





<b>SITE NAME:</b> GUTTERSEN STATE CC20-04 FL							<b>DATE:</b> 6/5/2024	<b>REM. PROJECT #:</b> 28732	<b>WEATHER:</b> SUNNY, 80s	
<b>SITE DIRECTIONS:</b> CR34 and CR53, E 2.50 mi, N 1.47 mi, E 0.74 mi, N 0.28 mi, E 1.72 mi, N 0.22 mi, E 0.23 mi, N 0.14 mi, NE 0.52 mi, NW 1.90 mi, NE 0.36 mi, N 0.15 mi into							<b>CLIENT:</b> NOBLE			
<b>LEGALS AND LAT/LONG:</b> 40.303200, -104.469160							<b>TASMAN PERSONNEL:</b> MW, TL			
<b>SOIL TYPES:</b>							<b>SURFACE GRADIENT:</b>			
<b>SOIL SAMPLING</b>							<b>FACILITY INFRASTRUCTURE</b>			
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo?	Grab or Lab Sample?	EQUIPMENT	Quantity	Photo?	
							Above Ground Storage Tank (AST)			
6/5/2024 09:47	FL01-01@2'	1.7	No Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel			
6/5/2024 10:00	FL01-02@2'	3.4	No Staining	No Odor	Yes	Lab	Separator			
6/5/2024 10:05	FL01-03@2'	1.5	No Staining	No Odor	Yes	Lab	Emission Control Device (ECD)			
6/5/2024 10:35	FL01-04@2'	0.1	No Staining	No Odor	Yes	Grab	Dump Line			
6/5/2024 10:22	FL01-05@2'	2.1	No Staining	No Odor	Yes	Grab	Wellhead			
6/5/2024 10:26	FL01-06@2'	2.5	No Staining	No Odor	Yes	Lab	Flowline			
6/6/2024 09:39	FL01-07@2'	0.8	No Staining	No Odor	Yes	Lab	Other:			
6/6/2024 09:50	FL01-08@2'	1.9	No Staining	No Odor	Yes	Lab	Soil Loads Removed			
6/6/2024 09:56	FL01-09@2'	3.5	No Staining	No Odor	Yes	Lab	<b>IMPACTED SOIL IDENTIFIED?</b>			
6/6/2024 10:06	FL01-10@2'	2.9	No Staining	No Odor	Yes	Grab	<b>ESTIMATED VOLUME OF IMPACTS:</b>			
							Date	Number	CY	
6/6/2024 10:14	FL01-11@2'	0.5	No Staining	No Odor	Yes	Grab				
6/6/2024 10:37	FL01-12@2'	2.6	No Staining	No Odor	Yes	Lab				
6/6/2024 10:40	FL01R-W@2'	3.3	No Staining	No Odor	Yes	Lab				
6/6/2024 10:43	BKG01@2'	4.1	No Staining	No Odor	Yes	Lab				
							Total Removed	0	0	
							<b>Disposal Facility:</b>			
							<b>Groundwater Recovery</b>			
							<b>DATE GW ENCOUNTERED:</b>		<b>DEPTH:</b>	
							<b>GROUNDWATER IN CONTACT WITH IMPACTED SOIL?</b>			
							<b>LNAPL OR SHEEN OBSERVED ON GW?</b>			
<b>GROUNDWATER SAMPLING</b>							Date	BBLs		
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?				
							Total Removed	0		
							<b>Disposal Facility:</b>			



					
<b>Equipment ID:</b> FL01-01 @ 2'		<b>Equipment Type:</b>	<b>Equipment ID:</b> FL01-02 @ 2'		<b>Equipment Type:</b>
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>
<b>Notes/Conditions:</b> FACING S			<b>Notes/Conditions:</b> FACING W		



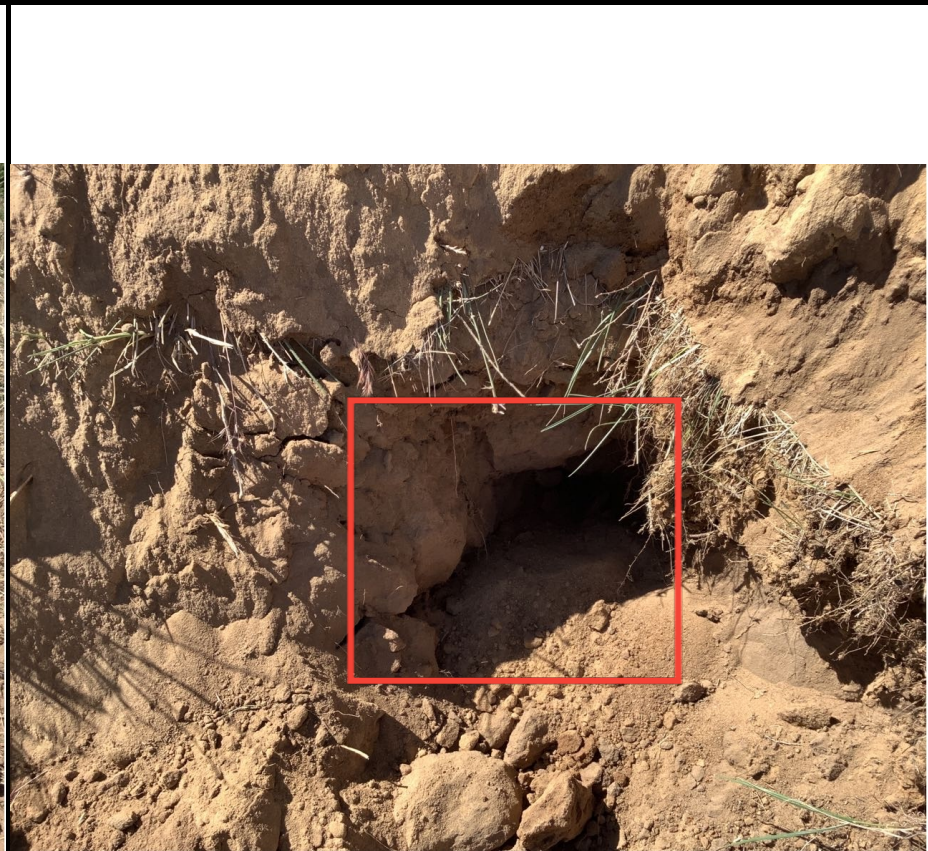
<b>Equipment ID:</b> FL01-03@2'		<b>Equipment Type:</b>		<b>Equipment ID:</b> FL01-04@2'		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>		<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> FACING N				<b>Notes/Conditions:</b> FACING N			



<b>Equipment ID:</b> FL01-05 @ 2'		<b>Equipment Type:</b>		<b>Equipment ID:</b> FL01-06 @ 2'		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>		<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> FACING W				<b>Notes/Conditions:</b> FACING N			



<b>Equipment ID:</b> FL01-07@2'		<b>Equipment Type:</b>		<b>Equipment ID:</b> FL01-08@2'		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>		<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> Facing S				<b>Notes/Conditions:</b> Facing N			



<b>Equipment ID:</b> FL01-09@2'		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> Facing S			

<b>Equipment ID:</b> FL01-10@2'		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> Facing S			



<b>Equipment ID:</b> FL01-11 @ 2'			<b>Equipment Type:</b>		
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>			
<b>Notes/Conditions:</b> Facing S					
<b>Equipment ID:</b> FL01-12 @ 2'			<b>Equipment Type:</b>		
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>			
<b>Notes/Conditions:</b> Facing N					



<b>Equipment ID:</b> FL01R-W@2'		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> Facing N			

<b>Equipment ID:</b> BKG01		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> Facing N			

**TABLE 1**  
**FIELD DATA SUMMARY TABLE**  
**NOBLE ENERGY INC.- 100322**  
**GUTTERSEN STATE CC20-04, WELD COUNTY, COLORADO**  
**REM # 28732**

Sample ID	Sample Date	Depth (ft.)	GPS Data		PDOP Value	VOC Concentration (ppm)
			Latitude	Longitude		
FL01-01@2'	6/5/2024	2	40.298963	-104.464200	1.4	1.7
FL01-02@2'	6/5/2024	2	40.299312	-104.464194	0.9	3.4
FL01-03@2'	6/5/2024	2	40.299357	-104.464503	1.0	1.5
FL01-04@2'	6/5/2024	2	40.299479	-104.465900	0.9	0.1
FL01-05@2'	6/5/2024	2	40.299599	-104.467055	1.3	2.1
FL01-06@2'	6/5/2024	2	40.299675	-104.467761	0.8	2.5
FL01-07@2'	6/6/2024	2	40.299730	-104.468702	0.8	0.8
FL01-08@2'	6/6/2024	2	40.300101	-104.469170	1.0	1.9
FL01-09@2'	6/6/2024	2	40.300715	-104.469153	0.9	3.5
FL01-10@2'	6/6/2024	2	40.301401	-104.469146	0.9	2.9
FL01-11@2'	6/6/2024	2	40.302186	-104.469162	0.9	0.5
FL01-12@2'	6/6/2024	2	40.302753	-104.469208	0.8	2.6
FL01R-W@2'	6/6/2024	2	40.303265	-104.469259	0.8	3.3
BKG01@2'	6/6/2024	2	40.303369	-104.469399	0.8	4.1

1. Global Positioning System (GPS) data is provided in decimal degrees using North American Datum (NAD) 83 UTMZone 13 North.

2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).

PDOP = Position Dilution of Precision

ppm = Parts per million

ft. = Feet

TABLE 2  
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA  
NOBLE ENERGY INC.- 100322  
GUTTERSEN STATE CC20-04, WELD COUNTY, COLORADO  
REM # 28732

Sample ID	Sample Date	Depth (ft)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)	1,2,4-Trimethyl-Benzene (mg/kg)	1,3,5-Trimethyl-Benzene (mg/kg)	Naphthalene (mg/kg)	TPH (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**		
FL01-01@2'	6/5/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL01-02@2'	6/5/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL01-03@2'	6/5/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL01-06@2'	6/5/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	0.017	<500	<0.50	<50	<50
FL01-07@2'	6/6/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<b>0.0140</b>	<500	<0.50	<50	<50
FL01-08@2'	6/6/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL01-09@2'	6/6/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL01-12@2'	6/6/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL01R-W@2'	6/6/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50

**Notes:**

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

ECMC = Energy & Carbon Management Commission

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

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

TPH-ORO = Total petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

TABLE 3  
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA  
NOBLE ENERGY INC. - 100322  
GUTTERSEN STATE CC20-04, WELD COUNTY, COLORADO  
REM # 28732

Sample ID	Sample Date	Depth (ft)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Benzo (b) Fluoranthene (mg/kg)	Benzo (k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3-cd) Pyrene (mg/kg)	Pyrene (mg/kg)	1-Methyl - Naphthalene (mg/kg)	2-Methyl- Naphthalene (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
FL01-01@2'	6/5/2024	2	0.00696	0.0161	<b>0.0504</b>	0.0316	0.0485	0.0153	0.0471	<0.00500	0.100	0.00806	0.0807	0.152	<0.00500	<0.00500
FL01-02@2'	6/5/2024	2	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FL01-03@2'	6/5/2024	2	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FL01-06@2'	6/5/2024	2	0.0219	0.0364	<b>0.0504</b>	0.0293	0.0447	0.0158	0.0474	<0.00500	0.117	0.0234	0.0737	0.152	<0.00500	<0.00500
FL01-07@2'	6/6/2024	2	0.0203	0.0474	<b>0.0772</b>	0.0541	0.0794	0.0292	0.0778	0.00793	0.188	0.0286	0.0423	0.158	<0.00500	<0.00500
FL01-08@2'	6/6/2024	2	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FL01-09@2'	6/6/2024	2	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00656	<0.00500	<0.00500	0.00578	<0.00500	<0.00500
FL01-12@2'	6/6/2024	2	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FL01R-W@2'	6/6/2024	2	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

**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 ENERGY INC.- 100322**  
**GUTTERSEN STATE CC20-04, WELD COUNTY, COLORADO**  
**REM # 28732**

Sample ID	Sample Date	Depth (ft)	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
FL01-01@2'	6/5/2024	2	7.97	0.146	0.171	<2.00
FL01-02@2'	6/5/2024	2	<b>8.67</b>	0.126	0.126	<2.00
FL01-03@2'	6/5/2024	2	7.36	0.0664	0.0392	<2.00
FL01-06@2'	6/5/2024	2	7.87	0.0291	0.0734	<2.00
FL01-07@2'	6/6/2024	2	7.54	0.0638	0.0230	<2.00
FL01-08@2'	6/6/2024	2	7.60	0.114	0.0394	<2.00
FL01-09@2'	6/6/2024	2	7.83	0.388	0.778	<2.00
FL01-12@2'	6/6/2024	2	8.14	0.342	0.601	<2.00
FL01R-W@2'	6/6/2024	2	8.16	0.287	0.310	<2.00
BKG01@2'	6/6/2024	2	8.55	0.161	0.0337	NA
Maximum Background Concentration			8.55	-	-	-

**Notes:**

2. **Bold** faced values exceed the ECMC Table 915-1 limit(s) above native background concentrations.

3. Brown highlighted soil analytical values indicate a regulatory exceedance.

ECMC = Colorado Energy & Carbon Management Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligram per liter

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

ft. = Feet

bgs = Below ground surface

NA = Constituent not analyzed

**TABLE 5**  
**SUMMARY OF METALS IN SOIL CHEMISTRY DATA**  
**NOBLE ENERGY INC. - 100322**  
**GUTTERSEN STATE CC20-04, WELD COUNTY, COLORADO**  
**REM # 28732**

Sample ID	Sample Date	Depth (ft)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			0.68	15000	71	0.3	3100	400	1500	390	390	23000
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FL01-01@2'	6/5/2024	2	<b>1.54</b>	42.1	<0.200	<0.30	3.90	4.52	3.70	<0.260	<0.0200	16.0
FL01-02@2'	6/5/2024	2	<b>1.63</b>	41.1	<0.200	<0.30	2.85	3.73	3.14	<0.260	<0.0200	12.3
FL01-03@2'	6/5/2024	2	<b>1.52</b>	41.8	<0.200	<0.30	3.41	4.11	3.71	<0.260	<0.0200	15.6
FL01-06@2'	6/5/2024	2	<b>1.31</b>	32.2	<0.200	<0.30	2.19	3.16	2.32	<0.260	<0.0200	9.14
FL01-07@2'	6/6/2024	2	<b>1.17</b>	35.7	<0.179	<0.30	2.36	2.68	2.99	<0.232	0.0180	11.3
FL01-08@2'	6/6/2024	2	<b>1.42</b>	34.2	<0.200	<0.30	2.59	3.13	2.77	<0.260	<0.0200	10.9
FL01-09@2'	6/6/2024	2	<b>1.74</b>	56.2	<0.200	<0.30	4.10	4.51	4.09	<0.260	<0.0200	16.9
FL01-12@2'	6/6/2024	2	<b>1.52</b>	59.1	<0.200	<0.30	4.20	4.75	4.18	<0.260	0.0231	18.7
FL01R-W@2'	6/6/2024	2	<b>1.71</b>	54.3	<0.200	<0.30	3.63	3.98	4.28	<0.260	<0.0200	16.9
BKG01@2'	6/6/2024	2	4.19	99.6	0.212	<0.30	10.7	8.57	11.6	<0.260	0.0437	37.4
Maximum Background Concentration			4.19	-	-	-	-	-	-	-	-	-
Maximum Background Concentration X 1.25			5.24	-	-	-	-	-	-	-	-	-

**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.

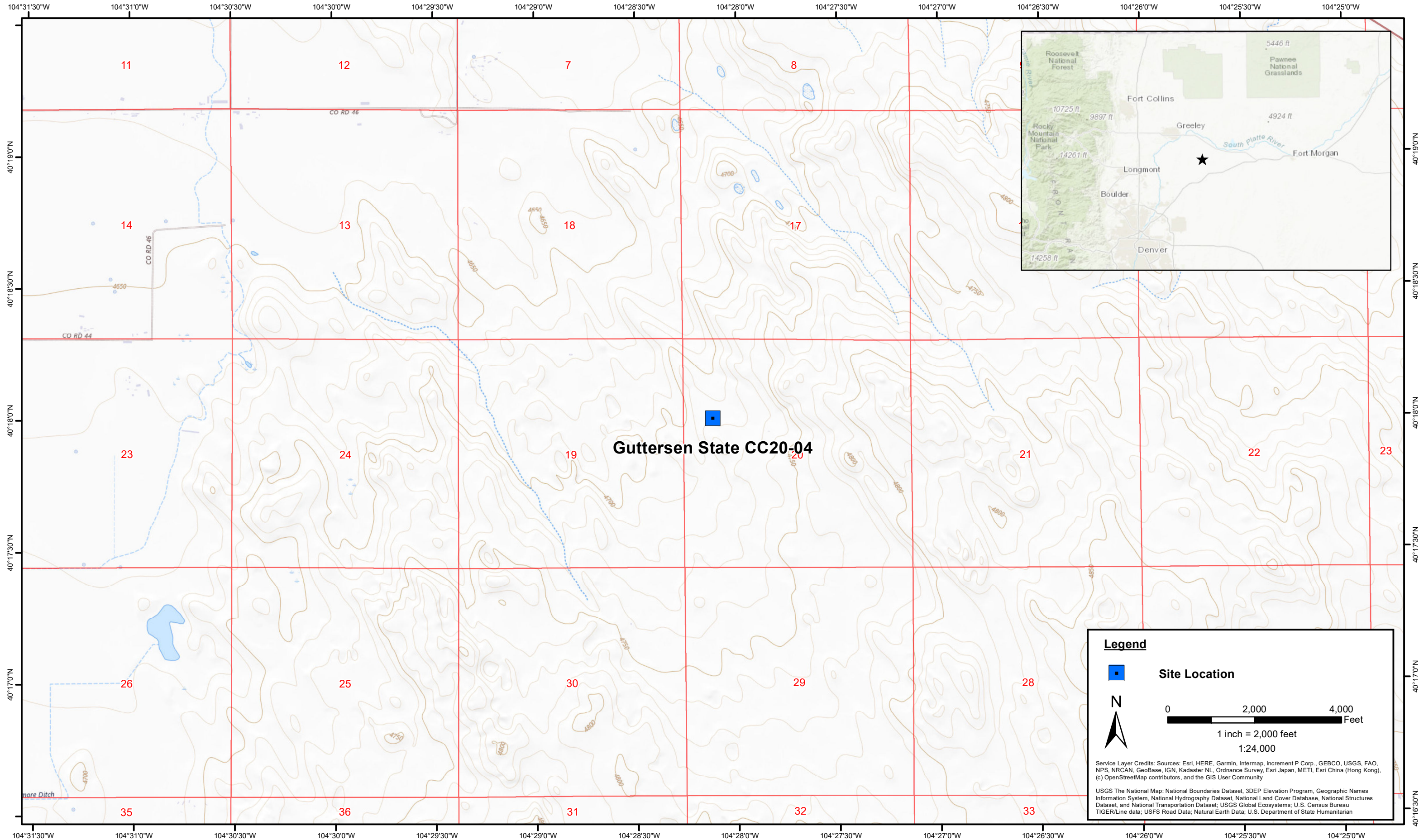
ECMC = Energy & Carbon Management Commission

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

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface



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

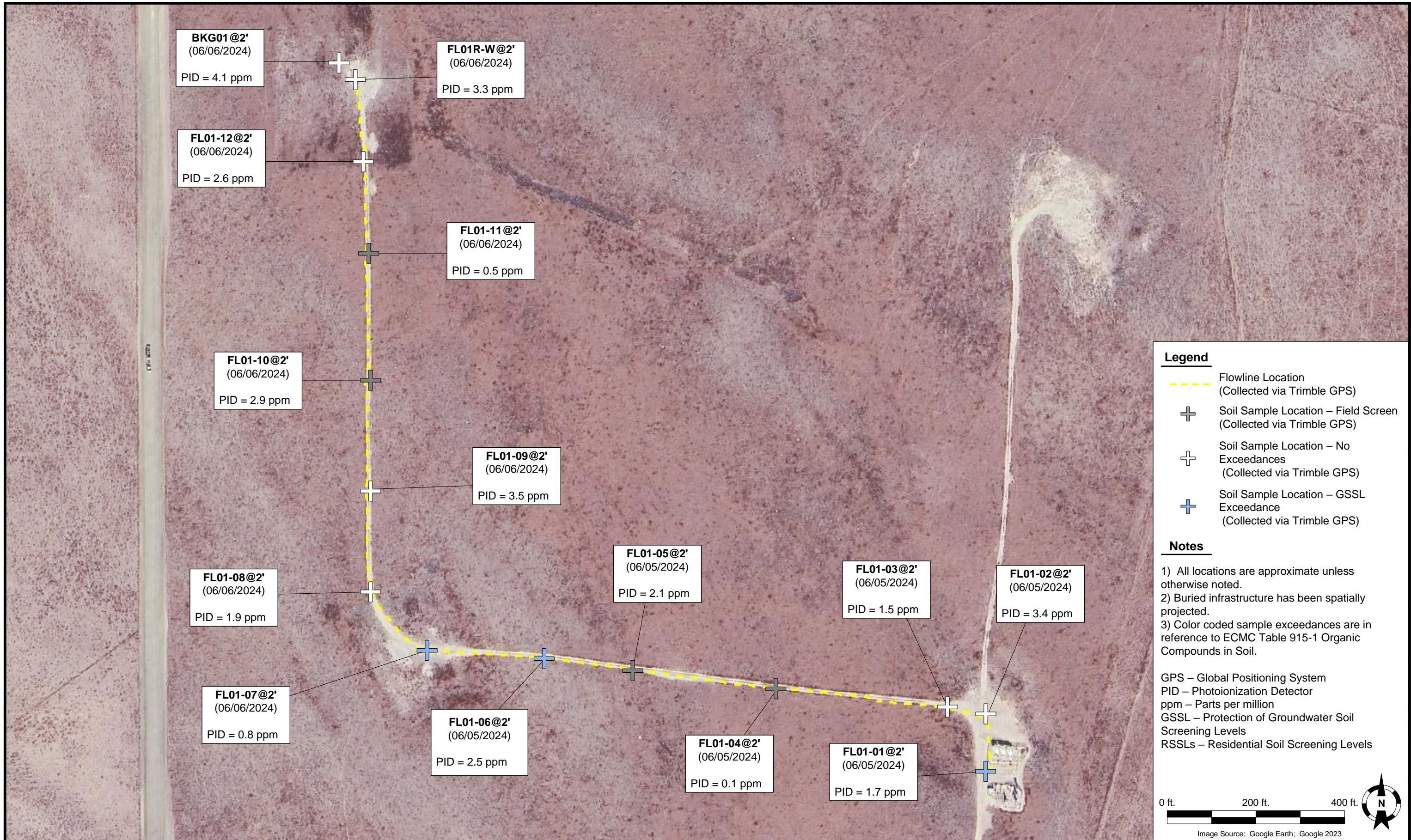


**Tasman, Inc.**  
6855 W. 119th Ave  
Broomfield, CO 80020

**Noble Energy, Inc. – DJ Basin**  
**Gutteresen State CC20-04**  
SWNW, Section 20, Township 4 North, Range 63 West  
Weld County, Colorado

Site Location Map

Figure  
1



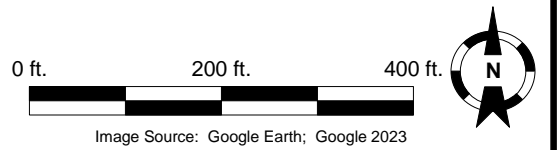
**Legend**

- Flowline Location (Collected via Trimble GPS)
- + Soil Sample Location – Field Screen (Collected via Trimble GPS)
- + Soil Sample Location – No Exceedances (Collected via Trimble GPS)
- + Soil Sample Location – GSSL Exceedance (Collected via Trimble GPS)

**Notes**

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

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



DATE: 07/02/2024

DESIGNED BY: JW

DRAWN BY: L. Bohannon

**TASMAN**  
GEOSCIENCES

Tasman Geosciences, Inc.  
6855 W 119<sup>th</sup> Avenue  
Broomfield, CO 80020

**Noble Energy, Inc. - 100322 - DJ Basin**  
**Guttersen State CC20-04**  
 SWNW, Section 20, Township 4 North, Range 63 West  
 Weld County, Colorado

Flowline Closure & Soil Analytical Results Map  
 (06/05/2024, 06/06/2024)

FIGURE 2

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 02, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

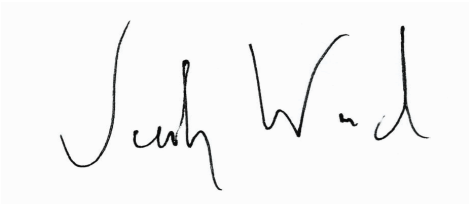
Broomfield, CO 80020

RE: Noble - Gutterson State CC20-04

Work Order #2406051

Enclosed are the results of analyses for samples received by Summit Scientific on 06/05/24 18:03. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and a distinct "W".

Jacob Wood For Paul Shrewsbury

President



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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01-01@2'	2406051-01	Soil	06/05/24 09:47	06/05/24 18:03
FL01-02@2'	2406051-02	Soil	06/05/24 10:00	06/05/24 18:03
FL01-03@2'	2406051-03	Soil	06/05/24 10:05	06/05/24 18:03
FL01-06@2'	2406051-04	Soil	06/05/24 10:26	06/05/24 18:03

Summit Scientific

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
# SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2406051	

Client: Noble / Tasman	Project Manager: Jake Whritenour	Send Invoice To:
Address: 6855 W. 119th Ave	E-Mail: Jwhritenour@tasman-geo.com	Company: Chevron
City/State/Zip: Broomfield, CO 80020		Project Name/Location: Guttersen State CC70-04
Phone: 978-857-4408	Project Name: Guttersen State CC70-04	AFE#: UWRWE- A3676-ABU
Sampler Name: Matthew Wentzel	Project Number:	PO/Billing Codes:
		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	VOC - 915	TPH - 915	PAH - 915	pH, EC, SAR	Boron - HWS		Metals - 915	HOLD		
1	FL01-01@2'	6.5.24	0947	3			X			X				X	X	X	X	X	X	X		pH, EC, SAR by saturated paste
2	FL01-02@2'	I	1000	I			I			I				I	I	I	I	I	I	I		
3	FL01-03@2'	I	1005	I			I			I				I	I	I	I	I	I	I		
4	FL01-06@2'	I	1026	I			I			I				I	I	I	I	I	I	I		
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						

Relinquished by: 	Date/Time: 6.5.24 1415	Received by: Tasman Lock Box	Date/Time: 6.5.24 1415	TAT Business Days	Field DO	Notes:
Relinquished by: Tasman Lock Box	Date/Time: 6.5.24 1803	Received by: 	Date/Time: 6.5.24 1803	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: 93	Corrected Temperature: 	IR gun #:	HNO3 lot #:			

S<sub>2</sub>

Sample Receipt Checklist

S2 Work Order# 2406051

Client: Noble Farm Client Project ID: Gutteresen State CC20-04

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? <sup>(1)</sup> <b>NOTE:</b> 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>on ice</u>
If custody seals are present, are they intact? <sup>(1)</sup>	<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 <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , 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? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> 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):

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

AS  
Custodian Printed Name

6/5/24  
Date/Time



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

Project: Noble - Gutttersen State CC20-04

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**FL01-01@2'**  
**2406051-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/05/24 09:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHF0155	06/06/24	06/07/24	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: **06/05/24 09:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0506	127 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0399	99.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0419	105 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/05/24 09:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHF0157	06/06/24	06/07/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **06/05/24 09:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	12.3	98.7 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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**2406051-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.00696	0.00500	mg/kg	1	BHF0136	06/06/24	06/06/24	EPA 8270D SIM	
Anthracene	0.0161	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.0504	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0316	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0485	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0153	0.00500	"	"	"	"	"	"	
Chrysene	0.0471	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0999	0.00500	"	"	"	"	"	"	
Fluorene	0.00806	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0807	0.00500	"	"	"	"	"	"	
Pyrene	0.152	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **06/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0272	81.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0252	75.6 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **06/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0147	06/06/24	06/11/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **06/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.54	0.200	mg/kg dry	1	BHF0153	06/06/24	06/08/24	EPA 6020B	

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Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**FL01-01@2'**  
**2406051-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Barium</b>	<b>42.1</b>	0.400	mg/kg dry	1	BHF0153	06/06/24	06/08/24	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
<b>Copper</b>	<b>3.90</b>	0.400	"	"	"	"	"	"	
<b>Lead</b>	<b>4.52</b>	0.200	"	"	"	"	"	"	
<b>Nickel</b>	<b>3.70</b>	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
<b>Zinc</b>	<b>16.0</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0150	06/06/24	06/06/24	EPA 7196A	

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

Date Sampled: **06/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>66.3</b>	0.0500	mg/L dry	1	BHF0066	06/06/24	06/10/24	EPA 6020B	
<b>Magnesium</b>	<b>13.1</b>	0.0500	"	"	"	"	"	"	
<b>Sodium</b>	<b>5.82</b>	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Sodium Adsorption Ratio</b>	<b>0.171</b>	0.00100	units	1	BHF0290	06/11/24	06/11/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **06/05/24 09:47**

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 - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**FL01-01@2'**  
**2406051-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

% Solids	95.3	%	1	BHF0151	06/06/24	06/06/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **06/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.146	0.0100	mmhos/cm	1	BHF0144	06/06/24	06/07/24	EPA 120.1	

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

Date Sampled: **06/05/24 09:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.97		pH Units	1	BHF0143	06/06/24	06/07/24	EPA 9045D	

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Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**FL01-02@2'**  
**2406051-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/05/24 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHF0155	06/06/24	06/07/24	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: **06/05/24 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0452	113 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0396	99.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0411	103 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/05/24 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHF0157	06/06/24	06/07/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **06/05/24 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.9	95.4 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**FL01-02@2'**  
**2406051-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/05/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0136	06/06/24	06/07/24	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: **06/05/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0250	75.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0215	64.6 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **06/05/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0147	06/06/24	06/11/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **06/05/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.  
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Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**FL01-02@2'**  
**2406051-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.63	0.200	mg/kg dry	1	BHF0153	06/06/24	06/08/24	EPA 6020B	
Barium	41.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.85	0.400	"	"	"	"	"	"	
Lead	3.73	0.200	"	"	"	"	"	"	
Nickel	3.14	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	12.3	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/05/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0150	06/06/24	06/06/24	EPA 7196A	

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

Date Sampled: **06/05/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	116	0.0500	mg/L dry	1	BHF0066	06/06/24	06/10/24	EPA 6020B	
Magnesium	19.1	0.0500	"	"	"	"	"	"	
Sodium	5.56	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/05/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.126	0.00100	units	1	BHF0290	06/11/24	06/11/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Summit Scientific

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Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**FL01-02@2'**  
**2406051-02 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **06/05/24 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	94.4			%	1	BHF0151	06/06/24	06/06/24	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **06/05/24 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.126	0.0100		mmhos/cm	1	BHF0144	06/06/24	06/07/24	EPA 120.1	

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

Date Sampled: **06/05/24 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.67			pH Units	1	BHF0143	06/06/24	06/07/24	EPA 9045D	

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**FL01-03@2'**  
**2406051-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/05/24 10:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHF0155	06/06/24	06/07/24	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: **06/05/24 10:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0461	115 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0384	96.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0413	103 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/05/24 10:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHF0157	06/06/24	06/07/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **06/05/24 10:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.5	92.0 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**FL01-03@2'**  
**2406051-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/05/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0136	06/06/24	06/07/24	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: **06/05/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0244	73.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0213	63.9 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **06/05/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0147	06/06/24	06/11/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **06/05/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**FL01-03@2'**  
**2406051-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.52	0.200	mg/kg dry	1	BHF0153	06/06/24	06/08/24	EPA 6020B	
Barium	41.8	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.41	0.400	"	"	"	"	"	"	
Lead	4.11	0.200	"	"	"	"	"	"	
Nickel	3.71	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	15.6	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/05/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0150	06/06/24	06/06/24	EPA 7196A	

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

Date Sampled: **06/05/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	147	0.0500	mg/L dry	1	BHF0066	06/06/24	06/10/24	EPA 6020B	
Magnesium	32.7	0.0500	"	"	"	"	"	"	
Sodium	2.02	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/05/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0392	0.00100	units	1	BHF0290	06/11/24	06/11/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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**Reported:**  
07/02/24 11:11

**FL01-03@2'**  
**2406051-03 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **06/05/24 10:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	93.1			%	1	BHF0151	06/06/24	06/06/24	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **06/05/24 10:05**

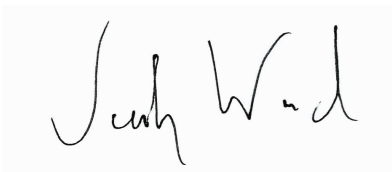
Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.0664	0.0100		mmhos/cm	1	BHF0144	06/06/24	06/07/24	EPA 120.1	

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

Date Sampled: **06/05/24 10:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.36			pH Units	1	BHF0143	06/06/24	06/07/24	EPA 9045D	

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Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**FL01-06@2'**  
**2406051-04 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/05/24 10:26**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHF0155	06/06/24	06/07/24	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	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/05/24 10:26**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0432	108 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0367	91.6 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0390	97.6 %	50-150	"	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/05/24 10:26**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHF0157	06/06/24	06/07/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/05/24 10:26**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	12.9	103 %	30-150	"	"	"	"	"	

**PAH by EPA Method 8270D SIM**

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**Reported:**  
07/02/24 11:11

**FL01-06@2'**  
**2406051-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/05/24 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0219	0.00500	mg/kg	1	BHF0136	06/06/24	06/07/24	EPA 8270D SIM	
Anthracene	0.0364	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.0504	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0293	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0447	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0158	0.00500	"	"	"	"	"	"	
Chrysene	0.0474	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.117	0.00500	"	"	"	"	"	"	
Fluorene	0.0234	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0737	0.00500	"	"	"	"	"	"	
Pyrene	0.152	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **06/05/24 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0223	67.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0217	65.1 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **06/05/24 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0147	06/06/24	06/11/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **06/05/24 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.31	0.200	mg/kg dry	1	BHF0153	06/06/24	06/08/24	EPA 6020B	

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Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**FL01-06@2'**  
**2406051-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Barium</b>	<b>32.2</b>	0.400	mg/kg dry	1	BHF0153	06/06/24	06/08/24	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
<b>Copper</b>	<b>2.19</b>	0.400	"	"	"	"	"	"	
<b>Lead</b>	<b>3.16</b>	0.200	"	"	"	"	"	"	
<b>Nickel</b>	<b>2.32</b>	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
<b>Zinc</b>	<b>9.14</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/05/24 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0150	06/06/24	06/06/24	EPA 7196A	

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

Date Sampled: **06/05/24 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>43.5</b>	0.0500	mg/L dry	1	BHF0066	06/06/24	06/10/24	EPA 6020B	
<b>Magnesium</b>	<b>10.9</b>	0.0500	"	"	"	"	"	"	
<b>Sodium</b>	<b>2.09</b>	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/05/24 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Sodium Adsorption Ratio</b>	<b>0.0734</b>	0.00100	units	1	BHF0290	06/11/24	06/11/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **06/05/24 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**FL01-06@2'**  
**2406051-04 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

% Solids	97.0	%	1	BHF0151	06/06/24	06/06/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **06/05/24 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0291	0.0100	mmhos/cm	1	BHF0144	06/06/24	06/07/24	EPA 120.1	

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

Date Sampled: **06/05/24 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.87		pH Units	1	BHF0143	06/06/24	06/07/24	EPA 9045D	

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**Reported:**  
07/02/24 11:11

**FL01-06@2'**  
**2406051-04 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

**I-04, O-04, O-05**

Date Sampled: **06/05/24 10:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Naphthalene	ND	0.0038		mg/kg	1	BHF0724	06/24/24	06/25/24	EPA 8260B	

Date Sampled: **06/05/24 10:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0349	87.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0372	92.9 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0375	93.7 %		50-150		"	"	"	"	

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Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

### 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 BHF0155 - EPA 5030 Soil MS

##### Blank (BHF0155-BLK1)

Prepared: 06/06/24 Analyzed: 06/07/24

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0441		"	0.0400		110	50-150			
<i>Surrogate: Toluene-d8</i>	0.0430		"	0.0400		107	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0407		"	0.0400		102	50-150			

##### LCS (BHF0155-BS1)

Prepared: 06/06/24 Analyzed: 06/07/24

Benzene	0.0972	0.0020	mg/kg	0.100		97.2	70-130			
Toluene	0.115	0.0050	"	0.100		115	70-130			
Ethylbenzene	0.106	0.0050	"	0.100		106	70-130			
m,p-Xylene	0.211	0.010	"	0.200		106	70-130			
o-Xylene	0.106	0.0050	"	0.100		106	70-130			
1,2,4-Trimethylbenzene	0.104	0.0050	"	0.100		104	70-130			
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100		102	70-130			
Naphthalene	0.0953	0.0038	"	0.100		95.3	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0437		"	0.0400		109	50-150			
<i>Surrogate: Toluene-d8</i>	0.0437		"	0.0400		109	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0398		"	0.0400		99.4	50-150			

##### Matrix Spike (BHF0155-MS1)

Source: 2406036-01

Prepared: 06/06/24 Analyzed: 06/07/24

Benzene	0.0898	0.0020	mg/kg	0.100	ND	89.8	70-130			
Toluene	0.0964	0.0050	"	0.100	ND	96.4	70-130			
Ethylbenzene	0.0879	0.0050	"	0.100	ND	87.9	70-130			
m,p-Xylene	0.177	0.010	"	0.200	ND	88.7	70-130			
o-Xylene	0.0888	0.0050	"	0.100	ND	88.8	70-130			
1,2,4-Trimethylbenzene	0.0828	0.0050	"	0.100	ND	82.8	70-130			
1,3,5-Trimethylbenzene	0.0828	0.0050	"	0.100	ND	82.8	70-130			
Naphthalene	0.0685	0.0038	"	0.100	ND	68.5	70-130			QM-07
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0422		"	0.0400		105	50-150			
<i>Surrogate: Toluene-d8</i>	0.0422		"	0.0400		106	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0395		"	0.0400		98.8	50-150			

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**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		

**Batch BHF0155 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (BHF0155-MSD1)</b>	<b>Source: 2406036-01</b>			Prepared: 06/06/24		Analyzed: 06/07/24				
Benzene	0.0926	0.0020	mg/kg	0.100	ND	92.6	70-130	2.96	30	
Toluene	0.0998	0.0050	"	0.100	ND	99.8	70-130	3.46	30	
Ethylbenzene	0.0946	0.0050	"	0.100	ND	94.6	70-130	7.43	30	
m,p-Xylene	0.189	0.010	"	0.200	ND	94.6	70-130	6.43	30	
o-Xylene	0.0935	0.0050	"	0.100	ND	93.5	70-130	5.13	30	
1,2,4-Trimethylbenzene	0.0865	0.0050	"	0.100	ND	86.5	70-130	4.40	30	
1,3,5-Trimethylbenzene	0.0875	0.0050	"	0.100	ND	87.5	70-130	5.49	30	
Naphthalene	0.0753	0.0038	"	0.100	ND	75.3	70-130	9.52	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0384</i>		"	<i>0.0400</i>		<i>96.1</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0424</i>		"	<i>0.0400</i>		<i>106</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0392</i>		"	<i>0.0400</i>		<i>97.9</i>	<i>50-150</i>			

**Batch BHF0724 - EPA 5030 Soil MS**

<b>Blank (BHF0724-BLK1)</b>				Prepared: 06/24/24		Analyzed: 06/25/24				
Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0424</i>		"	<i>0.0400</i>		<i>106</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0384</i>		"	<i>0.0400</i>		<i>95.9</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0346</i>		"	<i>0.0400</i>		<i>86.6</i>	<i>50-150</i>			

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Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**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 BHF0724 - EPA 5030 Soil MS**

**LCS (BHF0724-BS1)**

Prepared: 06/24/24 Analyzed: 06/25/24

Benzene	0.0874	0.0020	mg/kg	0.100		87.4	70-130			
Toluene	0.110	0.0050	"	0.100		110	70-130			
Ethylbenzene	0.0996	0.0050	"	0.100		99.6	70-130			
m,p-Xylene	0.202	0.010	"	0.200		101	70-130			
o-Xylene	0.103	0.0050	"	0.100		103	70-130			
1,2,4-Trimethylbenzene	0.0998	0.0050	"	0.100		99.8	70-130			
1,3,5-Trimethylbenzene	0.0913	0.0050	"	0.100		91.3	70-130			
Naphthalene	0.0923	0.0038	"	0.100		92.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0397		"	0.0400		99.2	50-150			
Surrogate: Toluene-d8	0.0501		"	0.0400		125	50-150			
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400		95.8	50-150			

**Matrix Spike (BHF0724-MS1)**

Source: 2406318-41

Prepared: 06/24/24 Analyzed: 06/25/24

Benzene	0.0721	0.0020	mg/kg	0.100	ND	72.1	70-130			
Toluene	0.0764	0.0050	"	0.100	ND	76.4	70-130			
Ethylbenzene	0.0699	0.0050	"	0.100	ND	69.9	70-130			QM-07
m,p-Xylene	0.144	0.010	"	0.200	ND	72.0	70-130			
o-Xylene	0.0740	0.0050	"	0.100	ND	74.0	70-130			
1,2,4-Trimethylbenzene	0.0705	0.0050	"	0.100	ND	70.5	70-130			
1,3,5-Trimethylbenzene	0.0612	0.0050	"	0.100	ND	61.2	70-130			QM-07
Naphthalene	0.0656	0.0038	"	0.100	ND	65.6	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0428		"	0.0400		107	50-150			
Surrogate: Toluene-d8	0.0381		"	0.0400		95.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400		96.0	50-150			

**Matrix Spike Dup (BHF0724-MSD1)**

Source: 2406318-41

Prepared: 06/24/24 Analyzed: 06/25/24

Benzene	0.0764	0.0020	mg/kg	0.100	ND	76.4	70-130	5.82	30	
Toluene	0.0807	0.0050	"	0.100	ND	80.7	70-130	5.54	30	
Ethylbenzene	0.0752	0.0050	"	0.100	ND	75.2	70-130	7.20	30	
m,p-Xylene	0.155	0.010	"	0.200	ND	77.4	70-130	7.31	30	
o-Xylene	0.0796	0.0050	"	0.100	ND	79.6	70-130	7.35	30	
1,2,4-Trimethylbenzene	0.0768	0.0050	"	0.100	ND	76.8	70-130	8.56	30	
1,3,5-Trimethylbenzene	0.0678	0.0050	"	0.100	ND	67.8	70-130	10.3	30	QM-07
Naphthalene	0.0707	0.0038	"	0.100	ND	70.7	70-130	7.52	30	
Surrogate: 1,2-Dichloroethane-d4	0.0427		"	0.0400		107	50-150			
Surrogate: Toluene-d8	0.0369		"	0.0400		92.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.2	50-150			

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Tasman Geosciences  
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Project: Noble - Guttersen State CC20-04  
Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BHF0157 - EPA 3550A**

**Blank (BHF0157-BLK1)**

Prepared & Analyzed: 06/06/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	15.6		"	12.5		124		30-150			

**LCS (BHF0157-BS1)**

Prepared & Analyzed: 06/06/24

C10-C28 (DRO)	589	50	mg/kg	500		118		70-130			
Surrogate: <i>o</i> -Terphenyl	14.6		"	12.5		117		30-150			

**Matrix Spike (BHF0157-MS1)**

Source: 2406049-04

Prepared & Analyzed: 06/06/24

C10-C28 (DRO)	509	50	mg/kg	500	33.5	95.1		70-130			
Surrogate: <i>o</i> -Terphenyl	12.0		"	12.5		96.2		30-150			

**Matrix Spike Dup (BHF0157-MSD1)**

Source: 2406049-04

Prepared & Analyzed: 06/06/24

C10-C28 (DRO)	604	50	mg/kg	500	33.5	114		70-130	17.1	20	
Surrogate: <i>o</i> -Terphenyl	15.7		"	12.5		125		30-150			

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Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**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 BHF0136 - EPA 5030 Soil MS**

**Blank (BHF0136-BLK1)**

Prepared & Analyzed: 06/06/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0215</i>		<i>"</i>	<i>0.0333</i>		<i>64.4</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0292</i>		<i>"</i>	<i>0.0333</i>		<i>87.7</i>	<i>40-150</i>			

**LCS (BHF0136-BS1)**

Prepared & Analyzed: 06/06/24

Acenaphthene	0.0244	0.00500	mg/kg	0.0333		73.1	31-137			
Anthracene	0.0261	0.00500	"	0.0333		78.3	30-120			
Benzo (a) anthracene	0.0271	0.00500	"	0.0333		81.2	30-120			
Benzo (a) pyrene	0.0232	0.00500	"	0.0333		69.7	30-120			
Benzo (b) fluoranthene	0.0258	0.00500	"	0.0333		77.5	30-120			
Benzo (k) fluoranthene	0.0270	0.00500	"	0.0333		81.1	30-120			
Chrysene	0.0275	0.00500	"	0.0333		82.4	30-120			
Dibenz (a,h) anthracene	0.0231	0.00500	"	0.0333		69.2	30-120			
Fluoranthene	0.0261	0.00500	"	0.0333		78.4	30-120			
Fluorene	0.0260	0.00500	"	0.0333		77.9	30-120			
Indeno (1,2,3-cd) pyrene	0.0302	0.00500	"	0.0333		90.5	30-120			
Pyrene	0.0322	0.00500	"	0.0333		96.6	35-142			
1-Methylnaphthalene	0.0192	0.00500	"	0.0333		57.7	35-142			
2-Methylnaphthalene	0.0195	0.00500	"	0.0333		58.5	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0195</i>		<i>"</i>	<i>0.0333</i>		<i>58.6</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0273</i>		<i>"</i>	<i>0.0333</i>		<i>82.0</i>	<i>40-150</i>			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Gutterson State CC20-04

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**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 BHF0136 - EPA 5030 Soil MS**

**Matrix Spike (BHF0136-MS1)**

Source: 2406037-01

Prepared & Analyzed: 06/06/24

Acenaphthene	0.0558	0.00500	mg/kg	0.0333	ND	167	31-137				QM-01
Anthracene	0.318	0.00500	"	0.0333	ND	955	30-120				QM-01
Benzo (a) anthracene	0.0870	0.00500	"	0.0333	0.0369	150	30-120				QM-01
Benzo (a) pyrene	0.0171	0.00500	"	0.0333	ND	51.4	30-120				
Benzo (b) fluoranthene	0.0208	0.00500	"	0.0333	ND	62.4	30-120				
Benzo (k) fluoranthene	0.0105	0.00500	"	0.0333	ND	31.4	30-120				
Chrysene	0.0194	0.00500	"	0.0333	0.0205	NR	30-120				QM-01
Dibenz (a,h) anthracene	0.0328	0.00500	"	0.0333	ND	98.4	30-120				
Fluoranthene	0.0258	0.00500	"	0.0333	0.0149	32.9	30-120				
Fluorene	0.196	0.00500	"	0.0333	0.240	NR	30-120				QM-01
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	0.0333	ND		30-120				QM-01
Pyrene	0.0475	0.00500	"	0.0333	0.0258	65.1	35-142				
1-Methylnaphthalene	0.269	0.00500	"	0.0333	0.332	NR	15-130				QM-01
2-Methylnaphthalene	0.240	0.00500	"	0.0333	0.308	NR	15-130				QM-01
Surrogate: 2-Methylnaphthalene-d10	0.00708		"	0.0333		21.2	40-150				QM-01
Surrogate: Fluoranthene-d10	0.0183		"	0.0333		54.9	40-150				

**Matrix Spike Dup (BHF0136-MSD1)**

Source: 2406037-01

Prepared & Analyzed: 06/06/24

Acenaphthene	0.0582	0.00500	mg/kg	0.0333	ND	175	31-137	4.33	30		QM-01
Anthracene	0.334	0.00500	"	0.0333	ND	1000	30-120	4.91	30		QM-01
Benzo (a) anthracene	0.101	0.00500	"	0.0333	0.0369	191	30-120	14.5	30		QM-01
Benzo (a) pyrene	0.0173	0.00500	"	0.0333	ND	51.8	30-120	0.628	30		
Benzo (b) fluoranthene	0.0148	0.00500	"	0.0333	ND	44.3	30-120	33.8	30		QM-01
Benzo (k) fluoranthene	0.0123	0.00500	"	0.0333	ND	36.8	30-120	15.7	30		
Chrysene	0.0607	0.00500	"	0.0333	0.0205	121	30-120	103	30		QM-01
Dibenz (a,h) anthracene	0.0453	0.00500	"	0.0333	ND	136	30-120	32.0	30		QM-01
Fluoranthene	0.0243	0.00500	"	0.0333	0.0149	28.4	30-120	6.02	30		QM-01
Fluorene	0.231	0.00500	"	0.0333	0.240	NR	30-120	16.6	30		QM-01
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	0.0333	ND		30-120		30		QM-01
Pyrene	0.0471	0.00500	"	0.0333	0.0258	63.8	35-142	0.885	30		
1-Methylnaphthalene	0.222	0.00500	"	0.0333	0.332	NR	15-130	19.1	50		QM-01
2-Methylnaphthalene	0.214	0.00500	"	0.0333	0.308	NR	15-130	11.3	50		QM-01
Surrogate: 2-Methylnaphthalene-d10	0.00643		"	0.0333		19.3	40-150				QM-01
Surrogate: Fluoranthene-d10	0.0170		"	0.0333		50.9	40-150				

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Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04  
Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**PAH by EPA Method 8270D SIM - Quality Control**  
**Summit Scientific**

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

**Batch BHF0454 - EPA 5030 Soil MS**

**Blank (BHF0454-BLK1)**

Prepared & Analyzed: 06/17/24

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0255</i>		"	<i>0.0333</i>		<i>76.6</i>		<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0308</i>		"	<i>0.0333</i>		<i>92.3</i>		<i>40-150</i>			

**LCS (BHF0454-BS1)**

Prepared & Analyzed: 06/17/24

Acenaphthene	0.0245	0.00500	mg/kg	0.0333		73.6		31-137			
Anthracene	0.0250	0.00500	"	0.0333		75.0		30-120			
Benzo (a) anthracene	0.0255	0.00500	"	0.0333		76.5		30-120			
Benzo (a) pyrene	0.0233	0.00500	"	0.0333		69.9		30-120			
Benzo (b) fluoranthene	0.0234	0.00500	"	0.0333		70.3		30-120			
Benzo (k) fluoranthene	0.0245	0.00500	"	0.0333		73.4		30-120			
Chrysene	0.0256	0.00500	"	0.0333		76.7		30-120			
Dibenz (a,h) anthracene	0.0218	0.00500	"	0.0333		65.5		30-120			
Fluoranthene	0.0246	0.00500	"	0.0333		73.7		30-120			
Fluorene	0.0247	0.00500	"	0.0333		74.0		30-120			
Indeno (1,2,3-cd) pyrene	0.0217	0.00500	"	0.0333		65.0		30-120			
Pyrene	0.0275	0.00500	"	0.0333		82.4		35-142			
1-Methylnaphthalene	0.0224	0.00500	"	0.0333		67.2		35-142			
2-Methylnaphthalene	0.0216	0.00500	"	0.0333		64.9		35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0224</i>		"	<i>0.0333</i>		<i>67.3</i>		<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0264</i>		"	<i>0.0333</i>		<i>79.2</i>		<i>40-150</i>			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**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 BHF0454 - EPA 5030 Soil MS**

<b>Matrix Spike (BHF0454-MS1)</b>	<b>Source: 2406196-01</b>			<b>Prepared &amp; Analyzed: 06/17/24</b>						
Acenaphthene	0.0214	0.00500	mg/kg	0.0333	ND	64.3	31-137			
Anthracene	0.0225	0.00500	"	0.0333	ND	67.6	30-120			
Benzo (a) anthracene	0.0224	0.00500	"	0.0333	ND	67.2	30-120			
Benzo (a) pyrene	0.0205	0.00500	"	0.0333	ND	61.4	30-120			
Benzo (b) fluoranthene	0.0203	0.00500	"	0.0333	ND	61.0	30-120			
Benzo (k) fluoranthene	0.0212	0.00500	"	0.0333	ND	63.6	30-120			
Chrysene	0.0221	0.00500	"	0.0333	ND	66.3	30-120			
Dibenz (a,h) anthracene	0.0188	0.00500	"	0.0333	ND	56.4	30-120			
Fluoranthene	0.0212	0.00500	"	0.0333	ND	63.7	30-120			
Fluorene	0.0224	0.00500	"	0.0333	ND	67.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0183	0.00500	"	0.0333	ND	55.0	30-120			
Pyrene	0.0241	0.00500	"	0.0333	ND	72.2	35-142			
1-Methylnaphthalene	0.0210	0.00500	"	0.0333	ND	62.9	15-130			
2-Methylnaphthalene	0.0203	0.00500	"	0.0333	ND	60.9	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0213</i>		<i>"</i>	<i>0.0333</i>		<i>63.8</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0231</i>		<i>"</i>	<i>0.0333</i>		<i>69.2</i>	<i>40-150</i>			

Summit Scientific

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

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

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

**Batch BHF0147 - EPA 3050B**

**Blank (BHF0147-BLK1)**

Prepared: 06/06/24 Analyzed: 06/10/24

Boron ND 2.00 mg/L

**LCS (BHF0147-BS1)**

Prepared: 06/06/24 Analyzed: 06/10/24

Boron 4.88 2.00 mg/L 5.00 97.6 80-120

**Duplicate (BHF0147-DUP1)**

**Source: 2406049-01**

Prepared: 06/06/24 Analyzed: 06/10/24

Boron 0.479 2.00 mg/L 0.214 76.4 20 QR-01

**Matrix Spike (BHF0147-MS1)**

**Source: 2406049-01**

Prepared: 06/06/24 Analyzed: 06/11/24

Boron 5.18 2.00 mg/L 5.02 0.214 98.9 75-125

**Matrix Spike Dup (BHF0147-MSD1)**

**Source: 2406049-01**

Prepared: 06/06/24 Analyzed: 06/11/24

Boron 5.14 2.00 mg/L 5.02 0.214 98.0 75-125 0.893 25

Summit Scientific

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**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 BHF0153 - EPA 3050B**

**Blank (BHF0153-BLK1)**

Prepared: 06/06/24 Analyzed: 06/08/24

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 (BHF0153-BS1)**

Prepared: 06/06/24 Analyzed: 06/08/24

Arsenic	37.2	0.200	mg/kg wet	40.0	92.9	80-120
Barium	38.5	0.400	"	40.0	96.1	80-120
Cadmium	1.94	0.200	"	2.00	97.1	80-120
Copper	37.9	0.400	"	40.0	94.8	80-120
Lead	19.4	0.200	"	20.0	97.2	80-120
Nickel	37.6	0.400	"	40.0	94.0	80-120
Silver	1.93	0.0200	"	2.00	96.6	80-120
Zinc	37.3	0.400	"	40.0	93.3	80-120
Selenium	4.22	0.260	"	4.00	106	80-120

**Duplicate (BHF0153-DUP1)**

Source: 2406036-03

Prepared: 06/06/24 Analyzed: 06/08/24

Arsenic	3.34	0.200	mg/kg dry	3.58	7.01	20
Barium	105	0.400	"	89.7	15.3	20
Cadmium	0.202	0.200	"	0.196	2.97	20
Copper	9.91	0.400	"	9.61	3.11	20
Lead	8.05	0.200	"	7.66	4.94	20
Nickel	10.8	0.400	"	10.5	2.45	20
Silver	0.0464	0.0200	"	0.0368	23.0	20
Zinc	35.7	0.400	"	40.7	13.1	20
Selenium	ND	0.260	"	ND		20

QR-01

Summit Scientific

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

Project: Noble - Gutterson State CC20-04

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**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 BHF0153 - EPA 3050B**

**Matrix Spike (BHF0153-MS1)**

Source: 2406036-03

Prepared: 06/06/24 Analyzed: 06/08/24

Arsenic	43.5	0.200	mg/kg dry	43.4	3.58	91.9	75-125			
Barium	131	0.400	"	43.4	89.7	94.8	75-125			
Cadmium	2.33	0.200	"	2.17	0.196	98.4	75-125			
Copper	49.4	0.400	"	43.4	9.61	91.6	75-125			
Lead	27.8	0.200	"	21.7	7.66	92.7	75-125			
Nickel	51.1	0.400	"	43.4	10.5	93.4	75-125			
Silver	2.10	0.0200	"	2.17	0.0368	95.1	75-125			
Zinc	77.3	0.400	"	43.4	40.7	84.3	75-125			
Selenium	4.74	0.260	"	4.34	ND	109	75-125			

**Matrix Spike Dup (BHF0153-MSD1)**

Source: 2406036-03

Prepared: 06/06/24 Analyzed: 06/08/24

Arsenic	46.4	0.200	mg/kg dry	46.2	3.58	92.7	75-125	6.42	25
Barium	136	0.400	"	46.2	89.7	101	75-125	4.05	25
Cadmium	2.49	0.200	"	2.31	0.196	99.5	75-125	6.58	25
Copper	52.4	0.400	"	46.2	9.61	92.7	75-125	5.88	25
Lead	29.9	0.200	"	23.1	7.66	96.4	75-125	7.38	25
Nickel	54.5	0.400	"	46.2	10.5	95.3	75-125	6.44	25
Silver	2.27	0.0200	"	2.31	0.0368	96.6	75-125	7.49	25
Zinc	79.7	0.400	"	46.2	40.7	84.6	75-125	3.12	25
Selenium	4.71	0.260	"	4.62	ND	102	75-125	0.670	25

Summit Scientific

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

Project: Noble - Gutterson State CC20-04

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**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 BHF0150 - 3060A Mod**

**Blank (BHF0150-BLK1)**

Prepared & Analyzed: 06/06/24

Chromium, Hexavalent      ND      0.30    mg/kg wet

**LCS (BHF0150-BS1)**

Prepared & Analyzed: 06/06/24

Chromium, Hexavalent      25.4      0.30    mg/kg wet      25.0      101      80-120

**Duplicate (BHF0150-DUP1)**

**Source: 2406037-03**

Prepared & Analyzed: 06/06/24

Chromium, Hexavalent      ND      0.30    mg/kg dry      ND      20

**Matrix Spike (BHF0150-MS1)**

**Source: 2406037-03**

Prepared & Analyzed: 06/06/24

Chromium, Hexavalent      27.4      0.30    mg/kg dry      28.2      ND      97.2      75-125

**Matrix Spike Dup (BHF0150-MSD1)**

**Source: 2406037-03**

Prepared & Analyzed: 06/06/24

Chromium, Hexavalent      28.6      0.30    mg/kg dry      28.2      ND      102      75-125      4.43      20

Summit Scientific

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

Project: Noble - Gutterson State CC20-04

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**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 BHF0066 - General Preparation**

**Blank (BHF0066-BLK1)**

Prepared: 06/04/24 Analyzed: 06/10/24

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

**LCS (BHF0066-BS1)**

Prepared: 06/04/24 Analyzed: 06/10/24

Calcium	5.78	0.0500	mg/L wet	5.00		116	70-130			
Magnesium	5.05	0.0500	"	5.00		101	70-130			
Sodium	5.07	0.0500	"	5.00		101	70-130			

Summit Scientific

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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN  
 Project Manager: Jacob Whritenour

**Reported:**  
 07/02/24 11:11

**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 BHF0151 - General Preparation**


**Duplicate (BHF0151-DUP1)**

**Source: 2406049-01**

Prepared & Analyzed: 06/06/24

% Solids	95.6		%		95.1			0.549	20	
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Summit Scientific



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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**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 BHF0144 - General Preparation**

**Blank (BHF0144-BLK1)**

Prepared: 06/06/24 Analyzed: 06/07/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BHF0144-BS1)**

Prepared: 06/06/24 Analyzed: 06/07/24

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

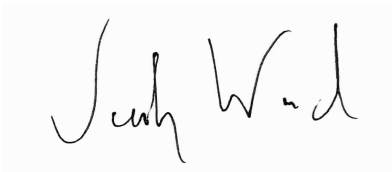
**Duplicate (BHF0144-DUP1)**

**Source: 2406037-03**

Prepared: 06/06/24 Analyzed: 06/07/24

Specific Conductance (EC) 0.835 0.0100 mmhos/cm 0.838 0.299 20

Summit Scientific



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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

**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 BHF0143 - General Preparation**

**LCS (BHF0143-BS1)**

Prepared: 06/06/24 Analyzed: 06/07/24

pH	9.27	pH Units	9.18	101	95-105
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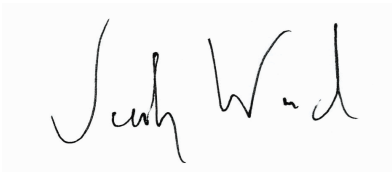
**Duplicate (BHF0143-DUP1)**

Source: 2406037-03

Prepared: 06/06/24 Analyzed: 06/07/24

pH	8.38	pH Units	8.40	0.238	20
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Summit Scientific



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

Project: Noble - Guttersen State CC20-04

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
07/02/24 11:11

### 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.
- O-05        This sample was extracted outside of the EPA recommended holding time.
- O-04        This sample was analyzed above the recommended temperature.
- I-04        Sample was analyzed out of recommended holding time per clients request.
- 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

June 24, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Gutttersen State CC20-04 FL

Work Order #2406087

Enclosed are the results of analyses for samples received by Summit Scientific on 06/06/24 17:53. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Natalie Tessier For Paul Shrewsbury

President



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

Project: Noble - Guttarsen State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01-07@2'	2406087-01	Soil	06/06/24 09:39	06/06/24 17:53
FL01-08@2'	2406087-02	Soil	06/06/24 09:50	06/06/24 17:53
FL01-09@2'	2406087-03	Soil	06/06/24 09:56	06/06/24 17:53
FL01-12@2'	2406087-04	Soil	06/06/24 10:37	06/06/24 17:53
FL01R-W@2'	2406087-05	Soil	06/06/24 10:40	06/06/24 17:53
BKG01@2'	2406087-06	Soil	06/06/24 10:43	06/06/24 17:53

Summit Scientific

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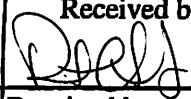
# SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2406087	

Client: Noble / Tasman	Project Manager: Jake Whritenour	Send Invoice To:
Address: 6855 W. 119th Ave	E-Mail: jwhritenour@tasman-geo.com	Company: Chevron
City/State/Zip: Broomfield, CO 80020	Project Name: Gutteresen State CO20.04 FL	Project Name/Location: Gutteresen State CO20.04 FL
Phone: 4788574408	Project Number:	AFB#: UURWE - A3676 - ABN
Sampler Name: Matthew Wentzel		PO/Billing Codes:
		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	VOC - 915	TPH - 915	PAH - 915	pH, EC, SAR	Boron - HWS	Metals - 915		HOLD	
1	FL01-07@2'	6-6-24	0939	3			X			X			X	X	X	X	X	X	X	X	pH, EC, SAR by saturated paste
2	FL01-09@2'		0950										X	X	X	X	X	X	X	X	
3	FL01-09@2'		0956										X	X	X	X	X	X	X	X	
4	FL01-12@2'		1037										X	X	X	X	X	X	X	X	
5	FL012-W@2'		1040										X	X	X	X	X	X	X	X	
6	BK001@2'		1043										X	X	X	X	X	X	X	X	
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: 	Date/Time: 6-6-24 1405	Received by: Tasman Lock Box	Date/Time: 6-6-24 1406	TAT Business Days	Field DO	Notes:
Relinquished by: Tasmanlockbox	Date/Time: 6/6/24 1753	Received by: 	Date/Time: 6/6/24 1753	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 6.4	Corrected Temperature: 6	IR gun #:		HNO3 lot #:		

S<sub>2</sub>

Sample Receipt Checklist

S2 Work Order# 2406087

Client: Noble Gasman Client Project ID: Gutteresen State CC20-04 FL

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

[ ] [ ] [ ] [ ] [ ]

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

Temp (°C) 8.4 Thermometer # [ ]

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? <sup>(1)</sup> <b>NOTE:</b> 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"/>	NOTE
If custody seals are present, are they intact? <sup>(1)</sup>	<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 <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , 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? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<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)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> 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):

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

AS  
Custodian Printed Name

6/6/21  
Date/Time



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

Project: Noble - Gutttersen State CC20-04 FL  
Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**FL01-07@2'**  
**2406087-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/06/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHF0171	06/07/24	06/08/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.014</b>	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/06/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0419	105 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0399	99.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0376	94.0 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/06/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHF0173	06/07/24	06/07/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/06/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	13.1	105 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - Guttersen State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**FL01-07@2'**  
**2406087-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/06/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0203	0.00500	mg/kg	1	BHF0170	06/07/24	06/08/24	EPA 8270D SIM	
Anthracene	0.0474	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.0772	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0541	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0794	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0292	0.00500	"	"	"	"	"	"	
Chrysene	0.0778	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	0.00793	0.00500	"	"	"	"	"	"	
Fluoranthene	0.188	0.00500	"	"	"	"	"	"	E
Fluorene	0.0286	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0423	0.00500	"	"	"	"	"	"	
Pyrene	0.158	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **06/06/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0179	53.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0203	60.9 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **06/06/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0177	06/07/24	06/14/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **06/06/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.17	0.179	mg/kg dry	1	BHF0287	06/11/24	06/13/24	EPA 6020B	

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

Project: Noble - Guttersen State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**FL01-07@2'**  
**2406087-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	35.7	0.357	mg/kg dry	1	BHF0287	06/11/24	06/13/24	EPA 6020B	
Cadmium	ND	0.179	"	"	"	"	"	"	
Copper	2.36	0.357	"	"	"	"	"	"	
Lead	2.68	0.179	"	"	"	"	"	"	
Nickel	2.99	0.357	"	"	"	"	"	"	
Silver	0.0180	0.0179	"	"	"	"	"	"	
Zinc	11.3	0.357	"	"	"	"	"	"	
Selenium	ND	0.232	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/06/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0282	06/11/24	06/11/24	EPA 7196A	

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

Date Sampled: **06/06/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	170	0.0500	mg/L dry	1	BHF0268	06/10/24	06/14/24	EPA 6020B	
Magnesium	28.5	0.0500	"	"	"	"	"	"	
Sodium	1.23	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/06/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0230	0.00100	units	1	BHF0429	06/14/24	06/14/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **06/06/24 09:39**

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 - Gutterson State CC20-04 FL  
Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**FL01-07@2'**  
**2406087-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

% Solids	95.1	%	1	BHF0285	06/11/24	06/11/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **06/06/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0638	0.0100	mmhos/cm	1	BHF0269	06/10/24	06/11/24	EPA 120.1	

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

Date Sampled: **06/06/24 09:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.54		pH Units	1	BHF0270	06/10/24	06/11/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Guttersen State CC20-04 FL  
Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**FL01-08@2'**  
**2406087-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHF0171	06/07/24	06/08/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0410	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0398	99.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0377	94.4 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHF0173	06/07/24	06/07/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	14.2	114 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - Guttersen State CC20-04 FL  
Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**FL01-08@2'**  
**2406087-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0170	06/07/24	06/08/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0279	83.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0279	83.8 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0177	06/07/24	06/14/24	EPA 6020B	

**Total Metals by EPA 6020B**

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

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 - Gutterson State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**FL01-08@2'**  
**2406087-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.42	0.200	mg/kg dry	1	BHF0287	06/11/24	06/13/24	EPA 6020B	
Barium	34.2	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.59	0.400	"	"	"	"	"	"	
Lead	3.13	0.200	"	"	"	"	"	"	
Nickel	2.77	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	10.9	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0282	06/11/24	06/11/24	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	93.8	0.0500	mg/L dry	1	BHF0268	06/10/24	06/14/24	EPA 6020B	
Magnesium	22.9	0.0500	"	"	"	"	"	"	
Sodium	1.64	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0394	0.00100	units	1	BHF0429	06/14/24	06/14/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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

Project: Noble - Guttarsen State CC20-04 FL  
Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**FL01-08@2'**  
**2406087-02 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	98.0			%	1	BHF0285	06/11/24	06/11/24	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.114	0.0100		mmhos/cm	1	BHF0269	06/10/24	06/11/24	EPA 120.1	

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

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.60			pH Units	1	BHF0270	06/10/24	06/11/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Guttersen State CC20-04 FL  
Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**FL01-09@2'**  
**2406087-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHF0171	06/07/24	06/08/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0418	104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0395	98.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0377	94.2 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHF0173	06/07/24	06/07/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	13.7	109 %	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 - Guttersen State CC20-04 FL  
Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**FL01-09@2'**  
**2406087-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0170	06/07/24	06/08/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.00656</b>	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.00578</b>	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0294	88.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0268	80.3 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0177	06/07/24	06/14/24	EPA 6020B	

**Total Metals by EPA 6020B**

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

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 - Guttarsen State CC20-04 FL  
Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**FL01-09@2'**  
**2406087-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.74	0.200	mg/kg dry	1	BHF0287	06/11/24	06/13/24	EPA 6020B	
Barium	56.2	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.10	0.400	"	"	"	"	"	"	
Lead	4.51	0.200	"	"	"	"	"	"	
Nickel	4.09	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	16.9	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0282	06/11/24	06/11/24	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	33.3	0.0500	mg/L dry	1	BHF0268	06/10/24	06/14/24	EPA 6020B	
Magnesium	7.81	0.0500	"	"	"	"	"	"	
Sodium	19.2	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.778	0.00100	units	1	BHF0429	06/14/24	06/14/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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

Project: Noble - Guttarsen State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**FL01-09@2'**  
**2406087-03 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	95.5			%	1	BHF0285	06/11/24	06/11/24	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.388	0.0100		mmhos/cm	1	BHF0269	06/10/24	06/11/24	EPA 120.1	

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

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.83			pH Units	1	BHF0270	06/10/24	06/11/24	EPA 9045D	

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04 FL  
Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**FL01-12@2'**  
**2406087-04 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/06/24 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHF0171	06/07/24	06/08/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/06/24 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0414	104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0395	98.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0373	93.2 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/06/24 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHF0173	06/07/24	06/08/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/06/24 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	14.9	119 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04 FL  
Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**FL01-12@2'**  
**2406087-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **06/06/24 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0170	06/07/24	06/08/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **06/06/24 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0263	78.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0270	81.1 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **06/06/24 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0177	06/07/24	06/14/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **06/06/24 10:37**

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

Project: Noble - Guttersen State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**FL01-12@2'**  
**2406087-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.52	0.200	mg/kg dry	1	BHF0287	06/11/24	06/13/24	EPA 6020B
Barium	59.1	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	4.20	0.400	"	"	"	"	"	"
Lead	4.75	0.200	"	"	"	"	"	"
Nickel	4.18	0.400	"	"	"	"	"	"
Silver	0.0231	0.0200	"	"	"	"	"	"
Zinc	18.7	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/06/24 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0282	06/11/24	06/11/24	EPA 7196A	

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

Date Sampled: **06/06/24 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	34.9	0.0500	mg/L dry	1	BHF0268	06/10/24	06/14/24	EPA 6020B	
Magnesium	6.37	0.0500	"	"	"	"	"	"	
Sodium	14.7	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/06/24 10:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.601	0.00100	units	1	BHF0429	06/14/24	06/14/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**FL01-12@2'**  
**2406087-04 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **06/06/24 10:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	95.6			%	1	BHF0285	06/11/24	06/11/24	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **06/06/24 10:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.342	0.0100		mmhos/cm	1	BHF0269	06/10/24	06/11/24	EPA 120.1	

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

Date Sampled: **06/06/24 10:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.14			pH Units	1	BHF0270	06/10/24	06/11/24	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**FL01R-W@2'**  
**2406087-05 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHF0171	06/07/24	06/08/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0411	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0396	98.9 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0372	92.9 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHF0173	06/07/24	06/08/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	12.1	96.8 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - Gutterson State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**FL01R-W@2'**  
**2406087-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0170	06/07/24	06/08/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0212	63.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0226	67.9 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0177	06/07/24	06/14/24	EPA 6020B	

**Total Metals by EPA 6020B**

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

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 - Guttarsen State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**FL01R-W@2'**  
**2406087-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.71	0.200	mg/kg dry	1	BHF0287	06/11/24	06/13/24	EPA 6020B	
Barium	54.3	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.63	0.400	"	"	"	"	"	"	
Lead	3.98	0.200	"	"	"	"	"	"	
Nickel	4.28	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	16.9	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0282	06/11/24	06/11/24	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	40.8	0.0500	mg/L dry	1	BHF0268	06/10/24	06/14/24	EPA 6020B	
Magnesium	7.81	0.0500	"	"	"	"	"	"	
Sodium	8.25	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.310	0.00100	units	1	BHF0429	06/14/24	06/14/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Gutterson State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**FL01R-W@2'**  
**2406087-05 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	91.6			%	1	BHF0285	06/11/24	06/11/24	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.287	0.0100		mmhos/cm	1	BHF0269	06/10/24	06/11/24	EPA 120.1	

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

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.16			pH Units	1	BHF0270	06/10/24	06/11/24	EPA 9045D	

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**BKG01@2'**  
**2406087-06 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **06/06/24 10:43**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	4.19	0.200	mg/kg dry	1	BHF0287	06/11/24	06/13/24	EPA 6020B	
Barium	99.6	0.400	"	"	"	"	"	"	
Cadmium	0.212	0.200	"	"	"	"	"	"	
Copper	10.7	0.400	"	"	"	"	"	"	
Lead	8.57	0.200	"	"	"	"	"	"	
Nickel	11.6	0.400	"	"	"	"	"	"	
Silver	0.0437	0.0200	"	"	"	"	"	"	
Zinc	37.4	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **06/06/24 10:43**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0282	06/11/24	06/11/24	EPA 7196A	

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

Date Sampled: **06/06/24 10:43**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	623	0.0500	mg/L dry	1	BHF0268	06/10/24	06/14/24	EPA 6020B	
Magnesium	59.9	0.0500	"	"	"	"	"	"	
Sodium	3.29	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **06/06/24 10:43**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.0337	0.00100	units	1	BHF0429	06/14/24	06/14/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Guttarsen State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**BKG01@2'**  
**2406087-06 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **06/06/24 10:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	94.7			%	1	BHF0285	06/11/24	06/11/24	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **06/06/24 10:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.161	0.0100		mmhos/cm	1	BHF0269	06/10/24	06/11/24	EPA 120.1	

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

Date Sampled: **06/06/24 10:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.55			pH Units	1	BHF0270	06/10/24	06/11/24	EPA 9045D	

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

Project: Noble - Guttersen State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

### 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 BHF0171 - EPA 5030 Soil MS

##### Blank (BHF0171-BLK1)

Prepared & Analyzed: 06/07/24

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0400		99.4	50-150			
Surrogate: Toluene-d8	0.0397		"	0.0400		99.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400		95.7	50-150			

##### LCS (BHF0171-BS1)

Prepared & Analyzed: 06/07/24

Benzene	0.158	0.0020	mg/kg	0.150		105	70-130			
Toluene	0.157	0.0050	"	0.150		104	70-130			
Ethylbenzene	0.169	0.0050	"	0.150		113	70-130			
m,p-Xylene	0.342	0.010	"	0.300		114	70-130			
o-Xylene	0.159	0.0050	"	0.150		106	70-130			
1,2,4-Trimethylbenzene	0.155	0.0050	"	0.150		103	70-130			
1,3,5-Trimethylbenzene	0.155	0.0050	"	0.150		103	70-130			
Naphthalene	0.155	0.0038	"	0.150		103	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0390		"	0.0400		97.4	50-150			
Surrogate: Toluene-d8	0.0402		"	0.0400		100	50-150			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.8	50-150			

##### Matrix Spike (BHF0171-MS1)

Source: 2406085-01

Prepared & Analyzed: 06/07/24

Benzene	0.159	0.0020	mg/kg	0.150	ND	106	70-130			
Toluene	0.161	0.0050	"	0.150	ND	107	70-130			
Ethylbenzene	0.172	0.0050	"	0.150	ND	115	70-130			
m,p-Xylene	0.343	0.010	"	0.300	ND	114	70-130			
o-Xylene	0.155	0.0050	"	0.150	ND	103	70-130			
1,2,4-Trimethylbenzene	0.148	0.0050	"	0.150	ND	98.7	70-130			
1,3,5-Trimethylbenzene	0.152	0.0050	"	0.150	ND	102	70-130			
Naphthalene	0.141	0.0038	"	0.150	ND	93.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0401		"	0.0400		100	50-150			
Surrogate: Toluene-d8	0.0402		"	0.0400		100	50-150			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.2	50-150			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Guttersen State CC20-04 FL  
Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**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		

**Batch BHF0171 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (BHF0171-MSD1)</b>	<b>Source: 2406085-01</b>			<b>Prepared &amp; Analyzed: 06/07/24</b>						
Benzene	0.163	0.0020	mg/kg	0.150	ND	109	70-130	2.40	30	
Toluene	0.165	0.0050	"	0.150	ND	110	70-130	2.72	30	
Ethylbenzene	0.179	0.0050	"	0.150	ND	119	70-130	4.01	30	
m,p-Xylene	0.362	0.010	"	0.300	ND	121	70-130	5.38	30	
o-Xylene	0.163	0.0050	"	0.150	ND	109	70-130	4.88	30	
1,2,4-Trimethylbenzene	0.154	0.0050	"	0.150	ND	102	70-130	3.76	30	
1,3,5-Trimethylbenzene	0.157	0.0050	"	0.150	ND	105	70-130	3.14	30	
Naphthalene	0.148	0.0038	"	0.150	ND	98.4	70-130	4.76	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>98.9</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>99.9</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>99.0</i>	<i>50-150</i>			

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Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BHF0173 - EPA 3550A**

**Blank (BHF0173-BLK1)**

Prepared & Analyzed: 06/07/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	18.4		"	12.5	147	30-150					

**LCS (BHF0173-BS1)**

Prepared & Analyzed: 06/07/24

C10-C28 (DRO)	516	50	mg/kg	500	103	70-130					
Surrogate: <i>o</i> -Terphenyl	15.1		"	12.5	120	30-150					

**Matrix Spike (BHF0173-MS1)**

Source: 2406085-01

Prepared & Analyzed: 06/07/24

C10-C28 (DRO)	560	50	mg/kg	500	29.9	106	70-130				
Surrogate: <i>o</i> -Terphenyl	17.1		"	12.5	136	30-150					

**Matrix Spike Dup (BHF0173-MSD1)**

Source: 2406085-01

Prepared & Analyzed: 06/07/24

C10-C28 (DRO)	552	50	mg/kg	500	29.9	104	70-130	1.51	20		
Surrogate: <i>o</i> -Terphenyl	16.9		"	12.5	135	30-150					

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6855 W. 119th Ave.  
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Project: Noble - Guttersen State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**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 BHF0170 - EPA 5030 Soil MS**

**Blank (BHF0170-BLK1)**

Prepared & Analyzed: 06/07/24

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	0.0303		"	0.0333		91.0	40-150			
Surrogate: Fluoranthene-d10	0.0289		"	0.0333		86.6	40-150			

**LCS (BHF0170-BS1)**

Prepared & Analyzed: 06/07/24

Acenaphthene	0.0247	0.00500	mg/kg	0.0333		74.2	31-137			
Anthracene	0.0262	0.00500	"	0.0333		78.7	30-120			
Benzo (a) anthracene	0.0293	0.00500	"	0.0333		88.0	30-120			
Benzo (a) pyrene	0.0258	0.00500	"	0.0333		77.3	30-120			
Benzo (b) fluoranthene	0.0270	0.00500	"	0.0333		80.9	30-120			
Benzo (k) fluoranthene	0.0266	0.00500	"	0.0333		79.7	30-120			
Chrysene	0.0285	0.00500	"	0.0333		85.4	30-120			
Dibenz (a,h) anthracene	0.0246	0.00500	"	0.0333		73.7	30-120			
Fluoranthene	0.0271	0.00500	"	0.0333		81.4	30-120			
Fluorene	0.0301	0.00500	"	0.0333		90.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0249	0.00500	"	0.0333		74.6	30-120			
Pyrene	0.0294	0.00500	"	0.0333		88.1	35-142			
1-Methylnaphthalene	0.0238	0.00500	"	0.0333		71.4	35-142			
2-Methylnaphthalene	0.0252	0.00500	"	0.0333		75.7	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0219		"	0.0333		65.7	40-150			
Surrogate: Fluoranthene-d10	0.0279		"	0.0333		83.8	40-150			

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Project: Noble - Guttersen State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**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 BHF0170 - EPA 5030 Soil MS**

<b>Matrix Spike (BHF0170-MS1)</b>	<b>Source: 2406083-01</b>			<b>Prepared &amp; Analyzed: 06/07/24</b>								
Acenaphthene	0.0166	0.00500	mg/kg	0.0333	ND	49.9	31-137					
Anthracene	0.0177	0.00500	"	0.0333	ND	53.2	30-120					
Benzo (a) anthracene	0.0199	0.00500	"	0.0333	ND	59.6	30-120					
Benzo (a) pyrene	0.0173	0.00500	"	0.0333	ND	51.8	30-120					
Benzo (b) fluoranthene	0.0180	0.00500	"	0.0333	ND	54.0	30-120					
Benzo (k) fluoranthene	0.0177	0.00500	"	0.0333	ND	53.1	30-120					
Chrysene	0.0196	0.00500	"	0.0333	ND	58.8	30-120					
Dibenz (a,h) anthracene	0.0166	0.00500	"	0.0333	ND	49.8	30-120					
Fluoranthene	0.0183	0.00500	"	0.0333	ND	54.8	30-120					
Fluorene	0.0202	0.00500	"	0.0333	ND	60.7	30-120					
Indeno (1,2,3-cd) pyrene	0.0159	0.00500	"	0.0333	ND	47.6	30-120					
Pyrene	0.0207	0.00500	"	0.0333	ND	62.2	35-142					
1-Methylnaphthalene	0.0174	0.00500	"	0.0333	ND	52.3	15-130					
2-Methylnaphthalene	0.0180	0.00500	"	0.0333	ND	53.9	15-130					
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0161</i>		<i>"</i>	<i>0.0333</i>		<i>48.4</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0189</i>		<i>"</i>	<i>0.0333</i>		<i>56.8</i>	<i>40-150</i>					

<b>Matrix Spike Dup (BHF0170-MSD1)</b>	<b>Source: 2406083-01</b>			<b>Prepared &amp; Analyzed: 06/07/24</b>							
Acenaphthene	0.0224	0.00500	mg/kg	0.0333	ND	67.2	31-137	29.5	30		
Anthracene	0.0223	0.00500	"	0.0333	ND	66.9	30-120	22.8	30		
Benzo (a) anthracene	0.0248	0.00500	"	0.0333	ND	74.3	30-120	22.0	30		
Benzo (a) pyrene	0.0221	0.00500	"	0.0333	ND	66.3	30-120	24.4	30		
Benzo (b) fluoranthene	0.0265	0.00500	"	0.0333	ND	79.4	30-120	38.2	30		QR-02
Benzo (k) fluoranthene	0.0244	0.00500	"	0.0333	ND	73.1	30-120	31.7	30		QR-02
Chrysene	0.0250	0.00500	"	0.0333	ND	74.9	30-120	24.0	30		
Dibenz (a,h) anthracene	0.0178	0.00500	"	0.0333	ND	53.4	30-120	6.88	30		
Fluoranthene	0.0227	0.00500	"	0.0333	ND	68.2	30-120	21.8	30		
Fluorene	0.0255	0.00500	"	0.0333	ND	76.5	30-120	22.9	30		
Indeno (1,2,3-cd) pyrene	0.0171	0.00500	"	0.0333	ND	51.3	30-120	7.52	30		
Pyrene	0.0257	0.00500	"	0.0333	ND	77.0	35-142	21.4	30		
1-Methylnaphthalene	0.0262	0.00500	"	0.0333	ND	78.5	15-130	40.2	50		
2-Methylnaphthalene	0.0247	0.00500	"	0.0333	ND	74.1	15-130	31.6	50		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0249</i>		<i>"</i>	<i>0.0333</i>		<i>74.8</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0235</i>		<i>"</i>	<i>0.0333</i>		<i>70.4</i>	<i>40-150</i>				

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

Project: Noble - Guttersen State CC20-04 FL  
Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**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 BHF0177 - EPA 3050B**

<b>Blank (BHF0177-BLK1)</b>				Prepared: 06/07/24 Analyzed: 06/14/24						
Boron	ND	2.00	mg/L							
<b>LCS (BHF0177-BS1)</b>				Prepared: 06/07/24 Analyzed: 06/14/24						
Boron	5.16	2.00	mg/L	5.00		103	80-120			
<b>Duplicate (BHF0177-DUP1)</b>				Source: 2406083-01 Prepared: 06/07/24 Analyzed: 06/14/24						
Boron	0.153	2.00	mg/L		0.176			13.6	20	
<b>Matrix Spike (BHF0177-MS1)</b>				Source: 2406083-01 Prepared: 06/07/24 Analyzed: 06/14/24						
Boron	5.54	2.00	mg/L	5.02	0.176	107	75-125			
<b>Matrix Spike Dup (BHF0177-MSD1)</b>				Source: 2406083-01 Prepared: 06/07/24 Analyzed: 06/14/24						
Boron	5.53	2.00	mg/L	5.02	0.176	107	75-125	0.217	25	

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Project: Noble - Guttersen State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**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 BHF0287 - EPA 3050B**

**Blank (BHF0287-BLK1)**

Prepared: 06/11/24 Analyzed: 06/12/24

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 (BHF0287-BS1)**

Prepared: 06/11/24 Analyzed: 06/12/24

Arsenic	38.8	0.200	mg/kg wet	40.0	97.1	80-120
Barium	39.1	0.400	"	40.0	97.8	80-120
Cadmium	1.92	0.200	"	2.00	95.8	80-120
Copper	39.8	0.400	"	40.0	99.6	80-120
Lead	18.9	0.200	"	20.0	94.7	80-120
Nickel	38.7	0.400	"	40.0	96.9	80-120
Silver	1.92	0.0200	"	2.00	96.2	80-120
Zinc	38.3	0.400	"	40.0	95.7	80-120
Selenium	3.78	0.260	"	4.00	94.6	80-120

**Duplicate (BHF0287-DUP1)**

Source: 2406075-03

Prepared: 06/11/24 Analyzed: 06/12/24

Arsenic	5.97	0.200	mg/kg dry	5.69	4.89	20	
Barium	114	0.400	"	123	7.39	20	
Cadmium	4.14	0.200	"	0.513	156	20	QR-04
Copper	9.83	0.400	"	10.0	1.93	20	
Lead	8.66	0.200	"	7.74	11.3	20	
Nickel	13.0	0.400	"	13.4	3.14	20	
Silver	0.0449	0.0200	"	0.0488	8.42	20	
Zinc	409	0.400	"	41.1	163	20	QR-04
Selenium	1.19	0.260	"	0.331	113	20	QR-01

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Broomfield CO, 80020

Project: Noble - Gutterson State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**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 BHF0287 - EPA 3050B**

**Matrix Spike (BHF0287-MS1)**

Source: 2406075-03

Prepared: 06/11/24 Analyzed: 06/12/24

Arsenic	51.7	0.200	mg/kg dry	47.1	5.69	97.8	75-125			
Barium	159	0.400	"	47.1	123	77.4	75-125			
Cadmium	2.81	0.200	"	2.35	0.513	97.5	75-125			
Copper	54.1	0.400	"	47.1	10.0	93.7	75-125			
Lead	28.0	0.200	"	23.5	7.74	85.9	75-125			
Nickel	58.1	0.400	"	47.1	13.4	94.9	75-125			
Silver	2.23	0.0200	"	2.35	0.0488	92.6	75-125			
Zinc	86.6	0.400	"	47.1	41.1	96.7	75-125			
Selenium	5.01	0.260	"	4.71	0.331	99.5	75-125			

**Matrix Spike Dup (BHF0287-MSD1)**

Source: 2406075-03

Prepared: 06/11/24 Analyzed: 06/12/24

Arsenic	52.3	0.200	mg/kg dry	47.8	5.69	97.4	75-125	1.06	25
Barium	164	0.400	"	47.8	123	86.1	75-125	2.92	25
Cadmium	2.95	0.200	"	2.39	0.513	102	75-125	4.82	25
Copper	54.5	0.400	"	47.8	10.0	93.1	75-125	0.719	25
Lead	28.6	0.200	"	23.9	7.74	87.4	75-125	2.32	25
Nickel	58.7	0.400	"	47.8	13.4	94.6	75-125	0.949	25
Silver	2.26	0.0200	"	2.39	0.0488	92.3	75-125	1.12	25
Zinc	99.6	0.400	"	47.8	41.1	123	75-125	14.0	25
Selenium	5.09	0.260	"	4.78	0.331	99.6	75-125	1.53	25

**Post Spike (BHF0287-PS1)**

Source: 2406075-03

Prepared: 06/11/24 Analyzed: 06/13/24

Arsenic	107		ug/l	100	12.8	94.5	75-125			
Barium	341		"	100	276	64.5	75-125			QM-01
Cadmium	6.06		"	5.00	1.16	98.1	75-125			
Copper	112		"	100	22.6	89.1	75-125			
Lead	61.9		"	50.0	17.4	89.0	75-125			
Nickel	118		"	100	30.3	87.9	75-125			
Silver	4.98		"	5.00	0.110	97.4	75-125			
Zinc	175		"	100	92.5	82.8	75-125			
Selenium	10.6		"	10.0	0.745	98.9	75-125			

Summit Scientific

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

Project: Noble - Gutterson State CC20-04 FL  
Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**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 BHF0282 - 3060A Mod**

**Blank (BHF0282-BLK1)**

Prepared & Analyzed: 06/11/24

Chromium, Hexavalent      ND      0.30    mg/kg wet

**LCS (BHF0282-BS1)**

Prepared & Analyzed: 06/11/24

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

**Duplicate (BHF0282-DUP1)**

**Source: 2406083-01**

Prepared & Analyzed: 06/11/24

Chromium, Hexavalent      ND      0.30    mg/kg dry      ND      20

**Matrix Spike (BHF0282-MS1)**

**Source: 2406083-01**

Prepared & Analyzed: 06/11/24

Chromium, Hexavalent      26.3      0.30    mg/kg dry      25.7      ND      102      75-125

**Matrix Spike Dup (BHF0282-MSD1)**

**Source: 2406083-01**

Prepared & Analyzed: 06/11/24

Chromium, Hexavalent      27.1      0.30    mg/kg dry      26.7      ND      101      75-125      3.14      20

Summit Scientific

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

Project: Noble - Gutterson State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

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

**Summit Scientific**

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

**Batch BHF0268 - General Preparation**

**Blank (BHF0268-BLK1)**

Prepared: 06/10/24 Analyzed: 06/14/24

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

**LCS (BHF0268-BS1)**

Prepared: 06/10/24 Analyzed: 06/14/24

Calcium	5.56	0.0500	mg/L wet	5.00	111	70-130
Magnesium	5.45	0.0500	"	5.00	109	70-130
Sodium	5.28	0.0500	"	5.00	106	70-130

Summit Scientific

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

Project: Noble - Guttersen State CC20-04 FL  
 Project Number: UWRWE-A3676-ABN  
 Project Manager: Jacob Whritenour

**Reported:**  
 06/24/24 08:14

**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 BHF0285 - General Preparation**

<b>Duplicate (BHF0285-DUP1)</b>		<b>Source: 2406087-01</b>			<b>Prepared &amp; Analyzed: 06/11/24</b>			
% Solids	94.8		%		95.1		0.316	20

Summit Scientific

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

Project: Noble - Guttersen State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**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 BHF0269 - General Preparation**

**Blank (BHF0269-BLK1)**

Prepared: 06/10/24 Analyzed: 06/11/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BHF0269-BS1)**

Prepared: 06/10/24 Analyzed: 06/11/24

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

**Duplicate (BHF0269-DUP1)**

Source: 2406081-01

Prepared: 06/10/24 Analyzed: 06/11/24

Specific Conductance (EC) 0.0702 0.0100 mmhos/cm 0.0708 0.780 20

Summit Scientific

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

Project: Noble - Guttersen State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

**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 BHF0270 - General Preparation**

**LCS (BHF0270-BS1)**

Prepared: 06/10/24 Analyzed: 06/11/24

pH	9.19	pH Units	9.18	100	95-105
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**Duplicate (BHF0270-DUP1)**

Source: 2406081-01

Prepared: 06/10/24 Analyzed: 06/11/24

pH	8.12	pH Units	8.18	0.736	20
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Summit Scientific

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

Project: Noble - Gutterson State CC20-04 FL

Project Number: UWRWE-A3676-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
06/24/24 08:14

### Notes and Definitions

- QR-04 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- QR-01 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
- QM-01 The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference