

**SITE ASSESSMENT REPORT**  
**FIVE RIVERS K09-21D**  
**ECMC REMEDIATION #29938**  
**ECMC SPILL TRACKING # 486824**

Prepared for:



2115 117th Avenue  
Greeley, CO 80631

Prepared by:



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

## **TABLES**

TABLE 1  
FIELD DATA SUMMARY TABLE  
NOBLE ENERGY, INC. - 100322  
FIVE RIVERS K09-21D FACILITY, WELD COUNTY, COLORADO  
REM # 29938

Sample ID	Sample Date	Depth (ft)	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
AST01@0.5'	3/20/2024	0.5	40.325583	-104.790846	NC	0.3
AST02@0.5'	3/20/2024	0.5	40.325618	-104.790803	NC	4.0
AST03@0.5'	3/20/2024	0.5	40.325646	-104.790776	NC	0.8
AST04@0.5'	3/20/2024	0.5	40.325680	-104.790745	NC	0.1
FLARE01@0.5'	3/20/2024	0.5	40.325987	-104.790555	NC	0.1
FLARE02@0.5'	3/20/2024	0.5	40.325952	-104.790480	NC	0.1
FS01@4'	3/20/2024	4	40.325641	-104.790869	NC	1.0
FS02@4'	3/20/2024	4	40.325664	-104.790849	NC	1.4
FS03@4'	3/20/2024	4	40.325704	-104.790816	NC	0.9
FS04@4'	3/20/2024	4	40.325739	-104.790794	NC	0.0
MH01@0.5'	3/20/2024	0.5	40.325945	-104.790800	NC	0.2
PIPE01@0.5'	3/20/2024	0.5	40.325696	-104.790564	NC	0.3
SS01@2'	3/20/2024	2	40.325657	-104.790881	NC	0.0
SS02@2'	3/20/2024	2	40.325692	-104.790852	NC	0.7
SS03@2'	3/20/2024	2	40.325732	-104.790820	NC	0.5
SS04@2'	3/20/2024	2	40.325757	-104.790781	NC	0.2
SS05@2'	3/20/2024	2	40.325720	-104.790779	NC	19.3
SS06@2'	3/20/2024	2	40.325667	-104.790809	NC	1.8
SS07@2'	3/20/2024	2	40.325633	-104.790848	NC	6.0
SS08@2'	3/20/2024	2	40.325624	-104.790886	NC	1.6
SEP01-DL@2'	3/20/2024	2	40.325892	-104.790703	NC	3.6
SEP02-DL@2'	3/20/2024	2	40.325873	-104.790674	NC	0.3
BH01@2-3'	11/15/2024	2-3	40.325729	-104.790777	0.9	0.0
BH01@4-4.5'	11/15/2024	4-4.5	40.325729	-104.790777	0.9	0.0
BH02@2-3'	11/15/2024	2-3	40.325773	-104.790734	0.8	0.1
BH02@4-4.5'	11/15/2024	4-4.5	40.325773	-104.790734	0.8	0.0
BH03@2-3'	11/15/2024	2-3	40.325693	-104.790723	0.8	0.0
BH03@4-4.5'	11/15/2024	4-4.5	40.325693	-104.790723	0.8	0.2
BH04@2-3'	11/15/2024	2-3	40.325680	-104.790816	0.9	0.0
BH04@4-4.5'	11/15/2024	4-4.5	40.325680	-104.790816	0.9	0.0
BH05@2-3'	11/15/2024	2-3	40.325760	-104.790843	0.9	0.0
BH05@4-4.5'	11/15/2024	4-4.5	40.325760	-104.790843	0.9	0.0
BG01@2-3'	11/15/2024	2-3	40.326136	-104.790433	0.9	0.1
BG01@4-4.5'	11/15/2024	4-4.5	40.326136	-104.790433	0.9	0.1
BG01@9-10'	11/15/2024	9-10	40.326136	-104.790433	0.9	0.0
BG02@2-3'	11/15/2024	2-3	40.325842	-104.790965	0.8	0.2
BG02@4-4.5'	11/15/2024	4-4.5	40.325842	-104.790965	0.8	0.0
BG02@9-10'	11/15/2024	9-10	40.325842	-104.790965	0.8	0.2
BG03@2-3'	11/15/2024	2-3	40.325844	-104.791014	0.8	0.0
BG03@4-4.5'	11/15/2024	4-4.5	40.325844	-104.791014	0.8	0.0
BG03@9-10'	11/15/2024	9-10	40.325844	-104.791014	0.8	0.0
BG04@2-3'	11/15/2024	2-3	40.325750	-104.791114	0.8	0.0
BG04@4-4.5'	11/15/2024	4-4.5	40.325750	-104.791114	0.8	0.1
BG04@9-10'	11/15/2024	9-10	40.325750	-104.791114	0.8	0.0
BG05@2-3'	11/15/2024	2-3	40.325494	-104.791344	1.0	0.0
BG05@4-4.5'	11/15/2024	4-4.5	40.325494	-104.791344	1.0	0.0
BG05@9-10'	11/15/2024	9-10	40.325494	-104.791344	1.0	0.0

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

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

PDOP = Position Dilution of Precision

ppm = Parts per million

ft = Feet

bgs = Below ground surface

NC = Data not collected

TABLE 2  
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA  
NOBLE ENERGY, INC. - 100322  
FIVE RIVERS K09-21D FACILITY, WELD COUNTY, COLORADO  
REM # 29938

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**		
AST01@0.5'	03/20/2024	0.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
AST02@0.5'	03/20/2024	0.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
AST03@0.5'	03/20/2024	0.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
AST04@0.5'	03/20/2024	0.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	0.0083	<0.0038	<500	<0.50	<50	<50
FS01@4'	03/20/2024	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FS02@4'	03/20/2024	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FS03@4'	03/20/2024	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FS04@4'	03/20/2024	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP01-DL@2'	03/20/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP02-DL@2'	03/20/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SS05@2'	03/20/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<b>0.020</b>	<0.0038	<500	<0.50	<50	<50
BH01@2-3'	11/15/2024	2-3	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
BH01@4-4.5'	11/15/2024	4-4.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
BH02@2-3'	11/15/2024	2-3	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
BH02@4-4.5'	11/15/2024	4-4.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
BH03@2-3'	11/15/2024	2-3	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
BH03@4-4.5'	11/15/2024	4-4.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
BH04@2-3'	11/15/2024	2-3	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
BH04@4-4.5'	11/15/2024	4-4.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
BH05@2-3'	11/15/2024	2-3	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
BH05@4-4.5'	11/15/2024	4-4.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50

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 = Colorado 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

TABLE 3  
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA  
NOBLE ENERGY, INC. - 100322)  
FIVE RIVERS K09-21D FACILITY, WELD COUNTY, COLORADO  
REM # 29938

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
AST01@0.5'	03/20/2024	0.5	<0.00500	<0.00500	<0.00500	0.0078	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
AST02@0.5'	03/20/2024	0.5	<0.00500	<0.00500	<0.00500	0.00772	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
AST03@0.5'	03/20/2024	0.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
AST04@0.5'	03/20/2024	0.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS01@4'	03/20/2024	4	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS02@4'	03/20/2024	4	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS03@4'	03/20/2024	4	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS04@4'	03/20/2024	4	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP01-DL@2'	03/20/2024	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
SEP02-DL@2'	03/20/2024	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
SS05@2'	03/20/2024	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
BH01@2-3'	11/15/2024	2-3	<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
BH01@4-4.5'	11/15/2024	4-4.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
BH02@2-3'	11/15/2024	2-3	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00673	<0.00500	<0.00500
BH02@4-4.5'	11/15/2024	4-4.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
BH03@2-3'	11/15/2024	2-3	<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
BH03@4-4.5'	11/15/2024	4-4.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00608	<0.00500	<0.00500	0.00822	<0.00500	<0.00500
BH04@2-3'	11/15/2024	2-3	<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
BH04@4-4.5'	11/15/2024	4-4.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
BH05@2-3'	11/15/2024	2-3	<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
BH05@4-4.5'	11/15/2024	4-4.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

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.  
PAHs = Polycyclic aromatic hydrocarbons  
mg/kg = Milligrams per kilogram  
ft. = Feet

**TABLE 4**  
**SUMMARY OF SOIL SUITABILITY FOR RECLAMATION**  
**NOBLE ENERGY, INC. - 100322)**  
**FIVE RIVERS K09-21D FACILITY, WELD COUNTY, COLORADO**  
**REM # 29938**

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
AST01@0.5'	03/20/2024	0.5	8.02	1.12	2.49	<2.00
AST02@0.5'	03/20/2024	0.5	7.86	2.84	4.24	<2.00
AST03@0.5'	03/20/2024	0.5	7.97	2.31	4.28	<2.00
AST04@0.5'	03/20/2024	0.5	8.06	2.41	5.41	<2.00
FS01@4'	03/20/2024	4	8.83	1.14	1.70	<2.00
FS02@4'	03/20/2024	4	8.16	0.615	0.826	<2.00
FS03@4'	03/20/2024	4	8.14	0.843	1.60	<2.00
FS04@4'	03/20/2024	4	7.69	1.47	1.72	<2.00
SEP01-DL@2'	03/20/2024	2	8.05	0.347	0.122	<2.00
SEP02-DL@2'	03/20/2024	2	7.98	0.427	0.320	<2.00
SS05@2'	03/20/2024	2	8.23	2.23	6.91	<2.00
BH01@2-3'	11/15/2024	2-3	7.85	1.85	3.17	<2.00
BH01@4-4.5'	11/15/2024	4-4.5	7.85	2.86	3.51	<2.00
BH02@2-3'	11/15/2024	2-3	8.02	0.263	0.151	<2.00
BH02@4-4.5'	11/15/2024	4-4.5	8.00	0.092	0.265	<2.00
BH03@2-3'	11/15/2024	2-3	7.87	0.790	1.69	<2.00
BH03@4-4.5'	11/15/2024	4-4.5	9.57	0.449	0.928	<2.00
BH04@2-3'	11/15/2024	2-3	7.93	1.80	3.81	<2.00
BH04@4-4.5'	11/15/2024	4-4.5	8.10	1.38	4.88	<2.00
BH05@2-3'	11/15/2024	2-3	9.31	0.262	0.494	<2.00
BH05@4-4.5'	11/15/2024	4-4.5	8.18	0.166	0.865	<2.00
BG01@2-3'	11/15/2024	2-3	6.92	1.63	0.399	<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
BG01@4-4.5'	11/15/2024	4-4.5	7.90	0.196	0.239	<2.00
BG01@9-10'	11/15/2024	9-10	7.78	0.2	1.06	<2.00
BG02@2-3'	11/15/2024	2-3	6.22	0.322	0.465	<2.00
BG02@4-4.5'	11/15/2024	4-4.5	7.60	0.231	0.813	<2.00
BG02@9-10'	11/15/2024	9-10	6.92	0.332	1.23	<2.00
BG03@2-3'	11/15/2024	2-3	6.92	1.22	1.2	<2.00
BG03@4-4.5'	11/15/2024	4-4.5	7.88	0.259	1.18	<2.00
BG03@9-10'	11/15/2024	9-10	7.82	0.215	1.2	<2.00
BG04@2-3'	11/15/2024	2-3	7.72	0.564	0.69	<2.00
BG04@4-4.5'	11/15/2024	4-4.5	7.60	0.23	1.5	<2.00
BG04@9-10'	11/15/2024	9-10	7.90	0.239	1.65	<2.00
BG05@2-3'	11/15/2024	2-3	8.10	2.05	4.37	<2.00
BG05@4-4.5'	11/15/2024	4-4.5	7.67	0.349	2.2	<2.00
BG05@9-10'	11/15/2024	9-10	5.28	0.523	0.762	<2.00
Maximum Background Concentration			8.10	2.05	4.37	-

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

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

3. Brown highlighted soil analytical values indicate a regulatory exceedance, but below background concentration.

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

TABLE 5  
SUMMARY OF METALS IN SOIL CHEMISTRY DATA  
NOBLE ENERGY, INC. - 100322  
FIVE RIVERS K09-21D FACILITY, WELD COUNTY, COLORADO  
REM # 29938

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
AST01@0.5'	03/20/2024	0.5'	2.88	69.4	0.260	<0.30*	6.12	7.20	5.31	0.515	0.0396	26.7
AST02@0.5'	03/20/2024	0.5'	3.16	78.9	0.271	<0.30*	6.11	8.60	5.46	1.23	0.0570	25.2
AST03@0.5'	03/20/2024	0.5'	2.58	68.9	0.210	<0.30*	5.08	6.35	4.38	0.621	0.0418	21.0
AST04@0.5'	03/20/2024	0.5'	1.98	50.6	<0.200	<0.30*	4.63	5.31	3.47	0.394	0.0306	21.8
FS01@4'	03/20/2024	4'	0.952	23.3	<0.200	<0.30*	2.59	2.86	1.68	<0.260	<0.0200	20.2
FS02@4'	03/20/2024	4'	1.48	45.3	<0.200	<0.30*	5.39	4.81	2.52	<0.260	0.0266	27.8
FS03@4'	03/20/2024	4'	1.08	40.5	<0.200	<0.30*	5.83	4.90	2.22	<0.260	0.0284	29.6
FS04@4'	03/20/2024	4'	1.49	42.3	<0.200	<0.30*	4.96	5.30	2.65	<0.260	0.0336	25.2
SEP01-DL@2'	03/20/2024	2'	1.52	44.0	<0.200	<0.30*	4.99	4.89	2.86	<0.260	0.0309	23.2
SEP02-DL@2'	03/20/2024	2'	2.58	62.4	0.208	<0.30*	5.77	5.98	4.39	<0.260	0.0333	25.3
SS05@2'	03/20/2024	2'	1.79	44.0	<0.200	<0.30*	5.52	5.50	2.91	<0.260	0.0290	24.8
BH01@2-3'	11/15/2024	2-3	2.26	49.0	<0.200	<0.30*	5.00	5.00	4.10	0.303	0.0527	21.2
BH01@4-4.5'	11/15/2024	4-4.5	1.90	36.0	<0.200	<0.30*	3.56	3.72	3.10	<0.260	0.0555	14.2
BH02@2-3'	11/15/2024	2-3	1.26	47.4	<0.200	<0.30*	6.26	5.32	3.01	<0.260	0.116	30.4
BH02@4-4.5'	11/15/2024	4-4.5	0.603	21.9	<0.200	<0.30*	3.05	3.50	1.24	<0.260	0.0451	15
BH03@2-3'	11/15/2024	2-3	3.05	82.4	0.267	<0.30*	9.04	7.99	5.33	0.325	0.108	46.6
BH03@4-4.5'	11/15/2024	4-4.5	2.29	79.4	0.404	<0.30*	8.86	13.8	3.02	<0.260	0.178	36.9
BH04@2-3'	11/15/2024	2-3	2.34	65.8	<0.200	<0.30*	5.68	5.87	5.23	0.438	0.0339	24
BH04@4-4.5'	11/15/2024	4-4.5	1.69	41.7	<0.200	<0.30*	4.03	4.19	3.66	<0.260	0.0236	17.1
BH05@2-3'	11/15/2024	2-3	1.92	81.1	0.257	<0.30*	6.69	10.6	3.95	<0.260	0.0763	25.4
BH05@4-4.5'	11/15/2024	4-4.5	0.433	7.89	<0.200	<0.30*	0.781	1.35	0.746	<0.260	<0.0200	4.30
BG01@2-3'	11/15/2024	2-3	1.06	59.8	<0.200	<0.30*	6.58	5.11	4.43	<0.260	0.0271	32.8
BG01@4-4.5'	11/15/2024	4-4.5	0.479	10.3	<0.200	<0.30*	1.76	2.49	0.951	<0.260	<0.0200	8.59
BG01@9-10'	11/15/2024	9-10	0.355	6.46	<0.200	<0.30*	0.687	1.42	0.621	<0.260	<0.0200	3.36
BG02@2-3'	11/15/2024	2-3	0.327	11.6	<0.200	<0.30*	1.15	1.03	0.768	<0.260	<0.0200	7.79
BG02@4-4.5'	11/15/2024	4-4.5	0.365	8.08	<0.200	<0.30*	0.503	0.729	0.428	<0.260	<0.0200	2.81
BG02@9-10'	11/15/2024	9-10	0.215	5.55	<0.200	<0.30*	1.10	0.882	0.839	<0.260	<0.0200	4.13
BG03@2-3'	11/15/2024	2-3	0.619	19.9	<0.200	<0.30*	2.34	2.04	1.30	<0.260	<0.0200	14.0



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
BG03@4-4.5'	11/15/2024	4-4.5	0.479	6.32	<0.200	<0.30*	1.04	1.58	1.11	<0.260	<0.0200	5.76
BG03@9-10'	11/15/2024	9-10	0.834	6.03	<0.200	<0.30*	1.05	1.41	0.796	<0.260	<0.0200	3.55
BG04@2-3'	11/15/2024	2-3	0.262	16.5	<0.200	<0.30*	<0.400	1.71	<0.400	<0.260	<0.0200	4.47
BG04@4-4.5'	11/15/2024	4-4.5	0.285	15.1	<0.200	<0.30*	<0.400	1.06	<0.400	<0.260	<0.0200	1.52
BG04@9-10'	11/15/2024	9-10	0.420	4.64	<0.200	<0.30*	<0.400	0.962	<0.400	<0.260	<0.0200	2.02
BG05@2-3'	11/15/2024	2-3	0.653	35.8	0.230	<0.30*	2.93	6.52	0.485	<0.260	0.0512	15.6
BG05@4-4.5'	11/15/2024	4-4.5	0.374	17.4	<0.200	<0.30*	0.453	1.83	<0.400	<0.260	<0.0200	4.17
BG05@9-10'	11/15/2024	9-10	0.257	8.18	<0.200	<0.30*	<0.400	1.03	<0.400	<0.260	<0.0200	1.33
Maximum Background Concentration			1.06	-	0.230	-	-	-	-	-	-	-
Mean Background Concentration X 1.25			1.33	-	0.2875	-	-	-	-	-	-	-

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

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

3. Red & 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 = Energy & Carbon Management Commission

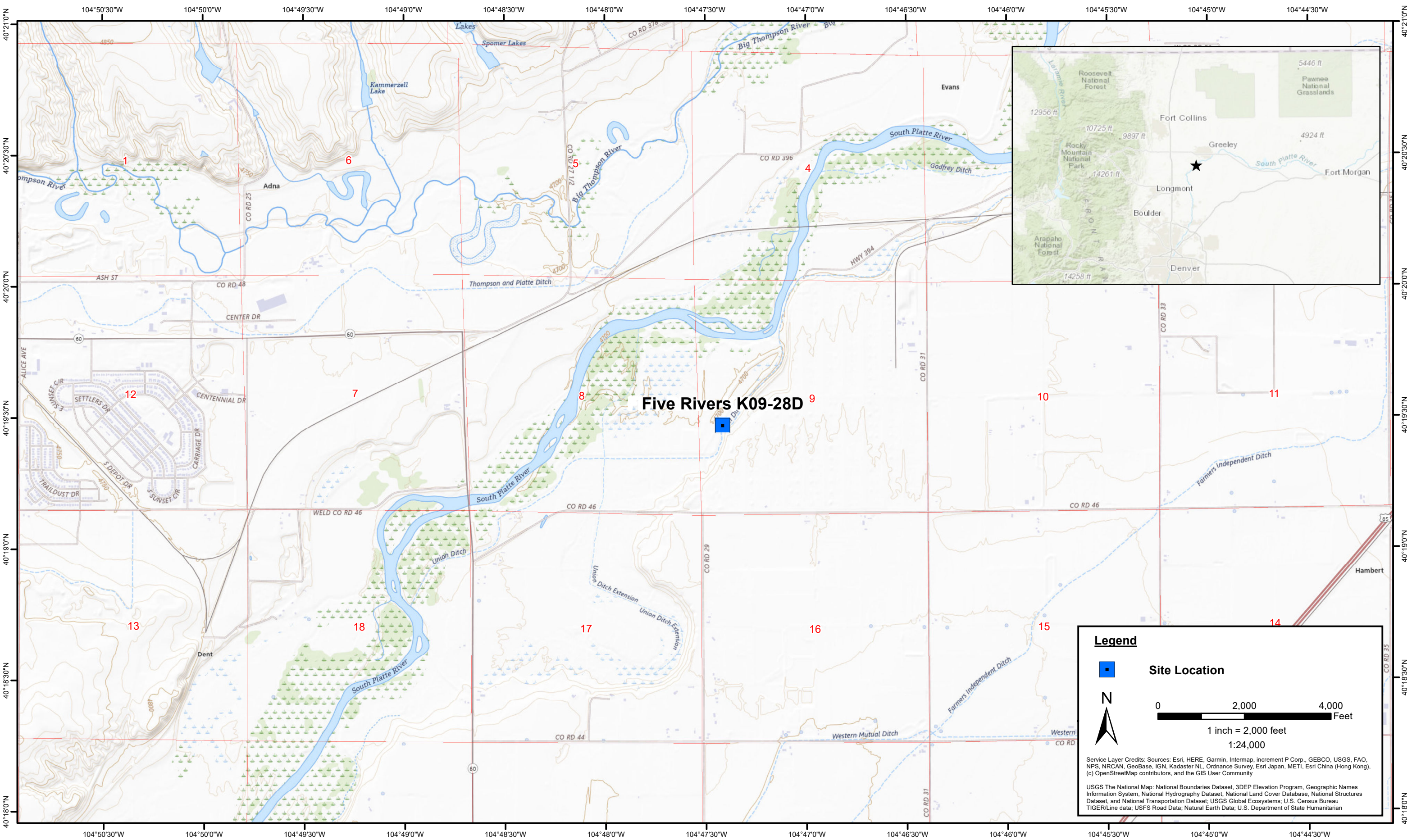
(<) = Analytical result is less than the indicated laboratory reporting limit.

mg/kg = Milligrams per kilogram

ft. = Feet

## **FIGURES**





DATE:	May 2024
DESIGNED BY:	J. Whritenour
DRAWN BY:	L. Reed



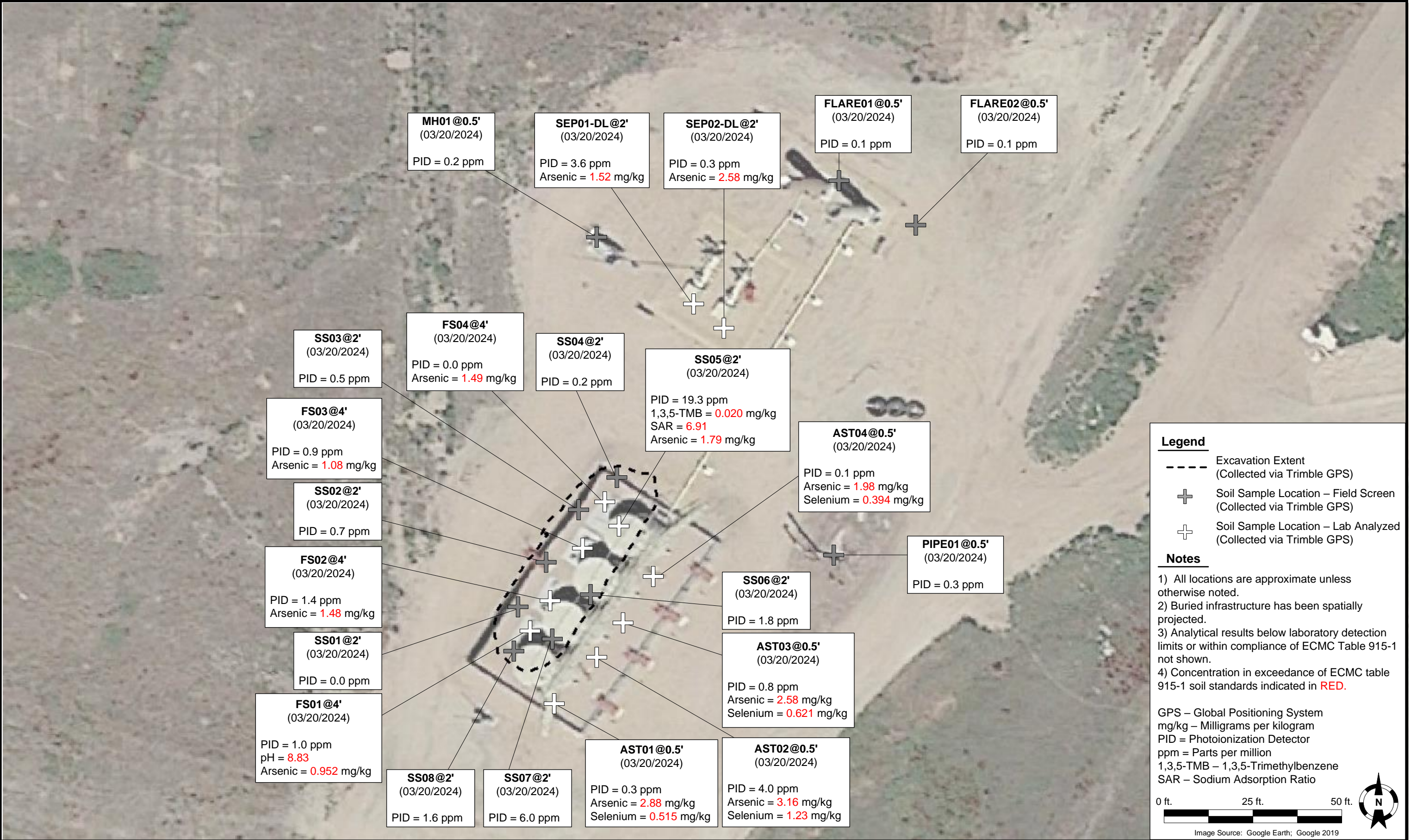
Tasman, Inc.  
6855 W. 119th Ave  
Broomfield, CO 80020

Noble Energy, Inc. 100322 - DJ Basin  
Five Rivers K09-28D  
NWSW, Section 9, Township 4 North, Range 66 West  
Weld County, Colorado

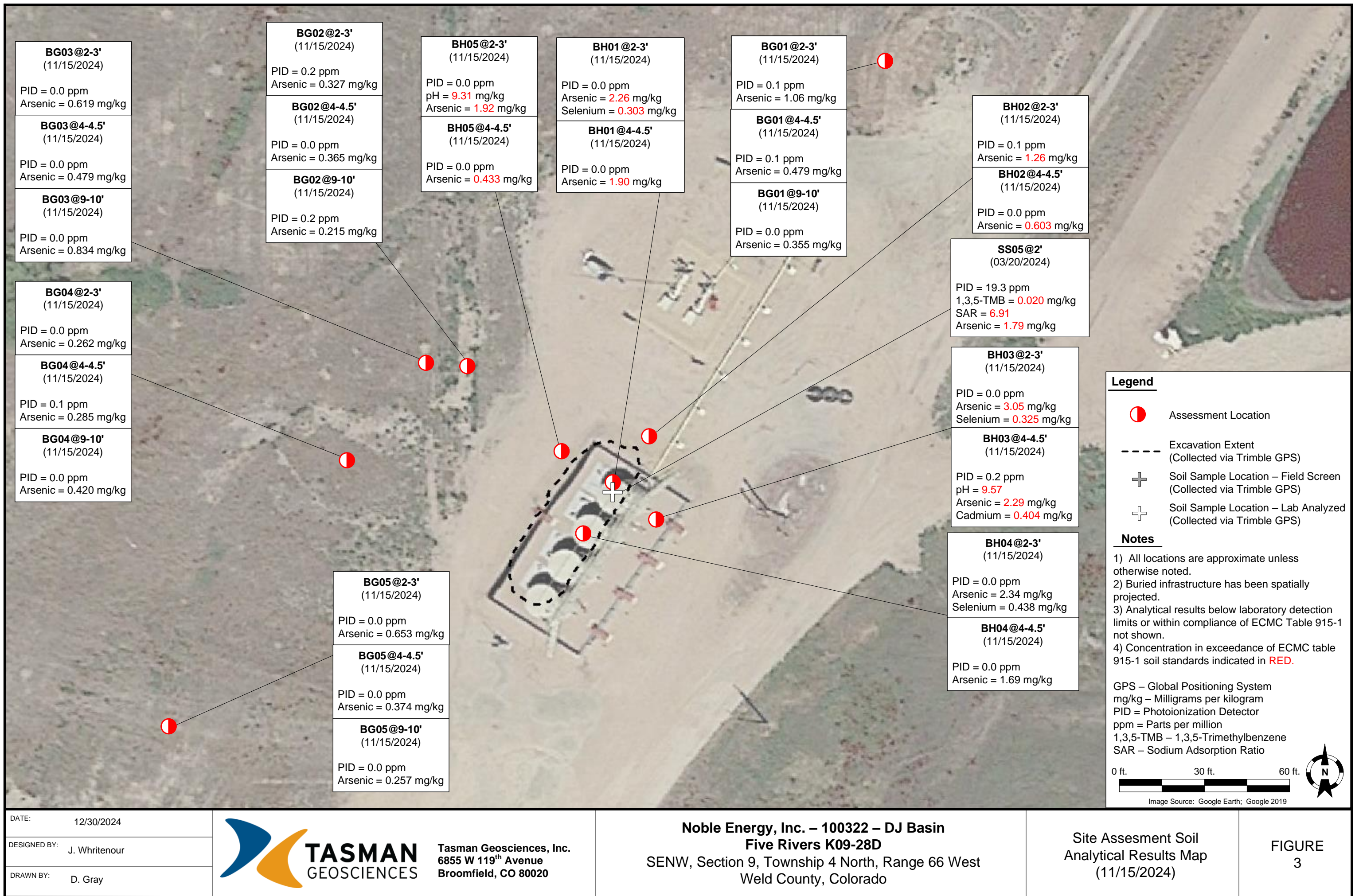
Site Location Map

Figure  
1









**ATTACHMENT B**  
**BORING LOGS**



CLIENT: Tasman

LOGGED BY: Natalie Crozier, David Erwin

PROJECT MANAGER: Andy Sagen

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 11/15/24 - 11/15/24

TOTAL WELL DEPTH (FT. BGS): 10

DEPTH TO WATER (FT. BGS): 5

Five Rivers K09-28D

BORING ID: BH01

LOCATION: Source

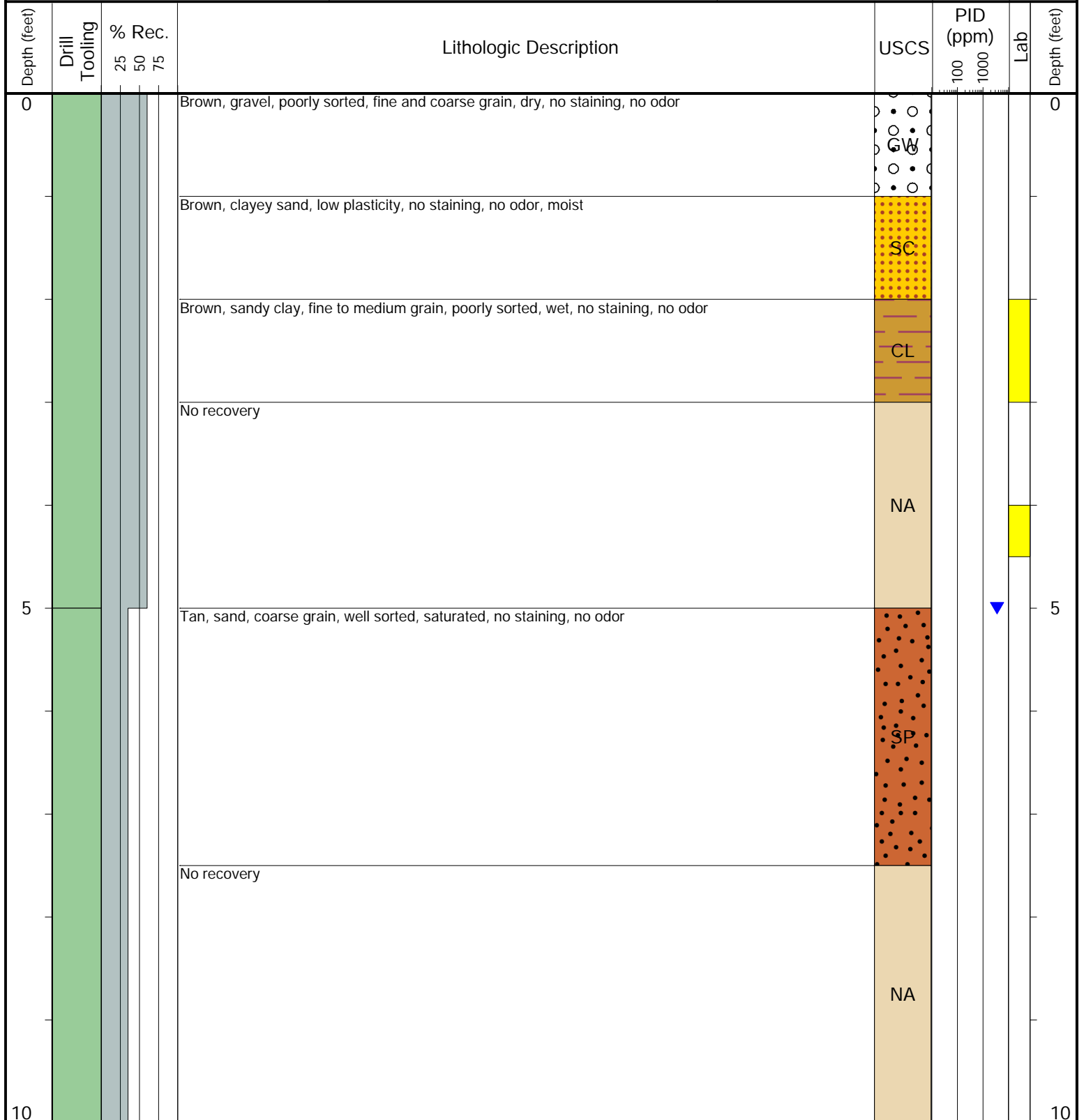
LATITUDE (NAD 83): 40.325729

LONGITUDE (NAD 83): -104.790777


GROUND ELEVATION (FT. AMSL): NM


ABANDONMENT METHOD: Native soil

6855 W. 119th Ave.  
Broomfield, CO 80020



Drilling / Sample Method:

 Macro-Core


 Expendable Well Tip

 Hand Auger

 HydroPunch Groundwater Sampler

Laboratory Sample Types:

 Geotechnical Lab

 Analytical Chemistry Lab

 Geotechnical & Analytical Chemistry Lab



6855 W. 119th Ave.  
Broomfield, CO 80020

CLIENT: Tasman

LOGGED BY: Natalie Crozier, David Erwin

PROJECT MANAGER: Andy Sagen

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 11/15/24 - 11/15/24

TOTAL WELL DEPTH (FT. BGS): 10

DEPTH TO WATER (FT. BGS): 6

Five Rivers K09-28D

BORING ID: BH02

LOCATION: West of AST

LATITUDE (NAD 83): 40.325773

LONGITUDE (NAD 83): -104.790734

GROUND ELEVATION (FT. AMSL): NM

ABANDONMENT METHOD: Native soil

Depth (feet)	Drill Tooling	% Rec. 25 50 75			Lithologic Description	USCS	PID (ppm)		Lab	Depth (feet)
							100	1000		
0					Dark brown, clay, medium plasticity, moist, no staining, no odor	CL				0
					Tan, sand, medium to coarse grain, moderately sorted, moist, no staining, no odor	SW				
					No recovery					
						NA				
5										5
					Tan, sand, coarse grain, saturated, well sorted, saturated at 6 feet, no staining, no odor	Sp				
					No recovery					
						NA				
10										10

Drilling / Sample Method:

 Macro-Core  
 Expendable Well Tip  
 Hand Auger  
 HydroPunch Groundwater Sampler

Laboratory Sample Types:

 Geotechnical Lab  
 Analytical Chemistry Lab  
 Geotechnical & Analytical Chemistry Lab





CLIENT: Tasman

LOGGED BY: Natalie Crozier, David Erwin

PROJECT MANAGER: Andy Sagen

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 11/15/24 - 11/15/24

TOTAL WELL DEPTH (FT. BGS): 10

DEPTH TO WATER (FT. BGS): 5

Five Rivers K09-28D

BORING ID: BH03

LOCATION: East of AST

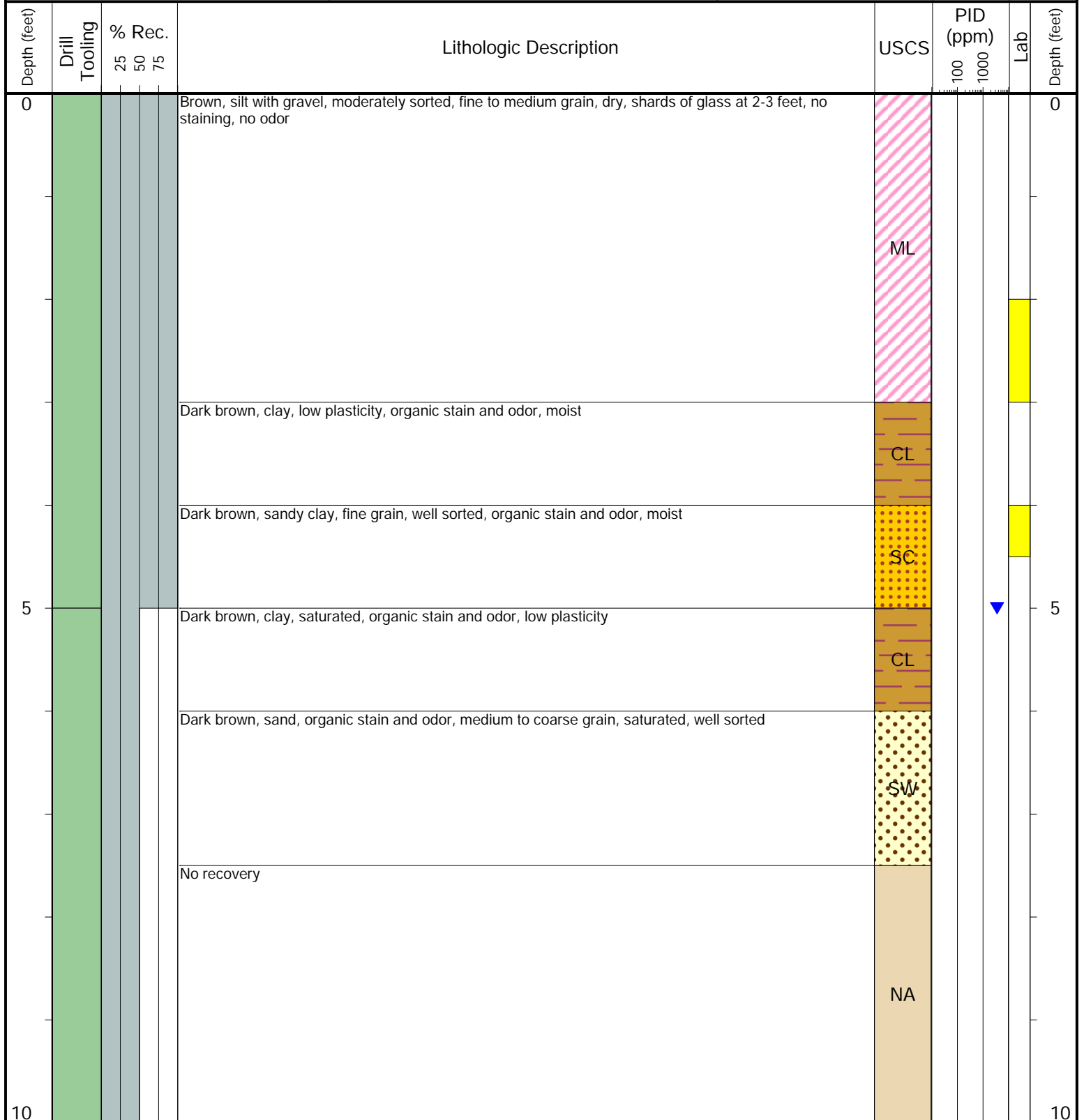
LATITUDE (NAD 83): 40.325693

LONGITUDE (NAD 83): -104.790723

GROUND ELEVATION (FT. AMSL): NM

ABANDONMENT METHOD: Native soil

6855 W. 119th Ave.  
Broomfield, CO 80020



Drilling / Sample Method:

Macro-Core  
 Expendable Well Tip  
 Hand Auger  
 HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab  
 Analytical Chemistry Lab  
 Geotechnical & Analytical Chemistry Lab



6855 W. 119th Ave.  
Broomfield, CO 80020

CLIENT: Tasman

LOGGED BY: Natalie Crozier, David Erwin

PROJECT MANAGER: Andy Sagen

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 11/15/24 - 11/15/24

TOTAL WELL DEPTH (FT. BGS): 10

DEPTH TO WATER (FT. BGS): 6

Five Rivers K09-28D

BORING ID: BH04

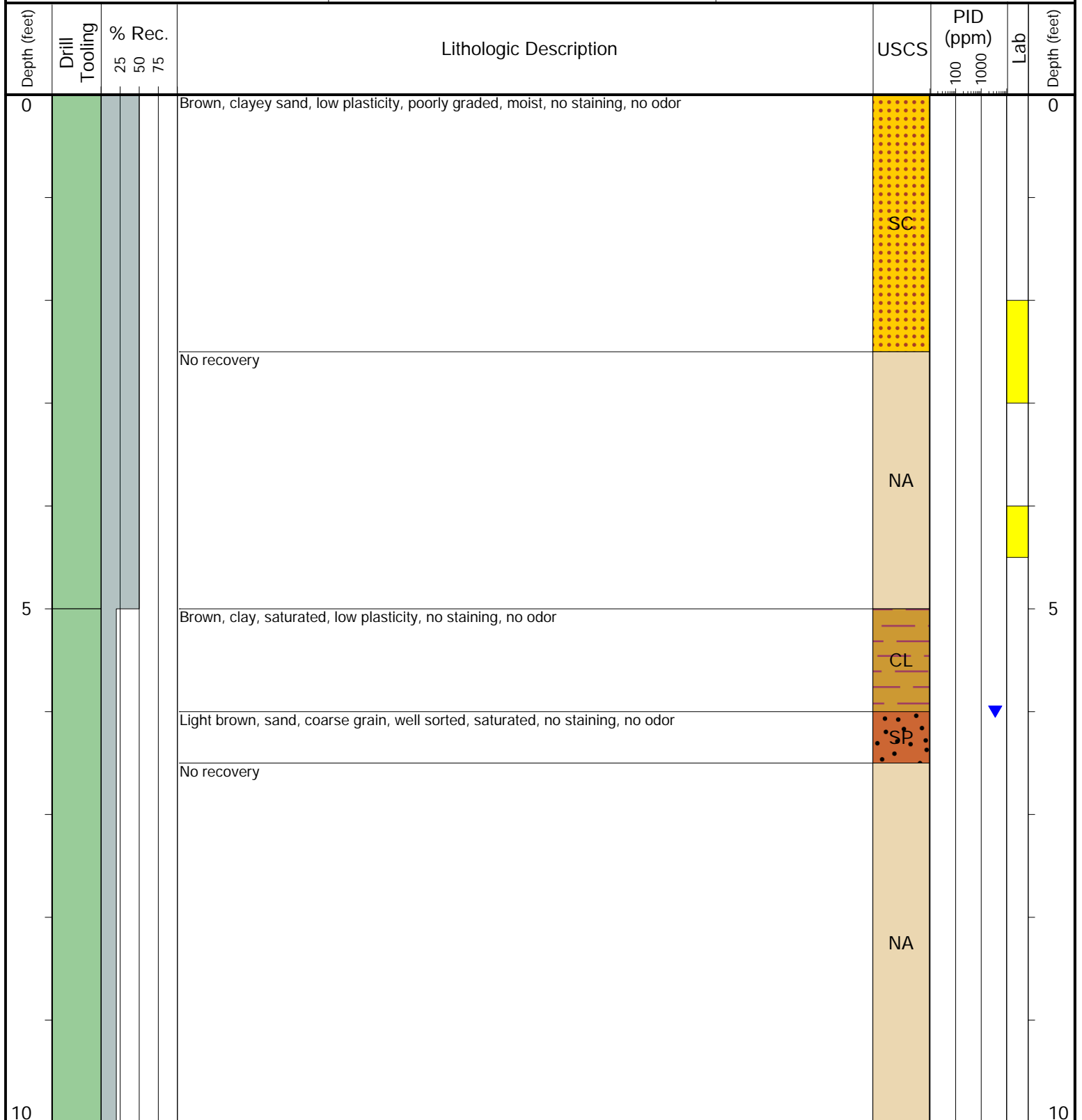
LOCATION: South of AST

LATITUDE (NAD 83): 40.32568

LONGITUDE (NAD 83): -104.790816

GROUND ELEVATION (FT. AMSL): NM

ABANDONMENT METHOD: Native soil



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Hand Auger

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6855 W. 119th Ave.  
Broomfield, CO 80020

CLIENT: Tasman

LOGGED BY: Natalie Crozier, David Erwin

PROJECT MANAGER: Andy Sagen

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 11/15/24 - 11/15/24

TOTAL WELL DEPTH (FT. BGS): 10

DEPTH TO WATER (FT. BGS): 6

Five Rivers K09-28D

BORING ID: BH05

LOCATION: North of AST

LATITUDE (NAD 83): 40.32576

LONGITUDE (NAD 83): -104.790843

GROUND ELEVATION (FT. AMSL): NM

ABANDONMENT METHOD: Native soil

Depth (feet)	Drill Tooling	% Rec. 25 50 75			Lithologic Description	USCS	PID (ppm)		Lab	Depth (feet)
							100	1000		
0					Brown, clay, medium plasticity, moist, no staining, no odor,	CL				0
					Tan, sand, fine grain, well sorted, moist, no staining, no odor	SP				
					No recovery					
						NA				
5					Tan, sand, fine grain, well sorted, moist, no staining, no odor					5
						SP				
					Tan, sand, coarse grain, well sorted, saturated, no staining, no odor					
					No recovery					
						NA				
10										10

Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Hand Auger

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6855 W. 119th Ave.  
Broomfield, CO 80020

CLIENT: Tasman

LOGGED BY: Natalie Crozier, David Erwin

PROJECT MANAGER: Andy Sagen

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 11/15/24 - 11/15/24

TOTAL WELL DEPTH (FT. BGS): 10

DEPTH TO WATER (FT. BGS): 5

Five Rivers K09-28D

BORING ID: BG01

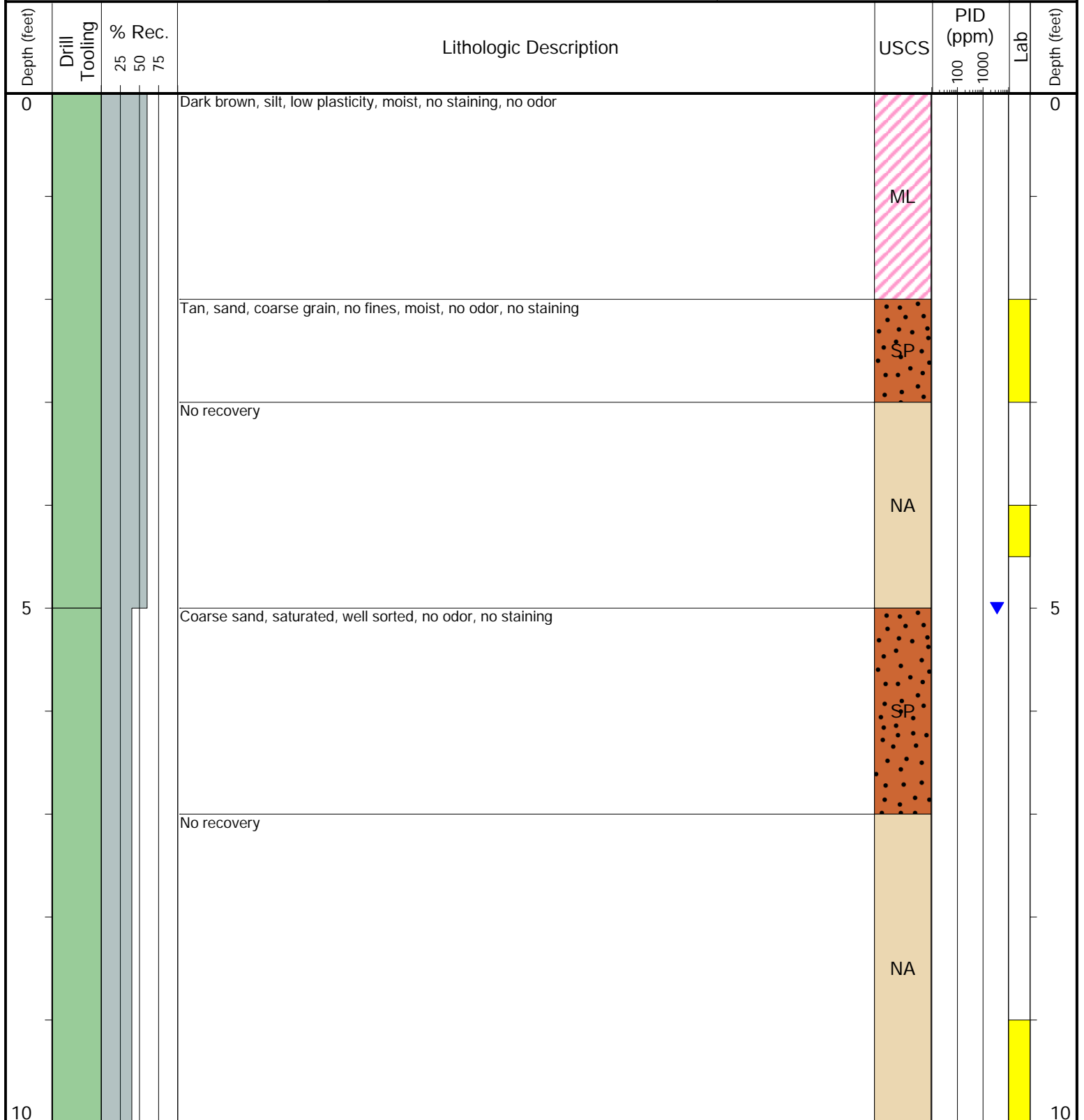
LOCATION: North of Site

LATITUDE (NAD 83): 40.326136

LONGITUDE (NAD 83): -104.790433

GROUND ELEVATION (FT. AMSL): NM

ABANDONMENT METHOD: Native soil



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Hand Auger

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6855 W. 119th Ave.  
Broomfield, CO 80020

CLIENT: Tasman

LOGGED BY: Natalie Crozier, David Erwin

PROJECT MANAGER: Andy Sagen

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 11/15/24 - 11/15/24

TOTAL WELL DEPTH (FT. BGS): 10

DEPTH TO WATER (FT. BGS): 5

Five Rivers K09-28D

BORING ID: BG02

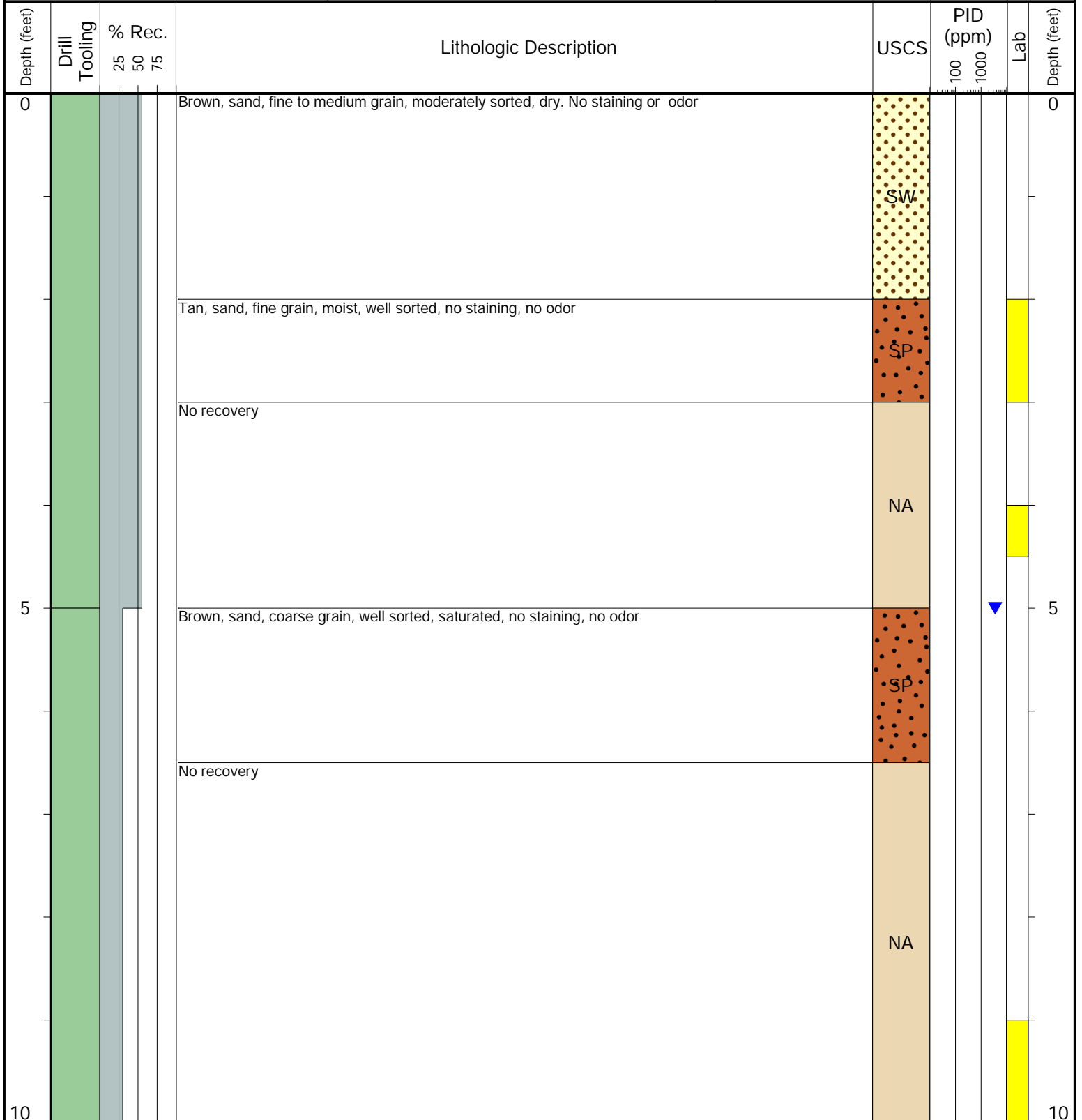
LOCATION: North of Site

LATITUDE (NAD 83): 40.325842

LONGITUDE (NAD 83): -104.790965

GROUND ELEVATION (FT. AMSL): NM

ABANDONMENT METHOD: Native soil



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Hand Auger

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab



Geotechnical & Analytical Chemistry Lab



CLIENT: Tasman

LOGGED BY: Natalie Crozier, David Erwin

PROJECT MANAGER: Andy Sagen

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 11/15/24 - 11/15/24

TOTAL WELL DEPTH (FT. BGS): 10

DEPTH TO WATER (FT. BGS): 5

Five Rivers K09-28D

BORING ID: BG03

LOCATION: North of Site

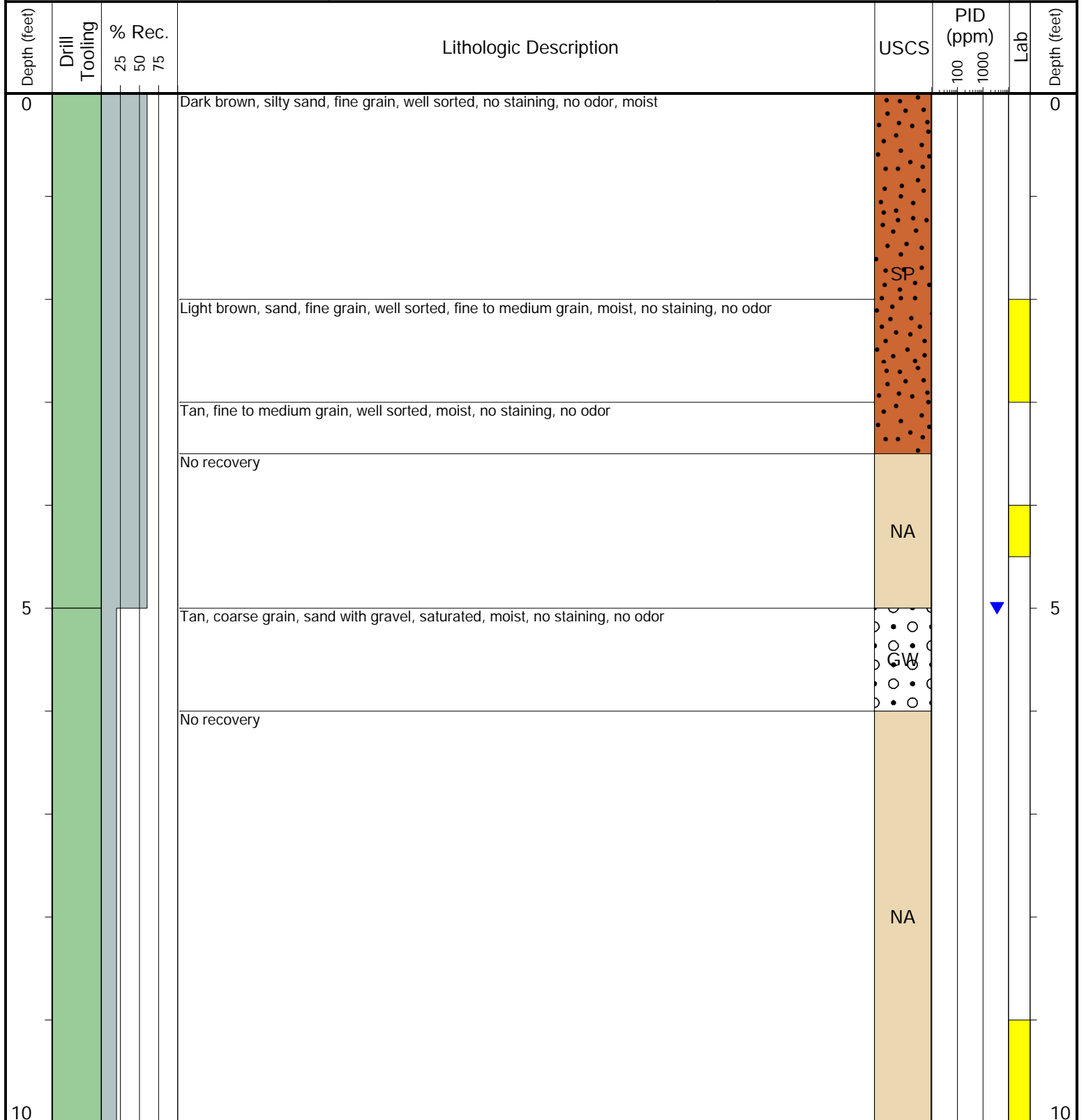
LATITUDE (NAD 83): 40.325844

LONGITUDE (NAD 83): -104.791014

GROUND ELEVATION (FT. AMSL): NM

ABANDONMENT METHOD: Native soil

6855 W. 119th Ave.  
Broomfield, CO 80020



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Hand Auger

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6855 W. 119th Ave.  
Broomfield, CO 80020

CLIENT: Tasman

LOGGED BY: Natalie Crozier, David Erwin

PROJECT MANAGER: Andy Sagen

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 11/15/24 - 11/15/24

TOTAL WELL DEPTH (FT. BGS): 10

DEPTH TO WATER (FT. BGS): 5

Five Rivers K09-28D

BORING ID: BG04

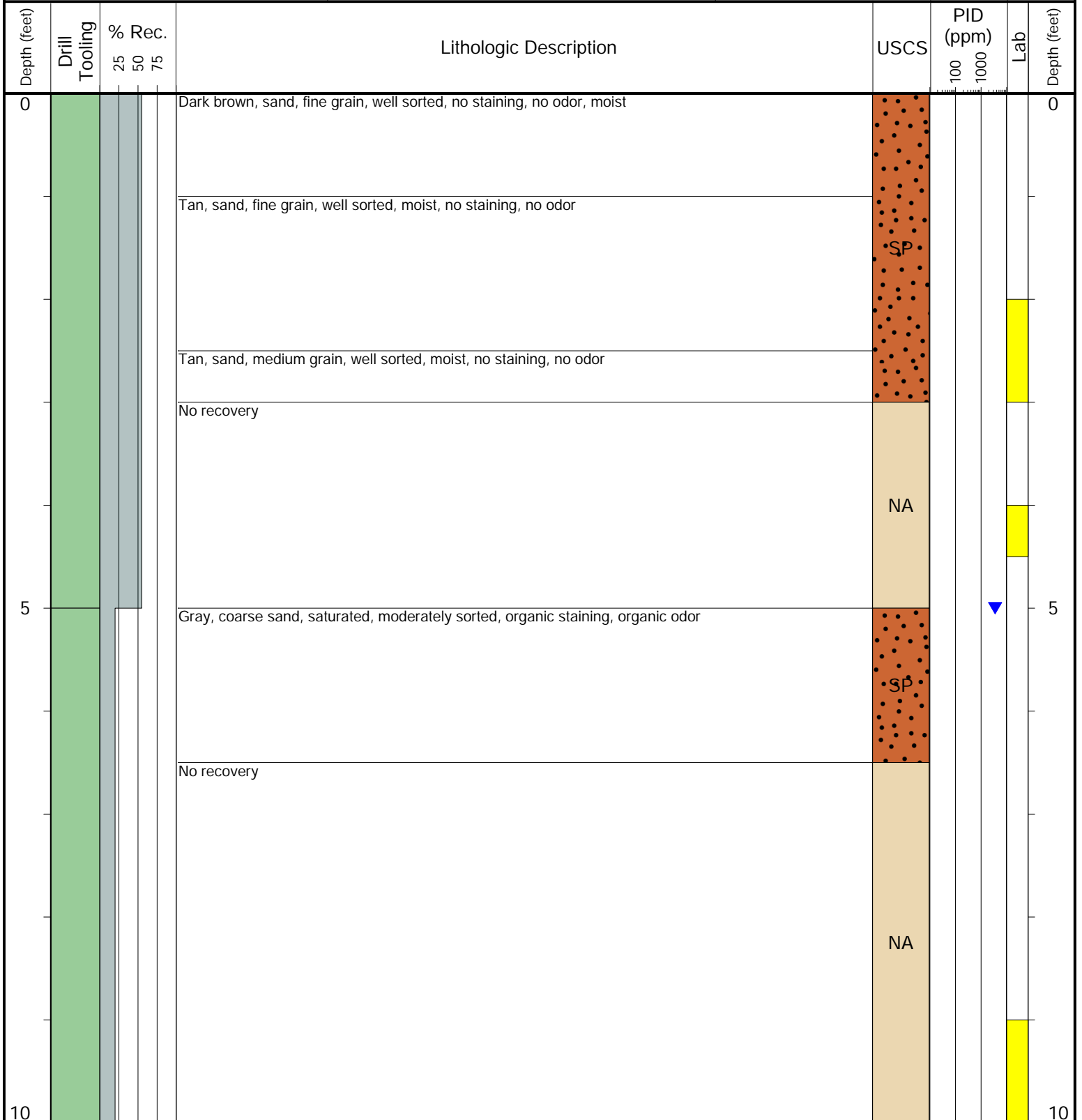
LOCATION: North of Site

LATITUDE (NAD 83): 40.32575

LONGITUDE (NAD 83): -104.791114

GROUND ELEVATION (FT. AMSL): NM

ABANDONMENT METHOD: Native soil



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Hand Auger

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



CLIENT: Tasman

LOGGED BY: Natalie Crozier, David Erwin

PROJECT MANAGER: Andy Sagen

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25"

DATE STARTED - COMPLETED: 11/15/24 - 11/15/24

TOTAL WELL DEPTH (FT. BGS): 10

DEPTH TO WATER (FT. BGS): 5

Five Rivers K09-28D

BORING ID: BG05

LOCATION: North of Site

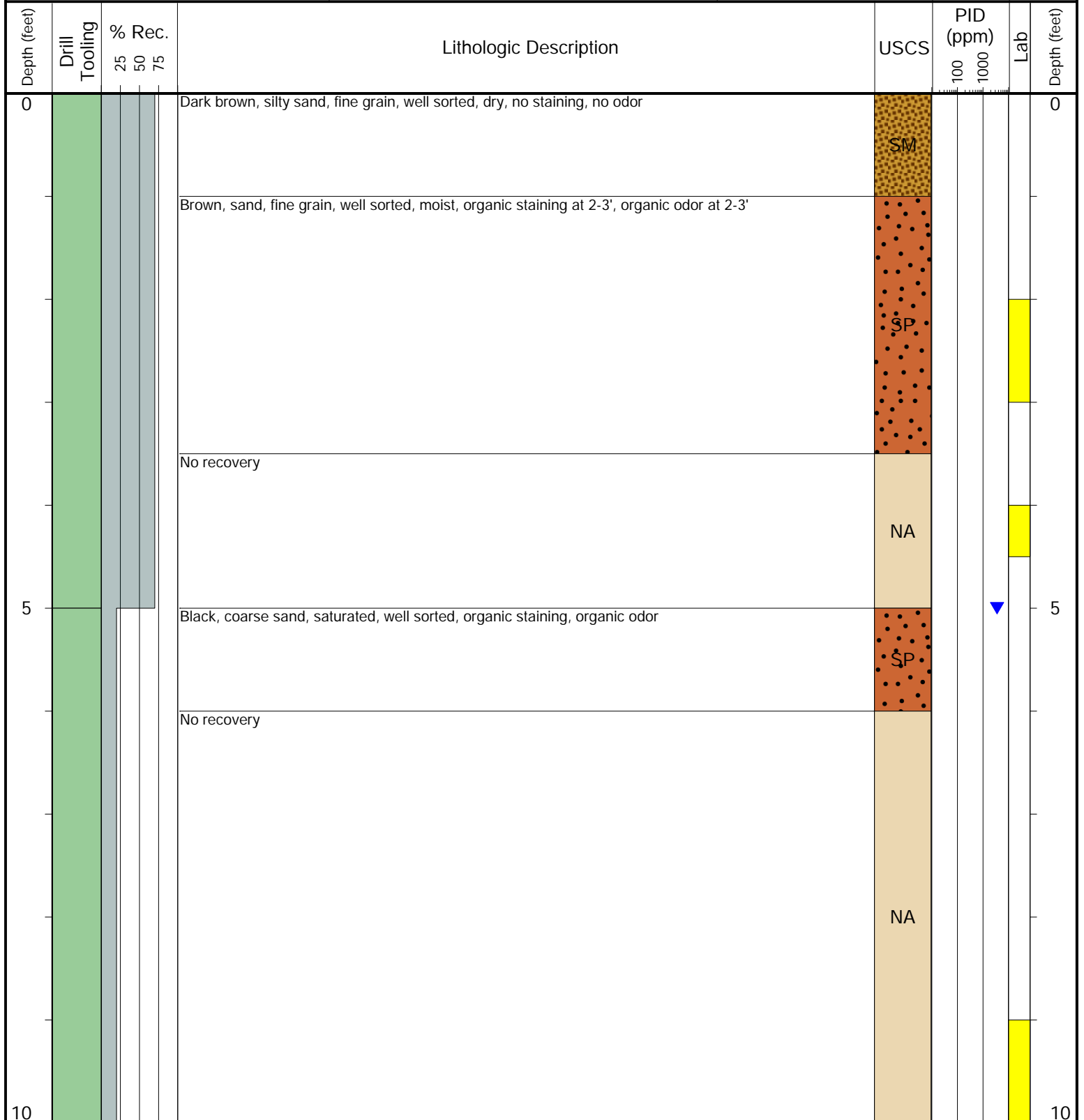
LATITUDE (NAD 83): 40.325494

LONGITUDE (NAD 83): -104.791344

GROUND ELEVATION (FT. AMSL): NM

ABANDONMENT METHOD: Native soil

6855 W. 119th Ave.  
Broomfield, CO 80020



Drilling / Sample Method:

Macro-Core

Hand Auger

Expendable Well Tip

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab