barium	95.5	0.357	"	40.9	54.4	100	75-125		
Cadmium	2.08	0.179	"	2.05	0.0949	97.1	75-125		
Copper	41.5	0.357	"	40.9	3.07	94.0	75-125		
Lead	22.7	0.179	"	20.5	3.37	94.3	75-125		
Nickel	42.2	0.357	"	40.9	3.73	94.1	75-125		
Silver	1.98	0.0179	"	2.05	0.0136	96.3	75-125		
Zinc	51.7	0.357	"	40.9	13.3	94.0	75-125		
Selenium	4.25	0.232	"	4.09	ND	104	75-125		

Matrix Spike Dup (BHF0859-MSD1)

Source: 2406380-01

Prepared: 06/26/24 Analyzed: 06/28/24

Arsenic	43.2	0.200	mg/kg dry	44.4	1.45	94.1	75-125	7.74	25
Barium	100	0.400	"	44.4	54.4	103	75-125	4.71	25
Cadmium	2.23	0.200	"	2.22	0.0949	96.1	75-125	6.84	25
Copper	44.3	0.400	"	44.4	3.07	92.8	75-125	6.47	25
Lead	24.3	0.200	"	22.2	3.37	94.4	75-125	7.06	25
Nickel	45.1	0.400	"	44.4	3.73	93.3	75-125	6.66	25
Silver	2.13	0.0200	"	2.22	0.0136	95.5	75-125	7.29	25
Zinc	55.1	0.400	"	44.4	13.3	94.3	75-125	6.37	25
Selenium	4.45	0.260	"	4.44	ND	100	75-125	4.70	25

Post Spike (BHF0859-PS1)

Source: 2406380-01

Prepared: 06/26/24 Analyzed: 06/28/24

Arsenic	105		ug/l	100	3.31	101	75-125		
Barium	220		"	100	124	95.8	75-125		
Cadmium	5.30		"	5.00	0.217	102	75-125		
Copper	106		"	100	7.03	98.5	75-125		
Lead	56.7		"	50.0	7.70	98.1	75-125		
Nickel	108		"	100	8.54	99.3	75-125		
Silver	5.12		"	5.00	0.0310	102	75-125		
Zinc	130		"	100	30.4	99.6	75-125		
Selenium	10.7		"	10.0	0.0670	106	75-125		

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHF0862 - 3060A Mod

Blank (BHF0862-BLK1)

Prepared & Analyzed: 06/26/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHF0862-BS1)

Prepared & Analyzed: 06/26/24

Chromium, Hexavalent 25.0 0.30 mg/kg wet 25.0 99.8 80-120

Duplicate (BHF0862-DUP1)

Source: 2406383-01

Prepared & Analyzed: 06/26/24

Chromium, Hexavalent ND 0.30 mg/kg dry 20

Matrix Spike (BHF0862-MS1)

Source: 2406383-01

Prepared & Analyzed: 06/26/24

Chromium, Hexavalent 27.2 0.30 mg/kg dry 29.5 92.2 75-125

Matrix Spike Dup (BHF0862-MSD1)

Source: 2406383-01

Prepared & Analyzed: 06/26/24

Chromium, Hexavalent 27.6 0.30 mg/kg dry 29.5 93.8 75-125 1.72 20

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

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 BHF0975 - General Preparation

Blank (BHF0975-BLK1)

Prepared: 06/28/24 Analyzed: 07/03/24

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

LCS (BHF0975-BS1)

Prepared: 06/28/24 Analyzed: 07/03/24

Calcium	5.63	0.0500	mg/L wet	5.00		113	70-130			
Magnesium	5.06	0.0500	"	5.00		101	70-130			
Sodium	5.13	0.0500	"	5.00		103	70-130			

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
 Project Manager: Jacob Whritenour

Reported:
 07/09/24 10:54

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 BHF0852 - General Preparation

Duplicate (BHF0852-DUP2)	Source: 2406347-01		Prepared: 06/26/24 Analyzed: 06/27/24	
% Solids	91.9	%	91.3	0.631 20

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

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 BHF0978 - General Preparation

Blank (BHF0978-BLK1)

Prepared: 06/28/24 Analyzed: 07/02/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHF0978-BS1)

Prepared: 06/28/24 Analyzed: 07/02/24

Specific Conductance (EC) 0.147 0.0100 mmhos/cm 0.150 98.2 95-105

Duplicate (BHF0978-DUP1)

Source: 2406367-01

Prepared: 06/28/24 Analyzed: 07/02/24

Specific Conductance (EC) 0.288 0.0100 mmhos/cm 0.285 1.22 20

Summit Scientific

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



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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

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 BHF0979 - General Preparation

LCS (BHF0979-BS1)

Prepared: 06/28/24 Analyzed: 07/02/24

pH	9.19	pH Units	9.18	100	95-105
----	------	----------	------	-----	--------

Duplicate (BHF0979-DUP1)

Source: 2406367-01

Prepared: 06/28/24 Analyzed: 07/02/24

pH	8.96	pH Units	8.96	0.00	20
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Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
07/09/24 10:54

Notes and Definitions

- QR-04 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- QR-01 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 10, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - CPC-Harless 64N64W 17SWNE

Work Order #2406414

Enclosed are the results of analyses for samples received by Summit Scientific on 06/26/24 18:03. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Natalie Tessier For Paul Shrewsbury

President



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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: UWRWE-A2766-ABN

Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST01@0-6"	2406414-01	Soil	06/26/24 10:30	06/26/24 18:03
AST02@0-6"	2406414-02	Soil	06/26/24 10:35	06/26/24 18:03
BKG01@0-6"	2406414-03	Soil	06/26/24 10:40	06/26/24 18:03
BKG01@2.5'	2406414-04	Soil	06/26/24 10:45	06/26/24 18:03
BKG01@4'	2406414-05	Soil	06/26/24 10:50	06/26/24 18:03

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.

Send Data To:		Send Invoice To:
Client: Noble/Tasman	Project Manager: Jake Whritenour	Company: Noble Energy, Inc.
Address: 6855 W. 119th Ave.	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location: <u>CPC-HARLESS-LYNLA W 175WNE</u>
City/State/Zip: Broomfield/CO/ 80020		AFE#: <u>UWPWE-A271de-ABN</u>
Phone: 602-881-5716	Project Name: <u>CPC-HARLESS-LYNLA W 175WNE</u>	PO/Billing Codes:
Sampler Name: McKenzie Reynolds	Project Number:	Contact: <u>Miguel Barron</u>

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested							Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS		HOLD
1	AST0100-0"	6/26/24	1030	3			X			X			X	X	X	X	X	X		SAR, EC, pH by saturated paste
2	AST0200-0"	I	1035	I			I			I			I	I	I	I	I	I		
3	BK0100-0"	I	1040	I			I			I			I	I	I	I	I	I		
4	BK0162.5'	I	1045	I			I			I			I	I	I	I	I	I		
5	BK0104'	I	1050	I			I			I			I	I	I	I	I	I		
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: <u>[Signature]</u>	Date/Time: <u>6/26/2024 1300</u>	Received by: Tasman Lock Box	Date/Time: <u>6/26/2024 1300</u>	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <u>Tasman Lock Box</u>	Date/Time: <u>6/26/24 1800</u>	Received by: <u>[Signature]</u>	Date/Time: <u>6/26/24 1803</u>	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: <u>8.0</u>	Corrected Temperature: <u>8</u>	IR gun #:		HNO3 lot #:		

S₂

Sample Receipt Checklist

S2 Work Order# 2406114

Client: Noble Farm Client Project ID: CPC-Harless-41N 64W 17SWNE

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"/>	<u>and CE</u>
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 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.

SN
Custodian Printed Name

6/26/24
Date/Time



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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

AST01@0-6"
2406414-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/26/24 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHF0925	06/27/24	06/29/24	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: **06/26/24 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0400	100 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0406	101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0388	97.0 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/26/24 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHF0923	06/27/24	06/29/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **06/26/24 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.1	88.6 %		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 - CPC-Harless 64N64W 17SWNE
Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

AST01@0-6"
2406414-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/26/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0899	06/27/24	06/28/24	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: **06/26/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0185	55.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0193	57.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/26/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0907	06/27/24	06/28/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/26/24 10:30**

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 - CPC-Harless 64N64W 17SWNE
Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

AST01@0-6"
2406414-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.62	0.179	mg/kg dry	1	BHF0915	06/27/24	07/02/24	EPA 6020B	
Barium	39.8	0.357	"	"	"	"	"	"	
Cadmium	ND	0.179	"	"	"	"	"	"	
Copper	4.12	0.357	"	"	"	"	"	"	
Lead	6.19	0.179	"	"	"	"	"	"	
Nickel	3.60	0.357	"	"	"	"	"	"	
Silver	0.0286	0.0179	"	"	"	"	"	"	
Zinc	18.9	0.357	"	"	"	"	"	"	
Selenium	ND	0.232	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/26/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0941	06/28/24	06/28/24	EPA 7196A	

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

Date Sampled: **06/26/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	121	0.0500	mg/L dry	1	BHG0074	07/02/24	07/03/24	EPA 6020B	
Magnesium	38.7	0.0500	"	"	"	"	"	"	
Sodium	37.4	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/26/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.758	0.00100	units	1	BHG0161	07/08/24	07/08/24	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 - CPC-Harless 64N64W 17SWNE
Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

AST01@0-6"
2406414-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/26/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.2		%	1	BHF0909	06/27/24	06/27/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/26/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.795	0.0100	mmhos/cm	1	BHG0075	07/02/24	07/03/24	EPA 120.1	

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

Date Sampled: **06/26/24 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.79		pH Units	1	BHG0076	07/02/24	07/03/24	EPA 9045D	

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE
Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

AST02@0-6"
2406414-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/26/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHF0925	06/27/24	06/29/24	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: **06/26/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0384	96.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0394	98.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0390	97.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/26/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHF0923	06/27/24	06/29/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/26/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	13.8	110 %	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 - CPC-Harless 64N64W 17SWNE
Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

AST02@0-6"
2406414-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/26/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0899	06/27/24	06/28/24	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: **06/26/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0194	58.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0190	57.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/26/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0907	06/27/24	06/28/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/26/24 10:35**

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 - CPC-Harless 64N64W 17SWNE
Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

AST02@0-6"
2406414-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.78	0.200	mg/kg dry	1	BHF0915	06/27/24	07/02/24	EPA 6020B	
Barium	15.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.04	0.400	"	"	"	"	"	"	
Lead	2.73	0.200	"	"	"	"	"	"	
Nickel	2.09	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	9.59	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/26/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0941	06/28/24	06/28/24	EPA 7196A	

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

Date Sampled: **06/26/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	72.5	0.0500	mg/L dry	1	BHG0074	07/02/24	07/03/24	EPA 6020B	
Magnesium	21.5	0.0500	"	"	"	"	"	"	
Sodium	31.7	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/26/24 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.840	0.00100	units	1	BHG0161	07/08/24	07/08/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Project: Noble - CPC-Harless 64N64W 17SWNE
Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

AST02@0-6"
2406414-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/26/24 10:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	98.1			%	1	BHF0909	06/27/24	06/27/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/26/24 10:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.989	0.0100		mmhos/cm	1	BHG0075	07/02/24	07/03/24	EPA 120.1	

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

Date Sampled: **06/26/24 10:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.00			pH Units	1	BHG0076	07/02/24	07/03/24	EPA 9045D	

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

BKG01@0-6''
2406414-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/26/24 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHF0907	06/27/24	06/28/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/26/24 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.62	0.200	mg/kg dry	1	BHF0915	06/27/24	07/02/24	EPA 6020B	
Barium	39.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.76	0.400	"	"	"	"	"	"	
Lead	5.18	0.200	"	"	"	"	"	"	
Nickel	3.22	0.400	"	"	"	"	"	"	
Silver	0.0200	0.0200	"	"	"	"	"	"	
Zinc	14.5	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/26/24 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0941	06/28/24	06/28/24	EPA 7196A	

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

Date Sampled: **06/26/24 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	208	0.0500	mg/L dry	1	BHG0074	07/02/24	07/03/24	EPA 6020B	
Magnesium	75.1	0.0500	"	"	"	"	"	"	
Sodium	79.0	0.0500	"	"	"	"	"	"	

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE
Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

BKG01@0-6''
2406414-03 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **06/26/24 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.19	0.00100	units	1	BHG0161	07/08/24	07/08/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/26/24 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.8		%	1	BHF0909	06/27/24	06/27/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/26/24 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.849	0.0100	mmhos/cm	1	BHG0075	07/02/24	07/03/24	EPA 120.1	

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

Date Sampled: **06/26/24 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.52		pH Units	1	BHG0076	07/02/24	07/03/24	EPA 9045D	

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE
Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

BKG01@2.5'
2406414-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/26/24 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHF0907	06/27/24	06/28/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/26/24 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.34	0.180	mg/kg dry	1	BHF0915	06/27/24	07/02/24	EPA 6020B	
Barium	43.4	0.360	"	"	"	"	"	"	
Cadmium	ND	0.180	"	"	"	"	"	"	
Copper	3.25	0.360	"	"	"	"	"	"	
Lead	5.12	0.180	"	"	"	"	"	"	
Nickel	3.71	0.360	"	"	"	"	"	"	
Silver	0.0294	0.0180	"	"	"	"	"	"	
Zinc	13.5	0.360	"	"	"	"	"	"	
Selenium	ND	0.234	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/26/24 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0941	06/28/24	06/28/24	EPA 7196A	

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

Date Sampled: **06/26/24 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	37.2	0.0500	mg/L dry	1	BHG0074	07/02/24	07/03/24	EPA 6020B	
Magnesium	9.97	0.0500	"	"	"	"	"	"	
Sodium	96.0	0.0500	"	"	"	"	"	"	

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE
Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

BKG01@2.5'
2406414-04 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **06/26/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.61	0.00100	units	1	BHG0161	07/08/24	07/08/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/26/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.8		%	1	BHF0909	06/27/24	06/27/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/26/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.843	0.0100	mmhos/cm	1	BHG0075	07/02/24	07/03/24	EPA 120.1	

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

Date Sampled: **06/26/24 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.72		pH Units	1	BHG0076	07/02/24	07/03/24	EPA 9045D	

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

BKG01@4'
2406414-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/26/24 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BHF0907	06/27/24	06/28/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/26/24 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.98	0.200	mg/kg dry	1	BHF0915	06/27/24	07/02/24	EPA 6020B	
Barium	42.4	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.13	0.400	"	"	"	"	"	"	
Lead	4.33	0.200	"	"	"	"	"	"	
Nickel	3.98	0.400	"	"	"	"	"	"	
Silver	0.0265	0.0200	"	"	"	"	"	"	
Zinc	12.9	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/26/24 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0941	06/28/24	06/28/24	EPA 7196A	

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

Date Sampled: **06/26/24 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	420	0.0500	mg/L dry	1	BHG0074	07/02/24	07/03/24	EPA 6020B	
Magnesium	105	0.0500	"	"	"	"	"	"	
Sodium	230	0.0500	"	"	"	"	"	"	

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

BKG01@4'
2406414-05 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **06/26/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.60	0.00100	units	1	BHG0161	07/08/24	07/08/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/26/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.7		%	1	BHF0909	06/27/24	06/27/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/26/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.99	0.0100	mmhos/cm	1	BHG0075	07/02/24	07/03/24	EPA 120.1	

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

Date Sampled: **06/26/24 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.50		pH Units	1	BHG0076	07/02/24	07/03/24	EPA 9045D	

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

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 BHF0925 - EPA 5030 Soil MS

Blank (BHF0925-BLK1)

Prepared: 06/27/24 Analyzed: 06/28/24

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	0.0405		"	0.0400		101	50-150				
Surrogate: Toluene-d8	0.0401		"	0.0400		100	50-150				
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	50-150				

LCS (BHF0925-BS1)

Prepared: 06/27/24 Analyzed: 06/28/24

Benzene	0.103	0.0020	mg/kg	0.100		103	70-130				
Toluene	0.101	0.0050	"	0.100		101	70-130				
Ethylbenzene	0.113	0.0050	"	0.100		113	70-130				
m,p-Xylene	0.211	0.010	"	0.200		105	70-130				
o-Xylene	0.103	0.0050	"	0.100		103	70-130				
1,2,4-Trimethylbenzene	0.102	0.0050	"	0.100		102	70-130				
1,3,5-Trimethylbenzene	0.101	0.0050	"	0.100		101	70-130				
Naphthalene	0.100	0.0038	"	0.100		100	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0389		"	0.0400		97.2	50-150				
Surrogate: Toluene-d8	0.0400		"	0.0400		99.9	50-150				
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.5	50-150				

Matrix Spike (BHF0925-MS1)

Source: 2406401-01

Prepared: 06/27/24 Analyzed: 06/29/24

Benzene	0.0913	0.0020	mg/kg	0.100	ND	91.3	70-130				
Toluene	0.0891	0.0050	"	0.100	ND	89.1	70-130				
Ethylbenzene	0.0911	0.0050	"	0.100	ND	91.1	70-130				
m,p-Xylene	0.176	0.010	"	0.200	ND	87.9	70-130				
o-Xylene	0.0848	0.0050	"	0.100	ND	84.8	70-130				
1,2,4-Trimethylbenzene	0.0779	0.0050	"	0.100	ND	77.9	70-130				
1,3,5-Trimethylbenzene	0.0780	0.0050	"	0.100	ND	78.0	70-130				
Naphthalene	0.0737	0.0038	"	0.100	ND	73.7	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0403		"	0.0400		101	50-150				
Surrogate: Toluene-d8	0.0395		"	0.0400		98.8	50-150				
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.7	50-150				

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

Project: Noble - CPC-Harless 64N64W 17SWNE
Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

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 BHF0925 - EPA 5030 Soil MS

Matrix Spike Dup (BHF0925-MSD1)	Source: 2406401-01			Prepared: 06/27/24 Analyzed: 06/29/24					
Benzene	0.0904	0.0020	mg/kg	0.100	ND	90.4	70-130	0.957	30
Toluene	0.0879	0.0050	"	0.100	ND	87.9	70-130	1.42	30
Ethylbenzene	0.0943	0.0050	"	0.100	ND	94.3	70-130	3.43	30
m,p-Xylene	0.182	0.010	"	0.200	ND	91.0	70-130	3.44	30
o-Xylene	0.0873	0.0050	"	0.100	ND	87.3	70-130	2.93	30
1,2,4-Trimethylbenzene	0.0812	0.0050	"	0.100	ND	81.2	70-130	4.22	30
1,3,5-Trimethylbenzene	0.0808	0.0050	"	0.100	ND	80.8	70-130	3.48	30
Naphthalene	0.0744	0.0038	"	0.100	ND	74.4	70-130	0.891	30
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0401</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>50-150</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0388</i>		<i>"</i>	<i>0.0400</i>		<i>97.0</i>	<i>50-150</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>		<i>98.6</i>	<i>50-150</i>		

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - CPC-Harless 64N64W 17SWNE
Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BHF0923 - EPA 3550A

Blank (BHF0923-BLK1)

Prepared: 06/27/24 Analyzed: 06/28/24

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: <i>o</i> -Terphenyl	15.2		"	12.5		122		30-150		

LCS (BHF0923-BS1)

Prepared: 06/27/24 Analyzed: 07/01/24

C10-C28 (DRO)	552	50	mg/kg	500		110		70-130		
Surrogate: <i>o</i> -Terphenyl	14.0		"	12.5		112		30-150		

Matrix Spike (BHF0923-MS1)

Source: 2406401-01

Prepared: 06/27/24 Analyzed: 07/01/24

C10-C28 (DRO)	646	50	mg/kg	500	36.2	122		70-130		
Surrogate: <i>o</i> -Terphenyl	16.6		"	12.5		133		30-150		

Matrix Spike Dup (BHF0923-MSD1)

Source: 2406401-01

Prepared: 06/27/24 Analyzed: 07/01/24

C10-C28 (DRO)	534	50	mg/kg	500	36.2	99.6		70-130	19.0	20
Surrogate: <i>o</i> -Terphenyl	16.6		"	12.5		133		30-150		

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

Project: Noble - CPC-Harless 64N64W 17SWNE
Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

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 BHF0899 - EPA 5030 Soil MS

Blank (BHF0899-BLK1)

Prepared & Analyzed: 06/27/24

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	0.0249		"	0.0333		74.7	40-150			
Surrogate: Fluoranthene-d10	0.0171		"	0.0333		51.4	40-150			

LCS (BHF0899-BS1)

Prepared & Analyzed: 06/27/24

Acenaphthene	0.0197	0.00500	mg/kg	0.0333		59.0	31-137			
Anthracene	0.0195	0.00500	"	0.0333		58.5	30-120			
Benzo (a) anthracene	0.0201	0.00500	"	0.0333		60.3	30-120			
Benzo (a) pyrene	0.0184	0.00500	"	0.0333		55.3	30-120			
Benzo (b) fluoranthene	0.0180	0.00500	"	0.0333		54.1	30-120			
Benzo (k) fluoranthene	0.0177	0.00500	"	0.0333		53.2	30-120			
Chrysene	0.0193	0.00500	"	0.0333		57.9	30-120			
Dibenz (a,h) anthracene	0.0198	0.00500	"	0.0333		59.3	30-120			
Fluoranthene	0.0194	0.00500	"	0.0333		58.3	30-120			
Fluorene	0.0197	0.00500	"	0.0333		59.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0157	0.00500	"	0.0333		47.2	30-120			
Pyrene	0.0200	0.00500	"	0.0333		60.0	35-142			
1-Methylnaphthalene	0.0261	0.00500	"	0.0333		78.3	35-142			
2-Methylnaphthalene	0.0243	0.00500	"	0.0333		73.0	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0254		"	0.0333		76.2	40-150			
Surrogate: Fluoranthene-d10	0.0186		"	0.0333		55.7	40-150			

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

Project: Noble - CPC-Harless 64N64W 17SWNE
Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

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 BHF0899 - EPA 5030 Soil MS

Matrix Spike (BHF0899-MS1)	Source: 2406388-01			Prepared & Analyzed: 06/27/24						
Acenaphthene	0.0165	0.00500	mg/kg	0.0333	ND	49.6	31-137			
Anthracene	0.0161	0.00500	"	0.0333	ND	48.4	30-120			
Benzo (a) anthracene	0.0178	0.00500	"	0.0333	ND	53.4	30-120			
Benzo (a) pyrene	0.0161	0.00500	"	0.0333	ND	48.3	30-120			
Benzo (b) fluoranthene	0.0157	0.00500	"	0.0333	ND	47.2	30-120			
Benzo (k) fluoranthene	0.0155	0.00500	"	0.0333	ND	46.4	30-120			
Chrysene	0.0170	0.00500	"	0.0333	ND	50.9	30-120			
Dibenz (a,h) anthracene	0.0177	0.00500	"	0.0333	ND	53.1	30-120			
Fluoranthene	0.0176	0.00500	"	0.0333	ND	52.8	30-120			
Fluorene	0.0167	0.00500	"	0.0333	ND	50.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0142	0.00500	"	0.0333	ND	42.5	30-120			
Pyrene	0.0172	0.00500	"	0.0333	ND	51.5	35-142			
1-Methylnaphthalene	0.0235	0.00500	"	0.0333	ND	70.4	15-130			
2-Methylnaphthalene	0.0210	0.00500	"	0.0333	ND	62.9	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0220</i>		<i>"</i>	<i>0.0333</i>		<i>66.1</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0169</i>		<i>"</i>	<i>0.0333</i>		<i>50.6</i>	<i>40-150</i>			

Matrix Spike Dup (BHF0899-MSD1)	Source: 2406388-01			Prepared & Analyzed: 06/27/24						
Acenaphthene	0.0166	0.00500	mg/kg	0.0333	ND	49.8	31-137	0.312	30	
Anthracene	0.0167	0.00500	"	0.0333	ND	50.1	30-120	3.47	30	
Benzo (a) anthracene	0.0182	0.00500	"	0.0333	ND	54.7	30-120	2.43	30	
Benzo (a) pyrene	0.0162	0.00500	"	0.0333	ND	48.6	30-120	0.628	30	
Benzo (b) fluoranthene	0.0157	0.00500	"	0.0333	ND	47.1	30-120	0.316	30	
Benzo (k) fluoranthene	0.0150	0.00500	"	0.0333	ND	44.9	30-120	3.42	30	
Chrysene	0.0171	0.00500	"	0.0333	ND	51.4	30-120	0.989	30	
Dibenz (a,h) anthracene	0.0201	0.00500	"	0.0333	ND	60.4	30-120	12.9	30	
Fluoranthene	0.0181	0.00500	"	0.0333	ND	54.3	30-120	2.86	30	
Fluorene	0.0169	0.00500	"	0.0333	ND	50.6	30-120	1.01	30	
Indeno (1,2,3-cd) pyrene	0.0169	0.00500	"	0.0333	ND	50.7	30-120	17.6	30	
Pyrene	0.0175	0.00500	"	0.0333	ND	52.4	35-142	1.60	30	
1-Methylnaphthalene	0.0245	0.00500	"	0.0333	ND	73.6	15-130	4.31	50	
2-Methylnaphthalene	0.0214	0.00500	"	0.0333	ND	64.1	15-130	1.89	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0228</i>		<i>"</i>	<i>0.0333</i>		<i>68.4</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0170</i>		<i>"</i>	<i>0.0333</i>		<i>51.1</i>	<i>40-150</i>			

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

Project: Noble - CPC-Harless 64N64W 17SWNE
Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

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 BHF0907 - EPA 3050B

Blank (BHF0907-BLK1)

Prepared: 06/27/24 Analyzed: 06/28/24

Boron ND 2.00 mg/L

LCS (BHF0907-BS1)

Prepared: 06/27/24 Analyzed: 06/28/24

Boron 5.20 2.00 mg/L 5.00 104 80-120

Duplicate (BHF0907-DUP1)

Source: 2406411-01

Prepared: 06/27/24 Analyzed: 06/28/24

Boron 0.124 2.00 mg/L 0.160 25.1 20 QR-01

Matrix Spike (BHF0907-MS1)

Source: 2406411-01

Prepared: 06/27/24 Analyzed: 06/28/24

Boron 4.89 2.00 mg/L 4.96 0.160 95.4 75-125

Matrix Spike Dup (BHF0907-MSD1)

Source: 2406411-01

Prepared: 06/27/24 Analyzed: 06/28/24

Boron 5.04 2.00 mg/L 4.96 0.160 98.3 75-125 2.93 25

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - CPC-Harless 64N64W 17SWNE
Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHF0915 - EPA 3050B

Blank (BHF0915-BLK1)

Prepared: 06/27/24 Analyzed: 07/02/24

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 (BHF0915-BS1)

Prepared: 06/27/24 Analyzed: 07/02/24

Arsenic	37.9	0.200	mg/kg wet	40.0	94.6	80-120
Barium	39.2	0.400	"	40.0	97.9	80-120
Cadmium	2.00	0.200	"	2.00	100	80-120
Copper	42.9	0.400	"	40.0	107	80-120
Lead	19.9	0.200	"	20.0	99.4	80-120
Nickel	42.4	0.400	"	40.0	106	80-120
Silver	2.02	0.0200	"	2.00	101	80-120
Zinc	41.6	0.400	"	40.0	104	80-120
Selenium	3.77	0.260	"	4.00	94.2	80-120

Duplicate (BHF0915-DUP1)

Source: 2406080-01

Prepared: 06/27/24 Analyzed: 07/03/24

Arsenic	2.73	0.200	mg/kg dry	2.72	0.270	20
Barium	27.5	0.400	"	26.8	2.57	20
Cadmium	0.532	0.200	"	0.541	1.52	20
Copper	37.2	0.400	"	37.0	0.564	20
Lead	21.2	0.200	"	21.0	0.738	20
Nickel	2.15	0.400	"	2.12	1.72	20
Silver	0.0941	0.0200	"	0.0929	1.28	20
Zinc	40.6	0.400	"	40.8	0.421	20
Selenium	ND	0.260	"	ND		20

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

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 BHF0915 - EPA 3050B

Matrix Spike (BHF0915-MS1)

Source: 2406080-01

Prepared: 06/27/24 Analyzed: 07/03/24

Arsenic	42.8	0.200	mg/kg dry	49.4	2.72	81.2	75-125				
Barium	55.8	0.400	"	49.4	26.8	58.7	75-125				QM-07
Cadmium	3.08	0.200	"	2.47	0.541	103	75-125				
Copper	86.1	0.400	"	49.4	37.0	99.4	75-125				
Lead	42.0	0.200	"	24.7	21.0	85.1	75-125				
Nickel	18.8	0.400	"	49.4	2.12	33.8	75-125				QM-07
Silver	2.60	0.0200	"	2.47	0.0929	102	75-125				
Zinc	82.3	0.400	"	49.4	40.8	84.1	75-125				
Selenium	2.75	0.260	"	4.94	ND	55.8	75-125				QM-07

Matrix Spike Dup (BHF0915-MSD1)

Source: 2406080-01

Prepared: 06/27/24 Analyzed: 07/03/24

Arsenic	41.3	0.200	mg/kg dry	49.0	2.72	78.6	75-125	3.78	25		
Barium	55.7	0.400	"	49.0	26.8	58.8	75-125	0.237	25		QM-07
Cadmium	2.90	0.200	"	2.45	0.541	96.4	75-125	5.89	25		
Copper	78.9	0.400	"	49.0	37.0	85.4	75-125	8.77	25		
Lead	37.1	0.200	"	24.5	21.0	65.4	75-125	12.6	25		QM-07
Nickel	18.9	0.400	"	49.0	2.12	34.2	75-125	0.190	25		QM-07
Silver	2.51	0.0200	"	2.45	0.0929	98.5	75-125	3.73	25		
Zinc	78.7	0.400	"	49.0	40.8	77.4	75-125	4.46	25		
Selenium	2.80	0.260	"	4.90	ND	57.1	75-125	1.61	25		QM-07

Post Spike (BHF0915-PS1)

Source: 2406080-01

Prepared: 06/27/24 Analyzed: 07/02/24

Arsenic	110		ug/l	100	5.59	104	75-125				
Barium	123		"	100	55.1	68.3	75-125				QM-01
Cadmium	6.18		"	5.00	1.11	101	75-125				
Copper	62.8		"	100	76.1	NR	75-125				QM-01
Lead	86.5		"	50.0	43.2	86.6	75-125				
Nickel	40.6		"	100	4.35	36.3	75-125				QM-01
Silver	5.43		"	5.00	0.191	105	75-125				
Zinc	64.9		"	100	83.8	NR	75-125				QM-01
Selenium	7.92		"	10.0	0.0780	78.4	75-125				

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE
Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHF0941 - 3060A Mod

Blank (BHF0941-BLK1)

Prepared & Analyzed: 06/28/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHF0941-BS1)

Prepared & Analyzed: 06/28/24

Chromium, Hexavalent 25.7 0.30 mg/kg wet 25.0 103 80-120

Duplicate (BHF0941-DUP1)

Source: 2406414-01

Prepared & Analyzed: 06/28/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHF0941-MS1)

Source: 2406414-01

Prepared & Analyzed: 06/28/24

Chromium, Hexavalent 27.2 0.30 mg/kg dry 27.4 ND 99.4 75-125

Matrix Spike Dup (BHF0941-MSD1)

Source: 2406414-01

Prepared & Analyzed: 06/28/24

Chromium, Hexavalent 27.0 0.30 mg/kg dry 27.4 ND 98.4 75-125 1.01 20

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

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 BHG0074 - General Preparation

Blank (BHG0074-BLK1)

Prepared: 07/02/24 Analyzed: 07/03/24

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

LCS (BHG0074-BS1)

Prepared: 07/02/24 Analyzed: 07/03/24

Calcium	5.05	0.0500	mg/L wet	5.00	101	70-130				
Magnesium	4.85	0.0500	"	5.00	97.0	70-130				
Sodium	4.79	0.0500	"	5.00	95.7	70-130				

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: UWRWE-A2766-ABN
 Project Manager: Jacob Whritenour

Reported:
 07/10/24 08:24

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 BHF0909 - General Preparation

Duplicate (BHF0909-DUP1)	Source: 2406408-01			Prepared & Analyzed: 06/27/24							
% Solids	87.1		%		88.9				2.03	20	

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

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

Summit Scientific

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

Batch BHG0075 - General Preparation

Blank (BHG0075-BLK1)

Prepared: 07/02/24 Analyzed: 07/03/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHG0075-BS1)

Prepared: 07/02/24 Analyzed: 07/03/24

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

Duplicate (BHG0075-DUP1)

Source: 2406413-01

Prepared: 07/02/24 Analyzed: 07/03/24

Specific Conductance (EC) 1.18 0.0100 mmhos/cm 1.20 1.59 20

Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

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 BHG0076 - General Preparation

LCS (BHG0076-BS1)

Prepared: 07/02/24 Analyzed: 07/03/24

pH	9.16	pH Units	9.18	99.8	95-105
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Duplicate (BHG0076-DUP1)

Source: 2406413-01

Prepared: 07/02/24 Analyzed: 07/03/24

pH	8.29	pH Units	8.32	0.361	20
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Summit Scientific

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

Project: Noble - CPC-Harless 64N64W 17SWNE

Project Number: UWRWE-A2766-ABN
Project Manager: Jacob Whritenour

Reported:
07/10/24 08:24

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-01 The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference