

Third Party														
Removal Date														
Sample taken?														
PID Readings														
Photo Number(s)														
Other Facility Equipment														
Equipment type	Meter House	Flare	Flare											
Equipment Condition	Good	Good	Good											
Age														
Soil impacts observed during	None observed	None Observed	None Observed											
PID Readings	0.0	1.0	0.7											
Sample taken?	Yes, see below	Yes, see below	Yes, see below											
Photo Number(s)	17	15	16											
Other observations regarding other facility or third party equipment:														
Sample taken below meter house (MH01@0.5'). Sample taken at Flare stacks (Flare01@0.5', Flare02@0.5').														
Summary														
Was impacted soil identified?														
<div> <div>No</div> <div>Yes - less than 10 cubic yards</div> <div>Yes - more than 10 cubic yards</div> </div>														
Total number of samples field screened: 17					Total number of samples collected: 14									
Highest PID Reading: 3.3					Total number of samples submitted to lab for analysis: 14									
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?														
<div> <div>No</div> <div>Yes - not impacted or in contact with impacted soils</div> <div>Yes - groundwater impacted and/or in contact with impacted soils</div> </div>														
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:
Material:
Volume:
Contents:
Notes/Conditions:

Equipment ID:SS02 @2.5'

Equipment Type:
Material:
Volume:
Contents:
Notes/Conditions:



Photographic Log

							
Equipment ID:SS03@2.5'		Equipment Type:		Equipment ID:SS04@2.5'		Equipment Type:	
Material:	Volume:	Contents:	Material:	Volume:	Contents:		
Notes/Conditions:			Notes/Conditions:				



Photographic Log

									
						Equipment ID:SS05@2.5'		Equipment Type:	
						Material:	Volume:	Contents:	
						Notes/Conditions:			
Equipment ID:SS06@2.5'			Equipment Type:						
Material:		Volume:	Contents:						
Notes/Conditions:									





Photographic Log

													
Equipment ID: FS01 @ 5.5'			Equipment Type:			Equipment ID: FS02 @ 6'			Equipment Type:				
Material:			Volume:		Contents:		Material:			Volume:		Contents:	
Notes/Conditions:						Notes/Conditions:							

Photographic Log

					
Equipment ID: AST01 @0.5'		Equipment Type:			
Material:	Volume:	Contents:		Equipment ID: AST02 @0.5'	
				Equipment Type:	
Material:		Volume:		Contents:	
Notes/Conditions:			Notes/Conditions:		

Photographic Log

					
Equipment ID: AST03@0.5'		Equipment Type:			
Material:	Volume:	Contents:			
Notes/Conditions:					
					
Equipment ID: AST04@0.5'		Equipment Type:			
Material:	Volume:	Contents:			
Notes/Conditions:					

Photographic Log



Equipment ID:SEP01-FL@4'		Equipment Type:		Equipment ID:SEP01-DL@4'		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

Photographic Log

													
Equipment ID: Flare01 @ 0.5'			Equipment Type:			Equipment ID: Flare02 @ 0.5'			Equipment Type:				
Material:			Volume:		Contents:		Material:			Volume:		Contents:	
Notes/Conditions:						Notes/Conditions:							

Photographic Log



Equipment ID: MH01 @ 0.5'		Equipment Type:		Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

TABLE 1
SOIL SAMPLE LOCATIONS
NOBLE ENERGY, INC. - THOMPSON D20-31D FAC

Soil Sample ID	Date	PID (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude ¹	Longitude	PDOP
SS01@2.5'	02/14/23	0.2	No Staining	No Odor	Lab	40.2185950	-104.5839581	1.1
SS02@2.5'	02/14/23	0.3	No Staining	No Odor	Lab	40.2185354	-104.5839282	0.9
SS03@2.5'	02/14/23	0.0	No Staining	No Odor	Lab	40.2184529	-104.5839336	0.9
SS04@2.5'	02/14/23	0.0	No Staining	No Odor	Lab	40.2183745	-104.5839743	0.9
SS05@2.5'	02/14/23	0.2	No Staining	No Odor	Lab	40.2184585	-104.5840044	0.9
SS06@2.5'	02/14/23	0.5	No Staining	No Odor	Lab	40.2185480	-104.5840040	NC
FS01@5.5'	02/14/23	1.3	No Staining	No Odor	Lab	40.2185162	-104.5839654	0.9
FS02@6'	02/14/23	0.3	No Staining	No Odor	Lab	40.2184285	-104.5839631	0.9
AST01@0.5'	02/14/23	0.1	No Staining	No Odor	Lab	40.2184449	-104.5841504	1.1
AST02@0.5'	02/14/23	0.3	No Staining	No Odor	Lab	40.2184400	-104.5840300	NC
AST03@0.5'	02/14/23	0.7	No Staining	No Odor	Lab	40.2185014	-104.5841223	1.0
AST04@0.5'	02/14/23	3.3	No Staining	No Odor	Lab	40.2185230	-104.5840290	NC
Flare01@0.5'	02/14/23	1.0	No Staining	No Odor	Grab	40.2184450	-104.5836970	NC
Flare02@0.5'	02/14/23	0.7	No Staining	No Odor	Grab	40.2184466	-104.5836276	1.0
SEP01-FL@4'	02/14/23	0.1	No Staining	No Odor	Lab	40.2183680	-104.5836130	NC
SEP01-DL@4'	02/14/23	0.2	No Staining	No Odor	Lab	40.2184070	-104.5836770	NC
MH01@0.5'	02/14/23	0.0	No Staining	No Odor	Grab	40.2183250	-104.5836060	NC

Notes:

PID = Photo-ionization detector

ppm = parts per million

PDOP = Position dilution of precision

HC = Hydrocarbon

NC = Not Collected - Coordinates should be considered approximate

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. - THOMPSON D20-31D 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
SS01@2.5'	02/14/23	<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
SS02@2.5'	02/14/23	<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
SS03@2.5'	02/14/23	<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
SS04@2.5'	02/14/23	<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
SS05@2.5'	02/14/23	<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
SS06@2.5'	02/14/23	<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@5.5'	02/14/23	<0.0020	<0.0050	<0.0050	<0.010	0.010	0.034	<0.0038	1.6	92	<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@6'	02/14/23	<0.0020	<0.0050	<0.0050	0.029	0.014	0.0077	<0.0038	1.2	290	62	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00526	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00931	0.0264
AST01@0.5'	02/14/23	<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'	02/14/23	<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'	02/14/23	<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
AST04@0.5'	02/14/23	<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
SEP01-FL@4'	02/14/23	<0.0020	<0.0050	<0.0050	0.021	0.019	0.011	<0.0038	1.2	81	<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
SEP01-DL@4'	02/14/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	94	<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
SS01@2.5'	02/14/23	7.63	0.0582	0.236	0.0704
SS02@2.5'	02/14/23	7.68	0.0934	0.184	0.0849
SS03@2.5'	02/14/23	7.68	0.116	0.266	0.119
SS04@2.5'	02/14/23	7.96	0.107	0.184	0.0661
SS05@2.5'	02/14/23	7.87	1.28	0.868	0.192
SS06@2.5'	02/14/23	8.18	0.830	0.358	0.199
FS01@5.5'	02/14/23	7.95	0.105	0.257	0.0908
FS02@6'	02/14/23	9.75	1.24	0.444	0.659
AST01@0.5'	02/14/23	8.08	0.210	0.331	0.343
AST02@0.5'	02/14/23	7.71	0.819	0.913	0.209
AST03@0.5'	02/14/23	7.96	0.437	0.407	0.214
AST04@0.5'	02/14/23	7.88	1.05	1.60	0.346
SEP01-FL@4'	02/14/23	8.01	0.243	0.256	0.126
SEP01-DL@4'	02/14/23	7.87	3.11	1.08	0.158

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 SSL ^{2,3}		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FS02@6'	02/14/23	2.41	77.2	0.156	<0.30	5.65	6.53	5.23	<0.260	0.0189	19.2

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) = Benzo(a)fluoranthene

Benzo(k) = Benzo(a)fluoranthene

Benzo(a) = Benzopyrene

A,H = Dibenzo(a,h)anthracene

1,2,3-CD = Indeno(1,2,3-cd)pyrene

1-M = 1-methylnaphthalene

2-M = 2-methylnaphthalene

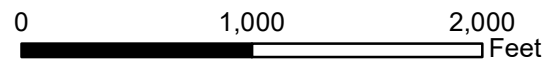
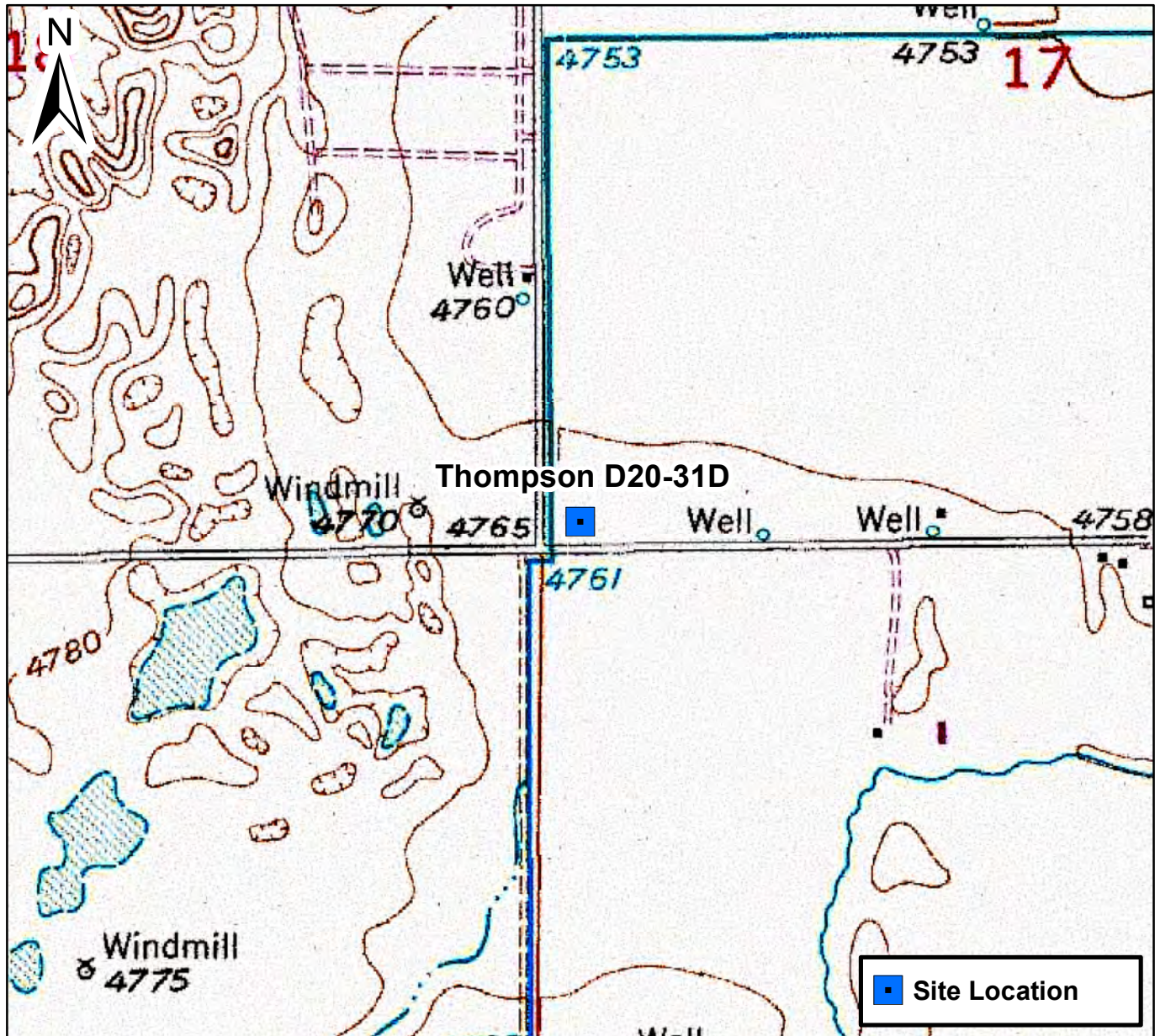
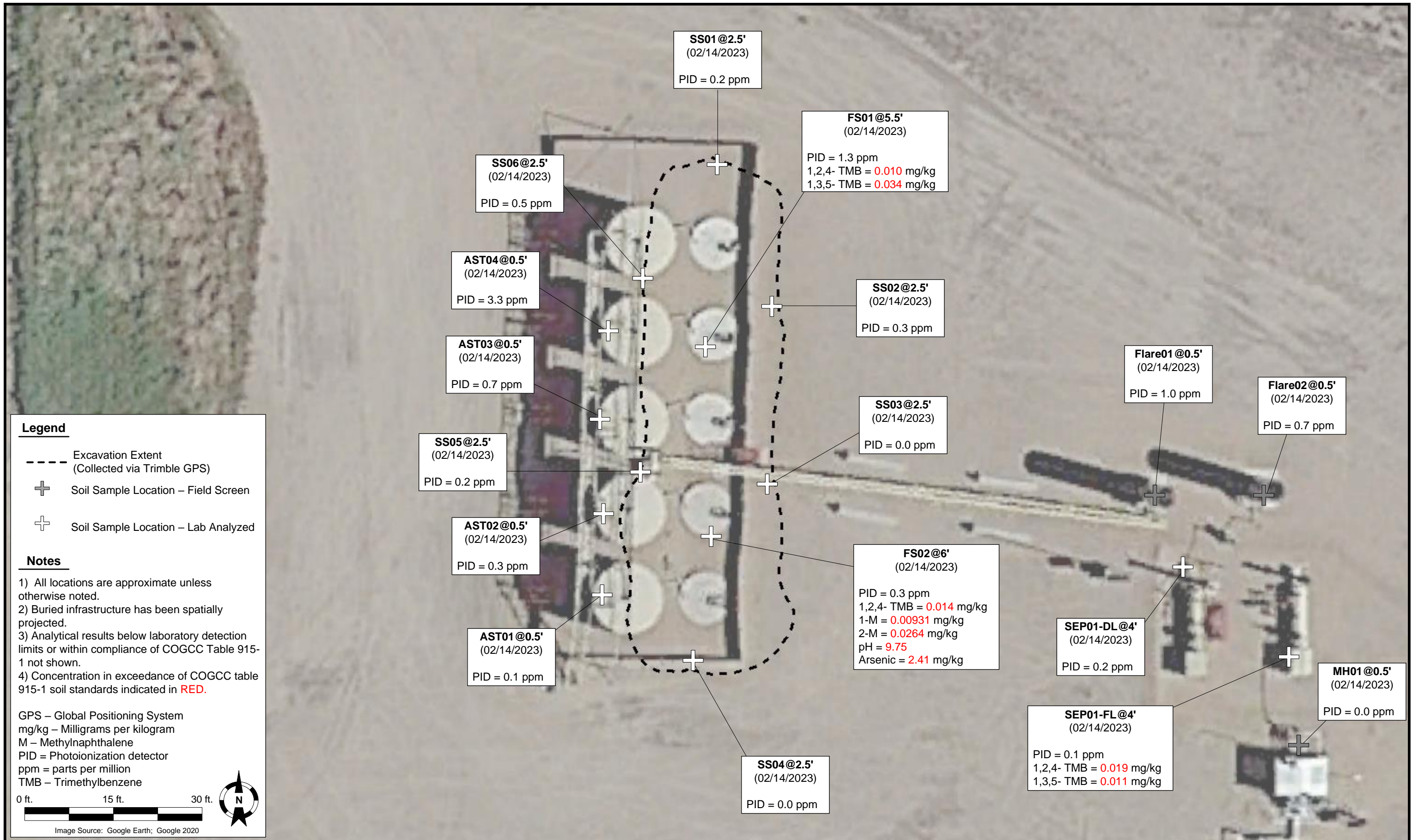


Figure 1

Site Location Map
Thompson D20-31D
SWSW S17 T3N R64W
Weld County, Colorado





Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

March 02, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Thompson D20-31D

Work Order # 2302295

Enclosed are the results of analyses for samples received by Summit Scientific on 02/14/23 17:43. 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 written in a cursive, flowing style.

Scott Sheely For Paul Shrewsbury

President



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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@2.5'	2302295-01	Soil	02/14/23 11:05	02/14/23 17:43
SS02@2.5'	2302295-02	Soil	02/14/23 11:08	02/14/23 17:43
SS03@2.5'	2302295-03	Soil	02/14/23 11:12	02/14/23 17:43
SS04@2.5'	2302295-04	Soil	02/14/23 11:15	02/14/23 17:43
SS05@2.5'	2302295-05	Soil	02/14/23 11:18	02/14/23 17:43
SS06@2.5'	2302295-06	Soil	02/14/23 11:21	02/14/23 17:43
FS01@5.5'	2302295-07	Soil	02/14/23 11:24	02/14/23 17:43
FS02@6'	2302295-08	Soil	02/14/23 11:27	02/14/23 17:43
AST01@0.5'	2302295-09	Soil	02/14/23 11:30	02/14/23 17:43
AST02@0.5'	2302295-10	Soil	02/14/23 11:32	02/14/23 17:43
AST03@0.5'	2302295-11	Soil	02/14/23 11:34	02/14/23 17:43
AST04@0.5'	2302295-12	Soil	02/14/23 11:36	02/14/23 17:43
SEP01-FL@4'	2302295-13	Soil	02/14/23 12:15	02/14/23 17:43
SEP01-DL@4'	2302295-14	Soil	02/14/23 12:20	02/14/23 17:43

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: Noble
Address: 6855 W 119TH AVE	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location: Thompson D20-31D
City/State/Zip: Broomfield CO 80020		AFE#:
Phone: 503-915-3046	Project Name: Thompson D20-31D	PO/Billing Codes:
Sampler Name: Martin Medeiros	Project Number: UWRWE-A2300-ABN	Contact:

					Preservative				Matrix				Analysis Requested						Special Instructions		
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	VOC-915	TPH-915	PAH-915	Boron-HWS	PH,EC,SAR	Hold			
1	SS01@2.5'	2/14/23	11:05	2			X			X			X	X	X	X	X	X	X		
2	SS02@2.5'		11:08							X								X	X		
3	SS03@2.5'		11:12															X	X		
4	SS04@2.5'		11:15															X	X		
5	SS05@2.5'		11:18															X	X		
6	SS06@2.5'		11:21															X			
7	FS01@5.5'		11:24																		
8	FS02@6'		11:27																		
9	AST01@0.5'		11:30																		
10	AST02@0.5'		11:32																		
11	AST03@0.5'		11:34																		
12	AST04@0.5'		11:36																		
13	SEP01-FL@4'		12:15																		
14	SEP01-DL@4'	✓	12:20	✓			✓			✓			✓	✓	✓	✓	✓				
15																					

Relinquished by: Martin Medeiros 2/14/23 15:30	Received by: [Signature] 2/14/23 15:30	TAT Business Days	Field DO	Notes:
		Same Day	Field EC	
Relinquished by: Tasman/Box 2/14/23 1743	Received by: [Signature] 2/14/23 1743	1 Day	Field ORP	
		2 Days	Field pH	
		3 Days	Field Temp.	
Relinquished by:	Received by:	Standard	Field Turb.	
Temperature Upon Receipt: 8.6	Corrected Temperature: 8	IR gun #:	HNO3 lot #:	

S₂

Sample Receipt Checklist

S2 Work Order# 2302295Client: Nobel Tasman Client Project ID: Thompson D20-310Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☐ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☐ Other ☐

Temp (°C)

8.6

Thermometer #

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"/>	ouze
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

2/14/23
Date/Time



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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN
Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SS01@2.5'
2302295-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 11:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0773	02/24/23	02/24/23	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: **02/14/23 11:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		91.3 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.9 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 11:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0774	02/24/23	02/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 11:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		94.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN
Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SS01@2.5'
2302295-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 11:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0765	02/24/23	02/24/23	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: **02/14/23 11:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		78.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		67.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/14/23 11:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0704	0.0100		mg/L	1	BGB0818	02/27/23	03/01/23	EPA 6020B	

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

Date Sampled: **02/14/23 11:05**

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN
Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SS01@2.5'
2302295-01 (Soil)

Summit Scientific

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

Calcium	39.2	0.0571	mg/L dry	1	BGB0827	02/27/23	03/01/23	EPA 6020B
Magnesium	6.01	0.0571	"	"	"	"	"	"
Sodium	1.48	0.0571	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **02/14/23 11:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0582	0.00100		units	1	BGC0033	03/01/23	03/01/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 11:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.6			%	1	BGB0820	02/27/23	02/27/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/14/23 11:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.236	0.0100		mmhos/cm	1	BGB0864	02/28/23	02/28/23	EPA 120.1	

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

Date Sampled: **02/14/23 11:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.63			pH Units	1	BGB0866	02/28/23	02/28/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SS02@2.5'
2302295-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 11:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0773	02/24/23	02/24/23	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: **02/14/23 11:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		91.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		93.9 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.5 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 11:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0774	02/24/23	02/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 11:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		73.5 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SS02@2.5'
2302295-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 11:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0765	02/24/23	02/24/23	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: **02/14/23 11:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		62.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		61.9 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/14/23 11:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0849	0.0100		mg/L	1	BGB0818	02/27/23	03/01/23	EPA 6020B	

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

Date Sampled: **02/14/23 11:08**

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

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SS02@2.5'
2302295-02 (Soil)

Summit Scientific

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

Calcium	40.4	0.0592	mg/L dry	1	BGB0827	02/27/23	03/01/23	EPA 6020B
Magnesium	4.84	0.0592	"	"	"	"	"	"
Sodium	2.36	0.0592	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **02/14/23 11:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0934	0.00100		units	1	BGC0033	03/01/23	03/01/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 11:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.4			%	1	BGB0820	02/27/23	02/27/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/14/23 11:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.184	0.0100		mmhos/cm	1	BGB0864	02/28/23	02/28/23	EPA 120.1	

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

Date Sampled: **02/14/23 11:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.68			pH Units	1	BGB0866	02/28/23	02/28/23	EPA 9045D	

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SS03@2.5'
2302295-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 11:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0773	02/24/23	02/24/23	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: **02/14/23 11:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		89.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 11:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0774	02/24/23	02/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 11:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		71.6 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SS03@2.5'
2302295-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 11:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0765	02/24/23	02/24/23	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: **02/14/23 11:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		70.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/14/23 11:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.119	0.0100		mg/L	1	BGB0818	02/27/23	03/01/23	EPA 6020B	

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

Date Sampled: **02/14/23 11:12**

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN
Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SS03@2.5'
2302295-03 (Soil)

Summit Scientific

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

Calcium	38.7	0.0563	mg/L dry	1	BGB0827	02/27/23	03/01/23	EPA 6020B
Magnesium	6.63	0.0563	"	"	"	"	"	"
Sodium	2.96	0.0563	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **02/14/23 11:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.116	0.00100		units	1	BGC0033	03/01/23	03/01/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 11:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.8			%	1	BGB0820	02/27/23	02/27/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/14/23 11:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.266	0.0100		mmhos/cm	1	BGB0864	02/28/23	02/28/23	EPA 120.1	

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

Date Sampled: **02/14/23 11:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.68			pH Units	1	BGB0866	02/28/23	02/28/23	EPA 9045D	

Summit Scientific

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SS04@2.5'
2302295-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0773	02/24/23	02/24/23	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: **02/14/23 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		85.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.4 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0774	02/24/23	02/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 11:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		73.4 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SS04@2.5'
2302295-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 11:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0765	02/24/23	02/24/23	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: **02/14/23 11:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		71.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		71.8 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/14/23 11:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0661	0.0100		mg/L	1	BGB0818	02/27/23	03/01/23	EPA 6020B	

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

Date Sampled: **02/14/23 11:15**

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN
Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SS04@2.5'
2302295-04 (Soil)

Summit Scientific

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

Calcium	50.7	0.0576	mg/L dry	1	BGB0827	02/27/23	03/01/23	EPA 6020B
Magnesium	5.00	0.0576	"	"	"	"	"	"
Sodium	2.99	0.0576	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **02/14/23 11:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.107	0.00100		units	1	BGC0033	03/01/23	03/01/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 11:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.8			%	1	BGB0820	02/27/23	02/27/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/14/23 11:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.184	0.0100		mmhos/cm	1	BGB0864	02/28/23	02/28/23	EPA 120.1	

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

Date Sampled: **02/14/23 11:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.96			pH Units	1	BGB0866	02/28/23	02/28/23	EPA 9045D	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SS05@2.5'
2302295-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 11:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0773	02/24/23	02/24/23	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: **02/14/23 11:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		93.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.3 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 11:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0774	02/24/23	02/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 11:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		85.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SS05@2.5'
2302295-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 11:18**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0765	02/24/23	02/24/23	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: **02/14/23 11:18**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		75.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		72.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/14/23 11:18**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.192	0.0100		mg/L	1	BGB0818	02/27/23	03/01/23	EPA 6020B	

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

Date Sampled: **02/14/23 11:18**

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SS05@2.5'
2302295-05 (Soil)

Summit Scientific

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

Calcium	95.8	0.0588	mg/L dry	1	BGB0827	02/27/23	03/01/23	EPA 6020B
Magnesium	17.3	0.0588	"	"	"	"	"	"
Sodium	51.7	0.0588	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **02/14/23 11:18**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.28	0.00100		units	1	BGC0033	03/01/23	03/01/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 11:18**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.0			%	1	BGB0820	02/27/23	02/27/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/14/23 11:18**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.868	0.0100		mmhos/cm	1	BGB0864	02/28/23	02/28/23	EPA 120.1	

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

Date Sampled: **02/14/23 11:18**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.87			pH Units	1	BGB0866	02/28/23	02/28/23	EPA 9045D	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SS06@2.5'
2302295-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 11:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0480	02/16/23	02/16/23	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: **02/14/23 11:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		84.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		88.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 11:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0482	02/16/23	02/16/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 11:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		117 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN
Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SS06@2.5'
2302295-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 11:21**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0574	02/20/23	02/20/23	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: **02/14/23 11:21**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		65.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		58.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/14/23 11:21**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.199	0.0100		mg/L	1	BGB0522	02/17/23	02/19/23	EPA 6020B	

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

Date Sampled: **02/14/23 11:21**

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SS06@2.5'
2302295-06 (Soil)

Summit Scientific

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

Calcium	36.2	0.0585	mg/L dry	1	BGB0620	02/20/23	02/22/23	EPA 6020B
Magnesium	4.99	0.0585	"	"	"	"	"	"
Sodium	20.1	0.0585	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **02/14/23 11:21**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.830	0.00100		units	1	BGB0704	02/22/23	02/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 11:21**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.4			%	1	BGB0514	02/16/23	02/17/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/14/23 11:21**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.358	0.0100		mmhos/cm	1	BGB0642	02/21/23	02/21/23	EPA 120.1	

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

Date Sampled: **02/14/23 11:21**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.18			pH Units	1	BGB0641	02/21/23	02/21/23	EPA 9045D	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

FS01@5.5'
2302295-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 11:24**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Benzene	ND	0.0020			mg/kg	1	BGB0480	02/16/23	02/16/23	EPA 8260B	
Toluene	ND	0.0050			"	"	"	"	"	"	
Ethylbenzene	ND	0.0050			"	"	"	"	"	"	
Xylenes (total)	ND	0.010			"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.010	0.0050			"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.034	0.0050			"	"	"	"	"	"	
Naphthalene	ND	0.0038			"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.6	0.50			"	"	"	"	"	"	

Date Sampled: **02/14/23 11:24**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
Surrogate: 1,2-Dichloroethane-d4		88.4 %			50-150		"	"	"	"	
Surrogate: Toluene-d8		88.3 %			50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %			50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 11:24**

Analyte	Result	Reporting		MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit									
C10-C28 (DRO)	92	50			mg/kg	1	BGB0482	02/16/23	02/16/23	EPA 8015M	
C28-C36 (ORO)	ND	50			"	"	"	"	"	"	

Date Sampled: **02/14/23 11:24**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

FS01@5.5'
2302295-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 11:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0574	02/20/23	02/20/23	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: **02/14/23 11:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		73.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		57.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/14/23 11:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0908	0.0100		mg/L	1	BGB0522	02/17/23	02/19/23	EPA 6020B	

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

Date Sampled: **02/14/23 11:24**

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

FS01@5.5'
2302295-07 (Soil)

Summit Scientific

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

Calcium	33.6	0.0584	mg/L dry	1	BGB0620	02/20/23	02/22/23	EPA 6020B
Magnesium	4.15	0.0584	"	"	"	"	"	"
Sodium	2.43	0.0584	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **02/14/23 11:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.105	0.00100		units	1	BGB0704	02/22/23	02/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 11:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.6			%	1	BGB0514	02/16/23	02/17/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/14/23 11:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.257	0.0100		mmhos/cm	1	BGB0642	02/21/23	02/21/23	EPA 120.1	

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

Date Sampled: **02/14/23 11:24**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.95			pH Units	1	BGB0641	02/21/23	02/21/23	EPA 9045D	

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN
Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

FS02@6'
2302295-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 11:27**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0480	02/16/23	02/16/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	0.029	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.014	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.0077	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.2	0.50		"	"	"	"	"	"	

Date Sampled: **02/14/23 11:27**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		83.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		88.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 11:27**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	290	50		mg/kg	1	BGB0482	02/16/23	02/16/23	EPA 8015M	
C28-C36 (ORO)	62	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 11:27**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

FS02@6'
2302295-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 11:27**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0574	02/20/23	02/20/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	0.00526	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	0.00931	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	0.0264	0.00500		"	"	"	"	"	"	

Date Sampled: **02/14/23 11:27**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		53.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		49.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/14/23 11:27**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.659	0.0100		mg/L	1	BGB0522	02/17/23	02/19/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **02/14/23 11:27**

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN
Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

FS02@6'
2302295-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.41	0.237	0.200	mg/kg dry	1	BGB0777	02/24/23	02/25/23	EPA 6020B	
Barium	77.2	0.474	0.374	"	"	"	"	"	"	
Cadmium	0.156	0.237	0.00853	"	"	"	"	"	"	
Copper	5.65	0.474	0.0247	"	"	"	"	"	"	
Lead	6.53	0.237	0.0651	"	"	"	"	"	"	
Nickel	5.23	0.474	0.0722	"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	
Silver	0.0189	0.0237	0.00316	"	"	"	"	"	"	
Zinc	19.2	0.474	0.315	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/14/23 11:27**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0780	02/24/23	02/24/23	EPA 7196A	

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

Date Sampled: **02/14/23 11:27**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	387	0.0592		mg/L dry	1	BGB0620	02/20/23	02/22/23	EPA 6020B	
Magnesium	54.9	0.0592		"	"	"	"	"	"	
Sodium	98.5	0.0592		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/14/23 11:27**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.24	0.00100		units	1	BGB0704	02/22/23	02/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

FS02@6'
2302295-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 11:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.5			%	1	BGB0514	02/16/23	02/17/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/14/23 11:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.444	0.0100		mmhos/cm	1	BGB0642	02/21/23	02/21/23	EPA 120.1	

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

Date Sampled: **02/14/23 11:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	9.75			pH Units	1	BGB0641	02/21/23	02/21/23	EPA 9045D	

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Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN
Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

AST01@0.5'
2302295-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0480	02/16/23	02/16/23	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: **02/14/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		77.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		86.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0482	02/16/23	02/16/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		117 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

AST01@0.5'
2302295-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 11:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0574	02/20/23	02/20/23	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: **02/14/23 11:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		68.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		61.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/14/23 11:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.343	0.0100		mg/L	1	BGB0522	02/17/23	02/19/23	EPA 6020B	

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

Date Sampled: **02/14/23 11:30**

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

AST01@0.5'
2302295-09 (Soil)

Summit Scientific

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

Calcium	134	0.0558	mg/L dry	1	BGB0620	02/20/23	02/22/23	EPA 6020B
Magnesium	38.0	0.0558	"	"	"	"	"	"
Sodium	10.7	0.0558	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **02/14/23 11:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.210	0.00100		units	1	BGB0704	02/22/23	02/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 11:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.6			%	1	BGB0514	02/16/23	02/17/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/14/23 11:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.331	0.0100		mmhos/cm	1	BGB0642	02/21/23	02/21/23	EPA 120.1	

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

Date Sampled: **02/14/23 11:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.08			pH Units	1	BGB0641	02/21/23	02/21/23	EPA 9045D	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

AST02@0.5'
2302295-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 11:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0480	02/16/23	02/16/23	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: **02/14/23 11:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		81.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		88.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 11:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0482	02/16/23	02/16/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 11:32**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN
Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

AST02@0.5'
2302295-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 11:32**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0574	02/20/23	02/20/23	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: **02/14/23 11:32**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		55.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		58.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/14/23 11:32**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.209	0.0100		mg/L	1	BGB0522	02/17/23	02/19/23	EPA 6020B	

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

Date Sampled: **02/14/23 11:32**

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

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

AST02@0.5'
2302295-10 (Soil)

Summit Scientific

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

Calcium	38.1	0.0557	mg/L dry	1	BGB0620	02/20/23	02/22/23	EPA 6020B
Magnesium	12.5	0.0557	"	"	"	"	"	"
Sodium	22.8	0.0557	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **02/14/23 11:32**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.819	0.00100		units	1	BGB0704	02/22/23	02/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 11:32**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.8			%	1	BGB0514	02/16/23	02/17/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/14/23 11:32**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.913	0.0100		mmhos/cm	1	BGB0642	02/21/23	02/21/23	EPA 120.1	

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

Date Sampled: **02/14/23 11:32**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.71			pH Units	1	BGB0641	02/21/23	02/21/23	EPA 9045D	

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

AST03@0.5'
2302295-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 11:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0480	02/16/23	02/16/23	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: **02/14/23 11:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		75.7 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		87.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 11:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0482	02/16/23	02/16/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 11:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		117 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

AST03@0.5'
2302295-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 11:34**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0574	02/20/23	02/20/23	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: **02/14/23 11:34**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		81.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		75.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/14/23 11:34**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.214	0.0100		mg/L	1	BGB0522	02/17/23	02/19/23	EPA 6020B	

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

Date Sampled: **02/14/23 11:34**

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

AST03@0.5'
2302295-11 (Soil)

Summit Scientific

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

Calcium	29.6	0.0544	mg/L dry	1	BGB0620	02/20/23	02/22/23	EPA 6020B
Magnesium	8.59	0.0544	"	"	"	"	"	"
Sodium	10.5	0.0544	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **02/14/23 11:34**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.437	0.00100		units	1	BGB0704	02/22/23	02/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 11:34**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.0			%	1	BGB0514	02/16/23	02/17/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/14/23 11:34**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.407	0.0100		mmhos/cm	1	BGB0642	02/21/23	02/21/23	EPA 120.1	

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

Date Sampled: **02/14/23 11:34**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.96			pH Units	1	BGB0641	02/21/23	02/21/23	EPA 9045D	

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

AST04@0.5'
2302295-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0480	02/16/23	02/16/23	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: **02/14/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		78.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		86.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0482	02/16/23	02/16/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		122 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

AST04@0.5'
2302295-12 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0574	02/20/23	02/20/23	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: **02/14/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		80.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		67.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/14/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.346	0.0100		mg/L	1	BGB0522	02/17/23	02/19/23	EPA 6020B	

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

Date Sampled: **02/14/23 11:36**

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

AST04@0.5'
2302295-12 (Soil)

Summit Scientific

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

Calcium	77.7	0.0553	mg/L dry	1	BGB0620	02/20/23	02/22/23	EPA 6020B
Magnesium	26.2	0.0553	"	"	"	"	"	"
Sodium	42.1	0.0553	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **02/14/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.05	0.00100		units	1	BGB0704	02/22/23	02/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.4			%	1	BGB0514	02/16/23	02/17/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/14/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.60	0.0100		mmhos/cm	1	BGB0642	02/21/23	02/21/23	EPA 120.1	

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

Date Sampled: **02/14/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.88			pH Units	1	BGB0641	02/21/23	02/21/23	EPA 9045D	

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN
Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SEP01-FL@4'
2302295-13 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 12:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0480	02/16/23	02/16/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	0.021	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.019	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.011	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.2	0.50		"	"	"	"	"	"	

Date Sampled: **02/14/23 12:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		84.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		89.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 12:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	81	50		mg/kg	1	BGB0482	02/16/23	02/16/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 12:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		123 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SEP01-FL@4'
2302295-13 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 12:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0574	02/20/23	02/21/23	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: **02/14/23 12:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		55.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		47.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/14/23 12:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.126	0.0100		mg/L	1	BGB0522	02/17/23	02/19/23	EPA 6020B	

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

Date Sampled: **02/14/23 12:15**

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SEP01-FL@4'
2302295-13 (Soil)

Summit Scientific

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

Calcium	29.4	0.0572	mg/L dry	1	BGB0620	02/20/23	02/22/23	EPA 6020B
Magnesium	6.75	0.0572	"	"	"	"	"	"
Sodium	5.62	0.0572	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **02/14/23 12:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.243	0.00100		units	1	BGB0704	02/22/23	02/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 12:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.5			%	1	BGB0514	02/16/23	02/17/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/14/23 12:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.256	0.0100		mmhos/cm	1	BGB0642	02/21/23	02/21/23	EPA 120.1	

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

Date Sampled: **02/14/23 12:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.01			pH Units	1	BGB0641	02/21/23	02/21/23	EPA 9045D	

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SEP01-DL@4'
2302295-14 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/14/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0480	02/16/23	02/16/23	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: **02/14/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		85.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		89.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/14/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	94	50		mg/kg	1	BGB0482	02/16/23	02/16/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/14/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		122 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SEP01-DL@4'
2302295-14 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/14/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BGB0574	02/20/23	02/21/23	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: **02/14/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		65.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		49.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/14/23 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.158	0.0100		mg/L	1	BGB0522	02/17/23	02/19/23	EPA 6020B	

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

Date Sampled: **02/14/23 12:20**

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

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

SEP01-DL@4'
2302295-14 (Soil)

Summit Scientific

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

Calcium	47.2	0.0583	mg/L dry	1	BGB0620	02/20/23	02/22/23	EPA 6020B
Magnesium	11.3	0.0583	"	"	"	"	"	"
Sodium	91.6	0.0583	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **02/14/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.11	0.00100		units	1	BGB0704	02/22/23	02/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/14/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.8			%	1	BGB0514	02/16/23	02/17/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/14/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.08	0.0100		mmhos/cm	1	BGB0642	02/21/23	02/21/23	EPA 120.1	

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

Date Sampled: **02/14/23 12:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.87			pH Units	1	BGB0641	02/21/23	02/21/23	EPA 9045D	

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Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

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 BGB0480 - EPA 5030 Soil MS

Blank (BGB0480-BLK1)

Prepared & Analyzed: 02/16/23

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	0.0347		"	0.0400		86.8	50-150			
Surrogate: Toluene-d8	0.0357		"	0.0400		89.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	50-150			

LCS (BGB0480-BS1)

Prepared & Analyzed: 02/16/23

Benzene	0.0946	0.0020	mg/kg	0.125		75.7	70-130			
Toluene	0.111	0.0050	"	0.125		88.7	70-130			
Ethylbenzene	0.139	0.0050	"	0.125		111	70-130			
m,p-Xylene	0.316	0.010	"	0.250		126	70-130			
o-Xylene	0.145	0.0050	"	0.125		116	70-130			
1,2,4-Trimethylbenzene	0.156	0.0050	"	0.125		125	70-130			
1,3,5-Trimethylbenzene	0.160	0.0050	"	0.125		128	70-130			
Naphthalene	0.117	0.0038	"	0.125		93.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0345		"	0.0400		86.3	50-150			
Surrogate: Toluene-d8	0.0357		"	0.0400		89.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	50-150			

Matrix Spike (BGB0480-MS1)

Source: 2302281-01

Prepared & Analyzed: 02/16/23

Benzene	0.0935	0.0020	mg/kg	0.125	ND	74.8	70-130			
Toluene	0.112	0.0050	"	0.125	ND	89.2	70-130			
Ethylbenzene	0.144	0.0050	"	0.125	ND	115	70-130			
m,p-Xylene	0.322	0.010	"	0.250	ND	129	70-130			
o-Xylene	0.149	0.0050	"	0.125	ND	119	70-130			
1,2,4-Trimethylbenzene	0.157	0.0050	"	0.125	ND	126	70-130			
1,3,5-Trimethylbenzene	0.155	0.0050	"	0.125	ND	124	70-130			
Naphthalene	0.133	0.0038	"	0.125	ND	107	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0330		"	0.0400		82.6	50-150			
Surrogate: Toluene-d8	0.0356		"	0.0400		89.1	50-150			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.4	50-150			

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Broomfield CO, 80020

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

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 BGB0480 - EPA 5030 Soil MS

Matrix Spike Dup (BGB0480-MSD1)

Source: 2302281-01

Prepared & Analyzed: 02/16/23

Benzene	0.0922	0.0020	mg/kg	0.125	ND	73.8	70-130	1.45	30	
Toluene	0.110	0.0050	"	0.125	ND	87.8	70-130	1.55	30	
Ethylbenzene	0.143	0.0050	"	0.125	ND	114	70-130	0.901	30	
m,p-Xylene	0.318	0.010	"	0.250	ND	127	70-130	1.15	30	
o-Xylene	0.146	0.0050	"	0.125	ND	117	70-130	1.95	30	
1,2,4-Trimethylbenzene	0.156	0.0050	"	0.125	ND	125	70-130	0.786	30	
1,3,5-Trimethylbenzene	0.163	0.0050	"	0.125	ND	130	70-130	5.00	30	
Naphthalene	0.133	0.0038	"	0.125	ND	106	70-130	0.248	30	
Surrogate: 1,2-Dichloroethane-d4	0.0348		"	0.0400		86.9	50-150			
Surrogate: Toluene-d8	0.0355		"	0.0400		88.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0381		"	0.0400		95.2	50-150			

Batch BGB0773 - EPA 5030 Soil MS

Blank (BGB0773-BLK1)

Prepared & Analyzed: 02/24/23

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	0.0297		"	0.0400		74.3	50-150			
Surrogate: Toluene-d8	0.0379		"	0.0400		94.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0380		"	0.0400		94.9	50-150			

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN
Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

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 BGB0773 - EPA 5030 Soil MS

LCS (BGB0773-BS1)

Prepared & Analyzed: 02/24/23

Benzene	0.0903	0.0020	mg/kg	0.100		90.3	70-130			
Toluene	0.0857	0.0050	"	0.100		85.7	70-130			
Ethylbenzene	0.108	0.0050	"	0.100		108	70-130			
m,p-Xylene	0.216	0.010	"	0.200		108	70-130			
o-Xylene	0.0984	0.0050	"	0.100		98.4	70-130			
1,2,4-Trimethylbenzene	0.0990	0.0050	"	0.100		99.0	70-130			
1,3,5-Trimethylbenzene	0.106	0.0050	"	0.100		106	70-130			
Naphthalene	0.0741	0.0038	"	0.100		74.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0271		"	0.0400		67.8	50-150			
Surrogate: Toluene-d8	0.0367		"	0.0400		91.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0372		"	0.0400		93.0	50-150			

Matrix Spike (BGB0773-MS1)

Source: 2302295-02

Prepared & Analyzed: 02/24/23

Benzene	0.0854	0.0020	mg/kg	0.100	ND	85.4	70-130			
Toluene	0.0841	0.0050	"	0.100	ND	84.1	70-130			
Ethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130			
m,p-Xylene	0.212	0.010	"	0.200	ND	106	70-130			
o-Xylene	0.0981	0.0050	"	0.100	ND	98.1	70-130			
1,2,4-Trimethylbenzene	0.0986	0.0050	"	0.100	ND	98.6	70-130			
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130			
Naphthalene	0.0747	0.0038	"	0.100	ND	74.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0265		"	0.0400		66.2	50-150			
Surrogate: Toluene-d8	0.0363		"	0.0400		90.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0372		"	0.0400		93.0	50-150			

Matrix Spike Dup (BGB0773-MSD1)

Source: 2302295-02

Prepared & Analyzed: 02/24/23

Benzene	0.0906	0.0020	mg/kg	0.100	ND	90.6	70-130	5.97	30	
Toluene	0.0886	0.0050	"	0.100	ND	88.6	70-130	5.24	30	
Ethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130	2.29	30	
m,p-Xylene	0.218	0.010	"	0.200	ND	109	70-130	2.34	30	
o-Xylene	0.101	0.0050	"	0.100	ND	101	70-130	2.92	30	
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130	2.61	30	
1,3,5-Trimethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130	2.58	30	
Naphthalene	0.0813	0.0038	"	0.100	ND	81.3	70-130	8.46	30	
Surrogate: 1,2-Dichloroethane-d4	0.0295		"	0.0400		73.8	50-150			
Surrogate: Toluene-d8	0.0367		"	0.0400		91.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0372		"	0.0400		93.1	50-150			

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN
Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

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 BGB0482 - EPA 3550A

Blank (BGB0482-BLK1)

Prepared & Analyzed: 02/16/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	7.32		"	12.5		58.6	30-150			

LCS (BGB0482-BS1)

Prepared & Analyzed: 02/16/23

C10-C28 (DRO)	397	50	mg/kg	500		79.4	70-130			
Surrogate: o-Terphenyl	9.46		"	12.5		75.7	30-150			

Matrix Spike (BGB0482-MS1)

Source: 2302281-01

Prepared & Analyzed: 02/16/23

C10-C28 (DRO)	425	50	mg/kg	500	9.97	82.9	70-130			
Surrogate: o-Terphenyl	8.94		"	12.5		71.5	30-150			

Matrix Spike Dup (BGB0482-MSD1)

Source: 2302281-01

Prepared & Analyzed: 02/16/23

C10-C28 (DRO)	446	50	mg/kg	500	9.97	87.1	70-130	4.81	20	
Surrogate: o-Terphenyl	8.79		"	12.5		70.3	30-150			

Batch BGB0774 - EPA 3550A

Blank (BGB0774-BLK1)

Prepared & Analyzed: 02/24/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.0		"	12.5		95.7	30-150			

LCS (BGB0774-BS1)

Prepared & Analyzed: 02/24/23

C10-C28 (DRO)	505	50	mg/kg	500		101	70-130			
Surrogate: o-Terphenyl	12.1		"	12.5		96.7	30-150			

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Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN
Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGB0774 - EPA 3550A

Matrix Spike (BGB0774-MS1)		Source: 2302295-02			Prepared & Analyzed: 02/24/23					
C10-C28 (DRO)	547	50	mg/kg	500	28.3	104	70-130			
Surrogate: o-Terphenyl	12.0		"	12.5		95.8	30-150			
Matrix Spike Dup (BGB0774-MSD1)		Source: 2302295-02			Prepared & Analyzed: 02/24/23					
C10-C28 (DRO)	519	50	mg/kg	500	28.3	98.1	70-130	5.22	20	
Surrogate: o-Terphenyl	11.7		"	12.5		93.3	30-150			

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Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

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 BGB0574 - EPA 5030 Soil MS

Blank (BGB0574-BLK1)

Prepared & Analyzed: 02/20/23

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	0.0323		"	0.0333		96.8	40-150			
Surrogate: Fluoranthene-d10	0.0334		"	0.0333		100	40-150			

LCS (BGB0574-BS1)

Prepared & Analyzed: 02/20/23

Acenaphthene	0.0318	0.00500	mg/kg	0.0333		95.5	31-137			
Anthracene	0.0318	0.00500	"	0.0333		95.3	30-120			
Benzo (a) anthracene	0.0309	0.00500	"	0.0333		92.7	30-120			
Benzo (a) pyrene	0.0312	0.00500	"	0.0333		93.6	30-120			
Benzo (b) fluoranthene	0.0319	0.00500	"	0.0333		95.8	30-120			
Benzo (k) fluoranthene	0.0326	0.00500	"	0.0333		97.7	30-120			
Chrysene	0.0315	0.00500	"	0.0333		94.5	30-120			
Dibenz (a,h) anthracene	0.0260	0.00500	"	0.0333		78.1	30-120			
Fluoranthene	0.0314	0.00500	"	0.0333		94.1	30-120			
Fluorene	0.0324	0.00500	"	0.0333		97.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0311	0.00500	"	0.0333		93.2	30-120			
Pyrene	0.0345	0.00500	"	0.0333		104	35-142			
1-Methylnaphthalene	0.0310	0.00500	"	0.0333		92.9	35-142			
2-Methylnaphthalene	0.0289	0.00500	"	0.0333		86.7	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0307		"	0.0333		92.2	40-150			
Surrogate: Fluoranthene-d10	0.0315		"	0.0333		94.4	40-150			

Summit Scientific

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN
Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGB0574 - EPA 5030 Soil MS

Matrix Spike (BGB0574-MS1)

Source: 2302295-06

Prepared & Analyzed: 02/20/23

Acenaphthene	0.0209	0.00500	mg/kg	0.0333	ND	62.8	31-137		
Anthracene	0.0202	0.00500	"	0.0333	ND	60.6	30-120		
Benzo (a) anthracene	0.0212	0.00500	"	0.0333	ND	63.5	30-120		
Benzo (a) pyrene	0.0200	0.00500	"	0.0333	ND	59.9	30-120		
Benzo (b) fluoranthene	0.0209	0.00500	"	0.0333	ND	62.6	30-120		
Benzo (k) fluoranthene	0.0202	0.00500	"	0.0333	ND	60.6	30-120		
Chrysene	0.0200	0.00500	"	0.0333	ND	60.1	30-120		
Dibenz (a,h) anthracene	0.0156	0.00500	"	0.0333	ND	46.8	30-120		
Fluoranthene	0.0211	0.00500	"	0.0333	ND	63.3	30-120		
Fluorene	0.0210	0.00500	"	0.0333	ND	63.1	30-120		
Indeno (1,2,3-cd) pyrene	0.0194	0.00500	"	0.0333	ND	58.2	30-120		
Pyrene	0.0223	0.00500	"	0.0333	ND	67.0	35-142		
1-Methylnaphthalene	0.0253	0.00500	"	0.0333	ND	76.0	15-130		
2-Methylnaphthalene	0.0180	0.00500	"	0.0333	ND	53.9	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0245		"	0.0333		73.5	40-150		
Surrogate: Fluoranthene-d10	0.0214		"	0.0333		64.1	40-150		

Matrix Spike Dup (BGB0574-MSD1)

Source: 2302295-06

Prepared & Analyzed: 02/20/23

Acenaphthene	0.0227	0.00500	mg/kg	0.0333	ND	68.2	31-137	8.19	30
Anthracene	0.0205	0.00500	"	0.0333	ND	61.5	30-120	1.46	30
Benzo (a) anthracene	0.0226	0.00500	"	0.0333	ND	67.7	30-120	6.34	30
Benzo (a) pyrene	0.0217	0.00500	"	0.0333	ND	65.1	30-120	8.23	30
Benzo (b) fluoranthene	0.0229	0.00500	"	0.0333	ND	68.7	30-120	9.33	30
Benzo (k) fluoranthene	0.0221	0.00500	"	0.0333	ND	66.4	30-120	9.13	30
Chrysene	0.0217	0.00500	"	0.0333	ND	65.2	30-120	8.10	30
Dibenz (a,h) anthracene	0.0167	0.00500	"	0.0333	ND	50.1	30-120	6.71	30
Fluoranthene	0.0221	0.00500	"	0.0333	ND	66.2	30-120	4.52	30
Fluorene	0.0218	0.00500	"	0.0333	ND	65.3	30-120	3.45	30
Indeno (1,2,3-cd) pyrene	0.0193	0.00500	"	0.0333	ND	57.9	30-120	0.450	30
Pyrene	0.0239	0.00500	"	0.0333	ND	71.8	35-142	6.86	30
1-Methylnaphthalene	0.0203	0.00500	"	0.0333	ND	60.9	15-130	22.0	50
2-Methylnaphthalene	0.0210	0.00500	"	0.0333	ND	63.1	15-130	15.6	50
Surrogate: 2-Methylnaphthalene-d10	0.0217		"	0.0333		65.0	40-150		
Surrogate: Fluoranthene-d10	0.0219		"	0.0333		65.8	40-150		

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

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 BGB0765 - EPA 5030 Soil MS

Blank (BGB0765-BLK1)

Prepared & Analyzed: 02/24/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0333		"	0.0333		99.9	40-150			
Surrogate: Fluoranthene-d10	0.0377		"	0.0333		113	40-150			

LCS (BGB0765-BS1)

Prepared & Analyzed: 02/24/23

Acenaphthene	0.0337	0.00500	mg/kg	0.0333	101	31-137
Anthracene	0.0334	0.00500	"	0.0333	100	30-120
Benzo (a) anthracene	0.0358	0.00500	"	0.0333	107	30-120
Benzo (a) pyrene	0.0370	0.00500	"	0.0333	111	30-120
Benzo (b) fluoranthene	0.0365	0.00500	"	0.0333	110	30-120
Benzo (k) fluoranthene	0.0365	0.00500	"	0.0333	109	30-120
Chrysene	0.0352	0.00500	"	0.0333	105	30-120
Dibenz (a,h) anthracene	0.0298	0.00500	"	0.0333	89.4	30-120
Fluoranthene	0.0335	0.00500	"	0.0333	101	30-120
Fluorene	0.0337	0.00500	"	0.0333	101	30-120
Indeno (1,2,3-cd) pyrene	0.0334	0.00500	"	0.0333	100	30-120
Pyrene	0.0378	0.00500	"	0.0333	113	35-142
1-Methylnaphthalene	0.0366	0.00500	"	0.0333	110	35-142
2-Methylnaphthalene	0.0325	0.00500	"	0.0333	97.6	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0347		"	0.0333	104	40-150
Surrogate: Fluoranthene-d10	0.0350		"	0.0333	105	40-150

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN
Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

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 BGB0765 - EPA 5030 Soil MS

Matrix Spike (BGB0765-MS1)			Source: 2302295-01			Prepared & Analyzed: 02/24/23					
Acenaphthene	0.0185	0.00500	mg/kg	0.0333	ND	55.4	31-137				
Anthracene	0.0152	0.00500	"	0.0333	ND	45.5	30-120				
Benzo (a) anthracene	0.0159	0.00500	"	0.0333	ND	47.8	30-120				
Benzo (a) pyrene	0.0171	0.00500	"	0.0333	ND	51.2	30-120				
Benzo (b) fluoranthene	0.0182	0.00500	"	0.0333	ND	54.7	30-120				
Benzo (k) fluoranthene	0.0175	0.00500	"	0.0333	ND	52.4	30-120				
Chrysene	0.0151	0.00500	"	0.0333	ND	45.4	30-120				
Dibenz (a,h) anthracene	0.0154	0.00500	"	0.0333	ND	46.2	30-120				
Fluoranthene	0.0156	0.00500	"	0.0333	ND	46.9	30-120				
Fluorene	0.0174	0.00500	"	0.0333	ND	52.1	30-120				
Indeno (1,2,3-cd) pyrene	0.0169	0.00500	"	0.0333	ND	50.6	30-120				
Pyrene	0.0181	0.00500	"	0.0333	ND	54.3	35-142				
1-Methylnaphthalene	0.0224	0.00500	"	0.0333	ND	67.1	15-130				
2-Methylnaphthalene	0.0188	0.00500	"	0.0333	ND	56.4	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0231		"	0.0333		69.2	40-150				
Surrogate: Fluoranthene-d10	0.0160		"	0.0333		48.0	40-150				

Matrix Spike Dup (BGB0765-MSD1)			Source: 2302295-01			Prepared & Analyzed: 02/24/23					
Acenaphthene	0.0204	0.00500	mg/kg	0.0333	ND	61.2	31-137	9.79	30		
Anthracene	0.0177	0.00500	"	0.0333	ND	53.0	30-120	15.2	30		
Benzo (a) anthracene	0.0188	0.00500	"	0.0333	ND	56.5	30-120	16.8	30		
Benzo (a) pyrene	0.0170	0.00500	"	0.0333	ND	51.0	30-120	0.346	30		
Benzo (b) fluoranthene	0.0178	0.00500	"	0.0333	ND	53.4	30-120	2.26	30		
Benzo (k) fluoranthene	0.0171	0.00500	"	0.0333	ND	51.4	30-120	1.95	30		
Chrysene	0.0179	0.00500	"	0.0333	ND	53.7	30-120	16.6	30		
Dibenz (a,h) anthracene	0.0159	0.00500	"	0.0333	ND	47.8	30-120	3.50	30		
Fluoranthene	0.0181	0.00500	"	0.0333	ND	54.3	30-120	14.5	30		
Fluorene	0.0190	0.00500	"	0.0333	ND	57.1	30-120	9.17	30		
Indeno (1,2,3-cd) pyrene	0.0159	0.00500	"	0.0333	ND	47.6	30-120	6.09	30		
Pyrene	0.0201	0.00500	"	0.0333	ND	60.2	35-142	10.4	30		
1-Methylnaphthalene	0.0236	0.00500	"	0.0333	ND	70.9	15-130	5.52	50		
2-Methylnaphthalene	0.0197	0.00500	"	0.0333	ND	59.2	15-130	4.79	50		
Surrogate: 2-Methylnaphthalene-d10	0.0229		"	0.0333		68.7	40-150				
Surrogate: Fluoranthene-d10	0.0173		"	0.0333		51.9	40-150				

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

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 BGB0522 - EPA 3050B

Blank (BGB0522-BLK1)

Prepared: 02/17/23 Analyzed: 02/19/23

Boron ND 0.0100 mg/L

LCS (BGB0522-BS1)

Prepared: 02/17/23 Analyzed: 02/19/23

Boron 5.77 0.0100 mg/L 5.00 115 80-120

Duplicate (BGB0522-DUP1)

Source: 2302294-01

Prepared: 02/17/23 Analyzed: 02/19/23

Boron 0.0799 0.0100 mg/L 0.0624 24.6 20 QR-03

Matrix Spike (BGB0522-MS1)

Source: 2302294-01

Prepared: 02/17/23 Analyzed: 02/19/23

Boron 5.81 0.0100 mg/L 5.00 0.0624 115 75-125

Matrix Spike Dup (BGB0522-MSD1)

Source: 2302294-01

Prepared: 02/17/23 Analyzed: 02/19/23

Boron 5.96 0.0100 mg/L 5.00 0.0624 118 75-125 2.41 25

Batch BGB0818 - EPA 3050B

Blank (BGB0818-BLK1)

Prepared: 02/27/23 Analyzed: 03/01/23

Boron ND 0.0100 mg/L

LCS (BGB0818-BS1)

Prepared: 02/27/23 Analyzed: 03/01/23

Boron 5.89 0.0100 mg/L 5.00 118 80-120

Duplicate (BGB0818-DUP1)

Source: 2302295-01

Prepared: 02/27/23 Analyzed: 03/01/23

Boron 0.0619 0.0100 mg/L 0.0704 12.7 20

Matrix Spike (BGB0818-MS1)

Source: 2302295-01

Prepared: 02/27/23 Analyzed: 03/01/23

Boron 5.97 0.0100 mg/L 5.00 0.0704 118 75-125

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

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

Summit Scientific

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

Batch BGB0818 - EPA 3050B

Matrix Spike Dup (BGB0818-MSD1)

Source: 2302295-01

Prepared: 02/27/23 Analyzed: 03/01/23

Boron	6.09	0.0100	mg/L	5.00	0.0704	120	75-125	2.09	25
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN
Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

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 BGB0777 - EPA 3050B

Blank (BGB0777-BLK1)

Prepared: 02/24/23 Analyzed: 02/25/23

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 (BGB0777-BS1)

Prepared: 02/24/23 Analyzed: 02/25/23

Arsenic	43.8	0.200	mg/kg wet	40.0	109	80-120
Barium	35.3	0.400	"	40.0	88.2	80-120
Cadmium	1.89	0.200	"	2.00	94.6	80-120
Copper	43.6	0.400	"	40.0	109	80-120
Lead	19.2	0.200	"	20.0	95.8	80-120
Nickel	43.0	0.400	"	40.0	107	80-120
Selenium	4.79	0.260	"	4.00	120	80-120
Silver	1.98	0.0200	"	2.00	99.2	80-120
Zinc	42.0	0.400	"	40.0	105	80-120

Duplicate (BGB0777-DUP1)

Source: 2302160-05

Prepared: 02/24/23 Analyzed: 02/25/23

Arsenic	1.70	0.231	mg/kg dry	1.54	9.99	20
Barium	127	0.463	"	111	13.2	20
Cadmium	0.256	0.231	"	0.247	3.50	20
Copper	4.09	0.463	"	3.96	3.25	20
Lead	8.14	0.231	"	8.06	0.914	20
Nickel	4.08	0.463	"	3.98	2.51	20
Selenium	0.192	0.260	"	0.177	7.78	20
Silver	0.0190	0.0231	"	0.0185	2.47	20
Zinc	14.4	0.463	"	14.5	0.594	20

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

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 BGB0777 - EPA 3050B

Matrix Spike (BGB0777-MS1)		Source: 2302160-05			Prepared: 02/24/23		Analyzed: 02/25/23			
Arsenic	51.2	0.231	mg/kg dry	46.3	1.54	107	75-125			
Barium	179	0.463	"	46.3	111	147	75-125			QM-05
Cadmium	2.44	0.231	"	2.31	0.247	94.6	75-125			
Copper	42.8	0.463	"	46.3	3.96	84.1	75-125			
Lead	29.8	0.231	"	23.1	8.06	93.8	75-125			
Nickel	42.8	0.463	"	46.3	3.98	83.9	75-125			
Selenium	5.73	0.260	"	4.63	0.177	120	75-125			
Silver	1.78	0.0231	"	2.31	0.0185	76.0	75-125			
Zinc	52.3	0.463	"	46.3	14.5	81.6	75-125			

Matrix Spike Dup (BGB0777-MSD1)		Source: 2302160-05			Prepared: 02/24/23		Analyzed: 02/25/23			
Arsenic	53.1	0.231	mg/kg dry	46.3	1.54	111	75-125	3.59	25	
Barium	186	0.463	"	46.3	111	161	75-125	3.55	25	QM-05
Cadmium	2.26	0.231	"	2.31	0.247	87.2	75-125	7.34	25	
Copper	39.6	0.463	"	46.3	3.96	77.0	75-125	7.95	25	
Lead	28.8	0.231	"	23.1	8.06	89.9	75-125	3.13	25	
Nickel	39.7	0.463	"	46.3	3.98	77.2	75-125	7.44	25	
Selenium	5.54	0.260	"	4.63	0.177	116	75-125	3.47	25	
Silver	2.04	0.0231	"	2.31	0.0185	87.3	75-125	13.7	25	
Zinc	52.0	0.463	"	46.3	14.5	81.1	75-125	0.483	25	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

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 BGB0780 - 3060A Mod

Blank (BGB0780-BLK1)

Prepared & Analyzed: 02/24/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGB0780-BS1)

Prepared & Analyzed: 02/24/23

Chromium, Hexavalent 27.0 0.30 mg/kg wet 25.0 108 80-120

Duplicate (BGB0780-DUP1)

Source: 2302393-01

Prepared & Analyzed: 02/24/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGB0780-MS1)

Source: 2302393-01

Prepared & Analyzed: 02/24/23

Chromium, Hexavalent 31.3 0.30 mg/kg dry 31.3 ND 100 75-125

Matrix Spike Dup (BGB0780-MSD1)

Source: 2302393-01

Prepared & Analyzed: 02/24/23

Chromium, Hexavalent 31.3 0.30 mg/kg dry 31.3 ND 100 75-125 0.00 20

Summit Scientific

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

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 BGB0620 - General Preparation

Blank (BGB0620-BLK1)

Prepared: 02/20/23 Analyzed: 02/22/23

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

LCS (BGB0620-BS1)

Prepared: 02/20/23 Analyzed: 02/22/23

Calcium	5.59	0.0500	mg/L wet	5.00	112	70-130
Magnesium	5.05	0.0500	"	5.00	101	70-130
Sodium	4.94	0.0500	"	5.00	98.9	70-130

Batch BGB0827 - General Preparation

Blank (BGB0827-BLK1)

Prepared: 02/27/23 Analyzed: 03/01/23

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

LCS (BGB0827-BS1)

Prepared: 02/27/23 Analyzed: 03/01/23

Calcium	5.37	0.0500	mg/L wet	5.00	107	70-130
Magnesium	5.99	0.0500	"	5.00	120	70-130
Sodium	6.03	0.0500	"	5.00	121	70-130

Summit Scientific

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

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

Summit Scientific

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

Batch BGB0514 - General Preparation


Duplicate (BGB0514-DUP1)		Source: 2212062-01			Prepared: 02/16/23 Analyzed: 02/17/23						
% Solids	96.0		%		96.0			0.0430		20	

Batch BGB0820 - General Preparation

Duplicate (BGB0820-DUP1)		Source: 2302295-01			Prepared & Analyzed: 02/27/23						
% Solids	88.1		%		87.6			0.573		20	

Summit Scientific

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

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 BGB0642 - General Preparation

Blank (BGB0642-BLK1)

Prepared & Analyzed: 02/21/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGB0642-BS1)

Prepared & Analyzed: 02/21/23

Specific Conductance (EC) 0.146 0.0100 mmhos/cm 0.150 97.7 95-105

Duplicate (BGB0642-DUP1)

Source: 2302269-01

Prepared & Analyzed: 02/21/23

Specific Conductance (EC) 0.750 0.0100 mmhos/cm 0.758 1.17 20

Batch BGB0864 - General Preparation

Blank (BGB0864-BLK1)

Prepared & Analyzed: 02/28/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGB0864-BS1)

Prepared & Analyzed: 02/28/23

Specific Conductance (EC) 0.145 0.0100 mmhos/cm 0.150 96.8 95-105

Duplicate (BGB0864-DUP1)

Source: 2302295-01

Prepared & Analyzed: 02/28/23

Specific Conductance (EC) 0.228 0.0100 mmhos/cm 0.236 3.62 20

Summit Scientific

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN

Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

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

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

Batch BGB0641 - General Preparation

LCS (BGB0641-BS1)

Prepared & Analyzed: 02/21/23

pH	9.17		pH Units	9.18		99.9	95-105		
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Duplicate (BGB0641-DUP1)

Source: 2302269-01

Prepared & Analyzed: 02/21/23

pH	8.69		pH Units	8.79			1.14	20	
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Batch BGB0866 - General Preparation

LCS (BGB0866-BS1)

Prepared & Analyzed: 02/28/23

pH	9.02		pH Units				95-105		
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Duplicate (BGB0866-DUP1)

Source: 2302295-01

Prepared & Analyzed: 02/28/23

pH	7.69		pH Units	7.63			0.783	20	
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Summit Scientific

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

Project: Noble - Thompson D20-31D

Project Number: UWRWE-A2800-ABN
Project Manager: Jacob Whritenour

Reported:
03/02/23 11:15

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
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