

**REMEDIAL EXCAVATION REPORT**  
**Guttersen State CC20-04 FLOWLINE**

ECMC SPILL TRACKING # 487229,  
487228 & 487167  
ECMC REMEDIATION # 28732



2115 117th Avenue  
Greeley, CO 80631

Prepared by:



6855 W. 119<sup>th</sup> Ave  
Broomfield, CO 80020

# TABLE

**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 Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
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
FS01-FL01-01@3'	09/04/2024	3	40.298960	-104.464201	1.0	0.9
FS01-FL01-06@3'	09/04/2024	3	40.299677	-104.467762	0.8	0.4
FS01-FL01-07@3'	09/04/2024	3	40.299734	-104.468700	0.7	0.1
SS01-FL01-01@2'	09/04/2024	2	40.298978	-104.464199	1.0	0.8
SS01-FL01-06@2'	09/04/2024	2	40.299694	-104.467759	0.8	0.3
SS01-FL01-07@2'	09/04/2024	2	40.299750	-104.468699	0.7	0.3
SS02-FL01-01@2'	09/04/2024	2	40.298958	-104.464177	1.0	1.0
SS02-FL01-06@2'	09/04/2024	2	40.299671	-104.467736	NC	0.3
SS02-FL01-07@2'	09/04/2024	2	40.299730	-104.468681	0.7	0.3

Sample ID	Sample Date	Depth (ft.)	GPS Data		PDOP Value	VOC Concentration (ppm)
			Latitude/Longitude			
SS03-FL01-01@2'	09/04/2024	2	40.298943	-104.464204	0.9	0.6
SS03-FL01-06@2'	09/04/2024	2	40.299651	-104.467763	0.8	0.0
SS03-FL01-07@2'	09/04/2024	2	40.299712	-104.468705	0.7	0.6
SS04-FL01-01@2'	09/04/2024	2	40.298964	-104.464233	NC	0.9
SS04-FL01-06@2'	09/04/2024	2	40.299679	-104.467788	0.8	0.1
SS04-FL01-07@2'	09/04/2024	2	40.299737	-104.468731	0.7	1.5
BKG01@2'	09/04/2024	2	40.299429	-104.469104	0.8	0.0
BKG02@2'	09/04/2024	2	40.299940	-104.467463	1.1	0.0
BKG03@2'	09/04/2024	2	40.299319	-104.465988	1.1	0.1
BKG04@2'	09/04/2024	2	40.299651	-104.463767	0.9	0.0
BKG05@2'	09/04/2024	2	40.298816	-104.463674	1.1	0.1

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	0.0140	<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
FS01-FL01-01@3'	09/04/2024	3	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FS01-FL01-06@3'	09/04/2024	3	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FS01-FL01-07@3'	09/04/2024	3	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SS01-FL01-01@2'	09/04/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SS01-FL01-06@2'	09/04/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SS01-FL01-07@2'	09/04/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SS02-FL01-01@2'	09/04/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SS02-FL01-06@2'	09/04/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SS02-FL01-07@2'	09/04/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SS03-FL01-01@2'	09/04/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SS03-FL01-06@2'	09/04/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SS03-FL01-07@2'	09/04/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SS04-FL01-01@2'	09/04/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SS04-FL01-06@2'	09/04/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SS04-FL01-07@2'	09/04/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50

**Notes:**

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

ECMC = Energy & Carbon Management Commission

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

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

TPH-ORO = Total petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

TABLE 3  
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA  
NOBLE ENERGY INC. - 100322  
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	0.0504	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	0.0504	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	0.0772	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
FS01-FL01-01@3'	09/04/2024	3	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS01-FL01-06@3'	09/04/2024	3	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS01-FL01-07@3'	09/04/2024	3	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS01-FL01-01@2'	09/04/2024	2	0.00983	0.033	0.0921	0.0623	0.0933	0.0328	0.0893	0.0128	0.19	0.0111	0.0658	<0.00500	<0.00500	<0.00500
SS01-FL01-06@2'	09/04/2024	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
SS01-FL01-07@2'	09/04/2024	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
SS02-FL01-01@2'	09/04/2024	2	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00572	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS02-FL01-06@2'	09/04/2024	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
SS02-FL01-07@2'	09/04/2024	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
SS03-FL01-01@2'	09/04/2024	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
SS03-FL01-06@2'	09/04/2024	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
SS03-FL01-07@2'	09/04/2024	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
SS04-FL01-01@2'	09/04/2024	2	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00793	<0.00500	<0.00500	0.00636	<0.00500	<0.00500
SS04-FL01-06@2'	09/04/2024	2	<0.00500	0.0139	0.00955	0.00544	0.00959	<0.00500	0.0114	<0.00500	0.0214	<0.00500	<0.00500	0.0176	<0.00500	<0.00500
SS04-FL01-07@2'	09/04/2024	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:**

- 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

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	8.67	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
FS01-FL01-01@3'	09/04/2024	3	7.12	0.635	0.18	<2.00
FS01-FL01-06@3'	09/04/2024	3	7.43	0.204	0.106	<2.00
FS01-FL01-07@3'	09/04/2024	3	7.83	0.335	0.684	<2.00
SS01-FL01-01@2'	09/04/2024	2	8.06	0.452	0.19	<2.00
SS01-FL01-06@2'	09/04/2024	2	7.11	0.172	0.153	<2.00
SS01-FL01-07@2'	09/04/2024	2	7.09	0.0718	0.101	<2.00
SS02-FL01-01@2'	09/04/2024	2	7.19	0.115	0.0777	<2.00
SS02-FL01-06@2'	09/04/2024	2	7.67	0.485	0.341	<2.00
SS02-FL01-07@2'	09/04/2024	2	7.43	0.761	1.1	<2.00
SS03-FL01-01@2'	09/04/2024	2	7.43	0.107	0.12	<2.00
SS03-FL01-06@2'	09/04/2024	2	8.06	0.0933	0.0764	<2.00
SS03-FL01-07@2'	09/04/2024	2	7.63	0.252	0.341	<2.00
SS04-FL01-01@2'	09/04/2024	2	6.87	0.324	0.478	<2.00
SS04-FL01-06@2'	09/04/2024	2	8.29	0.327	0.0885	<2.00

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
SS04-FL01-07@2'	09/04/2024	2	6.55	0.562	0.767	<2.00
BKG01@2'	6/6/2024	2	8.55	0.161	0.034	NA
BKG01@2'	09/04/2024	2	7.66	0.0514	0.0493	<2.00
BKG02@2'	09/04/2024	2	7.86	0.342	0.0254	<2.00
BKG03@2'	09/04/2024	2	8.02	0.232	0.0221	<2.00
BKG04@2'	09/04/2024	2	6.69	0.0586	0.0133	<2.00
BKG05@2'	09/04/2024	2	7.14	0.0507	0.0256	<2.00
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	1.54	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	1.63	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	1.52	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	1.31	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	1.17	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	1.42	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	1.74	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	1.52	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	1.71	54.3	<0.200	<0.30	3.63	3.98	4.28	<0.260	<0.0200	16.9
FS01-FL01-01@3'	09/04/2024	3	1.51	49.9	<0.200	<0.30	2.81	4.38	3.14	<0.260	0.0286	13.4
FS01-FL01-06@3'	09/04/2024	3	38	38.5	1.92	<0.30	39.5	18.9	39.3	3.86	1.94	42.6
FS01-FL01-07@3'	09/04/2024	3	41.2	161	2.29	<0.30	34.2	35.3	32.9	3.73	2.03	59.9
SS01-FL01-01@2'	09/04/2024	2	1.66	46.8	<0.200	<0.30	4.07	4.11	3.92	<0.260	<0.0200	15.4
SS01-FL01-06@2'	09/04/2024	2	1.85	122	0.252	<0.30	5.64	15.8	4.49	<0.260	0.0201	29.8
SS01-FL01-07@2'	09/04/2024	2	0.915	29.1	<0.200	<0.30	2.29	3.1	2.15	<0.260	<0.0200	9.26
SS02-FL01-01@2'	09/04/2024	2	1.36	47.8	<0.200	<0.30	3.82	4.06	3.93	<0.260	<0.0200	15.3
SS02-FL01-06@2'	09/04/2024	2	1.84	117	0.251	<0.30	5.77	33	4.5	<0.260	0.0232	29.9
SS02-FL01-07@2'	09/04/2024	2	0.986	31.6	<0.200	<0.30	2.75	3.43	2.35	<0.260	<0.0200	10.6
SS03-FL01-01@2'	09/04/2024	2	1.79	55.3	<0.200	<0.30	4.47	4.86	5.03	<0.260	0.0212	20.8
SS03-FL01-06@2'	09/04/2024	2	36.8	165	2.11	<0.30	31	54.7	28.7	3.12	1.83	79.2
SS03-FL01-07@2'	09/04/2024	2	0.914	30.4	<0.200	<0.30	2.49	2.8	2.35	<0.260	<0.0200	9.65
SS04-FL01-01@2'	09/04/2024	2	1.48	121	<0.200	<0.30	4.03	5.37	4.07	<0.260	<0.0200	16.5
SS04-FL01-06@2'	09/04/2024	2	36.8	152	2.1	<0.30	31.6	49.1	29.5	3.21	1.84	70.8
SS04-FL01-07@2'	09/04/2024	2	0.863	28.1	<0.200	<0.30	2.48	2.73	2.23	<0.260	<0.0200	9.48

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
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
BKG01@2'	09/04/2024	2	1.17	33.8	<0.200	<0.30	2.48	3.05	2.64	<0.260	<0.0200	10.3
BKG02@2'	09/04/2024	2	1.13	36.5	<0.179	<0.30	2.9	3.28	3.01	<0.232	<0.0179	11.7
BKG03@2'	09/04/2024	2	2.16	52.9	<0.200	<0.30	4.63	5.06	5.42	<0.260	0.0257	19.9
BKG04@2'	09/04/2024	2	1.43	54.3	<0.181	<0.30	4.73	5.01	4.73	<0.236	<0.0181	18.3
BKG05@2'	09/04/2024	2	1.19	32.9	<0.200	<0.30	2.17	2.86	2.44	<0.260	<0.0200	8.82
Maximum Background Concentration			4.19	99.6	0.212	-	-	8.57	11.6	-	0.044	-
Maximum Background Concentration X 1.25			5.24	125	0.265	-	-	10.7	14.5	-	0.055	-

**Notes:**

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

ECMC = Energy & Carbon Management Commission

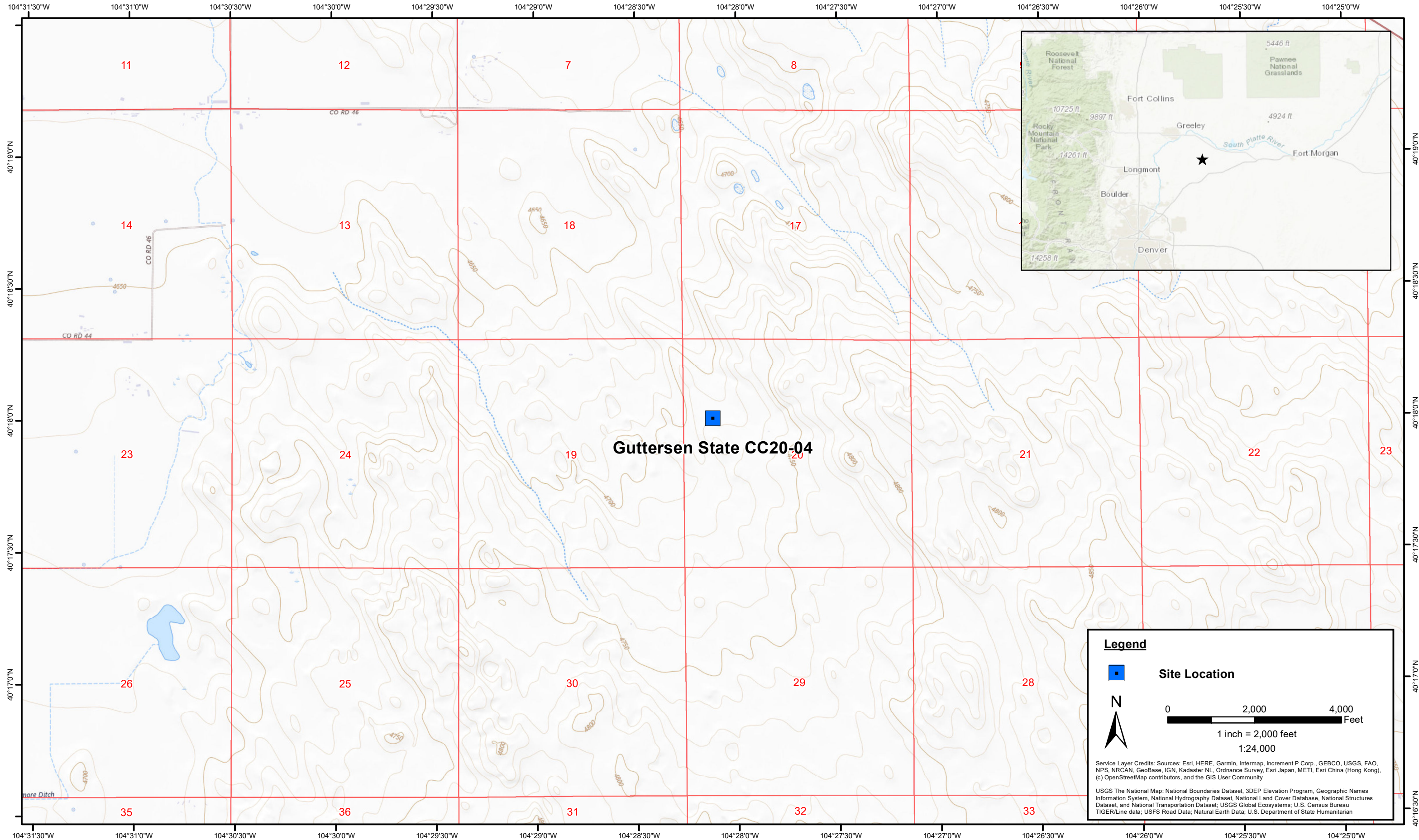
(<) = Analytical result is less than the indicated laboratory reporting limit.

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

## **FIGURES**



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**

- Excavation Extent (Collected via Trimble GPS)
- - - Flowline Location (Collected via Trimble GPS)
- +

**Notes**

- 1) All locations are approximate unless otherwise noted.
- 2) Buried infrastructure has been spatially projected.
- 3) Analytical results below laboratory detection limits or within compliance of ECMC Table 915-1 not shown.
- 4) Concentration in exceedance of ECMC Table 915-1 soil standards indicated in **RED**.

GPS – Global Positioning System  
 mg/kg – Milligrams per kilogram  
 PID – Photoionization Detector  
 ppm – parts per million

0 ft. 25 ft. 50 ft.

Image Source: Google Earth; Google 2023

DATE: 09/09/2024

DESIGNED BY: JW

DRAWN BY: L. Bohannon



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

Excavation Soil  
 Analytical Results Map  
 (06/05/2024 & 09/04/2024)

FIGURE  
 2



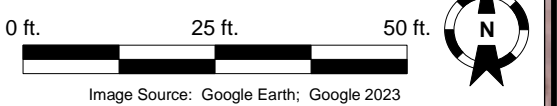
**Legend**

- Excavation Extent (Collected via Trimble GPS)
- - - Flowline Location (Collected via Trimble GPS)
- + Soil Sample Location – Lab Analyzed (Collected via Trimble GPS)
- + Soil Sample Location – GSSL Exceedance (Collected via Trimble GPS)

**Notes**

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

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



DATE:	09/09/2024
DESIGNED BY:	JW
DRAWN BY:	L. Bohannon

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

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

Excavation Soil  
 Analytical Results Map  
 (06/05/2024 & 09/04/2024)

**FIGURE**  
 2



**Legend**

- Excavation Extent (Collected via Trimble GPS)
- - - Flowline Location (Collected via Trimble GPS)
- + Soil Sample Location – Lab Analyzed (Collected via Trimble GPS)
- + Soil Sample Location – GSSL Exceedance (Collected via Trimble GPS)

**Notes**

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

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

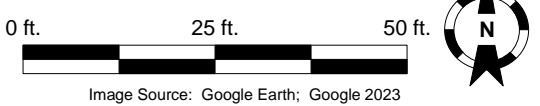


Image Source: Google Earth; Google 2023

DATE:	09/09/2024
DESIGNED BY:	JW
DRAWN BY:	L. Bohannon

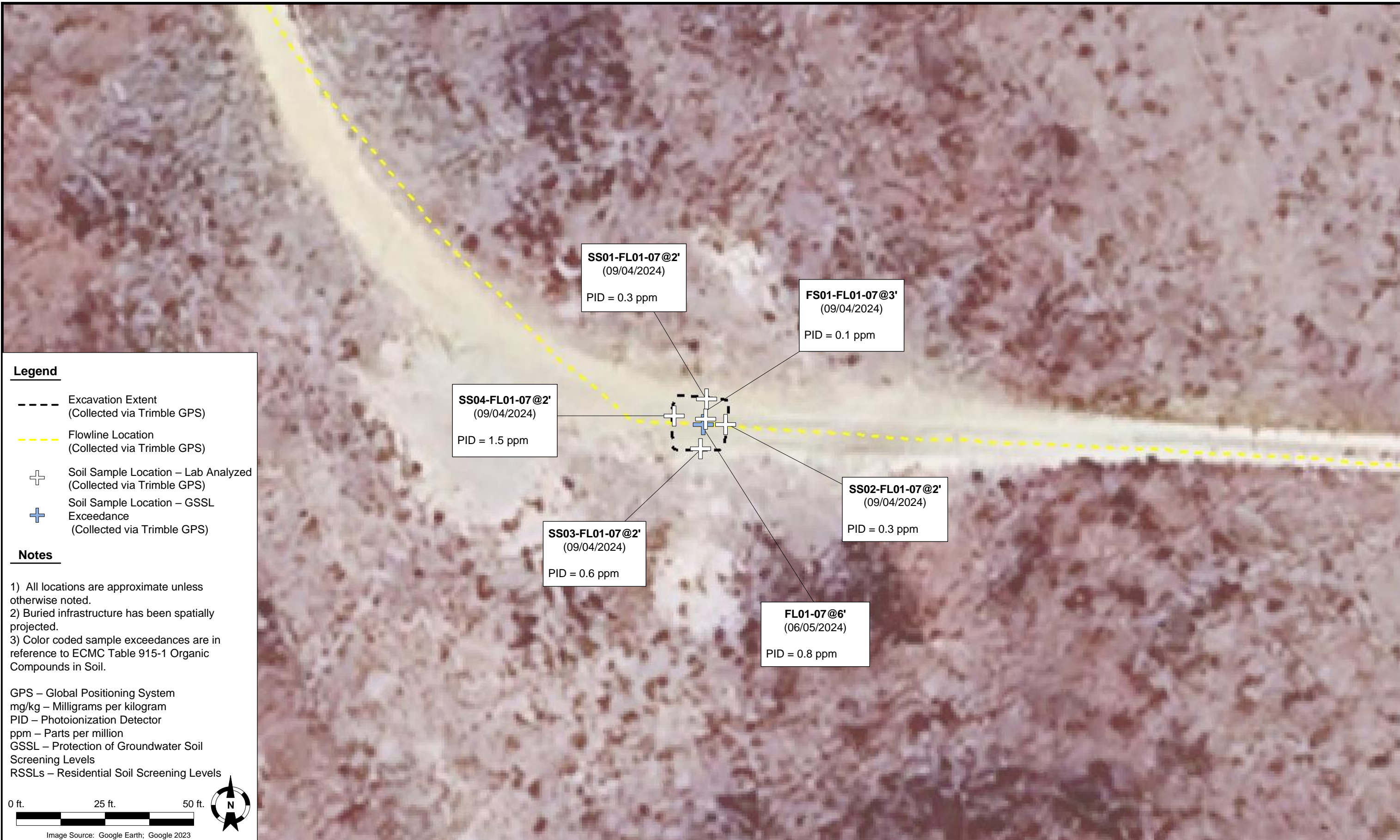


**Tasman, Inc.**  
 6855 W 119<sup>th</sup> Avenue  
 Broomfield, CO 80020

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

Excavation Soil  
 Analytical Results Map  
 (06/05/2024 & 09/04/2024)

**FIGURE**  
**3**



**Legend**

- Excavation Extent  
(Collected via Trimble GPS)
- - - Flowline Location  
(Collected via Trimble GPS)
- + Soil Sample Location – Lab Analyzed  
(Collected via Trimble GPS)
- + Soil Sample Location – GSSL Exceedance  
(Collected via Trimble GPS)

**Notes**

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

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

0 ft.      25 ft.      50 ft.

Image Source: Google Earth; Google 2023

DATE:	09/09/2024
DESIGNED BY:	JW
DRAWN BY:	L. Bohannon

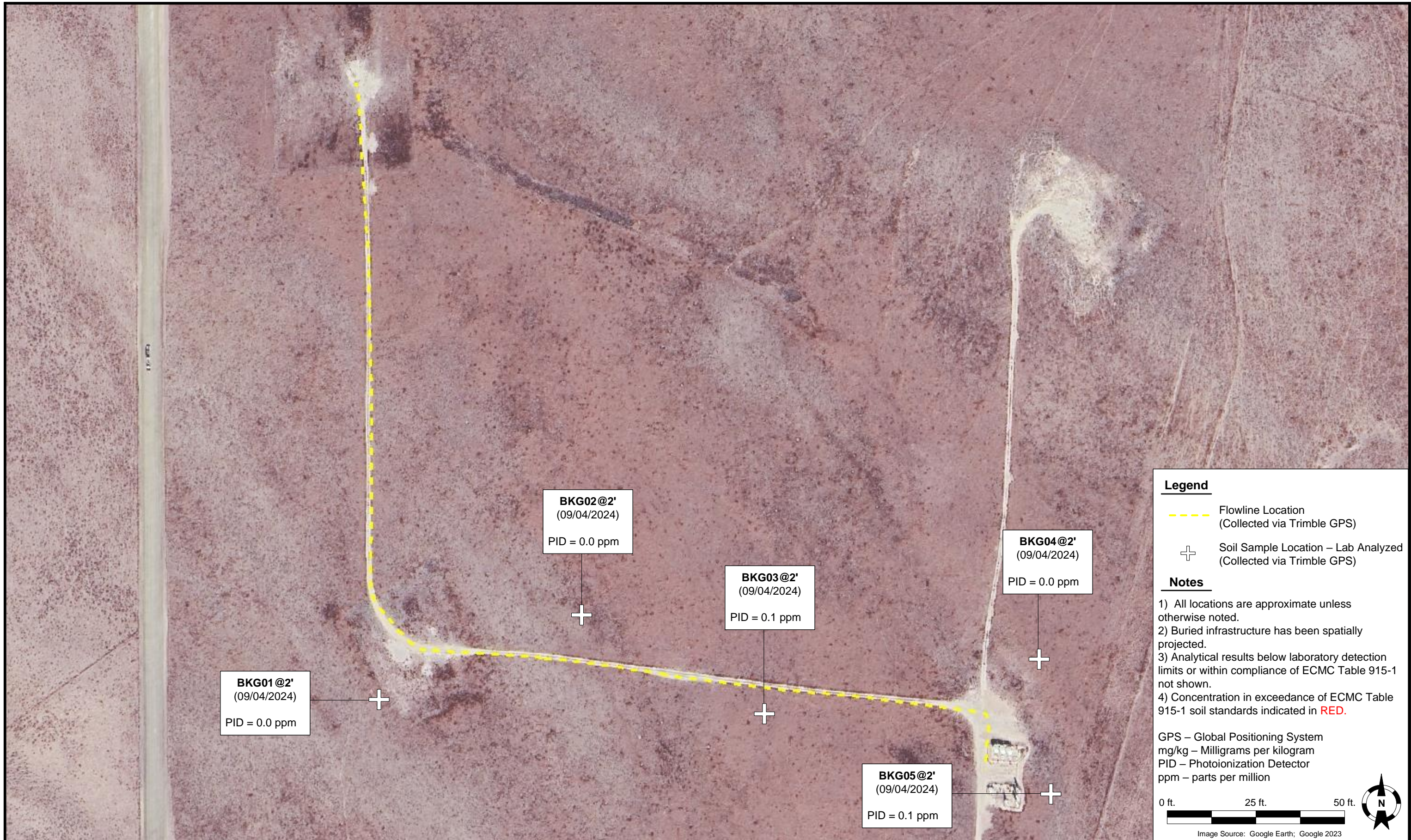


**Tasman, Inc.**  
 6855 W 119<sup>th</sup> Avenue  
 Broomfield, CO 80020

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

Excavation Soil  
 Analytical Results Map  
 (06/06/2024 & 09/04/2024)

FIGURE  
 4



**BKG01@2'**  
(09/04/2024)  
PID = 0.0 ppm

**BKG02@2'**  
(09/04/2024)  
PID = 0.0 ppm

**BKG03@2'**  
(09/04/2024)  
PID = 0.1 ppm

**BKG04@2'**  
(09/04/2024)  
PID = 0.0 ppm

**BKG05@2'**  
(09/04/2024)  
PID = 0.1 ppm

DATE: 09/09/2024

DESIGNED BY: JW

DRAWN BY: L. Bohannon



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

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

Excavation Background Soil  
 Analytical Results Map  
 09/04/2024

**FIGURE**  
5