

Tank Battery Closure Checklist COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form

Additional attachments (optional):		Pit Closure		Wellhead Closure		Flowline Closure		Partially Buried Vault Closure
Site Name & COGCC Facility Number: Kildow C31-7X		Date: 04/07/2023						Remediation Project #: 26391
Associated Wells:		Age of Site:						Number of Photos Attached: 19
Location: 40.270618, -104.590954							Estimated Facility Size (acres):	
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.) Good, no visible sign of erosion or corrosion								
USCS Soil Type: Well Graded Sand - SW				Estimated Depth to Groundwater: >7'				
Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) None Observed								
Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) None Observed								

Tanks	
-------	--

Tank Contents	Produced Water	Produced Water	Crude Oil	Crude Oil	Crude Oil				
Size (barrels)									
Age									
Construction Material	Concrete	Concrete	Steel	Steel	Steel				
Tank type (AST/DBT, etc.)	PBV	PBV	AST	AST	AST				
Visual Integrity of Tank	Good	Good	Good	Good	Good				
Condition of tank Bottom	Good	Good	Good	Good	Good				
PID Readings									
Soil impacts present at valves or hatches?	None observed	None observed	None Observed	None Observed	None Observed				
PID Readings	0.7 - 5.1	0.3-3.4	3.4	3.7	1.7				
Sample taken? Location/ Sample ID#	yes, see below	yes, see below	yes, see below	yes, see below	yes, see below				
Photo Number(s)									

Other observations regarding tanks:
None

Separators

Separator size									
Vertical or Horizontal Age	Horizontal	Horizontal	Horizontal						
Soil impacts (Phase 2, If any)	None observed	None observed	None Observed						
PID Readings	3.2	972.2	35.7						
Sample taken? Location/ Sample ID#	yes, see below	yes, see below	yes, see below						
Photo Number(s)									

Other observations regarding separators:



Samples only taken for dumplines. Only one flowline associated with this facility and the flowline was sampled at separator during flowline removal.

Third Party Equipment	
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
35	35
36	36
37	37
38	38
39	39
40	40
41	41
42	42
43	43
44	44
45	45
46	46
47	47
48	48
49	49
50	50
51	51
52	52
53	53
54	54
55	55
56	56
57	57
58	58
59	59
60	60
61	61
62	62
63	63
64	64
65	65
66	66
67	67
68	68
69	69
70	70
71	71
72	72
73	73
74	74
75	75
76	76
77	77
78	78
79	79
80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

[illegible]

Third Party														
Removal Date														
Sample taken?														
PID Readings														
Photo Number(s)														
Other Facility Equipment														
Equipment type	Meter House	Meter House	Flare											
Equipment Condition	Good	Good	Good											
Soil impacts	None observed	None Observed	None Observed											
PID Readings	0.6	0.0	2.1											
Sample taken?	Yes, see below	Yes, see below	Yes, see below											
Photo Number(s)														
Other observations regarding other facility or third party equipment:														
Sample taken below both meter house (MH01@0.5', MH02@0.5'), Sample taken below Flare (FLARE01@0.5').														
Summary														
Was impacted soil identified?														
No Yes - less than 10 cubic yards Yes - more than 10 cubic yards														
Total number of samples field screened: 19					Total number of samples collected: 16									
Highest PID Reading: 972.2					Total number of samples submitted to lab for analysis: 10									
If more than 10 cubic yards of impacted soil were observed:														
Vertical extent:					Estimated spill volume:									
Lateral extent:					Volume of soil removed:									
Is additional investigation required?														
Was groundwater encountered during the investigation?														
No Yes - not impacted or in contact with impacted soils Yes - groundwater impacted and/or in contact with impacted soils														
Measured depth to groundwater:					Was remedial groundwater removal conducted? Yes No									
Date Groundwater was encountered:					Commencement date of removal:									
Sheen on groundwater? Yes No					Volume of groundwater removed prior to sampling:									
Free product observed? Yes No					Volume of groundwater removed post sampling:									
Total number of samples collected:					Total Volume of groundwater removed:									
Total number of samples submitted to lab for analysis:														



Photographic Log

									
						Equipment ID: SS01 @ 2.5'		Equipment Type: Partially Buried Vault	
						Material: Concrete	Volume:	Contents: Produced Water	
						Notes/Conditions:			
Equipment ID: SS02 @ 2.5'			Equipment Type: Partially Buried Vault						
Material: Concrete		Volume:	Contents: Produced Water						
Notes/Conditions:									



Photographic Log

							
Equipment ID: SS03@2.5'		Equipment Type: Partially Buried Vault		Equipment ID: SS04@2.5'		Equipment Type: Partially Buried Vault	
Material: Concrete		Volume:		Material: Concrete		Volume:	
		Contents: Produced Water				Contents: Produced Water	
Notes/Conditions:				Notes/Conditions:			



Photographic Log

							
Equipment ID: FS01 @ 7'		Equipment Type: Partially Buried Vault		Equipment ID: SS05 @ 2.5'		Equipment Type: Partially Buried Vault	
Material: Concrete		Volume:		Material: Concrete		Volume:	
		Contents: Produced Water				Contents: Produced Water	
Notes/Conditions:				Notes/Conditions:			





Photographic Log

							
Equipment ID: SS06@2.5'		Equipment Type: Partially Buried Vault		Equipment ID: SS07@2.5'		Equipment Type: Partially Buried Vault	
Material: Concrete		Volume:		Contents: Produced Water		Material: Concrete	
Volume:		Contents:		Volume:		Contents: Produced Water	
Notes/Conditions:				Notes/Conditions:			

Photographic Log

							
Equipment ID: SS08@2.5'		Equipment Type: Partially Buried Vault		Equipment ID: FS02@7'		Equipment Type: Partially Buried Vault	
Material: Concrete		Volume:		Contents: Produced Water		Material: Concrete	
Volume:		Contents:		Volume:		Contents: Produced Water	
Notes/Conditions:				Notes/Conditions:			

Photographic Log

					
Equipment ID: AST01 @0.5'		Equipment Type: Above Ground Storage Tank			
Material: Steel	Volume:	Contents: Oil/Gas/Water			
Notes/Conditions:					
					
Equipment ID: AST02 @0.5'		Equipment Type: Above Ground Storage Tank			
Material: Steel	Volume:	Contents: Oil/Gas/Water			
Notes/Conditions:					

Photographic Log



Equipment ID: AST03@0.5'		Equipment Type: Above Ground Storage Tank		Equipment ID: SEP01-DL@3'		Equipment Type: Separator	
Material: Steel	Volume:	Contents: Oil/Gas/Water		Material: Steel	Volume:	Contents: Oil/Gas/Water	
Notes/Conditions:				Notes/Conditions:			

Photographic Log

											
Equipment ID: SEP02-DL@3'		Equipment Type: Separator		Equipment ID: SEP03-DL@3'		Equipment Type: Separator					
Material: Steel		Volume:		Contents: Oil/Gas/Water		Material: Steel		Volume:		Contents: Oil/Gas/Water	
Notes/Conditions:						Notes/Conditions:					

Photographic Log

					
Equipment ID: FLARE01 @ 0.5'		Equipment Type: Emission Control Device			
Material: Steel	Volume:	Contents: Oil/Gas/Water			
Notes/Conditions:					
					
Equipment ID: MH01 @ 0.5'		Equipment Type: Emission Control Device			
Material: Steel	Volume:	Contents: Oil/Gas/Water			
Notes/Conditions:					

Photographic Log


											
Equipment ID: MH02@0.5'		Equipment Type: Emission Control Device		Equipment ID:		Equipment Type:					
Material: Steel		Volume:		Contents: Oil/Gas/Water		Material:		Volume:		Contents:	
Notes/Conditions:						Notes/Conditions:					

TABLE 1
SOIL SAMPLE LOCATIONS
NOBLE ENERGY, INC. - KILDOW C31-7X FAC

Soil Sample ID	Date	PID (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude ¹	Longitude	PDOP
SS01@2.5'	04/07/23	0.7	No Staining	No Odor	Grab	40.27093212	-104.5911032	0.8
SS02@2.5'	04/07/23	2.2	No Staining	No Odor	Grab	40.27091708	-104.5910708	0.8
SS03@2.5'	04/07/23	3.1	No Staining	No Odor	Grab	40.27087976	-104.5911097	0.8
SS04@2.5'	04/07/23	5.1	No Staining	No Odor	Lab	40.27090174	-104.5911466	0.8
FS01@7'	04/07/23	3.5	No Staining	No Odor	Lab	40.27090619	-104.5911119	0.8
SS05@2.5'	04/07/23	1.2	No Staining	No Odor	Grab	40.27092549	-104.5908952	1.0
SS06@2.5'	04/07/23	0.3	No Staining	No Odor	Grab	40.27091390	-104.5908733	1.0
SS07@2.5'	04/07/23	2.8	No Staining	No Odor	Grab	40.27089612	-104.5908982	1.0
SS08@2.5'	04/07/23	3.4	No Staining	No Odor	Lab	40.27091431	-104.5909168	1.0
FS02@7'	04/07/23	2.8	No Staining	No Odor	Lab	40.27090949	-104.5908933	1.0
AST01@0.5'	04/07/23	3.4	No Staining	No Odor	Lab	40.27091310	-104.5910265	0.9
AST02@0.5'	04/07/23	3.7	No Staining	No Odor	Lab	40.27090933	-104.5909844	0.9
AST03@0.5'	04/07/23	1.7	No Staining	No Odor	Lab	40.27090542	-104.5909619	0.9
SEP01-DL@3'	04/07/23	3.2	No Staining	No Odor	Lab	40.27066669	-104.5909899	0.9
SEP02-DL@3'	04/07/23	972.2	No Staining	Strong HC Odor	Lab	40.27067992	-104.5910566	0.8
SEP03-DL@3'	04/07/23	35.7	No Staining	No Odor	Lab	40.27067142	-104.5910222	0.9
FLARE01@0.5'	04/07/23	2.1	No Staining	No Odor	Grab	40.27055624	-104.5910012	0.9
MH01@0.5'	04/07/23	0.6	No Staining	No Odor	Grab	40.27066574	-104.5908922	1.0
MH02@0.5'	04/07/23	0.0	No Staining	No Odor	Grab	40.27068093	-104.5908941	0.9

Notes:

PID = Photo-ionization detector

ppm = parts per million

PDOP = Position dilution of precision

HC = Hydrocarbon

1.) Latitude and longitude coordinates will be provided in decimal degrees with an accuracy and precision of 5 decimals of a degree using the North American Datum ("NAD") of 1983

TABLE 2
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - KILDOW C31-7X FAC

Soil Sample ID	Date	¹ Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1,2,4 - TMB (mg/kg)	1,3,5 - TMB (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL ²		1.2	490	5.8	58	30	27	2	500			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL ^{2,3}		0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500			0.55	6	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
SS04@2.5'	04/07/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS01@7'	04/07/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS08@2.5'	04/07/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS02@7'	04/07/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
AST01@0.5'	04/07/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
AST02@0.5'	04/07/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
AST03@0.5'	04/07/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	0.0153	0.0187	0.00990	0.0166	<0.00500	0.0379	<0.00500	0.00876	0.0206	<0.00500	<0.00500
SEP01-DL@3'	04/07/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP02-DL@3'	04/07/23	<0.0020	0.0070	<0.0050	0.034	0.042	0.038	0.0044	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0224	0.0515
SEP03-DL@3'	04/07/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
Residential SSL ²		6 - 8.3	<6	<4mmhos/cm	2
SS04@2.5'	04/07/23	7.43	0.0450	0.229	0.116
FS01@7'	04/07/23	7.06	0.0651	0.132	0.0590
SS08@2.5'	04/07/23	5.82	0.0575	0.156	0.0530
FS02@7'	04/07/23	7.47	0.151	0.168	0.0689
AST01@0.5'	04/07/23	4.40	0.0384	0.0711	0.0450
AST02@0.5'	04/07/23	8.22	0.599	0.269	0.0668
AST03@0.5'	04/07/23	7.50	0.0455	0.281	0.0911
SEP01-DL@3'	04/07/23	5.94	0.0663	0.120	0.0673
SEP02-DL@3'	04/07/23	5.89	0.105	0.192	0.0647
SEP03-DL@3'	04/07/23	6.11	0.169	0.131	0.0664

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 ²		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
SEP02-DL@3'	04/07/23	0.458	37.9	<0.217	<0.30	1.16	3.81	1.28	<0.260	<0.0217	5.04

Notes:

1. Compounds referenced from 2 CCR 404-1, Table 915-1, effective January 15, 2021.

2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.

3. SSLs are applicable if a pathway for communication with groundwater is present.

Definitions:

COGCC = Colorado Oil and Gas Conservation 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 = Millmhos per centimeter

mg/L = Milligrams per liter

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

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

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

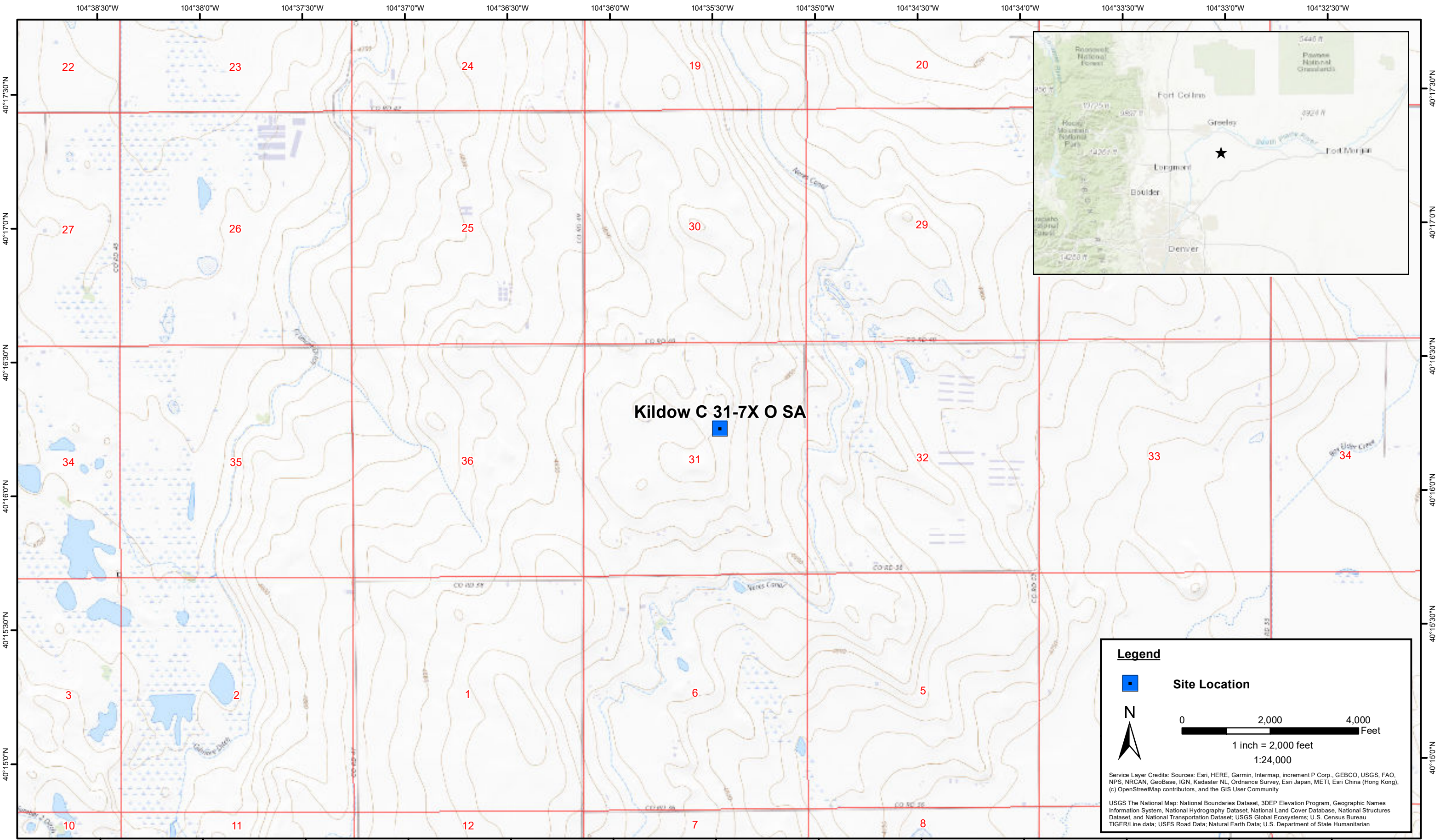
Benzo(a) = Benzopyrene


A,H = Dibenzoanthracene

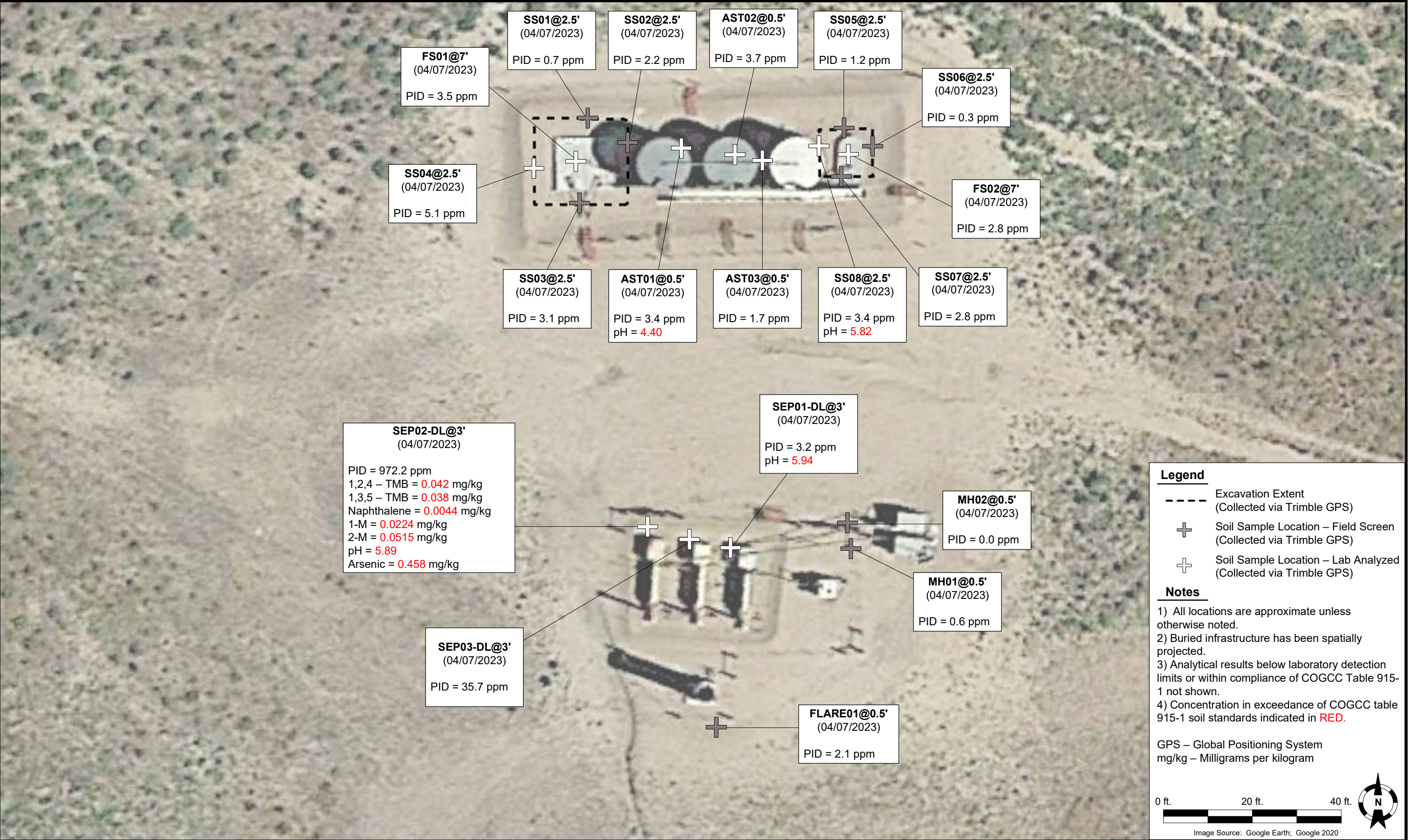
1,2,3-CD = Indenopyrene

1-M = 1-methylnaphthalene

2-M = 2-methylnaphthalene



DATE: April 2023	 Tasman, Inc. 6855 W. 119th Ave Broomfield, CO 80020	Noble Energy, Inc - DJ Basin Kildow C 31-7X O SA SWNE Sec. 31-T4N-R64W Weld County, Colorado	Site Location Map	Figure 1
DESIGNED BY: J. Whritenour				
DRAWN BY: L. Reed				



Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

May 02, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Kildow C 31-7x FAC

Work Order # 2304140

Enclosed are the results of analyses for samples received by Summit Scientific on 04/07/23 17:53. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely". The signature is fluid and cursive, with the first name "Scott" and last name "Sheely" clearly distinguishable.

Scott Sheely For Paul Shrewsbury

President



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

Project: Noble - Kildow C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS04@2.5'	2304140-04	Soil	04/07/23 09:23	04/07/23 17:53
FS01@7'	2304140-05	Soil	04/07/23 09:24	04/07/23 17:53
SS08@2.5'	2304140-09	Soil	04/07/23 09:27	04/07/23 17:53
FS02@7'	2304140-10	Soil	04/07/23 09:28	04/07/23 17:53
AST01@0.5'	2304140-11	Soil	04/07/23 09:50	04/07/23 17:53
AST02@0.5'	2304140-12	Soil	04/07/23 09:55	04/07/23 17:53
AST03@0.5'	2304140-13	Soil	04/07/23 10:00	04/07/23 17:53
SEP01-DL@3'	2304140-14	Soil	04/07/23 10:23	04/07/23 17:53
SEP02-DL@3'	2304140-15	Soil	04/07/23 10:26	04/07/23 17:53
SEP03-DL@3'	2304140-16	Soil	04/07/23 10:45	04/07/23 17:53

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>Kildow C 31-7X FAC</u>
City/State/Zip: Broomfield/CO/ 80020		AFE#:
Phone: 602-881-5716	Project Name: <u>Kildow C 31-7X FAC</u>	PO/Billing Codes:
Sampler Name: Dennis Gray	Project Number:	Contact: <u>Cole Moore</u>

					Preservative				Matrix				Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD			SAR, EC, pH by saturated paste
1	SS01@ 2.5'	4-7-23	920	2			X			X										X		
2	SS02@ 2.5'		921																	X		
3	SS03@ 2.5'		922																	X		
4	SS04@ 2.5'		923											X	X	X	X	X				
5	FS01@ 7'		924											X	X	X	X	X				
6	SS05@ 2.5'		925																X			
7	SS06@ 2.5'		925																X			
8	SS07@ 2.5'		926																X			
9	SS08@ 2.5'		927											X	X	X	X	X				
10	FS02@ 7'		928											X	X	X	X	X				
11	AST01@ 0.5'		950											X	X	X	X	X				
12	AST02@ 0.5'		955											X	X	X	X	X				
13	AST03@ 0.5'		1000											X	X	X	X	X				
14	SEP01-DL@ 3'		1023											X	X	X	X	X				
15	SEP02-DL@ 3'		1026											X	X	X	X	X				

Relinquished by: <u>Dennis Gray</u>	Date/Time: <u>4-7-23 1615</u>	Received by: <u>Tasman Lock Box</u>	Date/Time: <u>4-7-23 1615</u>	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <u>Tasman Lock Box</u>	Date/Time: <u>4723 1753</u>	Received by: <u>[Signature]</u>	Date/Time: <u>4723 1753</u>	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: <u>93</u>	Corrected Temperature: <u>6</u>	IR gun #: <u>1</u>	HNO3 lot #:			

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>Kildow C 31-7X FAC</u>
City/State/Zip: Broomfield/CO/ 80020		AFE#:
Phone: 602-881-5716	Project Name: <u>Kildow C 31-7X FAC</u>	PO/Billing Codes:
Sampler Name: Dennis Gray	Project Number:	Contact: <u>Cole Moore</u>

					Preservative				Matrix			Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD	
1	SEP03-DL@3'	4-7-23	1045	2			X			X				X	X	X	X	X		SAR, EC, pH by saturated paste
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: <u>Dennis Gray</u>	Date/Time: <u>4-7-23 1615</u>	Received by: <u>Tasman Lock Box</u>	Date/Time: <u>4-7-23 1615</u>	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <u>Tasman Lock Box</u>	Date/Time: <u>4-7-23 1753</u>	Received by: <u>[Signature]</u>	Date/Time: <u>4-7-23 1753</u>	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: <u>93</u>	Corrected Temperature: <u>6</u>	IR gun #: <u>1</u>	HNO3 lot #:			

S₂

2/2

Sample Receipt Checklist

S2 Work Order# 2304140Client: Noble/Trasman Client Project ID: Kildew C31-7xFAeShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 93Thermometer # 1

	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 type="checkbox"/>	<input checked="" 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 Name4/7/23
Date/Time



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

Project: Noble - Kildow C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

SS04@2.5'
2304140-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/23 09:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGD0280	04/10/23	04/10/23	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: **04/07/23 09:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		90.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		88.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.0 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/23 09:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGD0282	04/10/23	04/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **04/07/23 09:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		61.4 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Noble - Kildow C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

SS04@2.5'
2304140-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/07/23 09:23**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGD0411	04/13/23	04/13/23	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: **04/07/23 09:23**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		48.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		74.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/07/23 09:23**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.116	0.0100		mg/L	1	BGD0294	04/10/23	04/17/23	EPA 6020B	

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

Date Sampled: **04/07/23 09:23**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-----	-------	----------	-------	----------	----------	--------	-------

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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

SS04@2.5'
2304140-04 (Soil)

Summit Scientific

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

Calcium	492	0.0518	mg/L dry	1	BGD0473	04/15/23	04/21/23	EPA 6020B
Magnesium	105	0.0518	"	"	"	"	"	"
Sodium	4.21	0.0518	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **04/07/23 09:23**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0450	0.00100		units	1	BGD0696	04/21/23	04/21/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/23 09:23**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.5			%	1	BGD0291	04/10/23	04/11/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/07/23 09:23**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.229	0.0100		mmhos/cm	1	BGD0475	04/16/23	04/16/23	EPA 120.1	

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

Date Sampled: **04/07/23 09:23**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.43			pH Units	1	BGD0474	04/16/23	04/16/23	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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

FS01@7'
2304140-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/23 09:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGD0280	04/10/23	04/11/23	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: **04/07/23 09:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		88.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		88.7 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.0 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/23 09:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGD0282	04/10/23	04/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **04/07/23 09:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		48.5 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Noble - Kildow C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

FS01@7'
2304140-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/07/23 09:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGD0411	04/13/23	04/13/23	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: **04/07/23 09:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		52.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		64.9 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/07/23 09:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0590	0.0100		mg/L	1	BGD0294	04/10/23	04/17/23	EPA 6020B	

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

Date Sampled: **04/07/23 09:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-----	-------	----------	-------	----------	----------	--------	-------

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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

FS01@7'
2304140-05 (Soil)

Summit Scientific

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

Calcium	315	0.0549	mg/L dry	1	BGD0473	04/15/23	04/21/23	EPA 6020B
Magnesium	77.9	0.0549	"	"	"	"	"	"
Sodium	4.98	0.0549	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **04/07/23 09:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0651	0.00100		units	1	BGD0696	04/21/23	04/21/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/23 09:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.1			%	1	BGD0291	04/10/23	04/11/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/07/23 09:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.132	0.0100		mmhos/cm	1	BGD0475	04/16/23	04/16/23	EPA 120.1	

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

Date Sampled: **04/07/23 09:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.06			pH Units	1	BGD0474	04/16/23	04/16/23	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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

SS08@2.5'
2304140-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/23 09:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGD0280	04/10/23	04/11/23	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: **04/07/23 09:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		90.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		89.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/23 09:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGD0282	04/10/23	04/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **04/07/23 09:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		71.7 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Noble - Kildow C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

SS08@2.5'
2304140-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/07/23 09:27**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGD0411	04/13/23	04/13/23	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: **04/07/23 09:27**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		47.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		63.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/07/23 09:27**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0530	0.0100		mg/L	1	BGD0294	04/10/23	04/17/23	EPA 6020B	

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

Date Sampled: **04/07/23 09:27**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-----	-------	----------	-------	----------	----------	--------	-------

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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

SS08@2.5'
2304140-09 (Soil)

Summit Scientific

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

Calcium	149	0.0528	mg/L dry	1	BGD0473	04/15/23	04/21/23	EPA 6020B
Magnesium	34.9	0.0528	"	"	"	"	"	"
Sodium	3.00	0.0528	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **04/07/23 09:27**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0575	0.00100		units	1	BGD0696	04/21/23	04/21/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/23 09:27**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.6			%	1	BGD0291	04/10/23	04/11/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/07/23 09:27**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.156	0.0100		mmhos/cm	1	BGD0475	04/16/23	04/16/23	EPA 120.1	

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

Date Sampled: **04/07/23 09:27**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	5.82			pH Units	1	BGD0474	04/16/23	04/16/23	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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

FS02@7'
2304140-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/23 09:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGD0280	04/10/23	04/11/23	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: **04/07/23 09:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		89.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		89.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.8 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/23 09:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGD0282	04/10/23	04/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **04/07/23 09:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		58.9 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Noble - Kildow C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

FS02@7'
2304140-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/07/23 09:28**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGD0411	04/13/23	04/13/23	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: **04/07/23 09:28**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		55.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		72.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/07/23 09:28**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0689	0.0100		mg/L	1	BGD0294	04/10/23	04/17/23	EPA 6020B	

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

Date Sampled: **04/07/23 09:28**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-----	-------	----------	-------	----------	----------	--------	-------

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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

FS02@7'
2304140-10 (Soil)

Summit Scientific

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

Calcium	241	0.0542	mg/L dry	1	BGD0473	04/15/23	04/21/23	EPA 6020B
Magnesium	55.5	0.0542	"	"	"	"	"	"
Sodium	10.0	0.0542	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **04/07/23 09:28**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.151	0.00100		units	1	BGD0696	04/21/23	04/21/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/23 09:28**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.2			%	1	BGD0291	04/10/23	04/11/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/07/23 09:28**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.168	0.0100		mmhos/cm	1	BGD0475	04/16/23	04/16/23	EPA 120.1	

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

Date Sampled: **04/07/23 09:28**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.47			pH Units	1	BGD0474	04/16/23	04/16/23	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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

AST01@0.5'
2304140-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGD0280	04/10/23	04/11/23	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: **04/07/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		90.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		88.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.8 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGD0282	04/10/23	04/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **04/07/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		58.7 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Noble - Kildow C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

AST01@0.5'
2304140-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/07/23 09:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGD0411	04/13/23	04/13/23	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: **04/07/23 09:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		42.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		66.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/07/23 09:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0450	0.0100		mg/L	1	BGD0294	04/10/23	04/17/23	EPA 6020B	

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

Date Sampled: **04/07/23 09:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-----	-------	----------	-------	----------	----------	--------	-------

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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

AST01@0.5'
2304140-11 (Soil)

Summit Scientific

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

Calcium	193	0.0531	mg/L dry	1	BGD0473	04/15/23	04/21/23	EPA 6020B
Magnesium	28.5	0.0531	"	"	"	"	"	"
Sodium	2.16	0.0531	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **04/07/23 09:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0384	0.00100		units	1	BGD0696	04/21/23	04/21/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/23 09:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.1			%	1	BGD0291	04/10/23	04/11/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/07/23 09:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0711	0.0100		mmhos/cm	1	BGD0475	04/16/23	04/16/23	EPA 120.1	

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

Date Sampled: **04/07/23 09:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	4.40			pH Units	1	BGD0474	04/16/23	04/16/23	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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

AST02@0.5'
2304140-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/23 09:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGD0280	04/10/23	04/11/23	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: **04/07/23 09:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		92.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		89.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/23 09:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGD0282	04/10/23	04/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **04/07/23 09:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		58.3 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Noble - Kildow C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

AST02@0.5'
2304140-12 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/07/23 09:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BGD0411	04/13/23	04/13/23	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: **04/07/23 09:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		49.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		78.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/07/23 09:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0668	0.0100		mg/L	1	BGD0294	04/10/23	04/17/23	EPA 6020B	

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

Date Sampled: **04/07/23 09:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

AST02@0.5'
2304140-12 (Soil)

Summit Scientific

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

Calcium	271	0.0523	mg/L dry	1	BGD0473	04/15/23	04/21/23	EPA 6020B
Magnesium	37.5	0.0523	"	"	"	"	"	"
Sodium	39.7	0.0523	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **04/07/23 09:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.599	0.00100		units	1	BGD0696	04/21/23	04/21/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/23 09:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.5			%	1	BGD0291	04/10/23	04/11/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/07/23 09:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.269	0.0100		mmhos/cm	1	BGD0475	04/16/23	04/16/23	EPA 120.1	

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

Date Sampled: **04/07/23 09:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.22			pH Units	1	BGD0474	04/16/23	04/16/23	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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

AST03@0.5'
2304140-13 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/23 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGD0280	04/10/23	04/11/23	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: **04/07/23 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		90.1 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		88.7 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.4 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/23 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGD0282	04/10/23	04/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **04/07/23 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.4 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Noble - Kildow C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

AST03@0.5'
2304140-13 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/07/23 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGD0411	04/13/23	04/13/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	0.0153	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0187	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	0.00990	0.00500		"	"	"	"	"	"	
Chrysene	0.0166	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	0.0379	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.00876	0.00500		"	"	"	"	"	"	
Pyrene	0.0206	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **04/07/23 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		55.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		84.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/07/23 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0911	0.0100		mg/L	1	BGD0294	04/10/23	04/17/23	EPA 6020B	

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

Date Sampled: **04/07/23 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-----	-------	----------	-------	----------	----------	--------	-------

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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

AST03@0.5'
2304140-13 (Soil)

Summit Scientific

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

Calcium	293	0.0516	mg/L dry	1	BGD0473	04/15/23	04/21/23	EPA 6020B
Magnesium	68.7	0.0516	"	"	"	"	"	"
Sodium	3.33	0.0516	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **04/07/23 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0455	0.00100		units	1	BGD0696	04/21/23	04/21/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/23 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.0			%	1	BGD0291	04/10/23	04/11/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/07/23 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.281	0.0100		mmhos/cm	1	BGD0475	04/16/23	04/16/23	EPA 120.1	

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

Date Sampled: **04/07/23 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.50			pH Units	1	BGD0474	04/16/23	04/16/23	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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

SEP01-DL@3'
2304140-14 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/23 10:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGD0280	04/10/23	04/11/23	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: **04/07/23 10:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		92.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		89.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/23 10:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGD0282	04/10/23	04/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **04/07/23 10:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		48.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Noble - Kildow C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

SEP01-DL@3'
2304140-14 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/07/23 10:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BGD0411	04/13/23	04/13/23	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: **04/07/23 10:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		48.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		68.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/07/23 10:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0673	0.0100		mg/L	1	BGD0294	04/10/23	04/17/23	EPA 6020B	

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

Date Sampled: **04/07/23 10:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

SEP01-DL@3'
2304140-14 (Soil)

Summit Scientific

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

Calcium	139	0.0527	mg/L dry	1	BGD0473	04/15/23	04/21/23	EPA 6020B
Magnesium	29.5	0.0527	"	"	"	"	"	"
Sodium	3.30	0.0527	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **04/07/23 10:23**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0663	0.00100		units	1	BGD0696	04/21/23	04/21/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/23 10:23**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.9			%	1	BGD0291	04/10/23	04/11/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/07/23 10:23**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.120	0.0100		mmhos/cm	1	BGD0475	04/16/23	04/16/23	EPA 120.1	

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

Date Sampled: **04/07/23 10:23**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	5.94			pH Units	1	BGD0474	04/16/23	04/16/23	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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

SEP02-DL@3'
2304140-15 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/23 10:26**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGD0280	04/10/23	04/11/23	EPA 8260B	
Toluene	0.0070	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	0.034	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.042	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.038	0.0050		"	"	"	"	"	"	
Naphthalene	0.0044	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **04/07/23 10:26**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		93.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		89.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.0 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/23 10:26**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGD0282	04/10/23	04/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **04/07/23 10:26**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		50.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Noble - Kildow C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

SEP02-DL@3'
2304140-15 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/07/23 10:26**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGD0411	04/13/23	04/13/23	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	0.0224	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	0.0515	0.00500		"	"	"	"	"	"	

Date Sampled: **04/07/23 10:26**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		58.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		85.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/07/23 10:26**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0647	0.0100		mg/L	1	BGD0294	04/10/23	04/17/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/07/23 10:26**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-----	-------	----------	-------	----------	----------	--------	-------

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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

SEP02-DL@3'
2304140-15 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.458	0.217	mg/kg dry	1	BGD0828	04/25/23	05/01/23	EPA 6020B
Barium	37.9	0.434	"	"	"	"	"	"
Cadmium	ND	0.217	"	"	"	"	"	"
Copper	1.16	0.434	"	"	"	"	"	"
Lead	3.81	0.217	"	"	"	"	"	"
Nickel	1.28	0.434	"	"	"	"	"	"
Selenium	ND	0.260	0.175	"	"	"	"	"
Silver	ND	0.0217	"	"	"	"	"	"
Zinc	5.04	0.434	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/07/23 10:26**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGD0816	04/25/23	04/25/23	EPA 7196A	

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

Date Sampled: **04/07/23 10:26**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	324	0.0542		mg/L dry	1	BGD0473	04/15/23	04/21/23	EPA 6020B	
Magnesium	65.3	0.0542		"	"	"	"	"	"	
Sodium	7.93	0.0542		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/07/23 10:26**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.105	0.00100		units	1	BGD0696	04/21/23	04/21/23	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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

SEP02-DL@3'
2304140-15 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/23 10:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	92.2			%	1	BGD0291	04/10/23	04/11/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/07/23 10:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.192	0.0100		mmhos/cm	1	BGD0475	04/16/23	04/16/23	EPA 120.1	

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

Date Sampled: **04/07/23 10:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	5.89			pH Units	1	BGD0474	04/16/23	04/16/23	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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

SEP03-DL@3'
2304140-16 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGD0280	04/10/23	04/11/23	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: **04/07/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		93.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		89.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.0 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGD0282	04/10/23	04/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **04/07/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		47.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Noble - Kildow C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

SEP03-DL@3'
2304140-16 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/07/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BGD0411	04/13/23	04/13/23	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: **04/07/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		47.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		67.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/07/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0664	0.0100		mg/L	1	BGD0294	04/10/23	04/17/23	EPA 6020B	

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

Date Sampled: **04/07/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

SEP03-DL@3'
2304140-16 (Soil)

Summit Scientific

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

Calcium	164	0.0534	mg/L dry	1	BGD0473	04/15/23	04/21/23	EPA 6020B
Magnesium	31.6	0.0534	"	"	"	"	"	"
Sodium	9.04	0.0534	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **04/07/23 10:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.169	0.00100		units	1	BGD0696	04/21/23	04/21/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/23 10:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.6			%	1	BGD0291	04/10/23	04/11/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/07/23 10:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.131	0.0100		mmhos/cm	1	BGD0475	04/16/23	04/16/23	EPA 120.1	

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

Date Sampled: **04/07/23 10:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.11			pH Units	1	BGD0474	04/16/23	04/16/23	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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGD0280 - EPA 5030 Soil MS

Blank (BGD0280-BLK1)

Prepared & Analyzed: 04/10/23

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	0.0367		"	0.0400		91.6	50-150			
Surrogate: Toluene-d8	0.0352		"	0.0400		88.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0371		"	0.0400		92.7	50-150			

LCS (BGD0280-BS1)

Prepared & Analyzed: 04/10/23

Benzene	0.108	0.0020	mg/kg	0.125		86.8	70-130			
Toluene	0.135	0.0050	"	0.125		108	70-130			
Ethylbenzene	0.148	0.0050	"	0.125		119	70-130			
m,p-Xylene	0.295	0.010	"	0.250		118	70-130			
o-Xylene	0.137	0.0050	"	0.125		110	70-130			
1,2,4-Trimethylbenzene	0.153	0.0050	"	0.125		123	70-130			
1,3,5-Trimethylbenzene	0.153	0.0050	"	0.125		122	70-130			
Naphthalene	0.151	0.0038	"	0.125		121	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0354		"	0.0400		88.4	50-150			
Surrogate: Toluene-d8	0.0358		"	0.0400		89.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0347		"	0.0400		86.8	50-150			

Matrix Spike (BGD0280-MS1)

Source: 2304120-01

Prepared & Analyzed: 04/10/23

Benzene	0.108	0.0020	mg/kg	0.125	ND	86.7	70-130			
Toluene	0.136	0.0050	"	0.125	ND	109	70-130			
Ethylbenzene	0.152	0.0050	"	0.125	ND	121	70-130			
m,p-Xylene	0.300	0.010	"	0.250	ND	120	70-130			
o-Xylene	0.140	0.0050	"	0.125	ND	112	70-130			
1,2,4-Trimethylbenzene	0.158	0.0050	"	0.125	ND	127	70-130			
1,3,5-Trimethylbenzene	0.156	0.0050	"	0.125	ND	125	70-130			
Naphthalene	0.161	0.0038	"	0.125	ND	129	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0345		"	0.0400		86.2	50-150			
Surrogate: Toluene-d8	0.0355		"	0.0400		88.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0348		"	0.0400		87.0	50-150			

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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BGD0280 - EPA 5030 Soil MS

Matrix Spike Dup (BGD0280-MSD1)	Source: 2304120-01			Prepared & Analyzed: 04/10/23						
Benzene	0.109	0.0020	mg/kg	0.125	ND	86.8	70-130	0.111	30	
Toluene	0.136	0.0050	"	0.125	ND	109	70-130	0.177	30	
Ethylbenzene	0.151	0.0050	"	0.125	ND	120	70-130	0.656	30	
m,p-Xylene	0.298	0.010	"	0.250	ND	119	70-130	0.913	30	
o-Xylene	0.138	0.0050	"	0.125	ND	111	70-130	1.06	30	
1,2,4-Trimethylbenzene	0.156	0.0050	"	0.125	ND	125	70-130	1.24	30	
1,3,5-Trimethylbenzene	0.155	0.0050	"	0.125	ND	124	70-130	0.539	30	
Naphthalene	0.157	0.0038	"	0.125	ND	126	70-130	2.23	30	
Surrogate: 1,2-Dichloroethane-d4	0.0374		"	0.0400		93.5	50-150			
Surrogate: Toluene-d8	0.0356		"	0.0400		88.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0350		"	0.0400		87.5	50-150			

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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGD0282 - EPA 3550A

Blank (BGD0282-BLK1)

Prepared & Analyzed: 04/10/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	13.5		"	12.5	108	30-150				

LCS (BGD0282-BS1)

Prepared & Analyzed: 04/10/23

C10-C28 (DRO)	530	50	mg/kg	500	106	70-130				
Surrogate: o-Terphenyl	15.1		"	12.5	121	30-150				

Matrix Spike (BGD0282-MS1)

Source: 2304119-01

Prepared & Analyzed: 04/10/23

C10-C28 (DRO)	458	50	mg/kg	500	18.0	88.1	70-130			
Surrogate: o-Terphenyl	8.75		"	12.5	70.0	30-150				

Matrix Spike Dup (BGD0282-MSD1)

Source: 2304119-01

Prepared & Analyzed: 04/10/23

C10-C28 (DRO)	440	50	mg/kg	500	18.0	84.4	70-130	4.10	20	
Surrogate: o-Terphenyl	9.13		"	12.5	73.0	30-150				

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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGD0411 - EPA 5030 Soil MS

Blank (BGD0411-BLK1)

Prepared & Analyzed: 04/13/23

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	"							
Surrogate: 2-Methylnaphthalene-d10	0.0244		"	0.0333		73.3	40-150			
Surrogate: Fluoranthene-d10	0.0281		"	0.0333		84.3	40-150			

LCS (BGD0411-BS1)

Prepared & Analyzed: 04/13/23

Acenaphthene	0.0269	0.00500	mg/kg	0.0333		80.7	31-137			
Anthracene	0.0263	0.00500	"	0.0333		78.9	30-120			
Benzo (a) anthracene	0.0270	0.00500	"	0.0333		80.9	30-120			
Benzo (a) pyrene	0.0245	0.00500	"	0.0333		73.4	30-120			
Benzo (b) fluoranthene	0.0275	0.00500	"	0.0333		82.5	30-120			
Benzo (k) fluoranthene	0.0201	0.00500	"	0.0333		60.4	30-120			
Chrysene	0.0160	0.00500	"	0.0333		47.9	30-120			
Dibenz (a,h) anthracene	0.0265	0.00500	"	0.0333		79.6	30-120			
Fluoranthene	0.0252	0.00500	"	0.0333		75.5	30-120			
Fluorene	0.0264	0.00500	"	0.0333		79.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0302	0.00500	"	0.0333		90.5	30-120			
Pyrene	0.0241	0.00500	"	0.0333		72.2	35-142			
1-Methylnaphthalene	0.0242	0.00500	"	0.0333		72.7	35-142			
2-Methylnaphthalene	0.0248	0.00500	"	0.0333		74.4	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0250		"	0.0333		75.1	40-150			
Surrogate: Fluoranthene-d10	0.0268		"	0.0333		80.5	40-150			

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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGD0411 - EPA 5030 Soil MS

Matrix Spike (BGD0411-MS1)

Source: 2304140-04

Prepared & Analyzed: 04/13/23

Acenaphthene	0.0230	0.00500	mg/kg	0.0333	ND	68.9	31-137				
Anthracene	0.0215	0.00500	"	0.0333	ND	64.4	30-120				
Benzo (a) anthracene	0.0164	0.00500	"	0.0333	ND	49.3	30-120				
Benzo (a) pyrene	0.0168	0.00500	"	0.0333	ND	50.3	30-120				
Benzo (b) fluoranthene	0.0165	0.00500	"	0.0333	ND	49.5	30-120				
Benzo (k) fluoranthene	0.0145	0.00500	"	0.0333	ND	43.5	30-120				
Chrysene	0.0161	0.00500	"	0.0333	0.000876	45.8	30-120				
Dibenz (a,h) anthracene	0.0151	0.00500	"	0.0333	ND	45.3	30-120				
Fluoranthene	0.0257	0.00500	"	0.0333	ND	77.2	30-120				
Fluorene	0.0219	0.00500	"	0.0333	ND	65.6	30-120				
Indeno (1,2,3-cd) pyrene	0.0173	0.00500	"	0.0333	ND	52.0	30-120				
Pyrene	0.0164	0.00500	"	0.0333	ND	49.3	35-142				
1-Methylnaphthalene	0.0193	0.00500	"	0.0333	ND	57.9	15-130				
2-Methylnaphthalene	0.0201	0.00500	"	0.0333	ND	60.4	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0194		"	0.0333		58.2	40-150				
Surrogate: Fluoranthene-d10	0.0295		"	0.0333		88.4	40-150				

Matrix Spike Dup (BGD0411-MSD1)

Source: 2304140-04

Prepared & Analyzed: 04/13/23

Acenaphthene	0.0159	0.00500	mg/kg	0.0333	ND	47.8	31-137	36.1	30		QR-02
Anthracene	0.0170	0.00500	"	0.0333	ND	50.9	30-120	23.5	30		
Benzo (a) anthracene	0.0145	0.00500	"	0.0333	ND	43.5	30-120	12.5	30		
Benzo (a) pyrene	0.0149	0.00500	"	0.0333	ND	44.8	30-120	11.5	30		
Benzo (b) fluoranthene	0.0145	0.00500	"	0.0333	ND	43.5	30-120	12.9	30		
Benzo (k) fluoranthene	0.0138	0.00500	"	0.0333	ND	41.5	30-120	4.78	30		
Chrysene	0.0137	0.00500	"	0.0333	0.000876	38.5	30-120	16.1	30		
Dibenz (a,h) anthracene	0.0137	0.00500	"	0.0333	ND	41.2	30-120	9.62	30		
Fluoranthene	0.0200	0.00500	"	0.0333	ND	60.0	30-120	25.1	30		
Fluorene	0.0164	0.00500	"	0.0333	ND	49.2	30-120	28.6	30		
Indeno (1,2,3-cd) pyrene	0.0147	0.00500	"	0.0333	ND	44.0	30-120	16.7	30		
Pyrene	0.0152	0.00500	"	0.0333	ND	45.5	35-142	8.09	30		
1-Methylnaphthalene	0.0176	0.00500	"	0.0333	ND	52.9	15-130	9.13	50		
2-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.5	15-130	17.8	50		
Surrogate: 2-Methylnaphthalene-d10	0.0185		"	0.0333		55.4	40-150				
Surrogate: Fluoranthene-d10	0.0240		"	0.0333		71.9	40-150				

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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

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

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

Batch BGD0294 - EPA 3050B

Blank (BGD0294-BLK1)

Prepared: 04/10/23 Analyzed: 04/17/23

Boron ND 0.0100 mg/L

LCS (BGD0294-BS1)

Prepared: 04/10/23 Analyzed: 04/17/23

Boron 5.69 0.0100 mg/L 5.00 114 80-120

Duplicate (BGD0294-DUP1)

Source: 2304139-01

Prepared: 04/10/23 Analyzed: 04/17/23

Boron 0.149 0.0100 mg/L 0.158 6.46 20

Matrix Spike (BGD0294-MS1)

Source: 2304139-01

Prepared: 04/10/23 Analyzed: 04/17/23

Boron 5.69 0.0100 mg/L 5.00 0.158 111 75-125

Matrix Spike Dup (BGD0294-MSD1)

Source: 2304139-01

Prepared: 04/10/23 Analyzed: 04/17/23

Boron 5.79 0.0100 mg/L 5.00 0.158 113 75-125 1.73 25

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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGD0828 - EPA 3050B

Blank (BGD0828-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 (BGD0828-BS1)

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

Arsenic	36.9	0.200	mg/kg wet	40.0	92.4	80-120
Barium	41.8	0.400	"	40.0	105	80-120
Cadmium	2.03	0.200	"	2.00	102	80-120
Copper	38.0	0.400	"	40.0	94.9	80-120
Lead	21.1	0.200	"	20.0	106	80-120
Nickel	36.6	0.400	"	40.0	91.5	80-120
Selenium	4.81	0.260	"	4.00	120	80-120
Silver	2.28	0.0200	"	2.00	114	80-120
Zinc	36.0	0.400	"	40.0	90.0	80-120

Duplicate (BGD0828-DUP1)

Source: 2303710-34

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

Arsenic	3.61	0.237	mg/kg dry	3.61	0.144	20	QR-01
Barium	39.3	0.474	"	46.8	17.5	20	
Cadmium	0.0631	0.237	"	0.0498	23.5	20	
Copper	5.43	0.474	"	5.42	0.297	20	
Lead	14.0	0.237	"	16.4	15.7	20	
Nickel	4.33	0.474	"	4.39	1.51	20	QR-01
Selenium	0.265	0.260	"	0.256	3.46	20	
Silver	0.0370	0.0237	"	0.0266	32.8	20	
Zinc	19.4	0.474	"	19.9	2.53	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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGD0828 - EPA 3050B

Matrix Spike (BGD0828-MS1)

Source: 2303710-34

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

Arsenic	18.3	0.237	mg/kg dry	47.4	3.61	31.0	75-125			QM-07
Barium	78.2	0.474	"	47.4	46.8	66.1	75-125			QM-07
Cadmium	2.64	0.237	"	2.37	0.0498	109	75-125			
Copper	20.1	0.474	"	47.4	5.42	31.0	75-125			QM-07
Lead	39.9	0.237	"	23.7	16.4	98.9	75-125			
Nickel	20.1	0.474	"	47.4	4.39	33.1	75-125			QM-07
Selenium	4.96	0.260	"	4.74	0.256	99.1	75-125			
Silver	3.00	0.0237	"	2.37	0.0266	125	75-125			
Zinc	33.5	0.474	"	47.4	19.9	28.7	75-125			QM-07

Matrix Spike Dup (BGD0828-MSD1)

Source: 2303710-34

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

Arsenic	18.8	0.237	mg/kg dry	47.4	3.61	32.1	75-125	2.60	25	QM-07
Barium	80.3	0.474	"	47.4	46.8	70.5	75-125	2.65	25	QM-07
Cadmium	2.76	0.237	"	2.37	0.0498	114	75-125	4.29	25	
Copper	20.2	0.474	"	47.4	5.42	31.2	75-125	0.658	25	QM-07
Lead	39.8	0.237	"	23.7	16.4	98.8	75-125	0.0274	25	
Nickel	20.2	0.474	"	47.4	4.39	33.4	75-125	0.763	25	QM-07
Selenium	3.02	0.260	"	4.74	0.256	58.2	75-125	48.7	25	QM-07
Silver	2.95	0.0237	"	2.37	0.0266	123	75-125	1.58	25	
Zinc	33.6	0.474	"	47.4	19.9	28.8	75-125	0.102	25	QM-07

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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGD0816 - 3060A Mod

Blank (BGD0816-BLK1)

Prepared & Analyzed: 04/25/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGD0816-BS1)

Prepared & Analyzed: 04/25/23

Chromium, Hexavalent 20.8 0.30 mg/kg wet 25.0 83.0 80-120

Duplicate (BGD0816-DUP1)

Source: 2304514-01

Prepared & Analyzed: 04/25/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGD0816-MS1)

Source: 2304514-01

Prepared & Analyzed: 04/25/23

Chromium, Hexavalent 20.8 0.30 mg/kg dry 25.9 ND 80.4 75-125

Matrix Spike Dup (BGD0816-MSD1)

Source: 2304514-01

Prepared & Analyzed: 04/25/23

Chromium, Hexavalent 25.1 0.30 mg/kg dry 25.9 ND 97.0 75-125 18.7 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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

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

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

Batch BGD0473 - General Preparation

Blank (BGD0473-BLK1)

Prepared: 04/15/23 Analyzed: 04/21/23

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

LCS (BGD0473-BS1)

Prepared: 04/15/23 Analyzed: 04/21/23

Calcium	4.89	0.0500	mg/L wet	5.00	97.9	70-130
Magnesium	5.10	0.0500	"	5.00	102	70-130
Sodium	5.04	0.0500	"	5.00	101	70-130

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 C 31-7x FAC

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

05/02/23 10:50

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

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

Batch BGD0291 - General Preparation

Duplicate (BGD0291-DUP1)

Source: 2304120-01

Prepared: 04/10/23 Analyzed: 04/11/23

% Solids	90.9	%	92.0	1.21	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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

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

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

Batch BGD0475 - General Preparation

Blank (BGD0475-BLK1)

Prepared & Analyzed: 04/16/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGD0475-BS1)

Prepared & Analyzed: 04/16/23

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

Duplicate (BGD0475-DUP1)

Source: 2304139-01

Prepared & Analyzed: 04/16/23

Specific Conductance (EC) 0.374 0.0100 mmhos/cm 0.374 0.0267 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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BGD0474 - General Preparation

LCS (BGD0474-BS1)

Prepared & Analyzed: 04/16/23

pH	9.01	pH Units	9.18	98.1	95-105
----	------	----------	------	------	--------

Duplicate (BGD0474-DUP1)

Source: 2304139-01

Prepared & Analyzed: 04/16/23

pH	7.66	pH Units	7.60	0.786	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 C 31-7x FAC

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/02/23 10:50

Notes and Definitions

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
QM-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