

SITE ASSESSMENT REPORT
KILDOW PMC 31-2 FACILITY
ECMC SPILL TRACKING # 484174
ECMC REMEDIATION # 25628

Prepared for:



2115 117th Avenue
Greeley, CO 80631

Prepared by:



6855 W. 119th Ave
Broomfield, CO 80020

TABLES

TABLE 1
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - KILDOW PMC 31-2 FACILITY

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
SSR ^{1,2}		6 - 8.3	<6	<4mmhos/cm	2
SS01@2.5'	03/28/23	7.82	0.0438	0.281	0.0824
SS02@2.5'	03/28/23	7.82	0.0807	0.383	0.0805
SS03@2.5'	03/28/23	7.57	0.211	0.274	0.118
SS04@2.5'	03/28/23	7.26	0.0166	0.170	0.113
FS01@4.5'	03/28/23	7.85	0.467	0.489	0.308
FS01@7'	03/28/23	8.22	7.03	1.14	1.81
AST01@0.5'	03/28/23	8.13	0.0871	0.200	0.102
SEP01-FL@3'	03/28/23	7.87	0.110	0.345	0.0983
SEP01-DL@3'	03/28/23	8.10	0.0270	0.256	0.0639
BG01@2.5'	03/28/23	7.64	5.55	5.21	0.0682
BG01@4.5'	03/28/23	8.97	5.72	1.02	0.569
BG01@7'	03/28/23	8.79	2.83	0.673	0.374
BH-01@7'	04/20/23	8.52	9.99	1.79	<0.0100
BH-01@12'	04/20/23	8.28	8.20	2.74	1.60
BH-02@7'	04/20/23	7.99	2.00	0.667	1.10
BH-02@12'	04/20/23	8.09	8.28	1.81	1.57
BH-03@7'	04/20/23	8.84	5.09	0.712	1.46
BH-03@12'	04/20/23	8.38	1.30	3.05	1.48
BH-04@8'	04/20/23	8.44	9.02	1.76	2.02
BH-04@15'	04/20/23	7.89	1.52	1.18	0.957
BH-05@7'	04/20/23	8.37	7.00	2.16	2.52
BH-05@12'	04/20/23	8.14	8.36	2.01	1.43
BH-06@7'	04/20/23	7.97	1.05	0.691	2.02
BH-06@12'	04/20/23	8.38	8.69	1.54	0.441
BH07@7-8'	09/26/23	7.58	0.250	NA	<2.00
BH07@9-10'	09/26/23	8.81	3.36	NA	<2.00
BH07@11-12'	09/26/23	8.11	8.18	NA	<2.00
BH07@13-13.5'	09/26/23	8.38	6.62	NA	<2.00
BH08@7-8'	09/26/23	8.85	4.24	NA	<2.00
BH08@11.5-12.5'	09/26/23	8.63	5.47	NA	<2.00
BH09@7-8'	09/26/23	8.66	2.41	NA	<2.00
BH09@11-12'	09/26/23	7.93	5.54	NA	<2.00
BH09@13-13.5'	09/26/23	7.70	6.17	NA	<2.00
BH10@7-8'	09/26/23	8.69	4.33	NA	<2.00
BH10@11-12'	09/26/23	7.74	6.81	NA	<2.00
BG01@7-8'	09/26/23	8.32	4.24	NA	<2.00
BG01@11-12'	09/26/23	7.89	5.88	NA	<2.00
BG02@7-8'	09/26/23	8.43	4.52	NA	<2.00
BG02@11-12'	09/26/23	8.00	5.37	NA	<2.00
BG03@7-8'	09/26/23	7.80	4.55	NA	<2.00
BG03@11-12'	09/26/23	7.95	5.33	NA	<2.00
BG04@7-8'	09/26/23	7.71	4.16	NA	<2.00
BG04@11-12'	09/26/23	7.97	5.42	NA	<2.00
BG05@7-8'	09/26/23	8.71	3.73	NA	<2.00
BG05@11-12'	09/26/23	7.94	6.51	NA	<2.00
Highest Background		8.71	6.51	-	-

Soil Sample ID	Date	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)
Residential SSL ^{1,2}		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL ^{1,2,3}		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FS01@7'	03/28/23	3.19	54.6	1.73	<0.30	8.90	16.0	11.0	0.778	0.0823	52.7
BH-01@7'	04/20/23	3.64	66.7	1.40	<0.30	11.8	22.1	18.7	0.877	0.0630	65.9
BH-01@12'	04/20/23	1.59	11.4	<0.244	<0.30	9.72	10.2	2.40	<0.260	0.0581	12.2
BH-02@7'	04/20/23	3.11	118	0.771	<0.30	9.29	14.5	7.51	0.438	0.0445	36.4
BH-02@12'	04/20/23	44.9	20.9	0.470	<0.30	17.8	12.5	4.50	0.651	0.0993	63.0
BH-03@7'	04/20/23	6.82	53.5	0.362	<0.30	8.42	12.5	6.29	0.515	0.0458	42.7
BH-03@12'	04/20/23	0.745	14.1	<0.259	<0.30	10.0	10.5	2.70	0.277	0.0605	10.6
BH-04@8'	04/20/23	11.3	16.9	0.315	<0.30	10.8	14.8	9.67	0.627	0.0416	36.8
BH-04@15'	04/20/23	1.52	30.3	<0.242	<0.30	7.75	10.3	2.20	<0.260	0.0416	14.0
BH-05@7'	04/20/23	4.63	47.2	0.704	<0.30	13.5	<0.246	11.7	0.707	0.0762	52.3
BH-05@12'	04/20/23	2.37	12.2	<0.239	<0.30	12.3	6.99	2.90	0.412	0.0527	27.5
BH-06@7'	04/20/23	2.51	249	0.612	<0.30	7.28	9.82	7.58	0.472	0.0416	27.4
BH-06@12'	04/20/23	6.63	9.29	<0.240	<0.30	9.74	11.4	2.31	0.287	0.0303	30.5
BH07@7-8'	09/26/23	0.739	44.7	<0.200	NA	NA	3.80	NA	<0.260	NA	NA
BH07@9-10'	09/26/23	0.823	64.8	<0.200	NA	NA	8.87	NA	0.328	NA	NA
BH07@11-12'	09/26/23	1.89	10.8	<0.200	NA	NA	13.1	NA	1.03	NA	NA
BH07@13-13.5'	09/26/23	1.12	9.82	<0.200	NA	NA	10.9	NA	0.639	NA	NA
BH08@7-8'	09/26/23	4.66	17.2	0.437	NA	NA	17.4	NA	1.23	NA	NA
BH08@11.5-12.5'	09/26/23	2.13	16.7	<0.200	NA	NA	12.0	NA	1.09	NA	NA
BH09@7-8'	09/26/23	3.33	25.1	<0.200	NA	NA	3.33	NA	<0.260	NA	NA
BH09@11-12'	09/26/23	1.53	9.57	0.242	NA	NA	6.26	NA	2.60	NA	NA
BH09@13-13.5'	09/26/23	3.75	56.6	0.415	NA	NA	15.1	NA	4.34	NA	NA
BH10@7-8'	09/26/23	0.837	51.9	2.27	NA	NA	14.2	NA	0.716	NA	NA
BH10@11-12'	09/26/23	7.83	139	0.441	NA	NA	38.9	NA	5.16	NA	NA
BG01@7-8'	09/26/23	1.06	197	2.74	NA	NA	39.3	NA	0.969	NA	NA
BG01@11-12'	09/26/23	1.43	12.1	<0.200	NA	NA	12.7	NA	0.594	NA	NA
BG02@7-8'	09/26/23	0.894	54.2	0.797	NA	NA	23.1	NA	1.13	NA	NA
BG02@11-12'	09/26/23	1.39	13.6	0.239	NA	NA	26.3	NA	0.588	NA	NA
BG03@7-8'	09/26/23	4.08	16.6	0.289	NA	NA	16.5	NA	0.833	NA	NA
BG03@11-12'	09/26/23	1.99	43.3	<0.200	NA	NA	14.7	NA	0.454	NA	NA
BG04@7-8'	09/26/23	0.670	12.2	<0.200	NA	NA	10.4	NA	0.351	NA	NA
BG04@11-12'	09/26/23	1.89	14.4	<0.200	NA	NA	10.1	NA	0.977	NA	NA
BG05@7-8'	09/26/23	1.21	116	0.421	NA	NA	14.8	NA	0.804	NA	NA
BG05@11-12'	09/26/23	0.719	12.4	<0.200	NA	NA	13.3	NA	<0.260	NA	NA
Mean Background Concentration		1.53	49.2	0.55	-	-	18.1	-	0.696	-	-
Mean Background x1.25⁽⁴⁾		1.92	61.5	0.69	-	-	22.7	-	0.870	-	-
Highest Background		4.08	197	2.74	-	-	39.3	-	1.13	-	-
Highest Background x1.25		5.10	246.3	3.43	-	-	49.1	-	1.41	-	-

Notes:

- Compounds referenced from 2 CCR 404-1, Table 915-1, effective January 15, 2021.
- Soil Screening Levels (SSL) and Soil Suitability for Reclamation (SSR) standards referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
- SSLs are applicable if a pathway for communication with groundwater is present.
- Non-detect laboratory results are included in the mean calculation at the laboratory detection limit

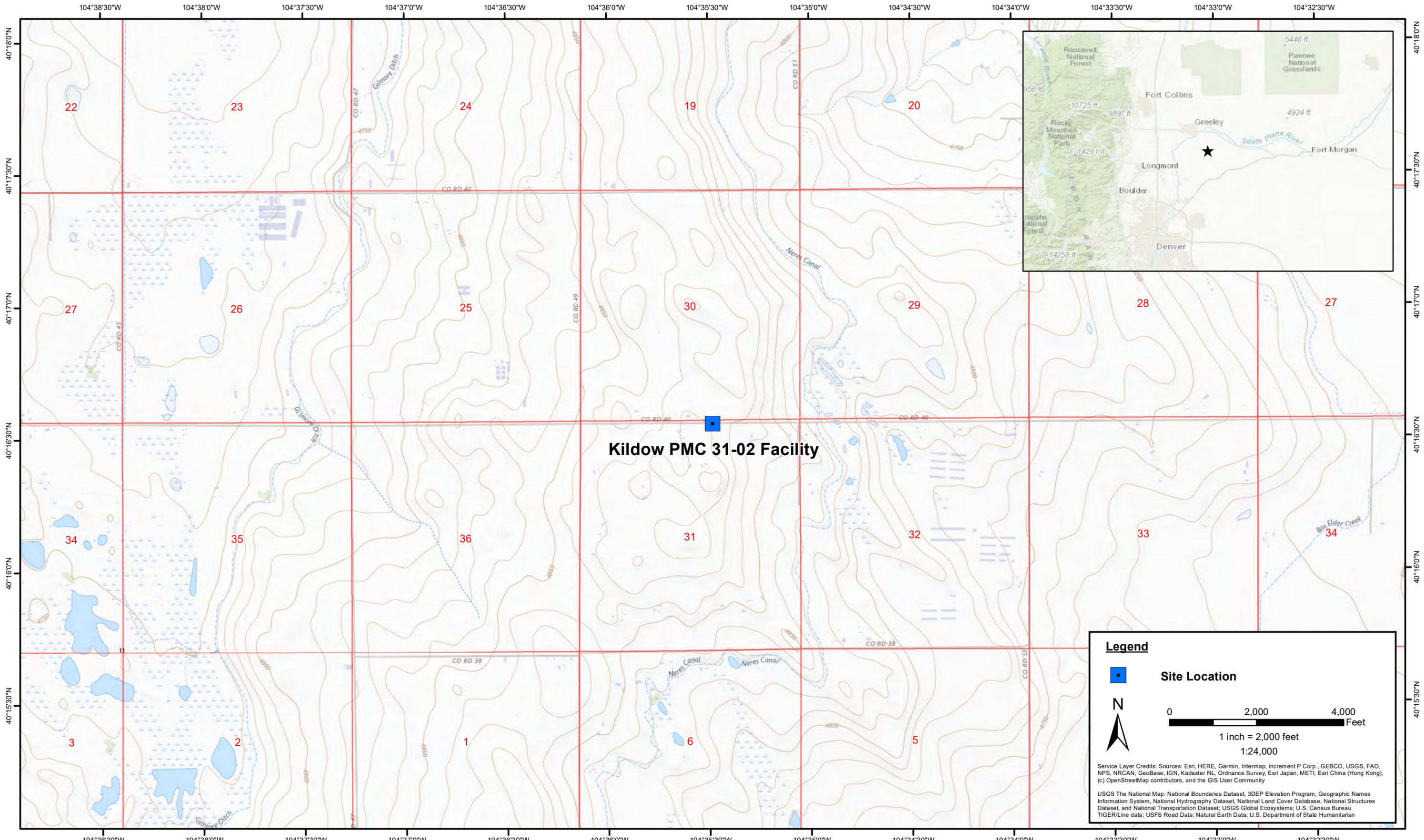
Definitions:

ECMC = Energy and Carbon Management Commission
 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
 SAR = Sodium Adsorption Ratio
 EC = Electrical Conductivity
 mmhos/cm = Millimhos per centimeter
 mg/L = Milligrams per liter
 < = Analytical result is less than the indicated laboratory reporting limit

1,2,4 - TMB = 1,2,4 Trimethylbenzene
 1,3,5 - TMB = 1,3,5 Trimethylbenzene
 Benz(a) = Benzanthracene
 Benzo(b) = Benzofluoranthene
 Benzo(k) = Benzofluoranthene
 Benzo(a) = Benzopyrene
 A,H = Dibenzoanthracene
 1,2,3-CD = Indenopyrene
 1-M = 1-methylnaphthalene
 2-M = 2-methylnaphthalene
 NA = Not analyzed

Highlighted results are equal to or exceed the ECMC Table 915-1 standard

FIGURES



DATE:	April 2023
DESIGNED BY:	J. Whritenour
DRAWN BY:	L. Reed

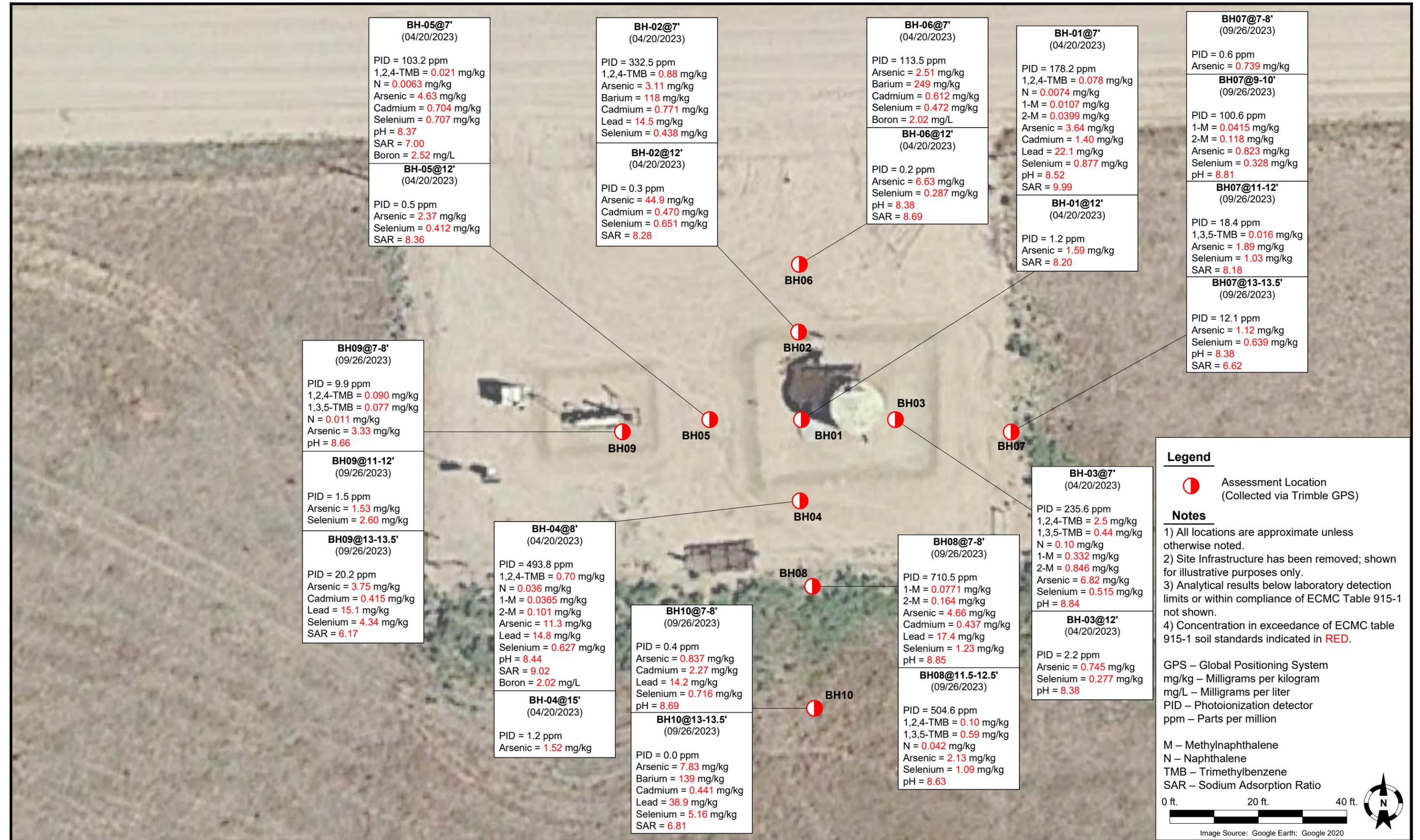


Tasman, Inc.
 6855 W. 119th Ave
 Broomfield, CO 80020

Noble Energy, Inc - DJ Basin
Kildow PMC 31-02 Facility
 NWN Sec. 31-T4N-R64W
 Weld County, Colorado

Site Location Map

Figure
1



BH-05@7'
(04/20/2023)

PID = 103.2 ppm
 1,2,4-TMB = **0.021** mg/kg
 N = **0.0063** mg/kg
 Arsenic = **4.63** mg/kg
 Cadmium = **0.704** mg/kg
 Selenium = **0.707** mg/kg
 pH = **8.37**
 SAR = **7.00**
 Boron = **2.52** mg/L

BH-05@12'
(04/20/2023)

PID = 0.5 ppm
 Arsenic = **2.37** mg/kg
 Selenium = **0.412** mg/kg
 SAR = **8.36**

BH-02@7'
(04/20/2023)

PID = 332.5 ppm
 1,2,4-TMB = **0.88** mg/kg
 Arsenic = **3.11** mg/kg
 Barium = **118** mg/kg
 Cadmium = **0.771** mg/kg
 Lead = **14.5** mg/kg
 Selenium = **0.438** mg/kg

BH-02@12'
(04/20/2023)

PID = 0.3 ppm
 Arsenic = **44.9** mg/kg
 Cadmium = **0.470** mg/kg
 Selenium = **0.651** mg/kg
 SAR = **8.28**

BH-06@7'
(04/20/2023)

PID = 113.5 ppm
 Arsenic = **2.51** mg/kg
 Barium = **249** mg/kg
 Cadmium = **0.612** mg/kg
 Selenium = **0.472** mg/kg
 Boron = **2.02** mg/L

BH-06@12'
(04/20/2023)

PID = 0.2 ppm
 Arsenic = **6.63** mg/kg
 Selenium = **0.287** mg/kg
 pH = **8.38**
 SAR = **8.69**

BH-01@7'
(04/20/2023)

PID = 178.2 ppm
 1,2,4-TMB = **0.078** mg/kg
 N = **0.0074** mg/kg
 1-M = **0.0107** mg/kg
 2-M = **0.0399** mg/kg
 Arsenic = **3.64** mg/kg
 Cadmium = **1.40** mg/kg
 Lead = **22.1** mg/kg
 Selenium = **0.877** mg/kg
 pH = **8.52**
 SAR = **9.99**

BH-01@12'
(04/20/2023)

PID = 1.2 ppm
 Arsenic = **1.59** mg/kg
 SAR = **8.20**

BH07@7-8'
(09/26/2023)

PID = 0.6 ppm
 Arsenic = **0.739** mg/kg

BH07@9-10'
(09/26/2023)

PID = 100.6 ppm
 1-M = **0.0415** mg/kg
 2-M = **0.118** mg/kg
 Arsenic = **0.823** mg/kg
 Selenium = **0.328** mg/kg
 pH = **8.81**

BH07@11-12'
(09/26/2023)

PID = 18.4 ppm
 1,3,5-TMB = **0.016** mg/kg
 Arsenic = **1.89** mg/kg
 Selenium = **1.03** mg/kg
 SAR = **8.18**

BH07@13-13.5'
(09/26/2023)

PID = 12.1 ppm
 Arsenic = **1.12** mg/kg
 Selenium = **0.639** mg/kg
 pH = **8.38**
 SAR = **6.62**

BH09@7-8'
(09/26/2023)

PID = 9.9 ppm
 1,2,4-TMB = **0.090** mg/kg
 1,3,5-TMB = **0.077** mg/kg
 N = **0.011** mg/kg
 Arsenic = **3.33** mg/kg
 pH = **8.66**

BH09@11-12'
(09/26/2023)

PID = 1.5 ppm
 Arsenic = **1.53** mg/kg
 Selenium = **2.60** mg/kg

BH09@13-13.5'
(09/26/2023)

PID = 20.2 ppm
 Arsenic = **3.75** mg/kg
 Cadmium = **0.415** mg/kg
 Lead = **15.1** mg/kg
 Selenium = **4.34** mg/kg
 SAR = **6.17**

BH-04@8'
(04/20/2023)

PID = 493.8 ppm
 1,2,4-TMB = **0.70** mg/kg
 N = **0.036** mg/kg
 1-M = **0.0365** mg/kg
 2-M = **0.101** mg/kg
 Arsenic = **11.3** mg/kg
 Lead = **14.8** mg/kg
 Selenium = **0.627** mg/kg
 pH = **8.44**
 SAR = **9.02**
 Boron = **2.02** mg/L

BH-04@15'
(04/20/2023)

PID = 1.2 ppm
 Arsenic = **1.52** mg/kg

BH10@7-8'
(09/26/2023)

PID = 0.4 ppm
 Arsenic = **0.837** mg/kg
 Cadmium = **2.27** mg/kg
 Lead = **14.2** mg/kg
 Selenium = **0.716** mg/kg
 pH = **8.69**

BH10@13-13.5'
(09/26/2023)

PID = 0.0 ppm
 Arsenic = **7.83** mg/kg
 Barium = **139** mg/kg
 Cadmium = **0.441** mg/kg
 Lead = **38.9** mg/kg
 Selenium = **5.16** mg/kg
 SAR = **6.81**

BH08@7-8'
(09/26/2023)

PID = 710.5 ppm
 1-M = **0.0771** mg/kg
 2-M = **0.164** mg/kg
 Arsenic = **4.66** mg/kg
 Cadmium = **0.437** mg/kg
 Lead = **17.4** mg/kg
 Selenium = **1.23** mg/kg
 pH = **8.85**

BH08@11.5-12.5'
(09/26/2023)

PID = 504.6 ppm
 1,2,4-TMB = **0.10** mg/kg
 1,3,5-TMB = **0.59** mg/kg
 N = **0.042** mg/kg
 Arsenic = **2.13** mg/kg
 Selenium = **1.09** mg/kg
 pH = **8.63**

BH-03@7'
(04/20/2023)

PID = 235.6 ppm
 1,2,4-TMB = **2.5** mg/kg
 1,3,5-TMB = **0.44** mg/kg
 N = **0.10** mg/kg
 1-M = **0.332** mg/kg
 2-M = **0.846** mg/kg
 Arsenic = **6.82** mg/kg
 Selenium = **0.515** mg/kg
 pH = **8.84**

BH-03@12'
(04/20/2023)

PID = 2.2 ppm
 Arsenic = **0.745** mg/kg
 Selenium = **0.277** mg/kg
 pH = **8.38**

DATE: 10/09/2023

DESIGNED BY: JW

DRAWN BY: JB



Noble Energy, Inc. – DJ Basin
Kildow PMC 31-2 Facility
 NWNE, Section 31, Township 4 North, Range 64 West
 Weld County, Colorado

Site Assessment
 Soil Analytical Results Map
 (04/20/2023 & 09/26/2023)

FIGURE
 2



BG01@7-8'
(09/26/2023)

PID = 0.0 ppm
 Arsenic = 1.06 mg/kg
 Barium = 197 mg/kg
 Cadmium = 2.74 mg/kg
 Lead = 39.3 mg/kg
 Selenium = 0.969 mg/kg
 pH = 8.32

BG01@11-12'
(09/26/2023)

PID = 0.0 ppm
 Arsenic = 1.43 mg/kg
 Selenium = 0.594 mg/kg

BG02@7-8'
(09/26/2023)

PID = 0.0 ppm
 Arsenic = 0.894 mg/kg
 Cadmium = 0.797 mg/kg
 Lead = 23.1 mg/kg
 Selenium = 1.13 mg/kg
 pH = 8.43

BG02@11-12'
(09/26/2023)

PID = 0.0 ppm
 Arsenic = 1.39 mg/kg
 Lead = 26.3 mg/kg
 Selenium = 0.588 mg/kg

BG03@7-8'
(09/26/2023)

PID = 0.0 ppm
 Arsenic = 4.08 mg/kg
 Lead = 16.5 mg/kg
 Selenium = 0.833 mg/kg

BG03@11-12'
(09/26/2023)

PID = 0.0 ppm
 Arsenic = 1.99 mg/kg
 Lead = 14.7 mg/kg
 Selenium = 0.454 mg/kg

BG04@7-8'
(09/26/2023)

PID = 0.0 ppm
 Arsenic = 0.670 mg/kg
 Selenium = 0.351 mg/kg

BG04@11-12'
(09/26/2023)

PID = 0.0 ppm
 Arsenic = 1.89 mg/kg
 Selenium = 0.977 mg/kg

BG05@7-8'
(09/26/2023)

PID = 0.0 ppm
 Arsenic = 1.21 mg/kg
 Barium = 116 mg/kg
 Cadmium = 0.421 mg/kg
 Lead = 14.8 mg/kg
 Selenium = 0.804 mg/kg
 pH = 8.71

BG05@11-12'
(09/26/2023)

PID = 0.0 ppm
 Arsenic = 0.719 mg/kg
 SAR = 6.51

Legend

Assessment Location
(Collected via Trimble GPS)

Notes

- 1) All locations are approximate unless otherwise noted.
- 2) Site Infrastructure has been removed; shown for illustrative purposes only.
- 3) Analytical results below laboratory detection limits or within compliance of ECOM Table 915-1 not shown.

GPS – Global Positioning System
 mg/kg – Milligrams per kilogram
 mg/L – Milligrams per liter
 PID – Photoionization detector
 ppm – Parts per million
 SAR – Sodium Adsorption Ratio

0 ft. 20 ft. 40 ft.

Image Source: Google Earth; Google 2020

DATE:	11/29/2023
DESIGNED BY:	JW
DRAWN BY:	AE

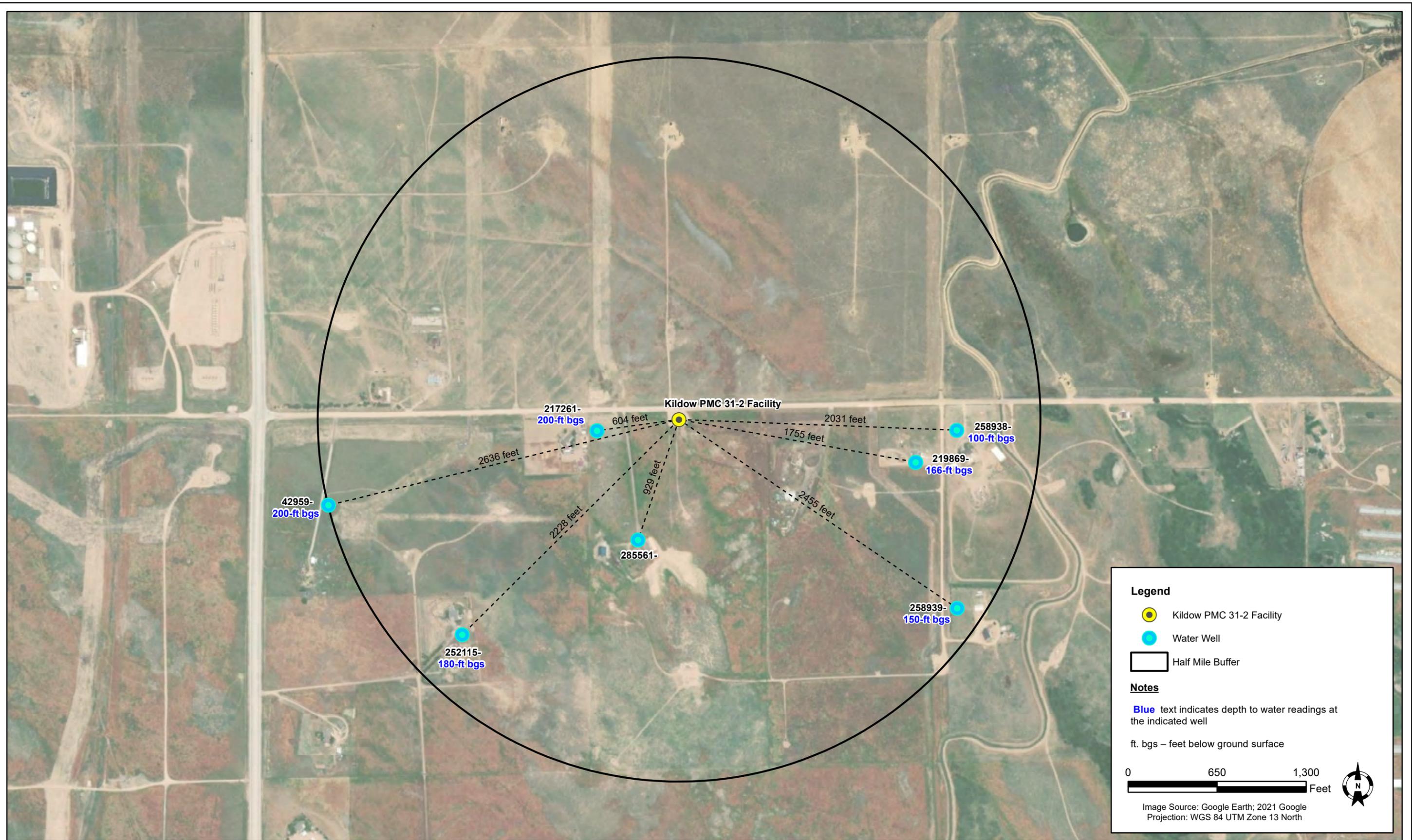


Tasman, Inc.
 6855 W 119th Avenue
 Broomfield, CO 80020

Noble Energy, Inc. – DJ Basin
Kildow PMC 31-2 Facility
 NWNE, Section 31, Township 4 North, Range 64 West
 Weld County, Colorado

Background Soil
 Analytical Results Map
 (09/26/2023)

FIGURE
 3



Legend

- Kildow PMC 31-2 Facility
- Water Well
- Half Mile Buffer

Notes

Blue text indicates depth to water readings at the indicated well

ft. bgs – feet below ground surface

0 650 1,300
 Feet

Image Source: Google Earth; 2021 Google
 Projection: WGS 84 UTM Zone 13 North

DATE: August 2023

DESIGNED BY: JW

DRAWN BY: JC

TASMAN Tasman, Inc.
 6855 W. 119th Avenue
 Broomfield, Colorado 80020

Noble Energy, Inc. – DJ Basin
Kildow PMC 31-2 FAC
 NWNE, Section 31, Township 4 North, Range 64 West
 Weld County, Colorado

WATER WELL INVESTIGATION
 LOCATION MAP

Figure
 4

ATTACHMENT A
LABORATORY SOIL ANALYTICAL DATA REPORTS

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 25, 2023

Jacob Whritenour
Tasman Geosciences
6855 W. 119th Ave.
Broomfield, CO 80020
RE: Noble - Kildow PMC 31-2
Work Order #2304468

Enclosed are the results of analyses for samples received by Summit Scientific on 04/20/23 17:38. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury
President



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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
 Project Manager: Jacob Whritenour

Reported:
 05/25/23 13:10

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH-01@7'	2304468-01	Soil	04/20/23 10:00	04/20/23 17:38
BH-01@12'	2304468-02	Soil	04/20/23 10:30	04/20/23 17:38
BH-02@7'	2304468-03	Soil	04/20/23 10:45	04/20/23 17:38
BH-02@12'	2304468-04	Soil	04/20/23 11:00	04/20/23 17:38
BH-03@7'	2304468-05	Soil	04/20/23 11:15	04/20/23 17:38
BH-03@12'	2304468-06	Soil	04/20/23 11:30	04/20/23 17:38
BH-04@8'	2304468-07	Soil	04/20/23 12:00	04/20/23 17:38
BH-04@15'	2304468-08	Soil	04/20/23 12:15	04/20/23 17:38
BH-05@7'	2304468-09	Soil	04/20/23 12:45	04/20/23 17:38
BH-05@12'	2304468-10	Soil	04/20/23 13:00	04/20/23 17:38
BH-06@7'	2304468-11	Soil	04/20/23 13:30	04/20/23 17:38
BH-06@12'	2304468-12	Soil	04/20/23 13:45	04/20/23 17:38

Summit Scientific

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



2304468.1

Summit Scientific

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Client: Tasman Project Manager: Jake Whriterour
 Address: 6855 W 119th Ave E-Mail: Jwhriterour@tasman-geo.com
 City/State/Zip: Broomfield CO
 Phone: 303-487-1228 Project Name: Kildrow PMC 31-2
 Sampler Name: Matt Kaczmarek Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested						Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other							
1	BH-01 @ 7'	4/20/23	1600	2			X			X									
2	BH-01 @ 12'		1030																
3	BH-02 @ 7'		1045																
4	BH-02 @ 12'		1100																
5	BH-03 @ 7'		1115																
6	BH-03 @ 12'		1130																
7	BH-04 @ 8'		1200																
8	BH-04 @ 15'		1215																
9	BH-05 @ 7'		1245																
10	BH-05 @ 12'		1300																

Relinquished by: <u>[Signature]</u>	Date/Time: <u>4/20/23 1600</u>	Received by: <u>Tasman Lockbox</u>	Date/Time: <u>4/20/23 1600</u>	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/> Sample Integrity: Temperature Upon Receipt: <u>11.2</u> Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes:
Relinquished by: <u>Tasman Lockbox</u>	Date/Time: <u>4/20/23 1738</u>	Received by: <u>[Signature]</u>	Date/Time: <u>4/20/23 1738</u>		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Summit Scientific

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Client: Tasman Project Manager: Jake Whriterour
 Address: 6455 W 119th Ave E-Mail: jwhriterour@tasman-geo.com
 City/State/Zip: Broomfield CO
 Phone: 303 487-1228 Project Name: Kildrow PMC 31-2
 Sampler Name: Matt Kaczmarek Project Number: 5468

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other							
1	BH-05 @ 7'	4/20/23	1330	2			X			X									
2	BH-05 @ 12'	↓	1345	2			X			X									
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Relinquished by: <u>M</u> Date/Time: <u>4/20/23 1600</u>	Received by: <u>Tasman Lockbox</u> Date/Time: <u>4/20/23 1600</u>	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/> Sample Integrity: Temperature Upon Receipt: <u>11.2</u> Samples Intact: Yes No	Notes:
Relinquished by: <u>Tasman Lockbox</u> Date/Time: <u>4/20/23 1738</u>	Received by: <u>[Signature]</u> Date/Time: <u>4/20/23 1738</u>		
Relinquished by: _____ Date/Time: _____	Received by: _____ Date/Time: _____		

S₂

2/2
Sample Receipt Checklist

S2 Work Order# 2304468

Client: Tasman Client Project ID: Kildrow PMC 31-2

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

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

Temp (°C) Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	samples 11 + 12 jars labeled Bt-06
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

AS
Custodian Printed Name

4/20/23
Date/Time



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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-01@7'
2304468-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGD0843	04/25/23	04/25/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.078	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	0.0074	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.2	0.50	"	"	"	"	"	"	

Date Sampled: **04/20/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0478	120 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0331	82.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0429	107 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/20/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGD0844	04/25/23	04/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/20/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	12.6	101 %	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 - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-01@7'
2304468-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/20/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGD0754	04/24/23	04/25/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0107	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0399	0.00500	"	"	"	"	"	"	

Date Sampled: **04/20/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0227	68.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0249	74.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/20/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	0.0100	mg/L	1	BGD0823	04/25/23	05/01/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/20/23 10:00**

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 - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-01@7'
2304468-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.64	0.239	mg/kg dry	1	BGD0827	04/25/23	05/01/23	EPA 6020B	
Barium	66.7	0.477	"	"	"	"	"	"	
Cadmium	1.40	0.239	"	"	"	"	"	"	
Copper	11.8	0.477	"	"	"	"	"	"	
Lead	22.1	0.239	"	"	"	"	"	"	
Nickel	18.7	0.477	"	"	"	"	"	"	
Selenium	0.877	0.260	"	"	"	"	"	"	
Silver	0.0630	0.0239	"	"	"	"	"	"	
Zinc	65.9	0.477	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/20/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGD0757	04/24/23	04/24/23	EPA 7196A	

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

Date Sampled: **04/20/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	14.4	0.0597	mg/L dry	1	BGD0896	04/26/23	05/02/23	EPA 6020B	
Magnesium	31.9	0.0597	"	"	"	"	"	"	
Sodium	297	0.0597	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/20/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	9.99	0.00100	units	1	BGE0089	05/03/23	05/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/20/23 10:00**

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 - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-01@7'
2304468-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	83.8	%	1	BGD0786	04/24/23	04/25/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/20/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.79	0.0100	mmhos/cm	1	BGD0921	04/27/23	04/27/23	EPA 120.1	

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

Date Sampled: **04/20/23 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.52		pH Units	1	BGD0920	04/27/23	04/27/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-01@12'
2304468-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGD0843	04/25/23	04/26/23	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: **04/20/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0499	125 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0332	83.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0387	96.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/20/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGD0844	04/25/23	04/25/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/20/23 10:30**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-01@12'
2304468-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/20/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGD0754	04/24/23	04/25/23	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: **04/20/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0256	76.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0249	74.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/20/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	1.60	0.0100	mg/L	1	BGD0823	04/25/23	05/01/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/20/23 10:30**

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

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-01@12'
2304468-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.59	0.244	mg/kg dry	1	BGD0827	04/25/23	05/01/23	EPA 6020B	
Barium	11.4	0.488	"	"	"	"	"	"	
Cadmium	ND	0.244	"	"	"	"	"	"	
Copper	9.72	0.488	"	"	"	"	"	"	
Lead	10.2	0.244	"	"	"	"	"	"	
Nickel	2.40	0.488	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	
Silver	0.0581	0.0244	"	"	"	"	"	"	
Zinc	12.2	0.488	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/20/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGD0757	04/24/23	04/24/23	EPA 7196A	

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

Date Sampled: **04/20/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	60.8	0.0610	mg/L dry	1	BGD0896	04/26/23	05/02/23	EPA 6020B	
Magnesium	62.5	0.0610	"	"	"	"	"	"	
Sodium	381	0.0610	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/20/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	8.20	0.00100	units	1	BGE0089	05/03/23	05/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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





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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-01@12'
2304468-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/20/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.9		%	1	BGD0786	04/24/23	04/25/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/20/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.74	0.0100	mmhos/cm	1	BGD0921	04/27/23	04/27/23	EPA 120.1	

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

Date Sampled: **04/20/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.28		pH Units	1	BGD0920	04/27/23	04/27/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-02@7'
2304468-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/23 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGD0843	04/25/23	04/26/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0086	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.88	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	18	0.50	"	"	"	"	"	"	

Date Sampled: **04/20/23 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0461	115 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0295	73.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0549	137 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/20/23 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	250	50	mg/kg	1	BGD0844	04/25/23	04/26/23	EPA 8015M	
C28-C36 (ORO)	56	50	"	"	"	"	"	"	

Date Sampled: **04/20/23 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	12.9	103 %	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 - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-02@7'
2304468-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/20/23 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGD0754	04/24/23	04/25/23	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	0.0141	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: **04/20/23 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0187	56.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0311	93.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/20/23 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	1.10	0.0100	mg/L	1	BGD0823	04/25/23	05/01/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/20/23 10:45**

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 - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-02@7'
2304468-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.11	0.244	mg/kg dry	1	BGD0827	04/25/23	05/02/23	EPA 6020B
Barium	118	0.489	"	"	"	"	"	"
Cadmium	0.771	0.244	"	"	"	"	"	"
Copper	9.29	0.489	"	"	"	"	"	"
Lead	14.5	0.244	"	"	"	"	"	"
Nickel	7.51	0.489	"	"	"	"	"	"
Selenium	0.438	0.260	"	"	"	"	"	"
Silver	0.0445	0.0244	"	"	"	"	"	"
Zinc	36.4	0.489	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/20/23 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGD0757	04/24/23	04/24/23	EPA 7196A	

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

Date Sampled: **04/20/23 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	21.8	0.0611	mg/L dry	1	BGD0896	04/26/23	05/02/23	EPA 6020B	
Magnesium	34.1	0.0611	"	"	"	"	"	"	
Sodium	64.3	0.0611	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/20/23 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.00	0.00100	units	1	BGE0089	05/03/23	05/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/20/23 10:45**

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

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



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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-02@7'
2304468-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	81.8	%	1	BGD0786	04/24/23	04/25/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/20/23 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.667	0.0100	mmhos/cm	1	BGD0921	04/27/23	04/27/23	EPA 120.1	

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

Date Sampled: **04/20/23 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.99		pH Units	1	BGD0920	04/27/23	04/27/23	EPA 9045D	

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-02@12'
2304468-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGD0843	04/25/23	04/26/23	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: **04/20/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0490	122 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0461	115 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0382	95.6 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/20/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGD0844	04/25/23	04/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **04/20/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	12.3	98.4 %		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 - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-02@12'
2304468-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/20/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGD0754	04/24/23	04/25/23	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: **04/20/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0223	66.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0246	73.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/20/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	1.57	0.0100	mg/L	1	BGD0823	04/25/23	05/01/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/20/23 11:00**

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 - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-02@12'
2304468-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	44.9	0.245	mg/kg dry	1	BGD0827	04/25/23	05/02/23	EPA 6020B	
Barium	20.9	0.489	"	"	"	"	"	"	
Cadmium	0.470	0.245	"	"	"	"	"	"	
Copper	17.8	0.489	"	"	"	"	"	"	
Lead	12.5	0.245	"	"	"	"	"	"	
Nickel	4.50	0.489	"	"	"	"	"	"	
Selenium	0.651	0.260	"	"	"	"	"	"	
Silver	0.0993	0.0245	"	"	"	"	"	"	
Zinc	63.0	0.489	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/20/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGD0757	04/24/23	04/24/23	EPA 7196A	

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

Date Sampled: **04/20/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	35.5	0.0612	mg/L dry	1	BGD0896	04/26/23	05/02/23	EPA 6020B	
Magnesium	38.8	0.0612	"	"	"	"	"	"	
Sodium	300	0.0612	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/20/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	8.28	0.00100	units	1	BGE0089	05/03/23	05/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/20/23 11:00**

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 - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-02@12'
2304468-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	81.7	%	1	BGD0786	04/24/23	04/25/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/20/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.81	0.0100	mmhos/cm	1	BGD0921	04/27/23	04/27/23	EPA 120.1	

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

Date Sampled: **04/20/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.09		pH Units	1	BGD0920	04/27/23	04/27/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-03@7'
2304468-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.020	mg/kg	10	BGD0843	04/25/23	04/26/23	EPA 8260B	
Toluene	ND	0.050	"	"	"	"	"	"	
Ethylbenzene	0.30	0.050	"	"	"	"	"	"	
Xylenes (total)	1.3	0.10	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	2.5	0.050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.44	0.050	"	"	"	"	"	"	
Naphthalene	0.10	0.038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	48	5.0	"	"	"	"	"	"	

Date Sampled: **04/20/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0441	110 %	50-150		"	"	"	"	
<i>Surrogate: Toluene-d8</i>	0.0324	81.0 %	50-150		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0410	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/20/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	160	50	mg/kg	1	BGD0844	04/25/23	04/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

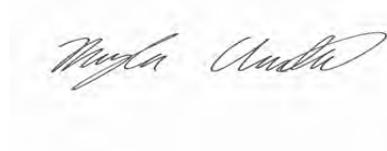
Date Sampled: **04/20/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>	12.8	102 %	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 - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-03@7'
2304468-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/20/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGD0754	04/24/23	04/25/23	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	0.00749	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0266	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.332	0.00500	"	"	"	"	"	"	E
2-Methylnaphthalene	0.846	0.00500	"	"	"	"	"	"	E

Date Sampled: **04/20/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0209	62.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0257	77.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/20/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	1.46	0.0100	mg/L	1	BGD0823	04/25/23	05/01/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/20/23 11:15**

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

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-03@7'
2304468-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.82	0.239	mg/kg dry	1	BGD0827	04/25/23	05/02/23	EPA 6020B	
Barium	53.5	0.477	"	"	"	"	"	"	
Cadmium	0.362	0.239	"	"	"	"	"	"	
Copper	8.42	0.477	"	"	"	"	"	"	
Lead	12.5	0.239	"	"	"	"	"	"	
Nickel	6.29	0.477	"	"	"	"	"	"	
Selenium	0.515	0.260	"	"	"	"	"	"	
Silver	0.0458	0.0239	"	"	"	"	"	"	
Zinc	42.7	0.477	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/20/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGD0757	04/24/23	04/24/23	EPA 7196A	

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

Date Sampled: **04/20/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	9.03	0.0597	mg/L dry	1	BGD0896	04/26/23	05/02/23	EPA 6020B	
Magnesium	15.2	0.0597	"	"	"	"	"	"	
Sodium	108	0.0597	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/20/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.09	0.00100	units	1	BGE0089	05/03/23	05/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/20/23 11:15**

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 - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-03@7'
2304468-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	83.8	%	1	BGD0786	04/24/23	04/25/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/20/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.712	0.0100	mmhos/cm	1	BGD0921	04/27/23	04/27/23	EPA 120.1	

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

Date Sampled: **04/20/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.84		pH Units	1	BGD0920	04/27/23	04/27/23	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-03@12'
2304468-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.020		mg/kg	10	BGD0843	04/25/23	04/26/23	EPA 8260B	
Toluene	ND	0.050		"	"	"	"	"	"	
Ethylbenzene	ND	0.050		"	"	"	"	"	"	
Xylenes (total)	ND	0.10		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.050		"	"	"	"	"	"	
Naphthalene	ND	0.038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	5.0		"	"	"	"	"	"	

Date Sampled: **04/20/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0506	127 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0318	79.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0377	94.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/20/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGD0844	04/25/23	04/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **04/20/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	13.3	107 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-03@12'
2304468-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/20/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGD0754	04/24/23	04/25/23	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: **04/20/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0210	62.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0219	65.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/20/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	1.48	0.0100	mg/L	1	BGD0823	04/25/23	05/01/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/20/23 11:30**

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 - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-03@12'
2304468-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.745	0.259	mg/kg dry	1	BGD0827	04/25/23	05/02/23	EPA 6020B	
Barium	14.1	0.518	"	"	"	"	"	"	
Cadmium	ND	0.259	"	"	"	"	"	"	
Copper	10.0	0.518	"	"	"	"	"	"	
Lead	10.5	0.259	"	"	"	"	"	"	
Nickel	2.70	0.518	"	"	"	"	"	"	
Selenium	0.277	0.260	"	"	"	"	"	"	
Silver	0.0605	0.0259	"	"	"	"	"	"	
Zinc	10.6	0.518	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/20/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGD0757	04/24/23	04/24/23	EPA 7196A	

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

Date Sampled: **04/20/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	62.1	0.0647	mg/L dry	1	BGD0896	04/26/23	05/02/23	EPA 6020B	
Magnesium	60.2	0.0647	"	"	"	"	"	"	
Sodium	59.8	0.0647	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/20/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.30	0.00100	units	1	BGE0089	05/03/23	05/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/20/23 11:30**

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 - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-03@12'
2304468-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	77.3	%	1	BGD0786	04/24/23	04/25/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/20/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.05	0.0100	mmhos/cm	1	BGD0921	04/27/23	04/27/23	EPA 120.1	

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

Date Sampled: **04/20/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.38		pH Units	1	BGD0920	04/27/23	04/27/23	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-04@8'
2304468-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/23 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGD0843	04/25/23	04/26/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.70	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	0.036	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	10	0.50	"	"	"	"	"	"	

Date Sampled: **04/20/23 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0468	117 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0310	77.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0561	140 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/20/23 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	130	50	mg/kg	1	BGD0844	04/25/23	04/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/20/23 12:00**

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 - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-04@8'
2304468-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/20/23 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGD0754	04/24/23	04/25/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0365	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.101	0.00500	"	"	"	"	"	"	

Date Sampled: **04/20/23 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0220	66.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0231	69.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/20/23 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	2.02	0.0100	mg/L	1	BGD0823	04/25/23	05/01/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/20/23 12:00**

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-04@8'
2304468-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	11.3	0.234	mg/kg dry	1	BGD0827	04/25/23	05/02/23	EPA 6020B	
Barium	16.9	0.467	"	"	"	"	"	"	
Cadmium	0.315	0.234	"	"	"	"	"	"	
Copper	10.8	0.467	"	"	"	"	"	"	
Lead	14.8	0.234	"	"	"	"	"	"	
Nickel	9.67	0.467	"	"	"	"	"	"	
Selenium	0.627	0.260	"	"	"	"	"	"	
Silver	0.0416	0.0234	"	"	"	"	"	"	
Zinc	36.8	0.467	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/20/23 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGD0757	04/24/23	04/24/23	EPA 7196A	

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

Date Sampled: **04/20/23 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	21.3	0.0584	mg/L dry	1	BGD0896	04/26/23	05/02/23	EPA 6020B	
Magnesium	30.1	0.0584	"	"	"	"	"	"	
Sodium	276	0.0584	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/20/23 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	9.02	0.00100	units	1	BGE0089	05/03/23	05/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/20/23 12:00**

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 - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-04@8'
2304468-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	85.6	%	1	BGD0786	04/24/23	04/25/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/20/23 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.76	0.0100	mmhos/cm	1	BGD0921	04/27/23	04/27/23	EPA 120.1	

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

Date Sampled: **04/20/23 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.44		pH Units	1	BGD0920	04/27/23	04/27/23	EPA 9045D	

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-04@15'
2304468-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGD0843	04/25/23	04/26/23	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: **04/20/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0544	136 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0344	85.9 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0386	96.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/20/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGD0844	04/25/23	04/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/20/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	13.2	106 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-04@15'
2304468-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/20/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGD0754	04/24/23	04/25/23	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: **04/20/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0171	51.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0248	74.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/20/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.957	0.0100	mg/L	1	BGD0823	04/25/23	05/01/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/20/23 12:15**

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

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



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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-04@15'
2304468-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.52	0.242	mg/kg dry	1	BGD0827	04/25/23	05/02/23	EPA 6020B	
Barium	30.3	0.484	"	"	"	"	"	"	
Cadmium	ND	0.242	"	"	"	"	"	"	
Copper	7.75	0.484	"	"	"	"	"	"	
Lead	10.3	0.242	"	"	"	"	"	"	
Nickel	2.20	0.484	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	
Silver	0.0416	0.0242	"	"	"	"	"	"	
Zinc	14.0	0.484	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/20/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGD0757	04/24/23	04/24/23	EPA 7196A	

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

Date Sampled: **04/20/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	89.4	0.0605	mg/L dry	1	BGD0896	04/26/23	05/02/23	EPA 6020B	
Magnesium	79.3	0.0605	"	"	"	"	"	"	
Sodium	82.0	0.0605	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/20/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.52	0.00100	units	1	BGE0089	05/03/23	05/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-04@15'
2304468-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/20/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.6		%	1	BGD0786	04/24/23	04/25/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/20/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.18	0.0100	mmhos/cm	1	BGD0921	04/27/23	04/27/23	EPA 120.1	

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

Date Sampled: **04/20/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.89		pH Units	1	BGD0920	04/27/23	04/27/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-05@7'
2304468-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGD0843	04/25/23	04/26/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.021	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	0.0063	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.7	0.50	"	"	"	"	"	"	

Date Sampled: **04/20/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0477	119 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0330	82.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0461	115 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/20/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGD0844	04/25/23	04/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/20/23 12:45**

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

Summit Scientific

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-05@7'
2304468-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/20/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGD0754	04/24/23	04/25/23	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: **04/20/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0175	52.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0257	77.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/20/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	2.52	0.0100	mg/L	1	BGD0823	04/25/23	05/01/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/20/23 12:45**

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 - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-05@7'
2304468-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.63	0.246	mg/kg dry	1	BGD0827	04/25/23	05/02/23	EPA 6020B	
Barium	47.2	0.492	"	"	"	"	"	"	
Cadmium	0.704	0.246	"	"	"	"	"	"	
Copper	13.5	0.492	"	"	"	"	"	"	
Lead	ND	0.246	"	"	"	"	"	"	
Nickel	11.7	0.492	"	"	"	"	"	"	
Selenium	0.707	0.260	"	"	"	"	"	"	
Silver	0.0762	0.0246	"	"	"	"	"	"	
Zinc	52.3	0.492	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/20/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGD0757	04/24/23	04/24/23	EPA 7196A	

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

Date Sampled: **04/20/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	54.3	0.0615	mg/L dry	1	BGD0896	04/26/23	05/02/23	EPA 6020B	
Magnesium	58.9	0.0615	"	"	"	"	"	"	
Sodium	313	0.0615	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/20/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	7.00	0.00100	units	1	BGE0089	05/03/23	05/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/20/23 12:45**

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 - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-05@7'
2304468-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	81.4	%	1	BGD0786	04/24/23	04/25/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/20/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.16	0.0100	mmhos/cm	1	BGD0921	04/27/23	04/27/23	EPA 120.1	

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

Date Sampled: **04/20/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.37		pH Units	1	BGD0920	04/27/23	04/27/23	EPA 9045D	

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-05@12'
2304468-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGD0843	04/25/23	04/26/23	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: **04/20/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0458	115 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0338	84.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0384	96.1 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/20/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGD0844	04/25/23	04/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/20/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	12.7	102 %	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 - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-05@12'
2304468-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/20/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGD0754	04/24/23	04/25/23	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: **04/20/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0161	48.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0190	56.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/20/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	1.43	0.0100	mg/L	1	BGD0823	04/25/23	05/01/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/20/23 13:00**

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 - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-05@12'
2304468-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.37	0.239	mg/kg dry	1	BGD0827	04/25/23	05/02/23	EPA 6020B	
Barium	12.2	0.479	"	"	"	"	"	"	
Cadmium	ND	0.239	"	"	"	"	"	"	
Copper	12.3	0.479	"	"	"	"	"	"	
Lead	6.99	0.239	"	"	"	"	"	"	
Nickel	2.90	0.479	"	"	"	"	"	"	
Selenium	0.412	0.260	"	"	"	"	"	"	
Silver	0.0527	0.0239	"	"	"	"	"	"	
Zinc	27.5	0.479	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/20/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGD0757	04/24/23	04/24/23	EPA 7196A	

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

Date Sampled: **04/20/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	36.0	0.0599	mg/L dry	1	BGD0896	04/26/23	05/02/23	EPA 6020B	
Magnesium	40.6	0.0599	"	"	"	"	"	"	
Sodium	308	0.0599	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/20/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	8.36	0.00100	units	1	BGE0089	05/03/23	05/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/20/23 13:00**

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 - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-05@12'
2304468-10 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	83.5	%	1	BGD0786	04/24/23	04/25/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/20/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.01	0.0100	mmhos/cm	1	BGD0921	04/27/23	04/27/23	EPA 120.1	

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

Date Sampled: **04/20/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.14		pH Units	1	BGD0920	04/27/23	04/27/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-06@7'
2304468-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGD0843	04/25/23	04/26/23	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: **04/20/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0467	117 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0343	85.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0396	98.9 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/20/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGD0844	04/25/23	04/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/20/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	13.2	106 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-06@7'
2304468-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/20/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGD0754	04/24/23	04/25/23	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: **04/20/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0149	44.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0153	46.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/20/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	2.02	0.0100	mg/L	1	BGD0823	04/25/23	05/01/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/20/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-06@7'
2304468-11 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.51	0.250	mg/kg dry	1	BGD0827	04/25/23	05/02/23	EPA 6020B
Barium	249	0.501	"	"	"	"	"	"
Cadmium	0.612	0.250	"	"	"	"	"	"
Copper	7.28	0.501	"	"	"	"	"	"
Lead	9.82	0.250	"	"	"	"	"	"
Nickel	7.58	0.501	"	"	"	"	"	"
Selenium	0.472	0.260	"	"	"	"	"	"
Silver	0.0416	0.0250	"	"	"	"	"	"
Zinc	27.4	0.501	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/20/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGD0757	04/24/23	04/24/23	EPA 7196A	

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

Date Sampled: **04/20/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	50.0	0.0626	mg/L dry	1	BGD0896	04/26/23	05/02/23	EPA 6020B	
Magnesium	43.6	0.0626	"	"	"	"	"	"	
Sodium	41.9	0.0626	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/20/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.05	0.00100	units	1	BGE0089	05/03/23	05/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/20/23 13:30**

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 - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-06@7'
2304468-11 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	79.9	%	1	BGD0786	04/24/23	04/25/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/20/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.691	0.0100	mmhos/cm	1	BGD0921	04/27/23	04/27/23	EPA 120.1	

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

Date Sampled: **04/20/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.97		pH Units	1	BGD0920	04/27/23	04/27/23	EPA 9045D	

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Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-06@12'
2304468-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGD0843	04/25/23	04/26/23	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: **04/20/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0485	121 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0478	120 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0381	95.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/20/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGD0844	04/25/23	04/26/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/20/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	13.0	104 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-06@12'
2304468-12 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/20/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGD0754	04/24/23	04/25/23	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: **04/20/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0143	42.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0137	41.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/20/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.441	0.0100	mg/L	1	BGD0823	04/25/23	05/01/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/20/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-06@12'
2304468-12 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	6.63	0.240	mg/kg dry	1	BGD0827	04/25/23	05/02/23	EPA 6020B
Barium	9.29	0.481	"	"	"	"	"	"
Cadmium	ND	0.240	"	"	"	"	"	"
Copper	9.74	0.481	"	"	"	"	"	"
Lead	11.4	0.240	"	"	"	"	"	"
Nickel	2.31	0.481	"	"	"	"	"	"
Selenium	0.287	0.260	"	"	"	"	"	"
Silver	0.0303	0.0240	"	"	"	"	"	"
Zinc	30.5	0.481	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/20/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGD0757	04/24/23	04/24/23	EPA 7196A	

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

Date Sampled: **04/20/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	17.8	0.0601	mg/L dry	1	BGD0896	04/26/23	05/02/23	EPA 6020B	
Magnesium	28.8	0.0601	"	"	"	"	"	"	
Sodium	255	0.0601	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/20/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	8.69	0.00100	units	1	BGE0089	05/03/23	05/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/20/23 13:45**

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

BH-06@12'
2304468-12 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	83.2	%	1	BGD0786	04/24/23	04/25/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/20/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.54	0.0100	mmhos/cm	1	BGD0921	04/27/23	04/27/23	EPA 120.1	

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

Date Sampled: **04/20/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.38		pH Units	1	BGD0920	04/27/23	04/27/23	EPA 9045D	

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Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGD0843 - EPA 5030 Soil MS

Blank (BGD0843-BLK1)

Prepared & Analyzed: 04/25/23

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	0.0464		"	0.0400		116		50-150			
Surrogate: Toluene-d8	0.0342		"	0.0400		85.6		50-150			
Surrogate: 4-Bromofluorobenzene	0.0353		"	0.0400		88.3		50-150			

LCS (BGD0843-BS1)

Prepared & Analyzed: 04/25/23

Benzene	0.106	0.0020	mg/kg	0.125		84.7		70-130			
Toluene	0.134	0.0050	"	0.125		107		70-130			
Ethylbenzene	0.153	0.0050	"	0.125		122		70-130			
m,p-Xylene	0.309	0.010	"	0.250		124		70-130			
o-Xylene	0.154	0.0050	"	0.125		123		70-130			
1,2,4-Trimethylbenzene	0.155	0.0050	"	0.125		124		70-130			
1,3,5-Trimethylbenzene	0.141	0.0050	"	0.125		113		70-130			
Naphthalene	0.161	0.0038	"	0.125		129		70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0448		"	0.0400		112		50-150			
Surrogate: Toluene-d8	0.0332		"	0.0400		83.0		50-150			
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.7		50-150			

Matrix Spike (BGD0843-MS1)

Source: 2304463-01

Prepared & Analyzed: 04/25/23

Benzene	0.106	0.0020	mg/kg	0.125	ND	84.7		70-130			
Toluene	0.134	0.0050	"	0.125	ND	108		70-130			
Ethylbenzene	0.150	0.0050	"	0.125	ND	120		70-130			
m,p-Xylene	0.296	0.010	"	0.250	ND	118		70-130			
o-Xylene	0.150	0.0050	"	0.125	ND	120		70-130			
1,2,4-Trimethylbenzene	0.155	0.0050	"	0.125	ND	124		70-130			
1,3,5-Trimethylbenzene	0.146	0.0050	"	0.125	ND	117		70-130			
Naphthalene	0.157	0.0038	"	0.125	ND	125		70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0512		"	0.0400		128		50-150			
Surrogate: Toluene-d8	0.0339		"	0.0400		84.7		50-150			
Surrogate: 4-Bromofluorobenzene	0.0338		"	0.0400		84.6		50-150			

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6855 W. 119th Ave.
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Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

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 BGD0843 - EPA 5030 Soil MS

Matrix Spike Dup (BGD0843-MSD1)	Source: 2304463-01			Prepared & Analyzed: 04/25/23						
Benzene	0.106	0.0020	mg/kg	0.125	ND	85.1	70-130	0.452	30	
Toluene	0.133	0.0050	"	0.125	ND	106	70-130	1.21	30	
Ethylbenzene	0.151	0.0050	"	0.125	ND	121	70-130	0.839	30	
m,p-Xylene	0.302	0.010	"	0.250	ND	121	70-130	1.87	30	
o-Xylene	0.149	0.0050	"	0.125	ND	119	70-130	0.381	30	
1,2,4-Trimethylbenzene	0.156	0.0050	"	0.125	ND	125	70-130	0.905	30	
1,3,5-Trimethylbenzene	0.150	0.0050	"	0.125	ND	120	70-130	2.57	30	
Naphthalene	0.155	0.0038	"	0.125	ND	124	70-130	1.25	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0518</i>		<i>"</i>	<i>0.0400</i>		<i>130</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0321</i>		<i>"</i>	<i>0.0400</i>		<i>80.3</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0350</i>		<i>"</i>	<i>0.0400</i>		<i>87.4</i>	<i>50-150</i>			

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

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 BGD0844 - EPA 3550A

Blank (BGD0844-BLK1)

Prepared & Analyzed: 04/25/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	13.6		"	12.5	109	30-150					

LCS (BGD0844-BS1)

Prepared & Analyzed: 04/25/23

C10-C28 (DRO)	499	50	mg/kg	500	99.9	70-130					
Surrogate: <i>o</i> -Terphenyl	12.7		"	12.5	102	30-150					

Matrix Spike (BGD0844-MS1)

Source: 2304463-01

Prepared & Analyzed: 04/25/23

C10-C28 (DRO)	496	50	mg/kg	500	ND	99.3	70-130				
Surrogate: <i>o</i> -Terphenyl	12.6		"	12.5	101	30-150					

Matrix Spike Dup (BGD0844-MSD1)

Source: 2304463-01

Prepared & Analyzed: 04/25/23

C10-C28 (DRO)	494	50	mg/kg	500	ND	98.8	70-130	0.520	20		
Surrogate: <i>o</i> -Terphenyl	12.2		"	12.5	97.8	30-150					

Summit Scientific

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

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 BGD0754 - EPA 5030 Soil MS

Blank (BGD0754-BLK1)

Prepared & Analyzed: 04/24/23

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>0.0300</i>		<i>"</i>	<i>0.0333</i>		<i>89.9</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0316</i>		<i>"</i>	<i>0.0333</i>		<i>94.8</i>	<i>40-150</i>			

LCS (BGD0754-BS1)

Prepared & Analyzed: 04/24/23

Acenaphthene	0.0303	0.00500	mg/kg	0.0333		91.0	31-137			
Anthracene	0.0306	0.00500	"	0.0333		91.8	30-120			
Benzo (a) anthracene	0.0279	0.00500	"	0.0333		83.8	30-120			
Benzo (a) pyrene	0.0282	0.00500	"	0.0333		84.6	30-120			
Benzo (b) fluoranthene	0.0271	0.00500	"	0.0333		81.4	30-120			
Benzo (k) fluoranthene	0.0302	0.00500	"	0.0333		90.7	30-120			
Chrysene	0.0290	0.00500	"	0.0333		87.1	30-120			
Dibenz (a,h) anthracene	0.0248	0.00500	"	0.0333		74.5	30-120			
Fluoranthene	0.0308	0.00500	"	0.0333		92.5	30-120			
Fluorene	0.0305	0.00500	"	0.0333		91.5	30-120			
Indeno (1,2,3-cd) pyrene	0.0246	0.00500	"	0.0333		73.7	30-120			
Pyrene	0.0290	0.00500	"	0.0333		87.1	35-142			
1-Methylnaphthalene	0.0339	0.00500	"	0.0333		102	35-142			
2-Methylnaphthalene	0.0331	0.00500	"	0.0333		99.2	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0338</i>		<i>"</i>	<i>0.0333</i>		<i>101</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0313</i>		<i>"</i>	<i>0.0333</i>		<i>94.0</i>	<i>40-150</i>			

Summit Scientific

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

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 BGD0754 - EPA 5030 Soil MS

Matrix Spike (BGD0754-MS1)	Source: 2304462-01			Prepared & Analyzed: 04/24/23						
Acenaphthene	0.0148	0.00500	mg/kg	0.0333	ND	44.3	31-137			
Anthracene	0.0140	0.00500	"	0.0333	ND	41.9	30-120			
Benzo (a) anthracene	0.0137	0.00500	"	0.0333	ND	41.2	30-120			
Benzo (a) pyrene	0.0151	0.00500	"	0.0333	ND	45.4	30-120			
Benzo (b) fluoranthene	0.0147	0.00500	"	0.0333	ND	44.0	30-120			
Benzo (k) fluoranthene	0.0148	0.00500	"	0.0333	ND	44.3	30-120			
Chrysene	0.0145	0.00500	"	0.0333	ND	43.4	30-120			
Dibenz (a,h) anthracene	0.0147	0.00500	"	0.0333	ND	44.1	30-120			
Fluoranthene	0.0167	0.00500	"	0.0333	ND	50.0	30-120			
Fluorene	0.0174	0.00500	"	0.0333	ND	52.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0156	0.00500	"	0.0333	ND	46.7	30-120			
Pyrene	0.0159	0.00500	"	0.0333	ND	47.8	35-142			
1-Methylnaphthalene	0.0172	0.00500	"	0.0333	ND	51.7	15-130			
2-Methylnaphthalene	0.0180	0.00500	"	0.0333	ND	53.9	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0172</i>		<i>"</i>	<i>0.0333</i>		<i>51.6</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0141</i>		<i>"</i>	<i>0.0333</i>		<i>42.2</i>	<i>40-150</i>			

Matrix Spike Dup (BGD0754-MSD1)	Source: 2304462-01			Prepared & Analyzed: 04/24/23						
Acenaphthene	0.0174	0.00500	mg/kg	0.0333	ND	52.2	31-137	16.3	30	
Anthracene	0.0167	0.00500	"	0.0333	ND	50.2	30-120	18.0	30	
Benzo (a) anthracene	0.0149	0.00500	"	0.0333	ND	44.6	30-120	8.12	30	
Benzo (a) pyrene	0.0144	0.00500	"	0.0333	ND	43.3	30-120	4.73	30	
Benzo (b) fluoranthene	0.0167	0.00500	"	0.0333	ND	50.1	30-120	13.0	30	
Benzo (k) fluoranthene	0.0160	0.00500	"	0.0333	ND	48.1	30-120	8.10	30	
Chrysene	0.0155	0.00500	"	0.0333	ND	46.4	30-120	6.54	30	
Dibenz (a,h) anthracene	0.0156	0.00500	"	0.0333	ND	46.9	30-120	6.15	30	
Fluoranthene	0.0137	0.00500	"	0.0333	ND	41.1	30-120	19.5	30	
Fluorene	0.0186	0.00500	"	0.0333	ND	55.7	30-120	6.43	30	
Indeno (1,2,3-cd) pyrene	0.0145	0.00500	"	0.0333	ND	43.5	30-120	7.15	30	
Pyrene	0.0133	0.00500	"	0.0333	ND	40.0	35-142	17.7	30	
1-Methylnaphthalene	0.0160	0.00500	"	0.0333	ND	47.9	15-130	7.66	50	
2-Methylnaphthalene	0.0217	0.00500	"	0.0333	ND	65.0	15-130	18.6	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0159</i>		<i>"</i>	<i>0.0333</i>		<i>47.8</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0171</i>		<i>"</i>	<i>0.0333</i>		<i>51.2</i>	<i>40-150</i>			

Summit Scientific

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

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

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

Batch BGD0823 - EPA 3050B

Blank (BGD0823-BLK1)

Prepared: 04/25/23 Analyzed: 05/01/23

Boron ND 0.0100 mg/L

LCS (BGD0823-BS1)

Prepared: 04/25/23 Analyzed: 05/01/23

Boron 4.68 0.0100 mg/L 5.00 93.5 80-120

Duplicate (BGD0823-DUP1)

Source: 2304460-01

Prepared: 04/25/23 Analyzed: 05/01/23

Boron 0.396 0.0100 mg/L 0.451 12.9 20

Matrix Spike (BGD0823-MS1)

Source: 2304460-01

Prepared: 04/25/23 Analyzed: 05/01/23

Boron 5.20 0.0100 mg/L 5.00 0.451 95.0 75-125

Matrix Spike Dup (BGD0823-MSD1)

Source: 2304460-01

Prepared: 04/25/23 Analyzed: 05/01/23

Boron 4.69 0.0100 mg/L 5.00 0.451 84.8 75-125 10.4 25

Summit Scientific

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGD0827 - EPA 3050B

Blank (BGD0827-BLK1)

Prepared: 04/25/23 Analyzed: 05/01/23

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	"						
Selenium	ND	0.260	"						
Silver	ND	0.0200	"						
Zinc	ND	0.400	"						

LCS (BGD0827-BS1)

Prepared: 04/25/23 Analyzed: 05/01/23

Arsenic	36.8	0.200	mg/kg wet	40.0	92.1	80-120
Barium	36.8	0.400	"	40.0	92.1	80-120
Cadmium	1.88	0.200	"	2.00	93.8	80-120
Copper	38.4	0.400	"	40.0	96.0	80-120
Lead	19.7	0.200	"	20.0	98.4	80-120
Nickel	37.9	0.400	"	40.0	94.7	80-120
Selenium	4.31	0.260	"	4.00	108	80-120
Silver	1.88	0.0200	"	2.00	93.9	80-120
Zinc	38.2	0.400	"	40.0	95.6	80-120

Duplicate (BGD0827-DUP1)

Source: 2304021-01

Prepared: 04/25/23 Analyzed: 05/01/23

Arsenic	0.746	0.209	mg/kg dry	0.715	4.23	20
Barium	33.0	0.417	"	33.8	2.27	20
Cadmium	0.0743	0.209	"	0.0793	6.52	20
Copper	2.59	0.417	"	2.52	2.75	20
Lead	3.57	0.209	"	3.60	0.675	20
Nickel	2.58	0.417	"	2.55	1.07	20
Selenium	ND	0.260	"	ND		20
Silver	0.0213	0.0209	"	0.0225	5.71	20
Zinc	10.3	0.417	"	10.2	1.05	20

Summit Scientific

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

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 BGD0827 - EPA 3050B

Matrix Spike (BGD0827-MS1)

Source: 2304021-01

Prepared: 04/25/23 Analyzed: 05/01/23

Arsenic	38.1	0.209	mg/kg dry	41.7	0.715	89.6	75-125			
Barium	76.4	0.417	"	41.7	33.8	102	75-125			
Cadmium	2.15	0.209	"	2.09	0.0793	99.1	75-125			
Copper	35.1	0.417	"	41.7	2.52	78.1	75-125			
Lead	23.7	0.209	"	20.9	3.60	96.3	75-125			
Nickel	35.1	0.417	"	41.7	2.55	78.0	75-125			
Selenium	4.36	0.260	"	4.17	ND	105	75-125			
Silver	2.03	0.0209	"	2.09	0.0225	96.2	75-125			
Zinc	44.0	0.417	"	41.7	10.2	80.9	75-125			

Matrix Spike Dup (BGD0827-MSD1)

Source: 2304021-01

Prepared: 04/25/23 Analyzed: 05/01/23

Arsenic	39.3	0.209	mg/kg dry	41.7	0.715	92.5	75-125	3.12	25
Barium	76.0	0.417	"	41.7	33.8	101	75-125	0.603	25
Cadmium	2.08	0.209	"	2.09	0.0793	96.1	75-125	2.90	25
Copper	36.0	0.417	"	41.7	2.52	80.3	75-125	2.57	25
Lead	23.7	0.209	"	20.9	3.60	96.6	75-125	0.216	25
Nickel	35.8	0.417	"	41.7	2.55	79.8	75-125	2.05	25
Selenium	4.26	0.260	"	4.17	ND	102	75-125	2.36	25
Silver	1.98	0.0209	"	2.09	0.0225	94.0	75-125	2.31	25
Zinc	45.1	0.417	"	41.7	10.2	83.5	75-125	2.43	25

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

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 BGD0757 - 3060A Mod

Blank (BGD0757-BLK1)

Prepared & Analyzed: 04/24/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGD0757-BS1)

Prepared & Analyzed: 04/24/23

Chromium, Hexavalent 29.4 0.30 mg/kg wet 25.0 118 80-120

Duplicate (BGD0757-DUP1)

Source: 2304468-01

Prepared & Analyzed: 04/24/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGD0757-MS1)

Source: 2304468-01

Prepared & Analyzed: 04/24/23

Chromium, Hexavalent 32.7 0.30 mg/kg dry 29.8 ND 110 75-125

Matrix Spike Dup (BGD0757-MSD1)

Source: 2304468-01

Prepared & Analyzed: 04/24/23

Chromium, Hexavalent 34.2 0.30 mg/kg dry 29.8 ND 115 75-125 4.63 20

Summit Scientific

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

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 BGD0896 - General Preparation

Blank (BGD0896-BLK1)

Prepared: 04/26/23 Analyzed: 05/02/23

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

LCS (BGD0896-BS1)

Prepared: 04/26/23 Analyzed: 05/02/23

Calcium	4.39	0.0500	mg/L wet	5.00	87.9	70-130
Magnesium	5.98	0.0500	"	5.00	120	70-130
Sodium	6.02	0.0500	"	5.00	120	70-130

Summit Scientific

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
 Project Manager: Jacob Whritenour

Reported:
 05/25/23 13:10

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 BGD0786 - General Preparation

Duplicate (BGD0786-DUP1)		Source: 2304463-01		Prepared: 04/24/23 Analyzed: 04/25/23	
% Solids	98.2	%		98.4	0.228 20

Summit Scientific

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

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

Summit Scientific

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

Batch BGD0921 - General Preparation

Blank (BGD0921-BLK1)

Prepared & Analyzed: 04/27/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGD0921-BS1)

Prepared & Analyzed: 04/27/23

Specific Conductance (EC) 0.152 0.0100 mmhos/cm 0.150 101 95-105

Duplicate (BGD0921-DUP1)

Source: 2304462-01

Prepared & Analyzed: 04/27/23

Specific Conductance (EC) 0.526 0.0100 mmhos/cm 0.534 1.64 20

Summit Scientific

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

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 BGD0920 - General Preparation

LCS (BGD0920-BS1)

Prepared & Analyzed: 04/27/23

pH	8.87	pH Units	9.18	96.6	95-105
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Duplicate (BGD0920-DUP1)

Source: 2304462-01

Prepared & Analyzed: 04/27/23

pH	7.86	pH Units	7.99	1.64	20
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Summit Scientific

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

Project: Noble - Kildow PMC 31-2

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/25/23 13:10

Notes and Definitions

- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 03, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

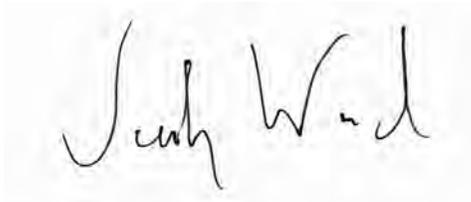
Broomfield, CO 80020

RE: Noble - Kildow PMC 31-2 (FAC)

Work Order #2309478

Enclosed are the results of analyses for samples received by Summit Scientific on 09/26/23 18:00. 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 long horizontal stroke at the end.

Jacob Wood For Paul Shrewsbury

President



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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH07@7-8'	2309478-01	Soil	09/26/23 12:40	09/26/23 18:00
BH07@9-10'	2309478-02	Soil	09/26/23 12:45	09/26/23 18:00
BH07@11-12'	2309478-03	Soil	09/26/23 12:50	09/26/23 18:00
BH07@13-13.5'	2309478-04	Soil	09/26/23 13:00	09/26/23 18:00
BH08@7-8'	2309478-05	Soil	09/26/23 10:30	09/26/23 18:00
BH08@11.5-12.5'	2309478-06	Soil	09/26/23 10:40	09/26/23 18:00
BH09@7-8'	2309478-07	Soil	09/26/23 11:00	09/26/23 18:00
BH09@11-12'	2309478-08	Soil	09/26/23 11:15	09/26/23 18:00
BH09@13-13.5'	2309478-09	Soil	09/26/23 11:30	09/26/23 18:00
BH10@7-8'	2309478-10	Soil	09/26/23 13:15	09/26/23 18:00
BH10@11-12'	2309478-11	Soil	09/26/23 13:20	09/26/23 18:00
BG01@7-8'	2309478-12	Soil	09/26/23 13:30	09/26/23 18:00
BG01@11-12'	2309478-13	Soil	09/26/23 13:35	09/26/23 18:00
BG02@7-8'	2309478-14	Soil	09/26/23 13:40	09/26/23 18:00
BG02@11-12'	2309478-15	Soil	09/26/23 13:45	09/26/23 18:00
BG03@7-8'	2309478-16	Soil	09/26/23 13:50	09/26/23 18:00
BG03@11-12'	2309478-17	Soil	09/26/23 13:55	09/26/23 18:00
BG04@7-8'	2309478-18	Soil	09/26/23 14:00	09/26/23 18:00
BG04@11-12'	2309478-19	Soil	09/26/23 14:05	09/26/23 18:00
BG05@7-8'	2309478-20	Soil	09/26/23 14:10	09/26/23 18:00
BG05@11-12'	2309478-21	Soil	09/26/23 14:15	09/26/23 18:00

Summit Scientific

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

Send Data To:		Send Invoice To:	
Client: Noble/Tasman	Project Manager: Jake Whritenour	Company: <u>Chevron</u>	
Address: 6855 W. 119th Ave.	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location: <u>Kidow Pmc 31-2 FAC</u>	
City/State/Zip: Broomfield/CO/ 80020		AFE#:	
Phone: 602-881-5716	Project Name: <u>Kidow Pmc 31-2 FAC</u>	PO/Billing Codes:	
Sampler Name: Dennis Gray	Project Number:	Contact: <u>Dan Peterson</u>	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Air-Canister #	Other <u>pH, SAR</u>	Analysis Requested							Special Instructions			
					HCl	HNO3	None	Other	Water	Soil			Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD		Arsenic, Barium, Cadmium, Lead, Selenium		
1	BG03 @ 7-8'	9-26-23	1350	1			X			X							X				SAR, EC, pH by saturated paste		
2	BG03 @ 11-12'		1355	1			X			X							X						
3	BG04 @ 7-8'		1400	1			X			X							X						
4	BG04 @ 11-12'		1405	1			X			X							X						
5	BG05 @ 7-8'		1410	1			X			X							X						
6	BG05 @ 11-12'		1415	1			X			X							X						
7																							
8																							
9																							
10																							
11																							
12																							
13																							
14																							
15																							

Relinquished by: <u>Dennis Gray</u>	Date/Time: <u>9-26-23 1630</u>	Received by: <u>Tasman Lock Box</u>	Date/Time: <u>9-26-23 1630</u>	TAT Business Days	Field DO	Notes: * Arsenic, Barium, Cadmium, Lead, Selenium
Relinquished by: <u>TASMAN Lockbox</u>	Date/Time: <u>9/26/23 1800</u>	Received by: <u>Jim Brown</u>	Date/Time: <u>9/26/23 1700</u>	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Temperature Upon Receipt: <u>4.2</u>	Corrected Temperature: <u>—</u>	IR gun #: <u>2</u>	HNO3 lot #:	Standard	<input checked="" type="checkbox"/> Field Turb.	

S₂

2/2
Sample Receipt Checklist

S2 Work Order# 2309478

Client: Noble / Tooman Client Project ID: Kildow PML 31-2 FAC

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

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

Temp (°C) 4.2 Thermometer # 2

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

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

AS
Custodian Printed Name

9/26/23
Date/Time

11 11 11



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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH07@7-8'
2309478-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/23 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGI0867	09/27/23	09/28/23	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: **09/26/23 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0360	90.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0401	100 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0379	94.8 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/26/23 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGI0870	09/27/23	09/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **09/26/23 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	10.1	81.0 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH07@7-8'
2309478-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/26/23 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BG10837	09/27/23	09/28/23	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: **09/26/23 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0297	89.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0205	61.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BG10941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 12:40**

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 - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH07@7-8'
2309478-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.739	0.200	mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	44.7	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	3.80	0.200	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

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

Date Sampled: **09/26/23 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	37.4	0.0567	mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	6.50	0.0567	"	"	"	"	"	"	
Sodium	6.29	0.0567	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.250	0.00100	units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.1		%	1	BGI0932	09/28/23	09/29/23	Calculation	

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

Date Sampled: **09/26/23 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.58		pH Units	1	BGI0013	10/02/23	10/02/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH07@9-10'
2309478-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/23 12:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGI0867	09/27/23	09/28/23	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: **09/26/23 12:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0362	90.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0389	97.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0359	89.7 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/26/23 12:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGI0870	09/27/23	09/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **09/26/23 12:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.57	68.5 %		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 - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH07@9-10'
2309478-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/26/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGI0837	09/27/23	09/28/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.00734	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0415	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.118	0.00500	"	"	"	"	"	"	

Date Sampled: **09/26/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0153	45.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0192	57.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGI0941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 12:45**

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 - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH07@9-10'
2309478-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.823	0.200	mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	64.8	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	8.87	0.200	"	"	"	"	"	"	
Selenium	0.328	0.260	"	"	"	"	"	"	

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

Date Sampled: **09/26/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	17.7	0.0615	mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	16.2	0.0615	"	"	"	"	"	"	
Sodium	81.3	0.0615	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.36	0.00100	units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.4		%	1	BGI0932	09/28/23	09/29/23	Calculation	

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

Date Sampled: **09/26/23 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.81		pH Units	1	BGI0013	10/02/23	10/02/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH07@11-12'
2309478-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/23 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BG10867	09/27/23	09/28/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.0068	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.016	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/26/23 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0378	94.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0411	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0401	100 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/26/23 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BG10870	09/27/23	09/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/26/23 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	9.17	73.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH07@11-12'
2309478-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/26/23 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BG10837	09/27/23	09/28/23	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: **09/26/23 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0339	102 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0211	63.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BG10941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 12:50**

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 - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH07@11-12'
2309478-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.89	0.200	mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	10.8	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	13.1	0.200	"	"	"	"	"	"	
Selenium	1.03	0.260	"	"	"	"	"	"	

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

Date Sampled: **09/26/23 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	14.5	0.0625	mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	13.0	0.0625	"	"	"	"	"	"	
Sodium	178	0.0625	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	8.18	0.00100	units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.0		%	1	BGI0932	09/28/23	09/29/23	Calculation	

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

Date Sampled: **09/26/23 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.11		pH Units	1	BGI0013	10/02/23	10/02/23	EPA 9045D	

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH07@13-13.5'
2309478-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGI0867	09/27/23	09/28/23	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: **09/26/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0380	95.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0412	103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0400	100 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/26/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGI0870	09/27/23	09/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **09/26/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.36	74.9 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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6855 W. 119th Ave.
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Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH07@13-13.5'
2309478-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/26/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BG10837	09/27/23	09/28/23	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: **09/26/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0220	66.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0158	47.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BG10941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 13:00**

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 - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH07@13-13.5'
2309478-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.12	0.200	mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	9.82	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	10.9	0.200	"	"	"	"	"	"	
Selenium	0.639	0.260	"	"	"	"	"	"	

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

Date Sampled: **09/26/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	14.1	0.0614	mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	12.3	0.0614	"	"	"	"	"	"	
Sodium	141	0.0614	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.62	0.00100	units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.4		%	1	BGI0932	09/28/23	09/29/23	Calculation	

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

Date Sampled: **09/26/23 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.38		pH Units	1	BGI0013	10/02/23	10/02/23	EPA 9045D	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH08@7-8'
2309478-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/23 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGI0867	09/27/23	09/28/23	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: **09/26/23 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0374	93.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0407	102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0406	101 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/26/23 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	110	50		mg/kg	1	BGI0870	09/27/23	09/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **09/26/23 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.77	78.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH08@7-8'
2309478-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/26/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BG10837	09/27/23	09/28/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0771	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.164	0.00500	"	"	"	"	"	"	

Date Sampled: **09/26/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0160	47.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0139	41.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BG10941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 10:30**

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 - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH08@7-8'
2309478-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.66	0.200	mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	17.2	0.400	"	"	"	"	"	"	
Cadmium	0.437	0.200	"	"	"	"	"	"	
Lead	17.4	0.200	"	"	"	"	"	"	
Selenium	1.23	0.260	"	"	"	"	"	"	

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

Date Sampled: **09/26/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	48.4	0.0590	mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	44.5	0.0590	"	"	"	"	"	"	
Sodium	170	0.0590	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.24	0.00100	units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.7		%	1	BGI0932	09/28/23	09/29/23	Calculation	

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

Date Sampled: **09/26/23 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.85		pH Units	1	BGI0013	10/02/23	10/02/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)
Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH08@11.5-12.5'
2309478-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/23 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGI0867	09/27/23	09/28/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.027	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.10	0.050	"	10	"	"	"	"	
1,3,5-Trimethylbenzene	0.59	0.0050	"	1	"	"	"	"	
Naphthalene	0.042	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	14	0.50	"	"	"	"	"	"	

Date Sampled: **09/26/23 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0391	97.6 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0405	101 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0878	220 %	50-150	"	"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/26/23 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	75	50	mg/kg	1	BGI0870	09/27/23	09/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/26/23 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.7	85.4 %	30-150	"	"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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6855 W. 119th Ave.
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Project: Noble - Kildow PMC 31-2 (FAC)
Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH08@11.5-12.5'
2309478-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/26/23 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BG10837	09/27/23	09/28/23	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	0.00563	0.00500	"	"	"	"	"	"	

Date Sampled: **09/26/23 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0161	48.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0137	41.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BG10941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 10:40**

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 - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH08@11.5-12.5'
2309478-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.13	0.200	mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	16.7	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	12.0	0.200	"	"	"	"	"	"	
Selenium	1.09	0.260	"	"	"	"	"	"	

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

Date Sampled: **09/26/23 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	15.2	0.0597	mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	13.3	0.0597	"	"	"	"	"	"	
Sodium	121	0.0597	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.47	0.00100	units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.8		%	1	BGI0932	09/28/23	09/29/23	Calculation	

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

Date Sampled: **09/26/23 10:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.63		pH Units	1	BGI0013	10/02/23	10/02/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH09@7-8'
2309478-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGI0867	09/27/23	09/28/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.036	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.090	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.077	0.0050	"	"	"	"	"	"	
Naphthalene	0.011	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.1	0.50	"	"	"	"	"	"	

Date Sampled: **09/26/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0334	83.6 %	50-150	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>	0.0424	106 %	50-150	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0423	106 %	50-150	"	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/26/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGI0870	09/27/23	09/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/26/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>	8.98	71.8 %	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 - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH09@7-8'
2309478-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/26/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BG10837	09/27/23	09/28/23	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: **09/26/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0327	98.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0255	76.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BG10941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 11:00**

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 - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH09@7-8'
2309478-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.33	0.200	mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	25.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	3.33	0.200	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

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

Date Sampled: **09/26/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	8.31	0.0603	mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	17.3	0.0603	"	"	"	"	"	"	
Sodium	53.2	0.0603	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.41	0.00100	units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.9		%	1	BGI0932	09/28/23	09/29/23	Calculation	

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

Date Sampled: **09/26/23 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.66		pH Units	1	BGI0013	10/02/23	10/02/23	EPA 9045D	

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH09@11-12'
2309478-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGI0867	09/27/23	09/28/23	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: **09/26/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0347	86.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0405	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0378	94.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/26/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGI0870	09/27/23	09/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/26/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.18	65.4 %	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 - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH09@11-12'
2309478-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/26/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BG10837	09/27/23	09/28/23	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: **09/26/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0306	91.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0249	74.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BG10941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 11:15**

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 - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH09@11-12'
2309478-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.53	0.200	mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	9.57	0.400	"	"	"	"	"	"	
Cadmium	0.242	0.200	"	"	"	"	"	"	
Lead	6.26	0.200	"	"	"	"	"	"	
Selenium	2.60	0.260	"	"	"	"	"	"	

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

Date Sampled: **09/26/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	15.8	0.0607	mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	14.2	0.0607	"	"	"	"	"	"	
Sodium	126	0.0607	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.54	0.00100	units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.4		%	1	BGI0932	09/28/23	09/29/23	Calculation	

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

Date Sampled: **09/26/23 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.93		pH Units	1	BGI0013	10/02/23	10/02/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH09@13-13.5'
2309478-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BG10867	09/27/23	09/28/23	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: **09/26/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0365	91.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0417	104 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0415	104 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/26/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BG10870	09/27/23	09/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **09/26/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.36	66.9 %		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 - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH09@13-13.5'
2309478-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/26/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BG10837	09/27/23	09/28/23	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: **09/26/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0275	82.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0203	60.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BG10941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 11:30**

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

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH09@13-13.5'
2309478-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.75	0.200	mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	56.6	0.400	"	"	"	"	"	"	
Cadmium	0.415	0.200	"	"	"	"	"	"	
Lead	15.1	0.200	"	"	"	"	"	"	
Selenium	4.34	0.260	"	"	"	"	"	"	

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

Date Sampled: **09/26/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	17.3	0.0625	mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	15.3	0.0625	"	"	"	"	"	"	
Sodium	146	0.0625	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.17	0.00100	units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.0		%	1	BGI0932	09/28/23	09/29/23	Calculation	

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

Date Sampled: **09/26/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.70		pH Units	1	BGI0013	10/02/23	10/02/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH10@7-8'
2309478-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/23 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGI0867	09/27/23	09/28/23	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: **09/26/23 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0392	98.1 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0400	100 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0374	93.6 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/26/23 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGI0870	09/27/23	09/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **09/26/23 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	10.7	85.9 %		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 - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH10@7-8'
2309478-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/26/23 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BG10837	09/27/23	09/28/23	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: **09/26/23 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0295	88.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0164	49.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BG10941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 13:15**

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 - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH10@7-8'
2309478-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.837	0.200	mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	51.9	0.400	"	"	"	"	"	"	
Cadmium	2.27	0.200	"	"	"	"	"	"	
Lead	14.2	0.200	"	"	"	"	"	"	
Selenium	0.716	0.260	"	"	"	"	"	"	

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

Date Sampled: **09/26/23 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	10.3	0.0607	mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	15.4	0.0607	"	"	"	"	"	"	
Sodium	94.0	0.0607	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.33	0.00100	units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.4		%	1	BGI0932	09/28/23	09/29/23	Calculation	

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

Date Sampled: **09/26/23 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.69		pH Units	1	BGI0013	10/02/23	10/02/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH10@11-12'
2309478-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGI0867	09/27/23	09/28/23	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: **09/26/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0346	86.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0405	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0380	95.1 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/26/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGI0870	09/27/23	09/28/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/26/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.74	61.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH10@11-12'
2309478-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/26/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BG10837	09/27/23	09/28/23	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: **09/26/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0306	91.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0183	55.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BG10941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 13:20**

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 - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BH10@11-12'
2309478-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	7.83	0.200	mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	139	0.400	"	"	"	"	"	"	
Cadmium	0.441	0.200	"	"	"	"	"	"	
Lead	38.9	0.200	"	"	"	"	"	"	
Selenium	5.16	0.260	"	"	"	"	"	"	

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

Date Sampled: **09/26/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	28.6	0.0624	mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	31.6	0.0624	"	"	"	"	"	"	
Sodium	222	0.0624	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.81	0.00100	units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.1		%	1	BGI0932	09/28/23	09/29/23	Calculation	

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

Date Sampled: **09/26/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.74		pH Units	1	BGI0013	10/02/23	10/02/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)
Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BG01@7-8'
2309478-12 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BGI0941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	1.06	0.200		mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	197	0.400		"	"	"	"	"	"	
Cadmium	2.74	0.200		"	"	"	"	"	"	
Lead	39.3	0.200		"	"	"	"	"	"	
Selenium	0.969	0.260		"	"	"	"	"	"	

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

Date Sampled: **09/26/23 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	20.8	0.0605		mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	30.7	0.0605		"	"	"	"	"	"	
Sodium	130	0.0605		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Sodium Adsorption Ratio	4.24	0.00100		units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								

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Broomfield CO, 80020

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BG01@7-8'
2309478-12 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	82.7	%	1	BGI0932	09/28/23	09/29/23	Calculation
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Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/26/23 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.32		pH Units	1	BGJ0013	10/02/23	10/02/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BG01@11-12'
2309478-13 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 13:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGI0941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 13:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.43	0.200	mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	12.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	12.7	0.200	"	"	"	"	"	"	
Selenium	0.594	0.260	"	"	"	"	"	"	

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

Date Sampled: **09/26/23 13:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	26.3	0.0622	mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	25.3	0.0622	"	"	"	"	"	"	
Sodium	176	0.0622	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 13:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	5.88	0.00100	units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 13:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BG01@11-12'
2309478-13 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	80.4	%	1	BGI0932	09/28/23	09/29/23	Calculation
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Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/26/23 13:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.89		pH Units	1	BGJ0013	10/02/23	10/02/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BG02@7-8'
2309478-14 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BGI0941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	0.894	0.200		mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	54.2	0.400		"	"	"	"	"	"	
Cadmium	0.797	0.200		"	"	"	"	"	"	
Lead	23.1	0.200		"	"	"	"	"	"	
Selenium	1.13	0.260		"	"	"	"	"	"	

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

Date Sampled: **09/26/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	19.2	0.0609		mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	33.2	0.0609		"	"	"	"	"	"	
Sodium	141	0.0609		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Sodium Adsorption Ratio	4.52	0.00100		units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								

Summit Scientific

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



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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BG02@7-8'
2309478-14 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	82.1	%	1	BGI0932	09/28/23	09/29/23	Calculation
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Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/26/23 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.43		pH Units	1	BGJ0013	10/02/23	10/02/23	EPA 9045D	

Summit Scientific

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



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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BG02@11-12'
2309478-15 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGI0941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.39	0.200	mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	13.6	0.400	"	"	"	"	"	"	
Cadmium	0.239	0.200	"	"	"	"	"	"	
Lead	26.3	0.200	"	"	"	"	"	"	
Selenium	0.588	0.260	"	"	"	"	"	"	

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

Date Sampled: **09/26/23 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	18.9	0.0639	mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	18.5	0.0639	"	"	"	"	"	"	
Sodium	137	0.0639	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	5.37	0.00100	units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						

Summit Scientific

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



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

Project: Noble - Kildow PMC 31-2 (FAC)
 Project Number: UWRWE-A2316-ABN
 Project Manager: Jacob Whritenour

Reported:
 10/03/23 14:31

BG02@11-12'
2309478-15 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	78.3	%	1	BGI0932	09/28/23	09/29/23	Calculation
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Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/26/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.00		pH Units	1	BGJ0013	10/02/23	10/02/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BG03@7-8'
2309478-16 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 13:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGI0941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 13:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	4.08	0.200	mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	16.6	0.400	"	"	"	"	"	"	
Cadmium	0.289	0.200	"	"	"	"	"	"	
Lead	16.5	0.200	"	"	"	"	"	"	
Selenium	0.833	0.260	"	"	"	"	"	"	

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

Date Sampled: **09/26/23 13:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	27.0	0.0609	mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	36.9	0.0609	"	"	"	"	"	"	
Sodium	155	0.0609	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 13:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	4.55	0.00100	units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 13:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						

Summit Scientific

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



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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BG03@7-8'
2309478-16 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	82.1	%	1	BGI0932	09/28/23	09/29/23	Calculation
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Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/26/23 13:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.80		pH Units	1	BGJ0013	10/02/23	10/02/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BG03@11-12'
2309478-17 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 13:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGI0941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 13:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.99	0.200	mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	43.3	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	14.7	0.200	"	"	"	"	"	"	
Selenium	0.454	0.260	"	"	"	"	"	"	

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

Date Sampled: **09/26/23 13:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	29.1	0.0582	mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	29.1	0.0582	"	"	"	"	"	"	
Sodium	170	0.0582	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 13:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	5.33	0.00100	units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 13:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						

Summit Scientific

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



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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
 Project Manager: Jacob Whritenour

Reported:
 10/03/23 14:31

BG03@11-12'
2309478-17 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	86.0	%	1	BGI0932	09/28/23	09/29/23	Calculation
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Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/26/23 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.95		pH Units	1	BGJ0013	10/02/23	10/02/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BG04@7-8'
2309478-18 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGI0941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.670	0.200	mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	12.2	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	10.4	0.200	"	"	"	"	"	"	
Selenium	0.351	0.260	"	"	"	"	"	"	

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

Date Sampled: **09/26/23 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	21.3	0.0605	mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	29.3	0.0605	"	"	"	"	"	"	
Sodium	126	0.0605	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	4.16	0.00100	units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BG04@7-8'
2309478-18 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	82.7	%	1	BGI0932	09/28/23	09/29/23	Calculation
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Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/26/23 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.71		pH Units	1	BGJ0013	10/02/23	10/02/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BG04@11-12'
2309478-19 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 14:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGI0941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 14:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.89	0.200	mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	14.4	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	10.1	0.200	"	"	"	"	"	"	
Selenium	0.977	0.260	"	"	"	"	"	"	

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

Date Sampled: **09/26/23 14:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	37.4	0.0615	mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	36.9	0.0615	"	"	"	"	"	"	
Sodium	195	0.0615	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 14:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	5.42	0.00100	units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 14:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						

Summit Scientific

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



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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BG04@11-12'
2309478-19 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

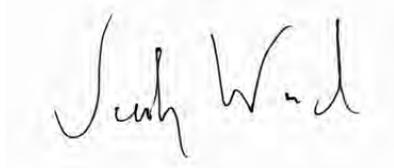
% Solids	81.3	%	1	BGI0932	09/28/23	09/29/23	Calculation
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Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/26/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.97			pH Units	1	BGJ0013	10/02/23	10/02/23	EPA 9045D	

Summit Scientific



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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BG05@7-8'
2309478-20 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BGI0941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	1.21	0.200		mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	116	0.400		"	"	"	"	"	"	
Cadmium	0.421	0.200		"	"	"	"	"	"	
Lead	14.8	0.200		"	"	"	"	"	"	
Selenium	0.804	0.260		"	"	"	"	"	"	

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

Date Sampled: **09/26/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	16.2	0.0606		mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	27.3	0.0606		"	"	"	"	"	"	
Sodium	106	0.0606		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Sodium Adsorption Ratio	3.73	0.00100		units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								

Summit Scientific

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



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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BG05@7-8'
2309478-20 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	82.6	%	1	BGI0932	09/28/23	09/29/23	Calculation
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Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/26/23 14:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.71		pH Units	1	BGJ0013	10/02/23	10/02/23	EPA 9045D	

Summit Scientific

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



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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BG05@11-12'
2309478-21 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	ND	2.00		mg/L	1	BGI0941	09/29/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	0.719	0.200		mg/kg dry	1	BGI0931	09/28/23	10/02/23	EPA 6020B	
Barium	12.4	0.400		"	"	"	"	"	"	
Cadmium	ND	0.200		"	"	"	"	"	"	
Lead	13.3	0.200		"	"	"	"	"	"	
Selenium	ND	0.260		"	"	"	"	"	"	

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

Date Sampled: **09/26/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	33.3	0.0615		mg/L dry	1	BGI0955	09/29/23	10/02/23	EPA 6020B	
Magnesium	34.7	0.0615		"	"	"	"	"	"	
Sodium	225	0.0615		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Sodium Adsorption Ratio	6.51	0.00100		units	1	BGI0066	10/03/23	10/03/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

BG05@11-12'
2309478-21 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	81.3	%	1	BGI0932	09/28/23	09/29/23	Calculation
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Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/26/23 14:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.94		pH Units	1	BGJ0013	10/02/23	10/02/23	EPA 9045D	

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

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 BGI0867 - EPA 5030 Soil MS

Blank (BGI0867-BLK1)

Prepared & Analyzed: 09/27/23

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>	0.0387		"	0.0400		96.8	50-150			
<i>Surrogate: Toluene-d8</i>	0.0400		"	0.0400		99.9	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0368		"	0.0400		92.0	50-150			

LCS (BGI0867-BS1)

Prepared & Analyzed: 09/27/23

Benzene	0.0990	0.0020	mg/kg	0.100		99.0	70-130			
Toluene	0.0982	0.0050	"	0.100		98.2	70-130			
Ethylbenzene	0.0968	0.0050	"	0.100		96.8	70-130			
m,p-Xylene	0.190	0.010	"	0.200		94.8	70-130			
o-Xylene	0.0917	0.0050	"	0.100		91.7	70-130			
1,2,4-Trimethylbenzene	0.0877	0.0050	"	0.100		87.7	70-130			
1,3,5-Trimethylbenzene	0.0908	0.0050	"	0.100		90.8	70-130			
Naphthalene	0.0784	0.0038	"	0.100		78.4	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0348		"	0.0400		87.1	50-150			
<i>Surrogate: Toluene-d8</i>	0.0401		"	0.0400		100	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0383		"	0.0400		95.7	50-150			

Matrix Spike (BGI0867-MS1)

Source: 2309461-01

Prepared & Analyzed: 09/27/23

Benzene	0.0851	0.0020	mg/kg	0.100	ND	85.1	70-130			
Toluene	0.0845	0.0050	"	0.100	ND	84.5	70-130			
Ethylbenzene	0.0802	0.0050	"	0.100	ND	80.2	70-130			
m,p-Xylene	0.156	0.010	"	0.200	ND	78.2	70-130			
o-Xylene	0.0769	0.0050	"	0.100	ND	76.9	70-130			
1,2,4-Trimethylbenzene	0.0716	0.0050	"	0.100	ND	71.6	70-130			
1,3,5-Trimethylbenzene	0.0734	0.0050	"	0.100	ND	73.4	70-130			
Naphthalene	0.0651	0.0038	"	0.100	ND	65.1	70-130			QM-07
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0379		"	0.0400		94.8	50-150			
<i>Surrogate: Toluene-d8</i>	0.0410		"	0.0400		102	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0400		"	0.0400		99.9	50-150			

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

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 BGI0867 - EPA 5030 Soil MS

Matrix Spike Dup (BGI0867-MSD1)	Source: 2309461-01			Prepared: 09/27/23 Analyzed: 09/28/23						
Benzene	0.0807	0.0020	mg/kg	0.100	ND	80.7	70-130	5.28	30	
Toluene	0.0788	0.0050	"	0.100	ND	78.8	70-130	6.94	30	
Ethylbenzene	0.0706	0.0050	"	0.100	ND	70.6	70-130	12.8	30	
m,p-Xylene	0.136	0.010	"	0.200	ND	68.1	70-130	13.8	30	QM-07
o-Xylene	0.0695	0.0050	"	0.100	ND	69.5	70-130	10.1	30	QM-07
1,2,4-Trimethylbenzene	0.0640	0.0050	"	0.100	ND	64.0	70-130	11.1	30	QM-07
1,3,5-Trimethylbenzene	0.0631	0.0050	"	0.100	ND	63.1	70-130	15.1	30	QM-07
Naphthalene	0.0687	0.0038	"	0.100	ND	68.7	70-130	5.43	30	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0374		"	0.0400		93.4	50-150			
Surrogate: Toluene-d8	0.0425		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	50-150			

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)
Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

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 BGI0870 - EPA 3550A

Blank (BGI0870-BLK1)

Prepared & Analyzed: 09/27/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	12.9		"	12.5	103	30-150					

LCS (BGI0870-BS1)

Prepared & Analyzed: 09/27/23

C10-C28 (DRO)	435	50	mg/kg	500	87.0	70-130					
Surrogate: <i>o</i> -Terphenyl	13.5		"	12.5	108	30-150					

Matrix Spike (BGI0870-MS1)

Source: 2309461-01

Prepared & Analyzed: 09/27/23

C10-C28 (DRO)	455	50	mg/kg	500	28.6	85.4	70-130				
Surrogate: <i>o</i> -Terphenyl	12.5		"	12.5	100	30-150					

Matrix Spike Dup (BGI0870-MSD1)

Source: 2309461-01

Prepared & Analyzed: 09/27/23

C10-C28 (DRO)	370	50	mg/kg	500	28.6	68.3	70-130	20.7	20		QM-07
Surrogate: <i>o</i> -Terphenyl	11.6		"	12.5	92.8	30-150					

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

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 BGI0837 - EPA 5030 Soil MS

Blank (BGI0837-BLK1)

Prepared: 09/27/23 Analyzed: 09/28/23

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>0.0200</i>		"	<i>0.0333</i>		<i>60.0</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0224</i>		"	<i>0.0333</i>		<i>67.2</i>	<i>40-150</i>			

LCS (BGI0837-BS1)

Prepared: 09/27/23 Analyzed: 09/28/23

Acenaphthene	0.0336	0.00500	mg/kg	0.0333	101	31-137
Anthracene	0.0343	0.00500	"	0.0333	103	30-120
Benzo (a) anthracene	0.0322	0.00500	"	0.0333	96.5	30-120
Benzo (a) pyrene	0.0335	0.00500	"	0.0333	101	30-120
Benzo (b) fluoranthene	0.0357	0.00500	"	0.0333	107	30-120
Benzo (k) fluoranthene	0.0365	0.00500	"	0.0333	109	30-120
Chrysene	0.0329	0.00500	"	0.0333	98.6	30-120
Dibenz (a,h) anthracene	0.0323	0.00500	"	0.0333	96.9	30-120
Fluoranthene	0.0364	0.00500	"	0.0333	109	30-120
Fluorene	0.0344	0.00500	"	0.0333	103	30-120
Indeno (1,2,3-cd) pyrene	0.0265	0.00500	"	0.0333	79.4	30-120
Pyrene	0.0335	0.00500	"	0.0333	100	35-142
1-Methylnaphthalene	0.0282	0.00500	"	0.0333	84.6	35-142
2-Methylnaphthalene	0.0309	0.00500	"	0.0333	92.6	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0356</i>		"	<i>0.0333</i>	<i>107</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0391</i>		"	<i>0.0333</i>	<i>117</i>	<i>40-150</i>

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

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 BGI0837 - EPA 5030 Soil MS

Matrix Spike (BGI0837-MS1)		Source: 2309478-01			Prepared: 09/27/23		Analyzed: 09/28/23	
Acenaphthene	0.0184	0.00500	mg/kg	0.0333	ND	55.3	31-137	
Anthracene	0.0190	0.00500	"	0.0333	ND	57.1	30-120	
Benzo (a) anthracene	0.0186	0.00500	"	0.0333	ND	55.9	30-120	
Benzo (a) pyrene	0.0203	0.00500	"	0.0333	ND	60.9	30-120	
Benzo (b) fluoranthene	0.0208	0.00500	"	0.0333	ND	62.4	30-120	
Benzo (k) fluoranthene	0.0222	0.00500	"	0.0333	ND	66.6	30-120	
Chrysene	0.0204	0.00500	"	0.0333	ND	61.0	30-120	
Dibenz (a,h) anthracene	0.0204	0.00500	"	0.0333	ND	61.1	30-120	
Fluoranthene	0.0198	0.00500	"	0.0333	ND	59.5	30-120	
Fluorene	0.0194	0.00500	"	0.0333	ND	58.3	30-120	
Indeno (1,2,3-cd) pyrene	0.0135	0.00500	"	0.0333	ND	40.5	30-120	
Pyrene	0.0200	0.00500	"	0.0333	ND	60.1	35-142	
1-Methylnaphthalene	0.0149	0.00500	"	0.0333	ND	44.8	15-130	
2-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.5	15-130	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0182</i>		"	<i>0.0333</i>		<i>54.7</i>	<i>40-150</i>	
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0201</i>		"	<i>0.0333</i>		<i>60.4</i>	<i>40-150</i>	

Matrix Spike Dup (BGI0837-MSD1)		Source: 2309478-01			Prepared: 09/27/23		Analyzed: 09/28/23	
Acenaphthene	0.0160	0.00500	mg/kg	0.0333	ND	48.0	31-137	14.1 30
Anthracene	0.0145	0.00500	"	0.0333	ND	43.4	30-120	27.3 30
Benzo (a) anthracene	0.0142	0.00500	"	0.0333	ND	42.6	30-120	27.1 30
Benzo (a) pyrene	0.0154	0.00500	"	0.0333	ND	46.3	30-120	27.2 30
Benzo (b) fluoranthene	0.0164	0.00500	"	0.0333	ND	49.2	30-120	23.7 30
Benzo (k) fluoranthene	0.0179	0.00500	"	0.0333	ND	53.7	30-120	21.4 30
Chrysene	0.0163	0.00500	"	0.0333	ND	48.8	30-120	22.4 30
Dibenz (a,h) anthracene	0.0160	0.00500	"	0.0333	ND	47.9	30-120	24.2 30
Fluoranthene	0.0151	0.00500	"	0.0333	ND	45.3	30-120	27.0 30
Fluorene	0.0171	0.00500	"	0.0333	ND	51.4	30-120	12.6 30
Indeno (1,2,3-cd) pyrene	0.0154	0.00500	"	0.0333	ND	46.2	30-120	13.1 30
Pyrene	0.0160	0.00500	"	0.0333	ND	47.9	35-142	22.5 30
1-Methylnaphthalene	0.0175	0.00500	"	0.0333	ND	52.5	15-130	15.8 50
2-Methylnaphthalene	0.0133	0.00500	"	0.0333	ND	40.0	15-130	23.1 50
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0145</i>		"	<i>0.0333</i>		<i>43.6</i>	<i>40-150</i>	
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0151</i>		"	<i>0.0333</i>		<i>45.2</i>	<i>40-150</i>	

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

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

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

Batch BGI0941 - EPA 3050B

Blank (BGI0941-BLK1)

Prepared: 09/29/23 Analyzed: 10/03/23

Boron ND 2.00 mg/L

LCS (BGI0941-BS1)

Prepared: 09/29/23 Analyzed: 10/03/23

Boron 5.01 2.00 mg/L 5.00 100 80-120

Duplicate (BGI0941-DUP1)

Source: 2309478-01

Prepared: 09/29/23 Analyzed: 10/03/23

Boron 0.129 2.00 mg/L 0.163 23.1 20 QR-01

Matrix Spike (BGI0941-MS1)

Source: 2309478-01

Prepared: 09/29/23 Analyzed: 10/03/23

Boron 4.88 2.00 mg/L 5.00 0.163 94.3 75-125

Matrix Spike Dup (BGI0941-MSD1)

Source: 2309478-01

Prepared: 09/29/23 Analyzed: 10/03/23

Boron 5.09 2.00 mg/L 5.00 0.163 98.5 75-125 4.25 25

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

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 BGI0931 - EPA 3050B

Blank (BGI0931-BLK1)

Prepared: 09/28/23 Analyzed: 10/02/23

Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Cadmium	ND	0.200	"							
Lead	ND	0.200	"							
Selenium	ND	0.260	"							

LCS (BGI0931-BS1)

Prepared: 09/28/23 Analyzed: 10/02/23

Arsenic	40.5	0.200	mg/kg wet	40.0		101	80-120			
Barium	42.4	0.400	"	40.0		106	80-120			
Cadmium	2.16	0.200	"	2.00		108	80-120			
Lead	21.0	0.200	"	20.0		105	80-120			
Selenium	4.28	0.260	"	4.00		107	80-120			

Duplicate (BGI0931-DUP1)

Source: 2309478-01

Prepared: 09/28/23 Analyzed: 10/02/23

Arsenic	0.725	0.200	mg/kg dry		0.739			1.92	20	
Barium	44.0	0.400	"		44.7			1.43	20	
Cadmium	0.103	0.200	"		0.102			1.77	20	
Lead	3.30	0.200	"		3.80			14.2	20	
Selenium	ND	0.260	"		ND				20	

Matrix Spike (BGI0931-MS1)

Source: 2309478-01

Prepared: 09/28/23 Analyzed: 10/02/23

Arsenic	22.4	0.200	mg/kg dry	45.4	0.739	47.6	75-125			QM-07
Barium	90.0	0.400	"	45.4	44.7	99.9	75-125			
Cadmium	2.39	0.200	"	2.27	0.102	101	75-125			
Lead	25.1	0.200	"	22.7	3.80	93.9	75-125			
Selenium	5.98	0.260	"	4.54	ND	132	75-125			QM-07

Matrix Spike Dup (BGI0931-MSD1)

Source: 2309478-01

Prepared: 09/28/23 Analyzed: 10/02/23

Arsenic	22.5	0.200	mg/kg dry	45.4	0.739	47.9	75-125	0.452	25	QM-07
Barium	91.6	0.400	"	45.4	44.7	103	75-125	1.72	25	
Cadmium	2.42	0.200	"	2.27	0.102	102	75-125	1.10	25	
Lead	25.6	0.200	"	22.7	3.80	95.9	75-125	1.81	25	
Selenium	6.28	0.260	"	4.54	ND	138	75-125	4.99	25	QM-07

Summit Scientific

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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

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 BGI0955 - General Preparation

Blank (BGI0955-BLK1)

Prepared: 09/29/23 Analyzed: 10/02/23

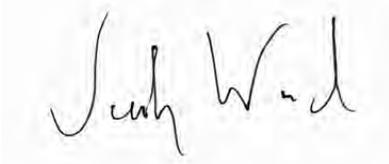
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

LCS (BGI0955-BS1)

Prepared: 09/29/23 Analyzed: 10/02/23

Calcium	5.82	0.0500	mg/L wet	5.00	116	70-130
Magnesium	5.27	0.0500	"	5.00	105	70-130
Sodium	5.02	0.0500	"	5.00	100	70-130

Summit Scientific



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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
 Project Manager: Jacob Whritenour

Reported:
 10/03/23 14:31

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

Summit Scientific

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

Batch BGI0932 - General Preparation

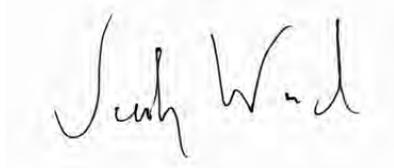
Duplicate (BGI0932-DUP1)

Source: 2309478-01

Prepared: 09/28/23 Analyzed: 09/29/23

% Solids	88.0		%		88.1			0.153		20	
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Summit Scientific



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



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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

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 BGJ0013 - General Preparation

LCS (BGJ0013-BS1)

Prepared & Analyzed: 10/02/23

pH 9.10 pH Units 9.18 99.1 95-105

Duplicate (BGJ0013-DUP1)

Source: 2309478-01

Prepared & Analyzed: 10/02/23

pH 7.60 pH Units 7.58 0.264 20

Summit Scientific

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



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

Project: Noble - Kildow PMC 31-2 (FAC)

Project Number: UWRWE-A2316-ABN
Project Manager: Jacob Whritenour

Reported:
10/03/23 14:31

Notes and Definitions

- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- QR-01 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

ATTACHMENT B
BORING LOGS



6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble

LOGGED BY: Matt Kaczmarek

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Site Services

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 4/20/23 - 4/20/23

TOTAL WELL DEPTH (FT. BGS): 15

DEPTH WATER ENCOUNTERED (FT. BGS): NM

Kildow PMC 31-2 Facility

BORING ID: BH01

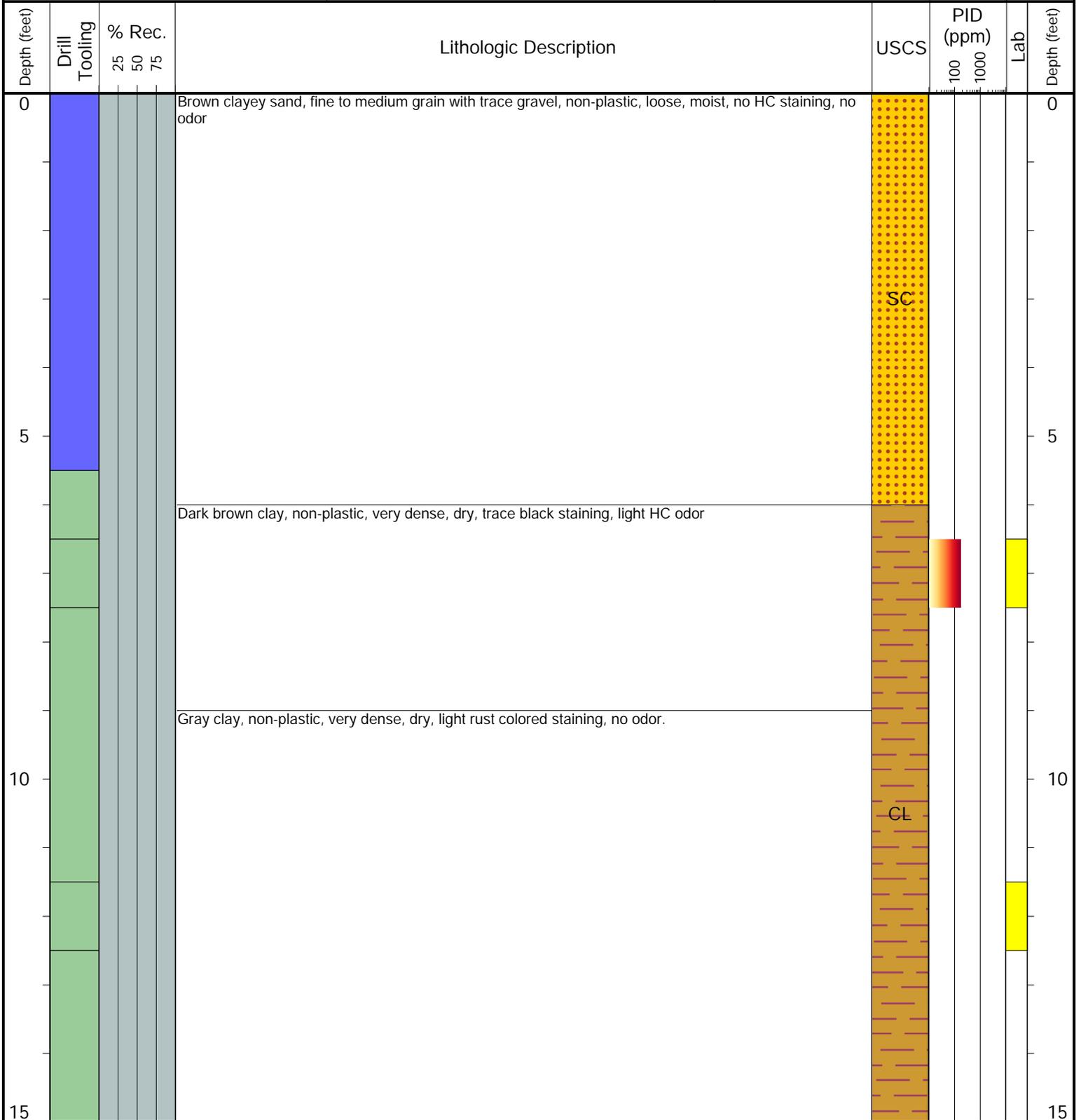
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.2758742534

LONGITUDE (NAD 83): -104.591215746

GROUND ELEVATION (FT. AMSL): NM

ABANDONMENT METHOD: Bentonite



Drilling / Sample Method:

- Macro-Core
- Hand Auger
- HydroPunch Groundwater Sampler

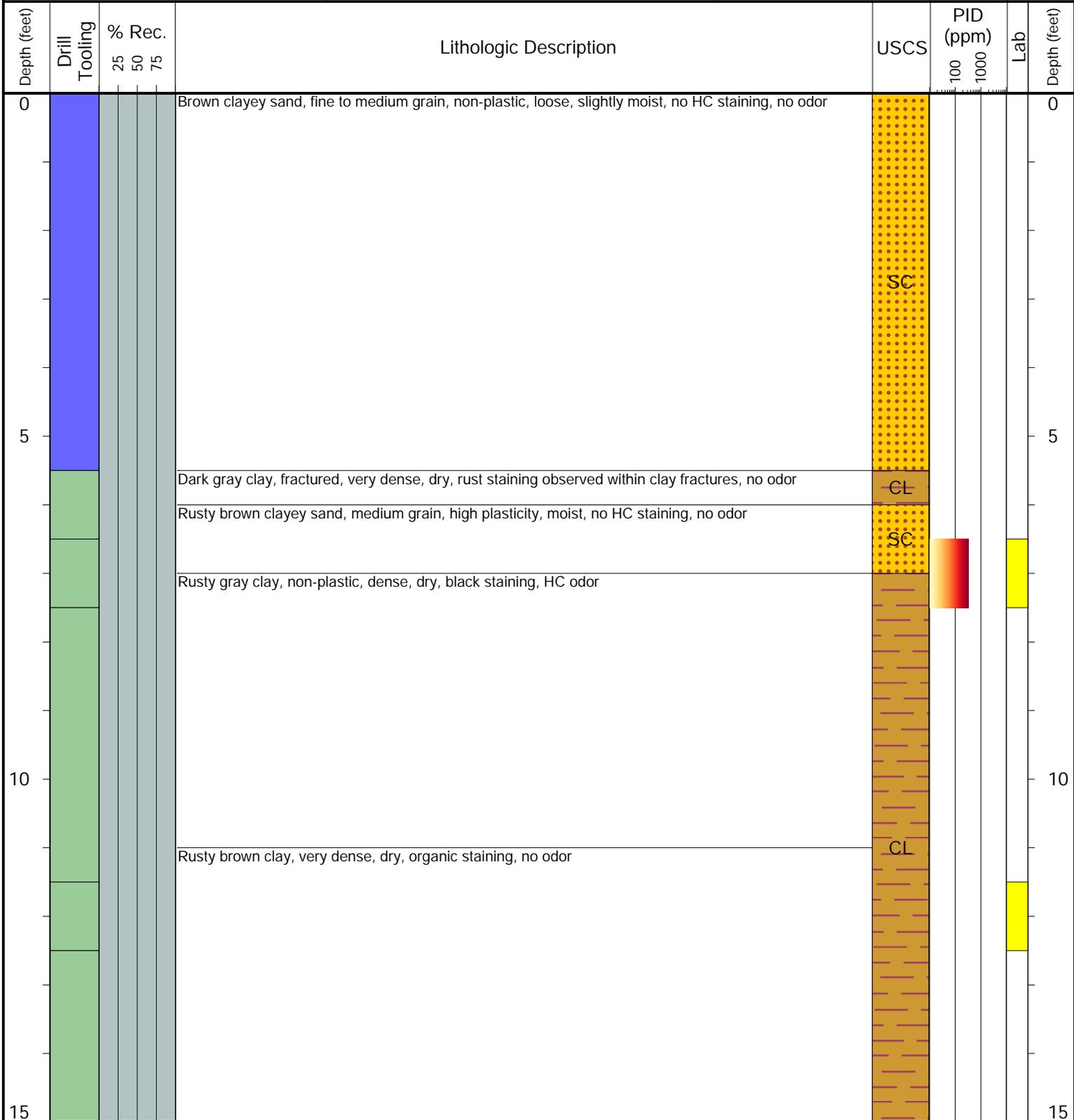
Laboratory Sample Types:

- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble	Kildow PMC 31-2 Facility
LOGGED BY: Matt Kaczmarek	
PROJECT MANAGER: Jake Whritenour	BORING ID: BH02
DRILLING CONTRACTOR: Site Services	
DRILLING EQUIPMENT: Geoprobe	LOCATION: Weld County, Colorado
DRILL BIT SIZE (INCHES): 2.375"	LATITUDE (NAD 83): 40.2759277437
DATE STARTED - COMPLETED: 4/20/23 - 4/20/23	LONGITUDE (NAD 83): -104.59121561
TOTAL WELL DEPTH (FT. BGS): 15	GROUND ELEVATION (FT. AMSL): NM
DEPTH WATER ENCOUNTERED (FT. BGS): NM	ABANDONMENT METHOD: Bentonite



Drilling / Sample Method:

- Macro-Core
- Hand Auger
- HydroPunch Groundwater Sampler
- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble

LOGGED BY: Matt Kaczmarek

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Site Services

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 4/20/23 - 4/20/23

TOTAL WELL DEPTH (FT. BGS): 15

DEPTH WATER ENCOUNTERED (FT. BGS): NM

Kildow PMC 31-2 Facility

BORING ID: BH03

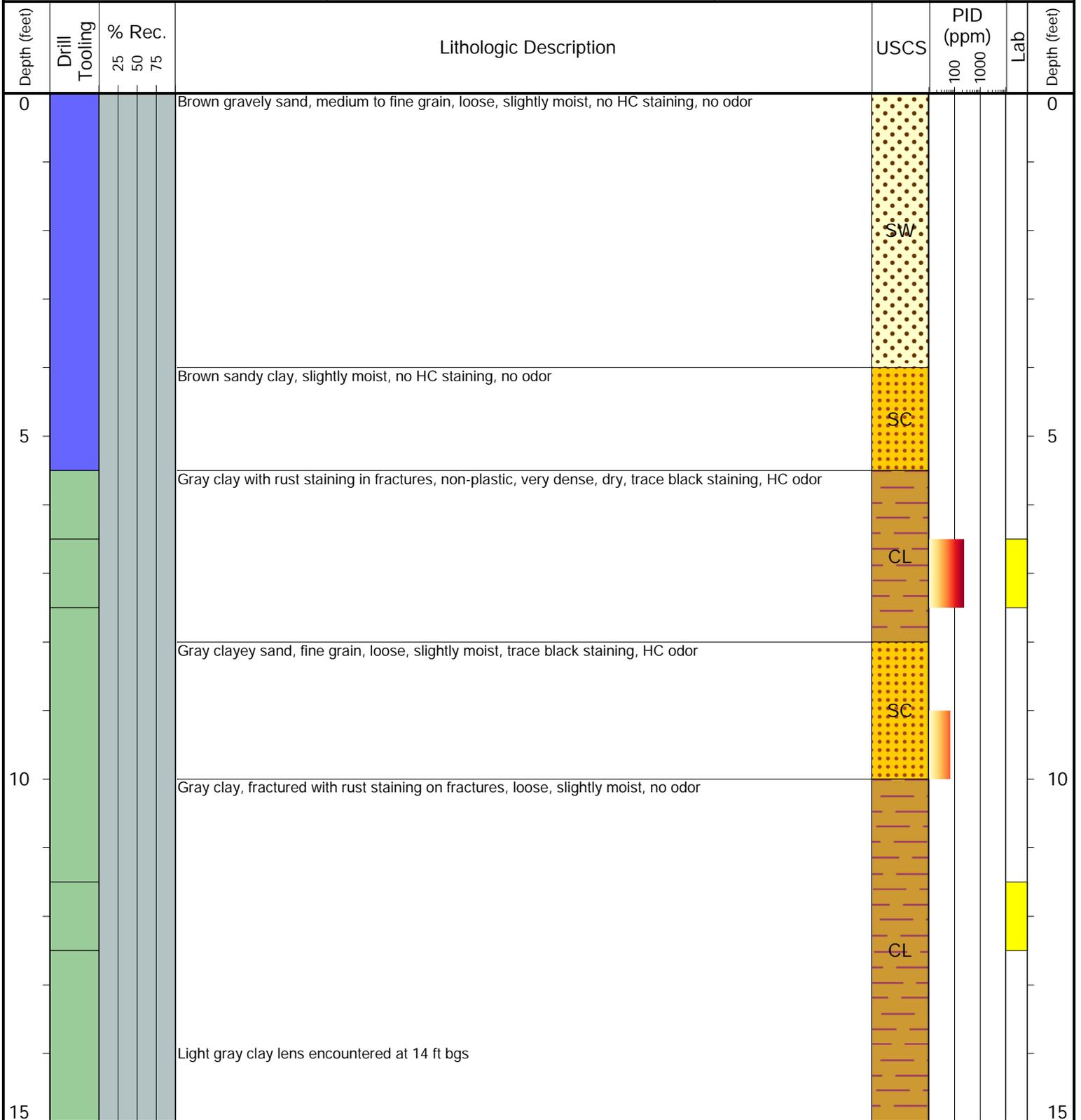
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.2758736923

LONGITUDE (NAD 83): -104.591137882

GROUND ELEVATION (FT. AMSL): NM

ABANDONMENT METHOD: Bentonite



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



6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble

LOGGED BY: Matt Kaczmarek

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Site Services

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 4/20/23 - 4/20/23

TOTAL WELL DEPTH (FT. BGS): 15

DEPTH WATER ENCOUNTERED (FT. BGS): NM

Kildow PMC 31-2 Facility

BORING ID: BH04

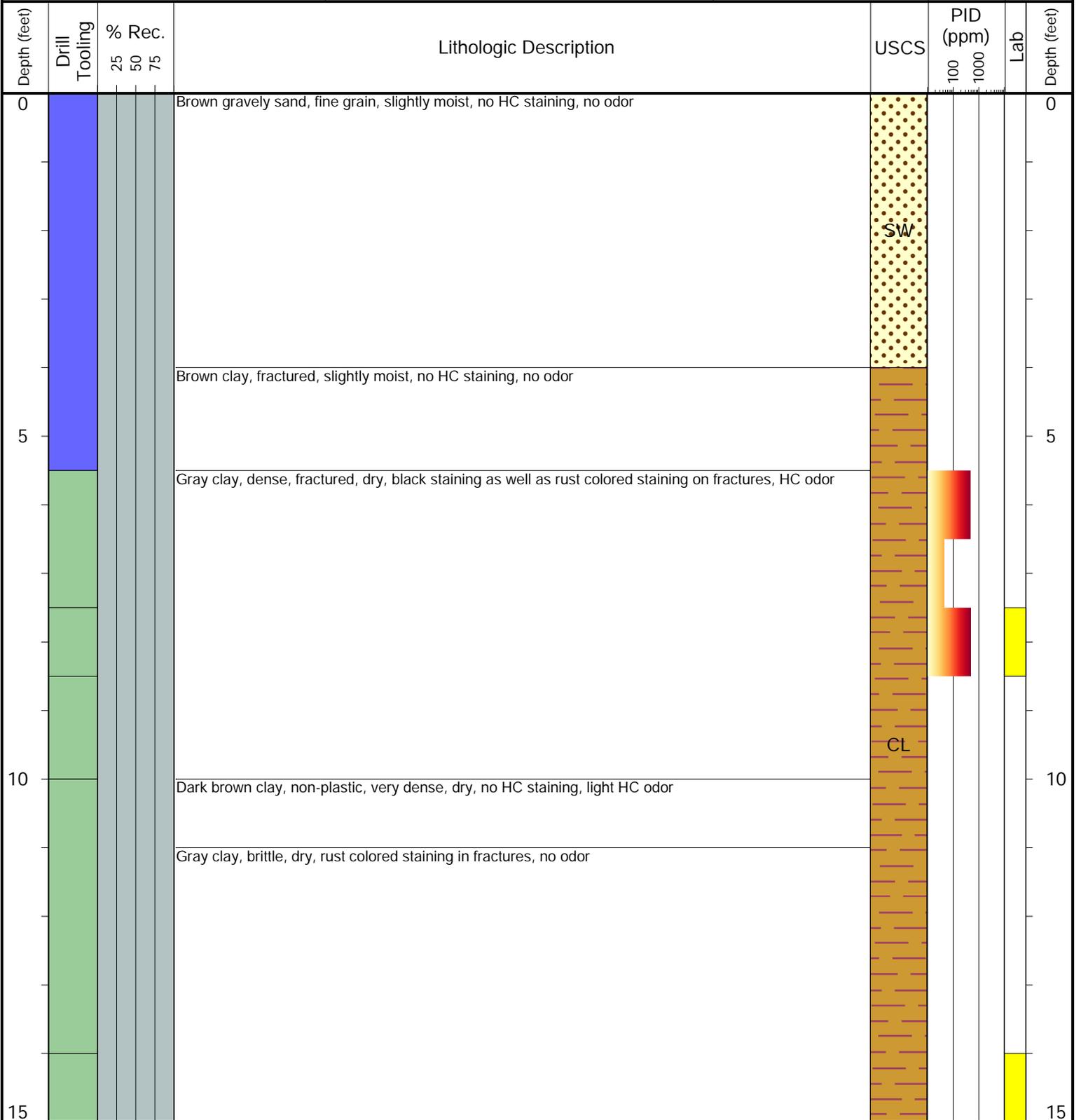
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.275824483

LONGITUDE (NAD 83): -104.591216232

GROUND ELEVATION (FT. AMSL): NM

ABANDONMENT METHOD: Bentonite



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



6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble

LOGGED BY: Matt Kaczmarek

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Site Services

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 4/20/23 - 4/20/23

TOTAL WELL DEPTH (FT. BGS): 15

DEPTH WATER ENCOUNTERED (FT. BGS): NM

Kildow PMC 31-2 Facility

BORING ID: BH05

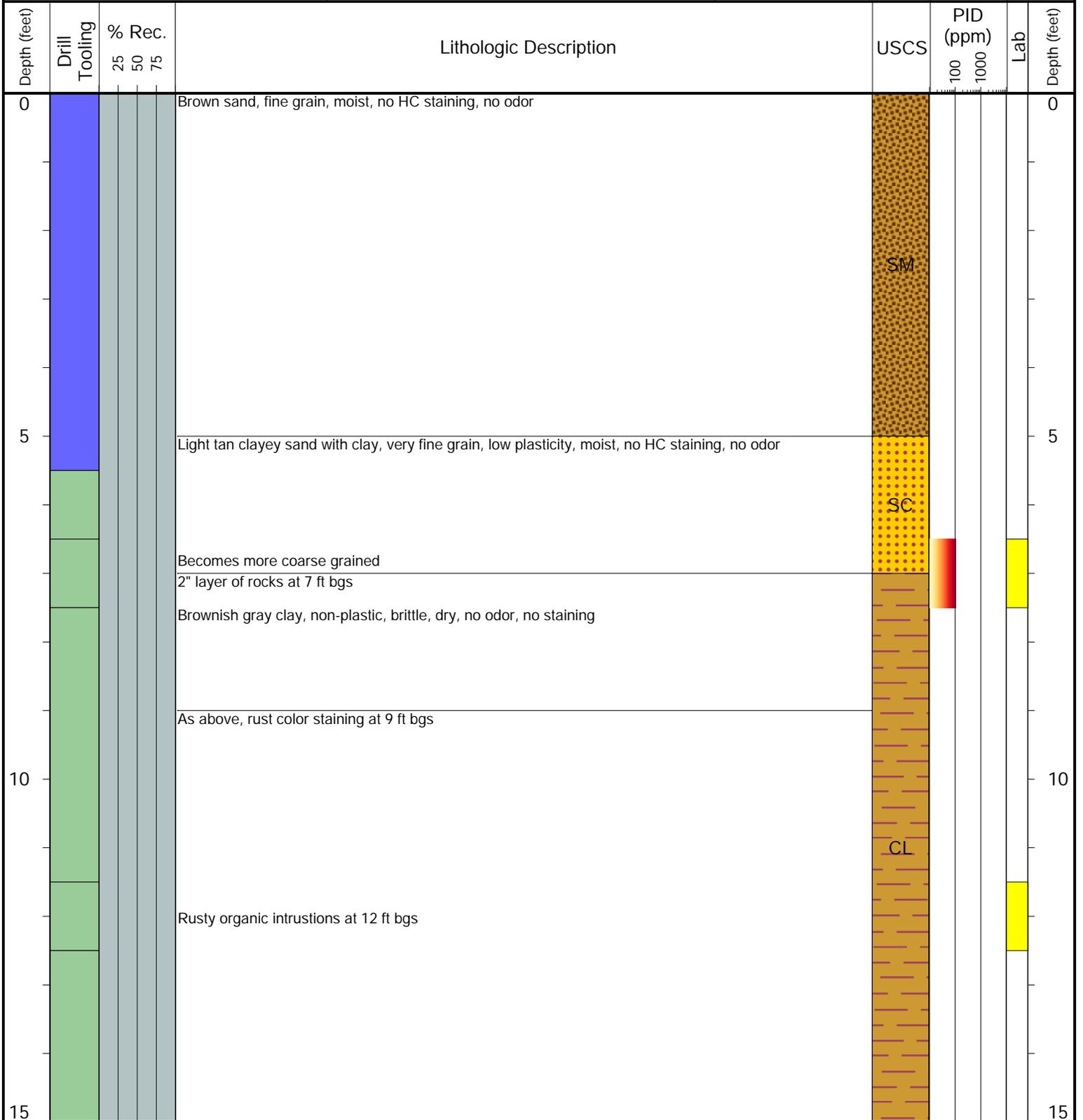
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.2758743729

LONGITUDE (NAD 83): -104.591290064

GROUND ELEVATION (FT. AMSL): NM

ABANDONMENT METHOD: Bentonite



Drilling / Sample Method:

- Macro-Core
- Hand Auger
- Expendable Well Tip
- HydroPunch Groundwater Sampler

Laboratory Sample Types:

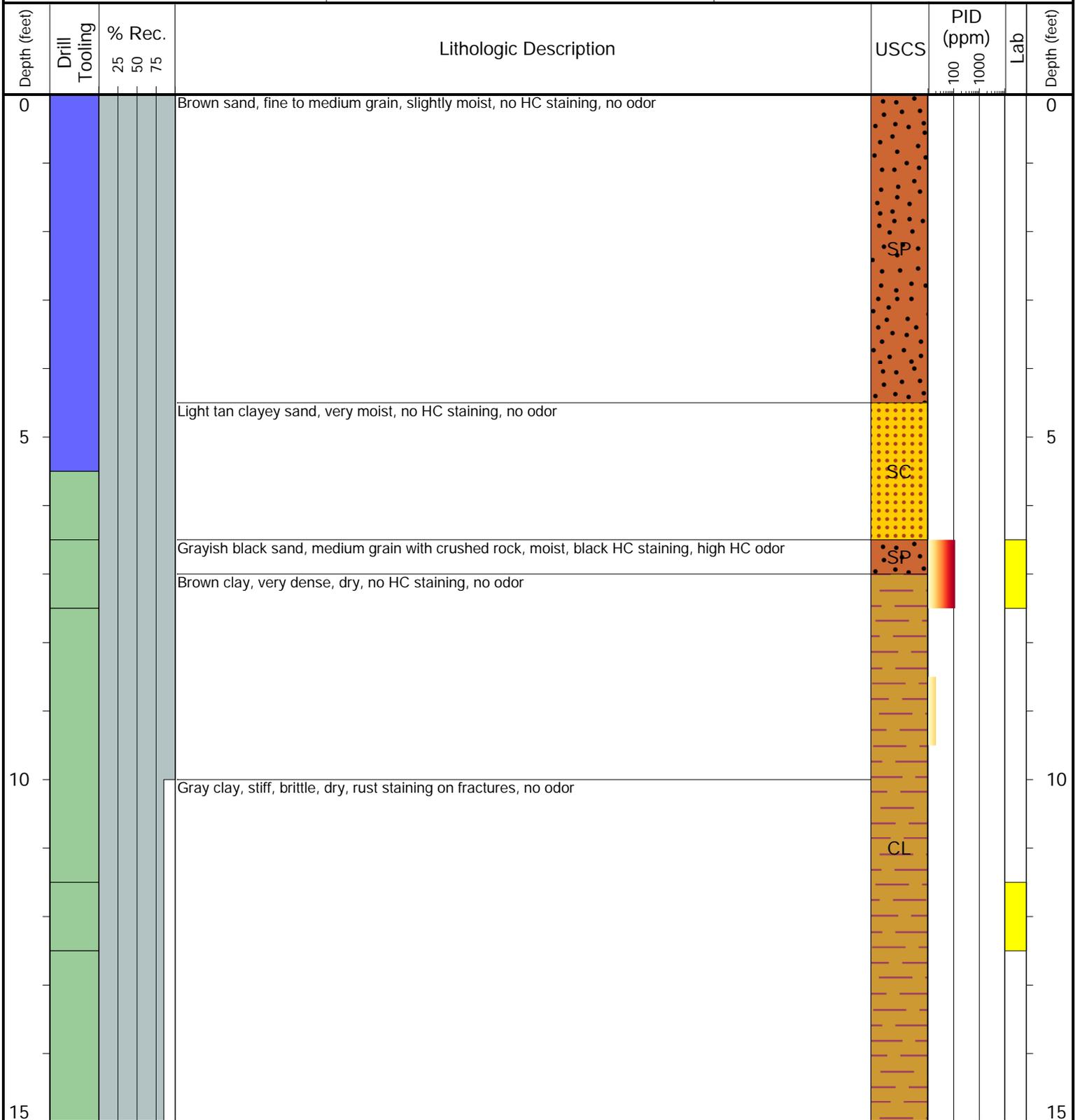
- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble
 LOGGED BY: Matt Kaczmarek
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Site Services
 DRILLING EQUIPMENT: Geoprobe
 DRILL BIT SIZE (INCHES): 2.375"
 DATE STARTED - COMPLETED: 4/20/23 - 4/20/23
 TOTAL WELL DEPTH (FT. BGS): 15
 DEPTH WATER ENCOUNTERED (FT. BGS): NM

Kildow PMC 31-2 Facility
BORING ID: BH06
 LOCATION: Weld County, Colorado
 LATITUDE (NAD 83): 40.275969
 LONGITUDE (NAD 83): -104.591215
 GROUND ELEVATION (FT. AMSL): NM
 ABANDONMENT METHOD: Bentonite



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



6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 9/26/23-9/26/23

TOTAL WELL DEPTH (FT. BGS): 13.5

DEPTH WATER ENCOUNTERED (FT. BGS): NM

Kildow PMC 31-2 Facility

BORING ID: BH07

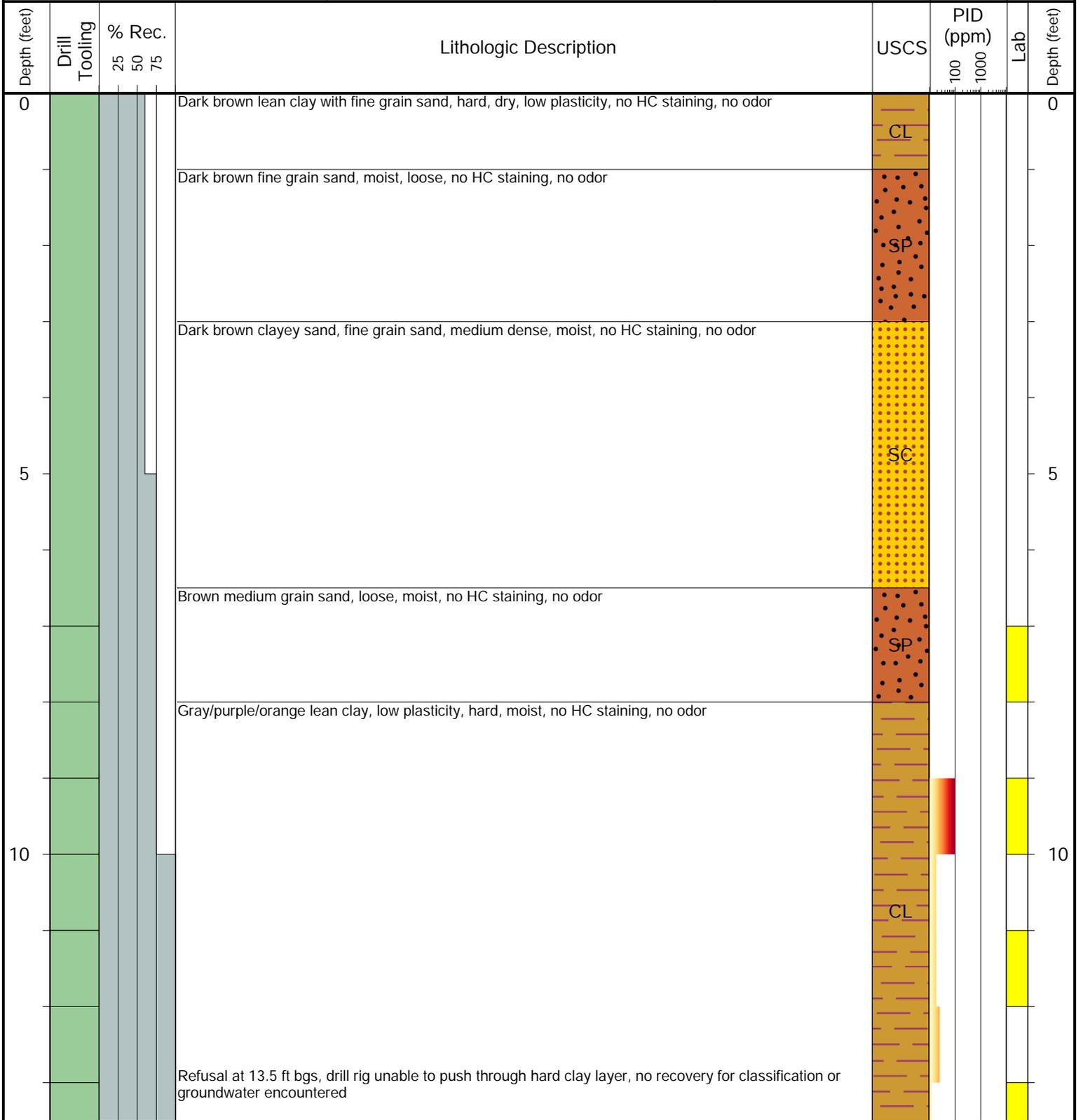
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.2758668416

LONGITUDE (NAD 83): -104.591045296

GROUND ELEVATION (FT. AMSL): NM

ABANDONMENT METHOD: Bentonite



Drilling / Sample Method:

- Macro-Core
- Hand Auger
- Expendable Well Tip
- HydroPunch Groundwater Sampler

Laboratory Sample Types:

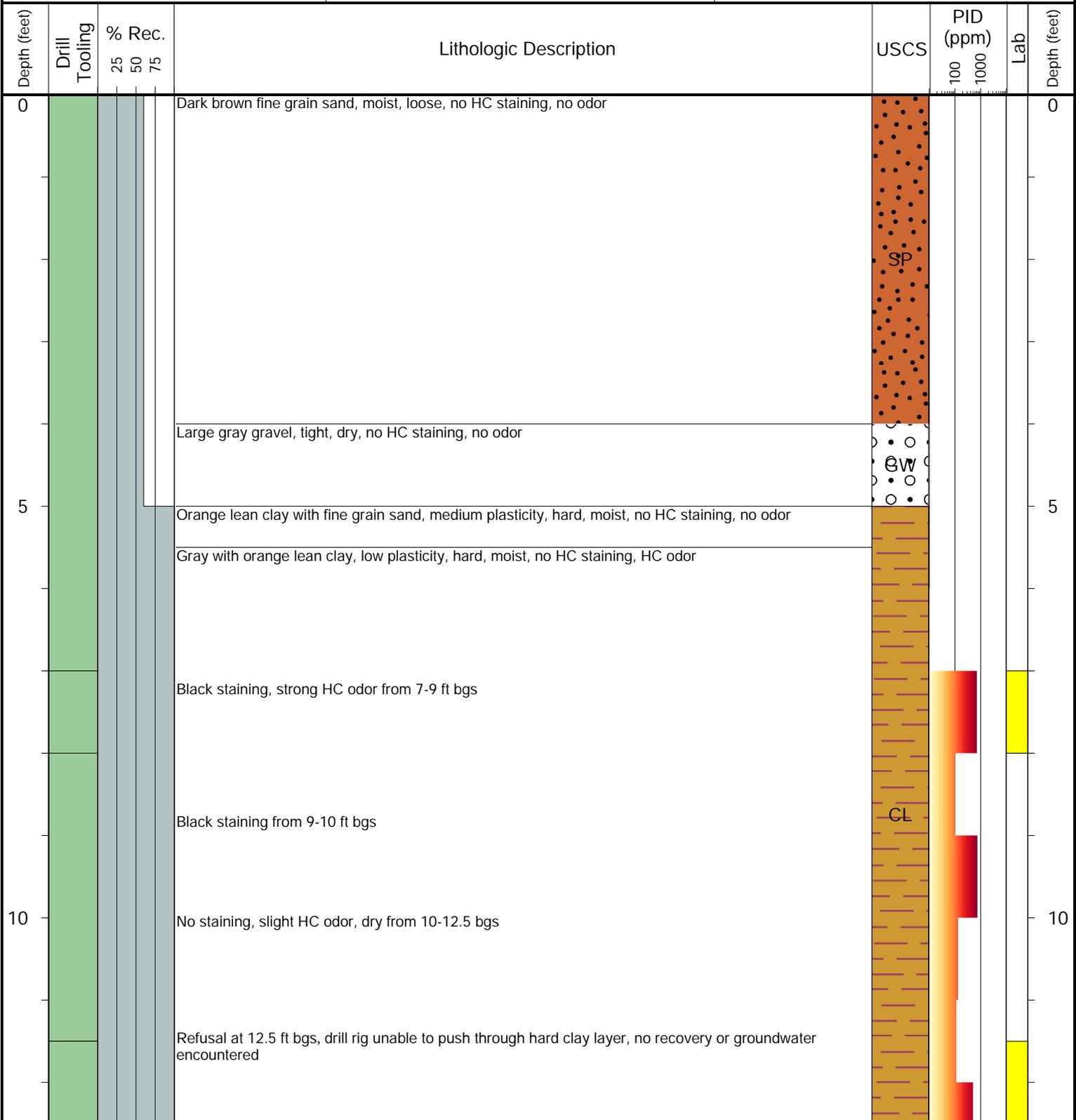
- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble
 LOGGED BY: Dennis Gray
 PROJECT MANAGER: Jake Whritenour
 DRILLING CONTRACTOR: Tasman
 DRILLING EQUIPMENT: Geoprobe
 DRILL BIT SIZE (INCHES): 2.375"
 DATE STARTED - COMPLETED: 9/26/23-9/26/23
 TOTAL WELL DEPTH (FT. BGS): 12.5
 DEPTH WATER ENCOUNTERED (FT. BGS): NM

Kildow PMC 31-2 Facility
BORING ID: BH08
 LOCATION: Weld County, Colorado
 LATITUDE (NAD 83): 40.2757699157
 LONGITUDE (NAD 83): -104.591206157
 GROUND ELEVATION (FT. AMSL): NM
 ABANDONMENT METHOD: Bentonite



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



6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 9/26/23-9/26/23

TOTAL WELL DEPTH (FT. BGS): 13.5

DEPTH WATER ENCOUNTERED (FT. BGS): NM

Kildow PMC 31-2 Facility

BORING ID: BH09

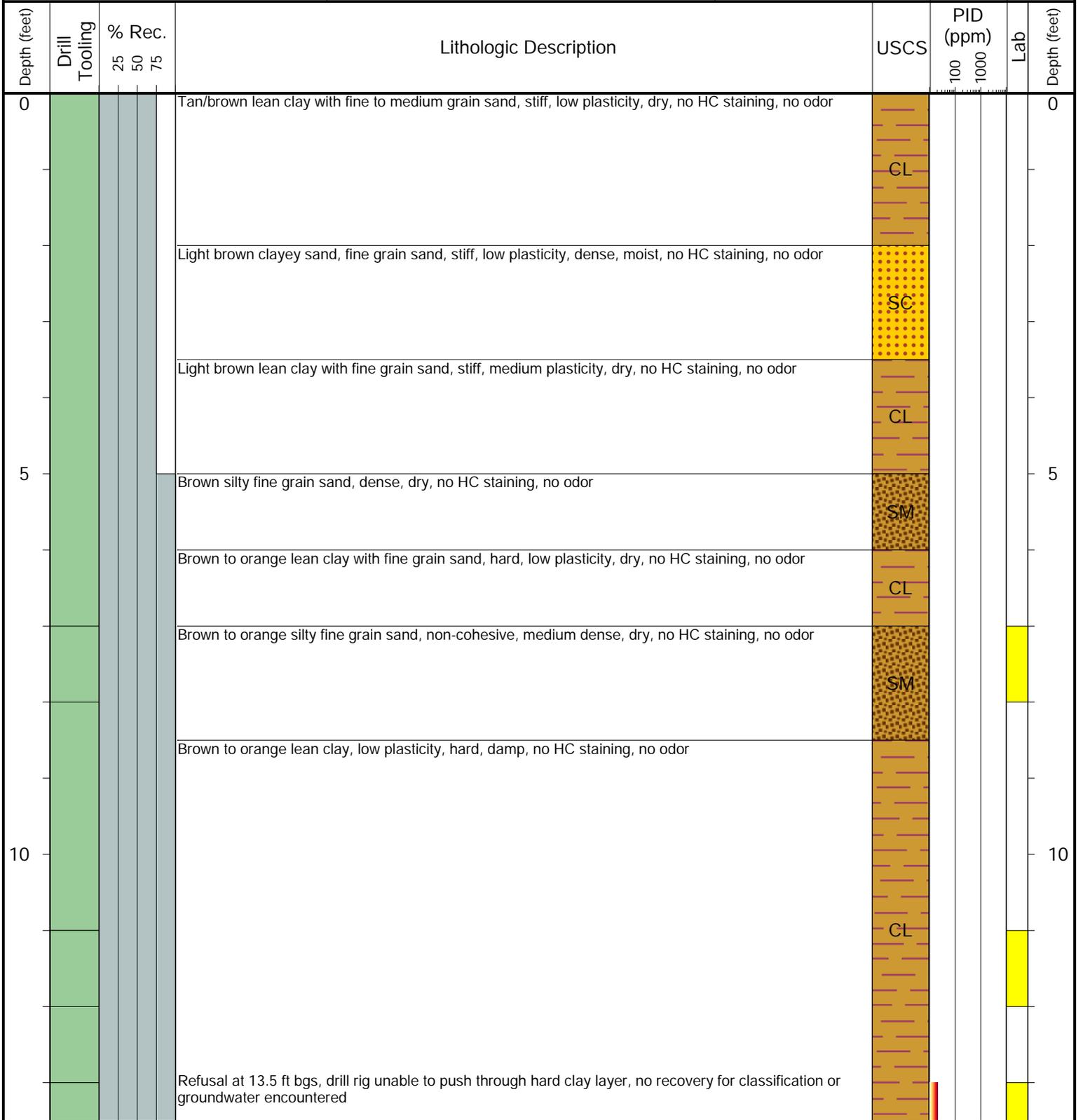
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): 40.2758677148

LONGITUDE (NAD 83): -104.591359932

GROUND ELEVATION (FT. AMSL): NM

ABANDONMENT METHOD: Bentonite



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



6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Noble

LOGGED BY: Dennis Gray

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 9/26/23-9/26/23

TOTAL WELL DEPTH (FT. BGS): 12

DEPTH WATER ENCOUNTERED (FT. BGS): NM

Kildow PMC 31-2 Facility

BORING ID: BH10

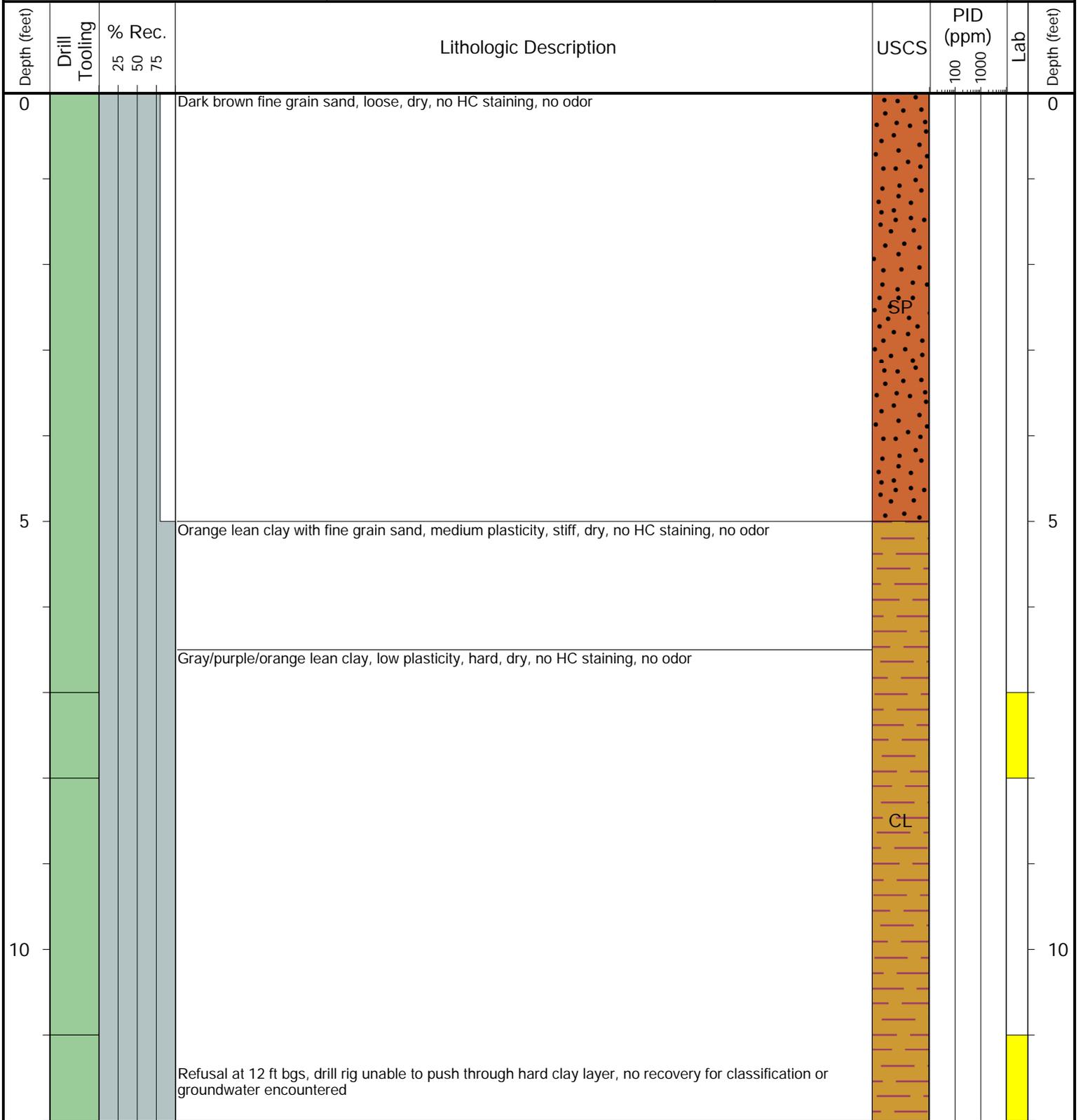
LOCATION: Weld County, Colorado

LATITUDE (NAD 83): NM

LONGITUDE (NAD 83): NM

GROUND ELEVATION (FT. AMSL): NM

ABANDONMENT METHOD: Bentonite



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