Flowline Closure Checklist

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

Additional Attachments:		Tank Battery Closure		Wellhead Closure		Pit Closure		Partially Buried Vault Closure

Site Name & COGCC Facility Number: Foos C27-18	Date: 8/25/2023	Remediation Project #: 28232
Associated Wells:	Age of Site:	Number of Photos Attached: 2

Starting point: (GPS coordinates and descriptions)
40.287198/ -104.536543

End point: (GPS coordinates and descriptions)
40.285692/ -104.529413

USCS Soil Type: SW	Estimated Depth to Groundwater: > 4'

Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)

None observed

Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)

None observed

Flowlines

Flowline type	Oil / Gas / Water			
Depth	4'			
Age				
Length	2580'			
Construction Material	steel			
Were flowlines pulled?	no			
Visual Integrity of lines	good			
Visual impacts if trenched	none observed			
PID Readings if trenched	2.2 - 5.3			
Sample taken? Location/Sample ID#	yes, see below			
Photo Number(s)	1, 2			

Other observations regarding on location flowlines:
Samples were taken at the wellhead (FL01-A@4') and at the separator (FL01-B@3').

The flowline was ABIP for now due to crops, and a future partial removal is planned for the fall / winter.

Summary

Was impacted soil identified? No

Total number of samples field screened: 2	Total number of samples collected: 2
Highest PID Reading: 5.3	Total number of samples submitted to lab for analysis: 2

If more than 10 cubic yards of impacted soil were observed:

Vertical extent:	Estimated spill volume:
Lateral extent:	Volume of soil removed:

Is additional investigation required?

Was groundwater encountered during the investigation?
No

Measured depth to groundwater:	Was remedial groundwater removal conducted?
Date Groundwater was encountered:	Commencement date of removal:
Sheen on groundwater?	Volume of groundwater removed prior to sampling:
Free product observed?	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:	

TASMAN GEOSCIENCES

Photographic Log

Equipment ID: FL01-A@4'	Equipment Type: Flowline	
Material: Steel	Volume:	Contents: Oil/Gas/Water
Notes/Conditions:		

Equipment ID: FL01-B@3'	Equipment Type: Flowline	
Material: Steel	Volume:	Contents: Oil/Gas/Water
Notes/Conditions: Facing North.		

TABLE 1
SOIL SAMPLE LOCATIONS
NOBLE ENERGY, INC. - FOOS C27-18

Soil Sample ID	Date	PID (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude[1]	Longitude	PDOP
FL01-A@4'	08/25/23	5.3	No Staining	No Odor	Lab	40.287190	-104.536543	0.9
FL01-B@3'	08/25/23	2.2	No Staining	No Odor	Lab	40.285694	-104.529412	1.2

Notes:

PID = Photoionization detector

ppm = parts per million

PDOP = Position dilution of precision

HC = Hydrocarbon

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

TABLE 2
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - FOOS C27-18

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**
FL01-A@4'	08/25/23	<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
FL01-B@3'	08/25/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
Residential SSL[2]		**6 - 8.3**	**<6**	**<4mmhos/cm**	**2**
FL01-A@4'	08/25/23	**8.48**	0.854	0.222	0.0858
FL01-B@3'	08/25/23	8.11	0.129	0.151	0.328

Sample ID	Date Sampled	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL [1,2]		**0.68**	**15,000**	**71**	**0.3**	**3,100**	**400**	**1,500**	**390**	**390**	**23,000**
Protection of Groundwater SSL [1,2,3]		**0.29**	**82**	**0.38**	**0.00067**	**46**	**14**	**26**	**0.26**	**0.8**	**370**
FL01-A@4'	08/25/23	**1.88**	**128**	<0.200	<0.30	5.59	7.47	4.47	<0.260	0.0271	18.4
FL01-B@3'	08/25/23	**2.83**	76.1	0.221	<0.30	7.24	9.31	5.46	<0.260	0.0493	22.3

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:

ECMC = Energy and Carbon Management Commission
TPH-GRO = Total petroleum hydrocarbons - gasoline range organics
TPH-DRO = Total petroleum hydrocarbons - diesel range organics
TPH-ORO = Total petroleum hydrocarbons - oil range organics
mg/kg = Milligrams per kilogram
SAR = Sodium Adsorption Ratio
EC = Electrical Conductivity
mmhos/cm = 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 ECMC Table 915-1 standard

1,2,4 - TMB = 1,2,4 Trimethylbenzene
1,3,5 - TMB = 1,3,5 Trimethylbenzene
Benz(a) = Benzo (a) anthracene
Benzo(b) = Benzo (b) fluoranthene
Benzo(k) = Benzo(k)fluoranthene
Benzo(a) = Benzo(a)pyrene
A,H = Dibenzo(a,h)anthracene
1,2,3-CD = Indeno(1,2,3-cd)pyrene
1-M = 1-methylnaphthalene
2-M = 2-methylnaphthalene

Legend

Flowline Location

Soil Sample Location – Lab Analyzed (Collected via Trimble GPS)

Notes

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

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

0 ft. 150 ft. 300 ft.

N

Image Source: Google Earth; Google 2020

DATE:	09/13/2023
DESIGNED BY:	JW
DRAWN BY:	EH

TASMAN GEOSCIENCES

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

Noble Energy, Inc. – DJ Basin
Foos C27-18
NWNE, Section 27, Township 4 North, Range 64 West
Weld County, Colorado

Flowline Closure & Soil Analytical Results Map (09/13/2023)

FIGURE 1

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 05, 2023

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

RE: Noble - Foos C27-18
Work Order #2308607

Enclosed are the results of analyses for samples received by Summit Scientific on 08/25/23 17:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Scott Sheely For Paul Shrewsbury
President

S2

Tasman Geosciences 6855 W. 119th Ave. Broomfield CO, 80020	Project: Noble - Foos C27-18 Project Number: UWRWE-A3219-ABN Project Manager: Jacob Whritenour	**Reported:** 09/05/23 14:52

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01-B@3'	2308607-01	Soil	08/25/23 14:55	08/25/23 17:55
FL01-A@4 '	2308607-02	Soil	08/25/23 15:15	08/25/23 17:55

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.

Summit Scientific

2308607

S_2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Client: Noble / Tasman Geosciences
Address: 6855 W. 119th Ave.
City/State/Zip: Broomfield / CO/ 80020
Phone: 231-292-2576
Sampler Name: Elyse Hossink

Project Manager: Jake Whritenour, Invoice:
E-Mail: Jwhritenour@tasman-geo.com
Project Name: FOOS C27-18 Wade Fivestein
Project Number: UWRWE-A3219-ABN

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ___	Water	Soil	Air-Canister #	Other ___	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD		pH, EC, SAR by saturated paste
1	FL01-B@3'	8/25/23	1455	3			✓			✓			✓	✓	✓	✓	✓	✓			
2	FL01-A@4'	8/25/23	1515	3			✓			✓			✓	✓	✓	✓	✓	✓			
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by:	Date/Time:	Received by:	Date/Time:
Elyse Hossink	8/25/23 1700	Tasman's Lock Box	8/25/23 1700
Relinquished by: Tasman's Lock Box	Date/Time: 8/25/23 1755	Received by:	Date/Time: 8/25/23 1755
Relinquished by:	Date/Time:	Received by:	Date/Time:

Turn Around Time (Check)

___ Same Day ___ 72 hours
___ 24 hours X Standard
___ 48 hours ___

Sample Integrity:
Temperature Upon Receipt: 10.0
Samples Intact: (Yes) No

Notes:

S2

Sample Receipt Checklist

S2 Work Order# 2308607

Client: Nobletasman Client Project ID: Focs C27-R

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

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

Temp (°C) 10.0 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.	–			ON ICE
If custody seals are present, are they intact? (1)	–			
Are samples due within 48 hours present?		–		
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		–		
Is a chain-of-custody (COC) form present and filled out Completely? (1)	–			
Is the COC properly relinquished by the client w/ date and time recorded? (1)	–			
Were all samples received intact? (1)	✓			
Was adequate sample volume provided? (1)	✓			
Does the COC agree with the number and type of sample bottles received? (1)	✓			
Do the sample IDs on the bottle labels match the COC? (1)	✓			
For volatiles in water – is there headspace present? **If yes, contact client and note in narrative.**			✓	
Are samples preserved that require preservation **(excluding cooling)?** (1) Note the type of preservative in the comments column – HCl, H_2SO_4, NaOH, HNO_3, etc.			✓	
If samples are acid preserved for metals, is the pH ≤ 2? (1) Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

AB
Custodian Printed Name

8/25/23
Date/Time

Tasman Geosciences 6855 W. 119th Ave. Broomfield CO, 80020	Project: Noble - Foos C27-18 Project Number: UWRWE-A3219-ABN Project Manager: Jacob Whritenour	**Reported:** 09/05/23 14:52

FL01-B@3'

2308607-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/25/23 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGH1131	08/28/23	08/29/23	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: **08/25/23 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0408	*102 %*	*50-150*		"	"	"	"	
Surrogate: Toluene-d8	0.0402	*100 %*	*50-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0370	*92.5 %*	*50-150*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/25/23 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGH1132	08/28/23	08/29/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/25/23 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	13.1	*105 %*	*30-150*		"	"	"	"	

PAH by EPA Method 8270D SIM

Tasman Geosciences 6855 W. 119th Ave. Broomfield CO, 80020	Project: Noble - Foos C27-18 Project Number: UWRWE-A3219-ABN Project Manager: Jacob Whritenour	**Reported:** 09/05/23 14:52

FL01-B@3'

2308607-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/25/23 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGH1187	08/29/23	08/31/23	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: **08/25/23 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0145	*43.4 %*	*40-150*		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0144	*43.3 %*	*40-150*		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/25/23 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	**0.328**	0.0100	mg/L	1	BGH1128	08/28/23	08/30/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/25/23 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

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Tasman Geosciences 6855 W. 119th Ave. Broomfield CO, 80020	Project: Noble - Foos C27-18 Project Number: UWRWE-A3219-ABN Project Manager: Jacob Whritenour	**Reported:** 09/05/23 14:52

FL01-B@3'

2308607-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**2.83**	0.200	mg/kg dry	1	BGH1091	08/28/23	08/30/23	EPA 6020B	
Barium	**76.1**	0.400	"	"	"	"	"	"	
Cadmium	**0.221**	0.200	"	"	"	"	"	"	
Copper	**7.24**	0.400	"	"	"	"	"	"	
Lead	**9.31**	0.200	"	"	"	"	"	"	
Nickel	**5.46**	0.400	"	"	"	"	"	"	
Silver	**0.0493**	0.0200	"	"	"	"	"	"	
Zinc	**22.3**	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/25/23 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH1193	08/29/23	08/29/23	EPA 7196A	

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

Date Sampled: **08/25/23 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**21.5**	0.0540	mg/L dry	1	BGH1167	08/29/23	08/31/23	EPA 6020B	
Magnesium	**4.10**	0.0540	"	"	"	"	"	"	
Sodium	**2.49**	0.0540	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/25/23 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.129**	0.00100	units	1	BGH1269	08/31/23	08/31/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/25/23 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Summit Scientific

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

Tasman Geosciences 6855 W. 119th Ave. Broomfield CO, 80020	Project: Noble - Foos C27-18 Project Number: UWRWE-A3219-ABN Project Manager: Jacob Whritenour	**Reported:** 09/05/23 14:52

FL01-B@3'

2308607-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**92.5**		%	1	BGH1125	08/28/23	08/28/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/25/23 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**0.151**	0.0100	mmhos/cm	1	BGH1191	08/29/23	08/30/23	EPA 120.1	

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

Date Sampled: **08/25/23 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.11**		pH Units	1	BGH1190	08/29/23	08/30/23	EPA 9045D	

Tasman Geosciences 6855 W. 119th Ave. Broomfield CO, 80020	Project: Noble - Foos C27-18 Project Number: UWRWE-A3219-ABN Project Manager: Jacob Whritenour	**Reported:** 09/05/23 14:52

FL01-A@4 '

2308607-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/25/23 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGH1131	08/28/23	08/29/23	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: **08/25/23 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0316	*78.9 %*	*50-150*		"	"	"	"	
Surrogate: Toluene-d8	0.0416	*104 %*	*50-150*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0360	*90.0 %*	*50-150*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/25/23 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGH1132	08/28/23	08/29/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **08/25/23 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	12.8	*102 %*	*30-150*		"	"	"	"	

PAH by EPA Method 8270D SIM

Tasman Geosciences 6855 W. 119th Ave. Broomfield CO, 80020	Project: Noble - Foos C27-18 Project Number: UWRWE-A3219-ABN Project Manager: Jacob Whritenour	**Reported:** 09/05/23 14:52

FL01-A@4 '

2308607-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/25/23 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGH1187	08/29/23	08/31/23	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: **08/25/23 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0203	*60.9 %*	*40-150*		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0201	*60.4 %*	*40-150*		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/25/23 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	**0.0858**	0.0100	mg/L	1	BGH1128	08/28/23	08/31/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/25/23 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

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Tasman Geosciences 6855 W. 119th Ave. Broomfield CO, 80020	Project: Noble - Foos C27-18 Project Number: UWRWE-A3219-ABN Project Manager: Jacob Whritenour	**Reported:** 09/05/23 14:52

FL01-A@4 '

2308607-02 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**1.88**	0.200	mg/kg dry	1	BGH1091	08/28/23	08/30/23	EPA 6020B	
Barium	**128**	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	**5.59**	0.400	"	"	"	"	"	"	
Lead	**7.47**	0.200	"	"	"	"	"	"	
Nickel	**4.47**	0.400	"	"	"	"	"	"	
Silver	**0.0271**	0.0200	"	"	"	"	"	"	
Zinc	**18.4**	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/25/23 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH1193	08/29/23	08/29/23	EPA 7196A	

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

Date Sampled: **08/25/23 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	**73.8**	0.0616	mg/L dry	1	BGH1167	08/29/23	08/31/23	EPA 6020B	
Magnesium	**8.27**	0.0616	"	"	"	"	"	"	
Sodium	**29.0**	0.0616	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/25/23 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.854**	0.00100	units	1	BGH1269	08/31/23	08/31/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Tasman Geosciences 6855 W. 119th Ave. Broomfield CO, 80020	Project: Noble - Foos C27-18 Project Number: UWRWE-A3219-ABN Project Manager: Jacob Whritenour	**Reported:** 09/05/23 14:52

FL01-A@4 '

2308607-02 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/25/23 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	**81.2**		%	1	BGH1125	08/28/23	08/28/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/25/23 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	**0.222**	0.0100	mmhos/cm	1	BGH1191	08/29/23	08/30/23	EPA 120.1	

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

Date Sampled: **08/25/23 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.48**		pH Units	1	BGH1190	08/29/23	08/30/23	EPA 9045D	

Tasman Geosciences 6855 W. 119th Ave. Broomfield CO, 80020	Project: Noble - Foos C27-18 Project Number: UWRWE-A3219-ABN Project Manager: Jacob Whritenour	**Reported:** 09/05/23 14:52

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BGH1131 - EPA 5030 Soil MS										
Blank (BGH1131-BLK1)				Prepared: 08/28/23 Analyzed: 08/29/23						
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	*0.0268*		*"*	*0.0400*		*67.0*	*50-150*			
Surrogate: Toluene-d8	*0.0387*		*"*	*0.0400*		*96.8*	*50-150*			
Surrogate: 4-Bromofluorobenzene	*0.0389*		*"*	*0.0400*		*97.4*	*50-150*			
LCS (BGH1131-BS1)				Prepared: 08/28/23 Analyzed: 08/29/23						
Benzene	0.0971	0.0020	mg/kg	0.100		97.1	70-130			
Toluene	0.101	0.0050	"	0.100		101	70-130			
Ethylbenzene	0.113	0.0050	"	0.100		113	70-130			
m,p-Xylene	0.222	0.010	"	0.200		111	70-130			
o-Xylene	0.102	0.0050	"	0.100		102	70-130			
1,2,4-Trimethylbenzene	0.110	0.0050	"	0.100		110	70-130			
1,3,5-Trimethylbenzene	0.109	0.0050	"	0.100		109	70-130			
Naphthalene	0.0920	0.0038	"	0.100		92.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0357*		*"*	*0.0400*		*89.2*	*50-150*			
Surrogate: Toluene-d8	*0.0410*		*"*	*0.0400*		*103*	*50-150*			
Surrogate: 4-Bromofluorobenzene	*0.0407*		*"*	*0.0400*		*102*	*50-150*			
Matrix Spike (BGH1131-MS1)	**Source: 2308601-01**			Prepared: 08/28/23 Analyzed: 08/29/23						
Benzene	0.0909	0.0020	mg/kg	0.100	ND	90.9	70-130			
Toluene	0.0916	0.0050	"	0.100	ND	91.6	70-130			
Ethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130			
m,p-Xylene	0.197	0.010	"	0.200	ND	98.3	70-130			
o-Xylene	0.0938	0.0050	"	0.100	ND	93.8	70-130			
1,2,4-Trimethylbenzene	0.0956	0.0050	"	0.100	ND	95.6	70-130			
1,3,5-Trimethylbenzene	0.0946	0.0050	"	0.100	ND	94.6	70-130			
Naphthalene	0.0830	0.0038	"	0.100	ND	83.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0374*		*"*	*0.0400*		*93.5*	*50-150*			
Surrogate: Toluene-d8	*0.0398*		*"*	*0.0400*		*99.6*	*50-150*			
Surrogate: 4-Bromofluorobenzene	*0.0389*		*"*	*0.0400*		*97.2*	*50-150*			

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Tasman Geosciences 6855 W. 119th Ave. Broomfield CO, 80020	Project: Noble - Foos C27-18 Project Number: UWRWE-A3219-ABN Project Manager: Jacob Whritenour	**Reported:** 09/05/23 14:52

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BGH1131 - EPA 5030 Soil MS										
Matrix Spike Dup (BGH1131-MSD1)	**Source: 2308601-01**			Prepared: 08/28/23 Analyzed: 08/29/23						
Benzene	0.0862	0.0020	mg/kg	0.100	ND	86.2	70-130	5.28	30	
Toluene	0.0870	0.0050	"	0.100	ND	87.0	70-130	5.14	30	
Ethylbenzene	0.0932	0.0050	"	0.100	ND	93.2	70-130	8.01	30	
m,p-Xylene	0.182	0.010	"	0.200	ND	90.9	70-130	7.80	30	
o-Xylene	0.0857	0.0050	"	0.100	ND	85.7	70-130	8.99	30	
1,2,4-Trimethylbenzene	0.0904	0.0050	"	0.100	ND	90.4	70-130	5.58	30	
1,3,5-Trimethylbenzene	0.0871	0.0050	"	0.100	ND	87.1	70-130	8.29	30	
Naphthalene	0.0814	0.0038	"	0.100	ND	81.4	70-130	1.97	30	
Surrogate: 1,2-Dichloroethane-d4	*0.0380*		*"*	*0.0400*		*94.9*	*50-150*			
Surrogate: Toluene-d8	*0.0398*		*"*	*0.0400*		*99.5*	*50-150*			
Surrogate: 4-Bromofluorobenzene	*0.0366*		*"*	*0.0400*		*91.5*	*50-150*			

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

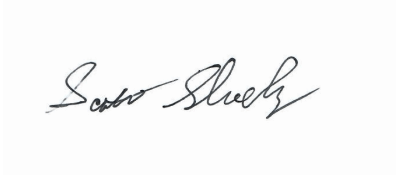
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BGH1132 - EPA 3550A										
Blank (BGH1132-BLK1)				Prepared: 08/28/23 Analyzed: 08/29/23						
C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	*13.1*		*"*	*12.5*		*105*	*30-150*			
LCS (BGH1132-BS1)				Prepared: 08/28/23 Analyzed: 08/29/23						
C10-C28 (DRO)	485	50	mg/kg	500		97.0	70-130			
Surrogate: o-Terphenyl	*13.0*		*"*	*12.5*		*104*	*30-150*			
Matrix Spike (BGH1132-MS1)	**Source: 2308601-01**			Prepared: 08/28/23 Analyzed: 08/29/23						
C10-C28 (DRO)	496	50	mg/kg	500	5.57	98.1	70-130			
Surrogate: o-Terphenyl	*12.8*		*"*	*12.5*		*103*	*30-150*			
Matrix Spike Dup (BGH1132-MSD1)	**Source: 2308601-01**			Prepared: 08/28/23 Analyzed: 08/29/23						
C10-C28 (DRO)	511	50	mg/kg	500	5.57	101	70-130	2.88	20	
Surrogate: o-Terphenyl	*12.8*		*"*	*12.5*		*102*	*30-150*			

Tasman Geosciences 6855 W. 119th Ave. Broomfield CO, 80020	Project: Noble - Foos C27-18 Project Number: UWRWE-A3219-ABN Project Manager: Jacob Whritenour	**Reported:** 09/05/23 14:52

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BGH1187 - EPA 5030 Soil MS										
Blank (BGH1187-BLK1)				Prepared: 08/29/23 Analyzed: 08/30/23						
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	*0.0278*		*"*	*0.0333*		*83.3*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0276*		*"*	*0.0333*		*82.9*	*40-150*			
LCS (BGH1187-BS1)				Prepared: 08/29/23 Analyzed: 08/30/23						
Acenaphthene	0.0300	0.00500	mg/kg	0.0333		90.1	31-137			
Anthracene	0.0299	0.00500	"	0.0333		89.6	30-120			
Benzo (a) anthracene	0.0289	0.00500	"	0.0333		86.7	30-120			
Benzo (a) pyrene	0.0303	0.00500	"	0.0333		91.0	30-120			
Benzo (b) fluoranthene	0.0306	0.00500	"	0.0333		91.7	30-120			
Benzo (k) fluoranthene	0.0306	0.00500	"	0.0333		91.9	30-120			
Chrysene	0.0306	0.00500	"	0.0333		91.7	30-120			
Dibenz (a,h) anthracene	0.0399	0.00500	"	0.0333		120	30-120			
Fluoranthene	0.0294	0.00500	"	0.0333		88.1	30-120			
Fluorene	0.0303	0.00500	"	0.0333		91.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0281	0.00500	"	0.0333		84.4	30-120			
Pyrene	0.0345	0.00500	"	0.0333		104	35-142			
1-Methylnaphthalene	0.0294	0.00500	"	0.0333		88.3	35-142			
2-Methylnaphthalene	0.0312	0.00500	"	0.0333		93.5	35-142			
Surrogate: 2-Methylnaphthalene-d10	*0.0302*		*"*	*0.0333*		*90.5*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0287*		*"*	*0.0333*		*86.0*	*40-150*			



Tasman Geosciences 6855 W. 119th Ave. Broomfield CO, 80020	Project: Noble - Foos C27-18 Project Number: UWRWE-A3219-ABN Project Manager: Jacob Whritenour	**Reported:** 09/05/23 14:52

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BGH1187 - EPA 5030 Soil MS										
Matrix Spike (BGH1187-MS1)	**Source: 2308601-01**			Prepared: 08/29/23 Analyzed: 08/30/23						
Acenaphthene	0.0190	0.00500	mg/kg	0.0333	ND	57.1	31-137			
Anthracene	0.0178	0.00500	"	0.0333	ND	53.5	30-120			
Benzo (a) anthracene	0.0198	0.00500	"	0.0333	ND	59.4	30-120			
Benzo (a) pyrene	0.0193	0.00500	"	0.0333	ND	58.0	30-120			
Benzo (b) fluoranthene	0.0210	0.00500	"	0.0333	ND	63.1	30-120			
Benzo (k) fluoranthene	0.0207	0.00500	"	0.0333	ND	62.1	30-120			
Chrysene	0.0187	0.00500	"	0.0333	ND	56.0	30-120			
Dibenz (a,h) anthracene	0.0220	0.00500	"	0.0333	ND	66.0	30-120			
Fluoranthene	0.0187	0.00500	"	0.0333	ND	56.0	30-120			
Fluorene	0.0183	0.00500	"	0.0333	ND	54.9	30-120			
Indeno (1,2,3-cd) pyrene	0.0273	0.00500	"	0.0333	ND	81.9	30-120			
Pyrene	0.0210	0.00500	"	0.0333	ND	63.1	35-142			
1-Methylnaphthalene	0.0178	0.00500	"	0.0333	ND	53.4	15-130			
2-Methylnaphthalene	0.0187	0.00500	"	0.0333	ND	56.2	15-130			
Surrogate: 2-Methylnaphthalene-d10	*0.0190*		*"*	*0.0333*		*56.9*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0187*		*"*	*0.0333*		*56.1*	*40-150*			
Matrix Spike Dup (BGH1187-MSD1)	**Source: 2308601-01**			Prepared: 08/29/23 Analyzed: 08/30/23						
Acenaphthene	0.0211	0.00500	mg/kg	0.0333	ND	63.2	31-137	10.1	30	
Anthracene	0.0181	0.00500	"	0.0333	ND	54.2	30-120	1.37	30	
Benzo (a) anthracene	0.0204	0.00500	"	0.0333	ND	61.3	30-120	3.20	30	
Benzo (a) pyrene	0.0189	0.00500	"	0.0333	ND	56.6	30-120	2.52	30	
Benzo (b) fluoranthene	0.0198	0.00500	"	0.0333	ND	59.5	30-120	5.90	30	
Benzo (k) fluoranthene	0.0198	0.00500	"	0.0333	ND	59.3	30-120	4.59	30	
Chrysene	0.0191	0.00500	"	0.0333	ND	57.4	30-120	2.53	30	
Dibenz (a,h) anthracene	0.0192	0.00500	"	0.0333	ND	57.7	30-120	13.4	30	
Fluoranthene	0.0185	0.00500	"	0.0333	ND	55.4	30-120	1.10	30	
Fluorene	0.0212	0.00500	"	0.0333	ND	63.6	30-120	14.8	30	
Indeno (1,2,3-cd) pyrene	0.0216	0.00500	"	0.0333	ND	64.7	30-120	23.6	30	
Pyrene	0.0211	0.00500	"	0.0333	ND	63.2	35-142	0.141	30	
1-Methylnaphthalene	0.0206	0.00500	"	0.0333	ND	61.8	15-130	14.6	50	
2-Methylnaphthalene	0.0200	0.00500	"	0.0333	ND	60.1	15-130	6.75	50	
Surrogate: 2-Methylnaphthalene-d10	*0.0206*		*"*	*0.0333*		*61.9*	*40-150*			
Surrogate: Fluoranthene-d10	*0.0184*		*"*	*0.0333*		*55.3*	*40-150*			

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BGH1128 - EPA 3050B										
Blank (BGH1128-BLK1)				Prepared: 08/28/23 Analyzed: 08/30/23						
Boron	ND	0.0100	mg/L							
LCS (BGH1128-BS1)				Prepared: 08/28/23 Analyzed: 08/30/23						
Boron	5.48	0.0100	mg/L	5.00		110	80-120			
Duplicate (BGH1128-DUP1)	**Source: 2308602-02**			Prepared: 08/28/23 Analyzed: 08/30/23						
Boron	0.0522	0.0100	mg/L		0.0931			56.2	20	QR-01
Matrix Spike (BGH1128-MS1)	**Source: 2308602-02**			Prepared: 08/28/23 Analyzed: 08/30/23						
Boron	5.33	0.0100	mg/L	5.00	0.0931	105	75-125			
Matrix Spike Dup (BGH1128-MSD1)	**Source: 2308602-02**			Prepared: 08/28/23 Analyzed: 08/30/23						
Boron	5.24	0.0100	mg/L	5.00	0.0931	103	75-125	1.63	25	

Tasman Geosciences 6855 W. 119th Ave. Broomfield CO, 80020	Project: Noble - Foos C27-18 Project Number: UWRWE-A3219-ABN Project Manager: Jacob Whritenour	**Reported:** 09/05/23 14:52

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BGH1091 - EPA 3050B										
Blank (BGH1091-BLK1)				Prepared: 08/28/23 Analyzed: 08/30/23						
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	"							
Silver	ND	0.0200	"							
Zinc	ND	0.400	"							
Selenium	ND	0.260	"							
LCS (BGH1091-BS1)				Prepared: 08/28/23 Analyzed: 08/30/23						
Arsenic	38.4	0.200	mg/kg wet	40.0		96.0	80-120			
Barium	43.1	0.400	"	40.0		108	80-120			
Cadmium	2.13	0.200	"	2.00		107	80-120			
Copper	38.3	0.400	"	40.0		95.8	80-120			
Lead	21.4	0.200	"	20.0		107	80-120			
Nickel	38.3	0.400	"	40.0		95.8	80-120			
Silver	2.09	0.0200	"	2.00		104	80-120			
Zinc	38.9	0.400	"	40.0		97.2	80-120			
Duplicate (BGH1091-DUP1)		**Source: 2308565-01**		Prepared: 08/28/23 Analyzed: 08/30/23						
Arsenic	4.41	0.200	mg/kg dry		5.32			18.5	20	
Barium	40.6	0.400	"		55.3			30.6	20	QM-04
Cadmium	0.145	0.200	"		0.182			22.7	20	QR-01
Copper	7.75	0.400	"		9.09			15.9	20	
Lead	13.2	0.200	"		15.3			15.3	20	
Nickel	10.5	0.400	"		13.8			27.2	20	QM-04
Silver	0.0454	0.0200	"		0.0512			12.0	20	
Zinc	34.7	0.400	"		39.4			12.7	20	
Selenium	1.22	0.260	"		1.38			12.2	200	

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Total Metals by EPA 6020B - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BGH1091 - EPA 3050B										
Matrix Spike (BGH1091-MS1)	**Source: 2308565-01**			Prepared: 08/28/23 Analyzed: 08/30/23						
Arsenic	36.2	0.200	mg/kg dry	48.3	5.32	64.0	75-125			QM-07
Barium	75.6	0.400	"	48.3	55.3	42.1	75-125			QM-07
Cadmium	2.00	0.200	"	2.41	0.182	75.2	75-125			
Copper	27.9	0.400	"	48.3	9.09	38.9	75-125			QM-07
Lead	30.5	0.200	"	24.1	15.3	63.0	75-125			QM-07
Nickel	30.7	0.400	"	48.3	13.8	34.9	75-125			QM-07
Silver	1.89	0.0200	"	2.41	0.0512	76.3	75-125			
Zinc	52.2	0.400	"	48.3	39.4	26.5	75-125			QM-07
Matrix Spike Dup (BGH1091-MSD1)	**Source: 2308565-01**			Prepared: 08/28/23 Analyzed: 08/30/23						
Arsenic	36.0	0.200	mg/kg dry	48.3	5.32	63.5	75-125	0.753	25	QM-07
Barium	78.2	0.400	"	48.3	55.3	47.4	75-125	3.36	25	QM-07
Cadmium	2.08	0.200	"	2.41	0.182	78.7	75-125	4.19	25	
Copper	28.2	0.400	"	48.3	9.09	39.6	75-125	1.20	25	QM-07
Lead	31.5	0.200	"	24.1	15.3	67.0	75-125	3.08	25	QM-07
Nickel	30.9	0.400	"	48.3	13.8	35.3	75-125	0.688	25	QM-07
Silver	1.91	0.0200	"	2.41	0.0512	77.0	75-125	0.863	25	
Zinc	52.7	0.400	"	48.3	39.4	27.6	75-125	1.02	25	QM-07

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Hexavalent Chromium by EPA Method 7196 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BGH1193 - 3060A_Mod										
Blank (BGH1193-BLK1)				Prepared & Analyzed: 08/29/23						
Chromium, Hexavalent	ND	0.30	mg/kg wet							
LCS (BGH1193-BS1)				Prepared & Analyzed: 08/29/23						
Chromium, Hexavalent	23.7	0.30	mg/kg wet	25.0		94.8	80-120			
Duplicate (BGH1193-DUP1)	**Source: 2308212-06**			Prepared & Analyzed: 08/29/23						
Chromium, Hexavalent	ND	0.30	mg/kg dry		ND				20	
Matrix Spike (BGH1193-MS1)	**Source: 2308212-06**			Prepared & Analyzed: 08/29/23						
Chromium, Hexavalent	30.1	0.30	mg/kg dry	29.8	ND	101	75-125			
Matrix Spike Dup (BGH1193-MSD1)	**Source: 2308212-06**			Prepared & Analyzed: 08/29/23						
Chromium, Hexavalent	28.9	0.30	mg/kg dry	29.8	ND	97.2	75-125	3.83	20	

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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.

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BGH1167 - General Preparation										
Blank (BGH1167-BLK1)				Prepared: 08/29/23 Analyzed: 08/31/23						
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							
LCS (BGH1167-BS1)				Prepared: 08/29/23 Analyzed: 08/31/23						
Calcium	4.68	0.0500	mg/L wet	5.00		93.7	70-130			
Magnesium	5.42	0.0500	"	5.00		108	70-130			
Sodium	5.41	0.0500	"	5.00		108	70-130			

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BGH1125 - General Preparation										
Duplicate (BGH1125-DUP1)		**Source: 2308577-01**		Prepared & Analyzed: 08/28/23						
% Solids	88.0		%		88.6			0.682	20	

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BGH1191 - General Preparation										
Blank (BGH1191-BLK1)				Prepared: 08/29/23 Analyzed: 08/30/23						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (BGH1191-BS1)				Prepared: 08/29/23 Analyzed: 08/30/23						
Specific Conductance (EC)	0.155	0.0100	mmhos/cm	0.150		104	95-105			
Duplicate (BGH1191-DUP1)		**Source: 2308446-03**		Prepared: 08/29/23 Analyzed: 08/30/23						
Specific Conductance (EC)	0.140	0.0100	mmhos/cm		0.140			0.00	20	

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

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BGH1190 - General Preparation										
LCS (BGH1190-BS1)				Prepared: 08/29/23 Analyzed: 08/30/23						
pH	9.08		pH Units	9.18		98.9	95-105			
Duplicate (BGH1190-DUP1)		**Source: 2308446-04**		Prepared: 08/29/23 Analyzed: 08/30/23						
pH	8.04		pH Units		8.04			0.00	20	

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Notes and Definitions

QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
QM-04	Visual evaluation of the sample indicates the RPD is above the control limit due to a non-homogeneous sample matrix.
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