



Third Party														
Removal Date														
Sample taken?														
PID Readings														
Photo Number(s)														
Other Facility Equipment														
Equipment type	FLARE													
Equipment Condition	Good													
Age														
Soil impacts observed during decommissioning	None observed													
PID Readings	0.1													
Sample taken?	Yes, see below													
Photo Number(s)	1													
Other observations regarding other facility or third party equipment: Sample taken below meter house (MH01@0.5') Flare was taken out prior to decommissioning														
Summary														
Was impacted soil identified? No Yes - less than 10 cubic yards Yes - more than 10 cubic yards														
Total number of samples field screened: 8					Total number of samples collected: 8									
Highest PID Reading: 27.2					Total number of samples submitted to lab for analysis: 7									
If more than 10 cubic yards of impacted soil were observed:														
Vertical extent:					Estimated spill volume:									
Lateral extent:					Volume of soil removed:									
Is additional investigation required?														
Was groundwater encountered during the investigation? No Yes - not impacted or in contact with impacted soils Yes - groundwater impacted and/or in contact with impacted soils														
Measured depth to groundwater:					Was remedial groundwater removal conducted? Yes No									
Date Groundwater was encountered:					Commencement date of removal:									
Sheen on groundwater? Yes No					Volume of groundwater removed prior to sampling:									
Free product observed? Yes No					Volume of groundwater removed post sampling:									
Total number of samples collected:					Total Volume of groundwater removed:									
Total number of samples submitted to lab for analysis:														



Photographic Log

					
Equipment ID: MH01		Equipment Type: Meter House		Equipment ID: Sep01-DL01 @3'	
Material: Steel		Volume:	Contents:	Equipment Type: Dump Line	
Material: Steel		Volume:	Contents:	Material: Steel	
Notes/Conditions: Soil screen location MH01 @0.5'. No hydrocarbon odor or staining.			Notes/Conditions: Soil sample of dumpline at separator SEP01-DL01 @3'. No hydrocarbon odor or staining.		

Photographic Log

							
Equipment ID: AST01		Equipment Type: Above Ground Storage Tank		Equipment ID: SS01		Equipment Type: Partially Buried Vault	
Material: Steel		Volume:		Material: Concrete		Volume:	
		Contents: Crude Oil				Contents: Produced Water	
Notes/Conditions: Soil sample location AST01 @0.5'. No hydrocarbon odor or staining.							
				Notes/Conditions: North sidewall sample SS01 @2.5'. No hydrocarbon odor or staining.			

Photographic Log

					
Equipment ID: SS02		Equipment Type: Partially Buried Vault	Equipment ID: SS03		Equipment Type: Partially Buried Vault
Material: Concrete	Volume:	Contents: Produced Water	Material: Concrete	Volume:	Contents: Produced Water
Notes/Conditions: East sidewall SS02 @2.5'. No hydrocarbon odor or staining.			Notes/Conditions: South sidewall sample SS03 @2.5'		

Photographic Log



							
Equipment ID: SS04		Equipment Type: Partially Buried Vault		Equipment ID: FS01		Equipment Type: Partially Buried Vault	
Material: Concrete		Volume:		Material: Concrete		Volume:	
		Contents: Produced Water				Contents: Produced Water	
Notes/Conditions: west sidewall sample SS04 @2.5'. No hydrocarbon odor or staining.				Notes/Conditions: Base sample FS01 @5' . No hydrocarbon odor or staining.			

TABLE 1
SOIL SAMPLE LOCATIONS
NOBLE ENERGY, INC. - PETRIKIN A34-08

Soil Sample ID	Date	PID (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude ¹	Longitude	PDOP
SS01@2.5'	03/03/22	0.5	No Staining	No Odor	On-hold	40.44622941	-104.5294674	1.0
SS02@2.5'	03/03/22	1.2	No Staining	No Odor	Lab	40.44621494	-104.5294491	0.9
SS03@2.5'	03/03/22	1.0	No Staining	No Odor	On-hold	40.44619323	-104.5294578	0.9
SS04@2.5'	03/03/22	0.2	No Staining	No Odor	On-hold	40.44620329	-104.5294893	1.0
FS01@5'	03/03/22	27.2	HC Staining	Slight HC Odor	Lab	40.44620999	-104.5294628	1.0
AST01@0.5'	03/03/22	0.4	No Staining	No Odor	Lab	40.44620670	-104.5294198	1.0
SEP01-DL01@3'	03/03/22	2.6	No Staining	No Odor	Lab	40.44621298	-104.5296617	1.0
MH01@0.5'	03/03/22	0.1	No Staining	No Odor	Grab	40.44622118	-104.5296672	1.0

Notes:

PID = Photo-ionization detector

ppm = parts per million

PDOP = Position dilution of precision

HC = Hydrocarbon

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

TABLE 2
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - PETRIKIN A34-08

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
SEP01-DL01@3'	03/03/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	310	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0182	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
AST01@0.5'	03/03/22	<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
SS01@2.5'	03/03/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	0.0094	<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'	03/03/22	<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'	03/03/22	<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'	03/03/22	<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'	03/03/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	0.95	320	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0155	<0.00500	<0.00500	0.0251	<0.00500	<0.00500	0.0983	0.0514

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
Residential SSL ²		6 - 8.3	<6	<4mmhos/cm	2
SEP01-DL01@3'	03/03/22	8.11	4.61	0.976	0.436
AST01@0.5'	03/03/22	8.78	0.498	0.130	0.0328
SS01@2.5'	03/03/22	7.99	1.78	0.323	0.578
SS02@2.5'	03/03/22	8.03	0.315	0.284	0.0497
SS03@2.5'	03/03/22	8.18	0.995	0.236	0.108
SS04@2.5'	03/03/22	8.08	1.22	0.429	0.431
FS01@5'	03/03/22	8.37	1.58	0.372	0.127

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 SSL2		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FS01@5'	03/03/22	5.33	99.3	<0.231	<0.30	7.99	7.07	9.09	0.950	0.0316	41.9

Notes:

- Compounds referenced from 2 CCR 404-1, Table 915-1, effective January 15, 2021.
- Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
- SSLs are applicable if a pathway for communication with groundwater is present.

Definitions:

COGCC = Colorado Oil and Gas Conservation Commission

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

TPH-ORO = Total petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

SAR = Sodium Adsorption Ratio

EC = Electrical Conductivity

mmhos/cm = Millmhos per centimeter

mg/L = Milligrams per liter

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

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

1,2,4 - TMB = 1,2,4 Trimethylbenzene

1,3,5 - TMB = 1,3,5 Trimethylbenzene

Benz(a) = Benzanthracene

Benzo(b) = Benzofluoranthene

Benzo(k) = Benzofluoranthene

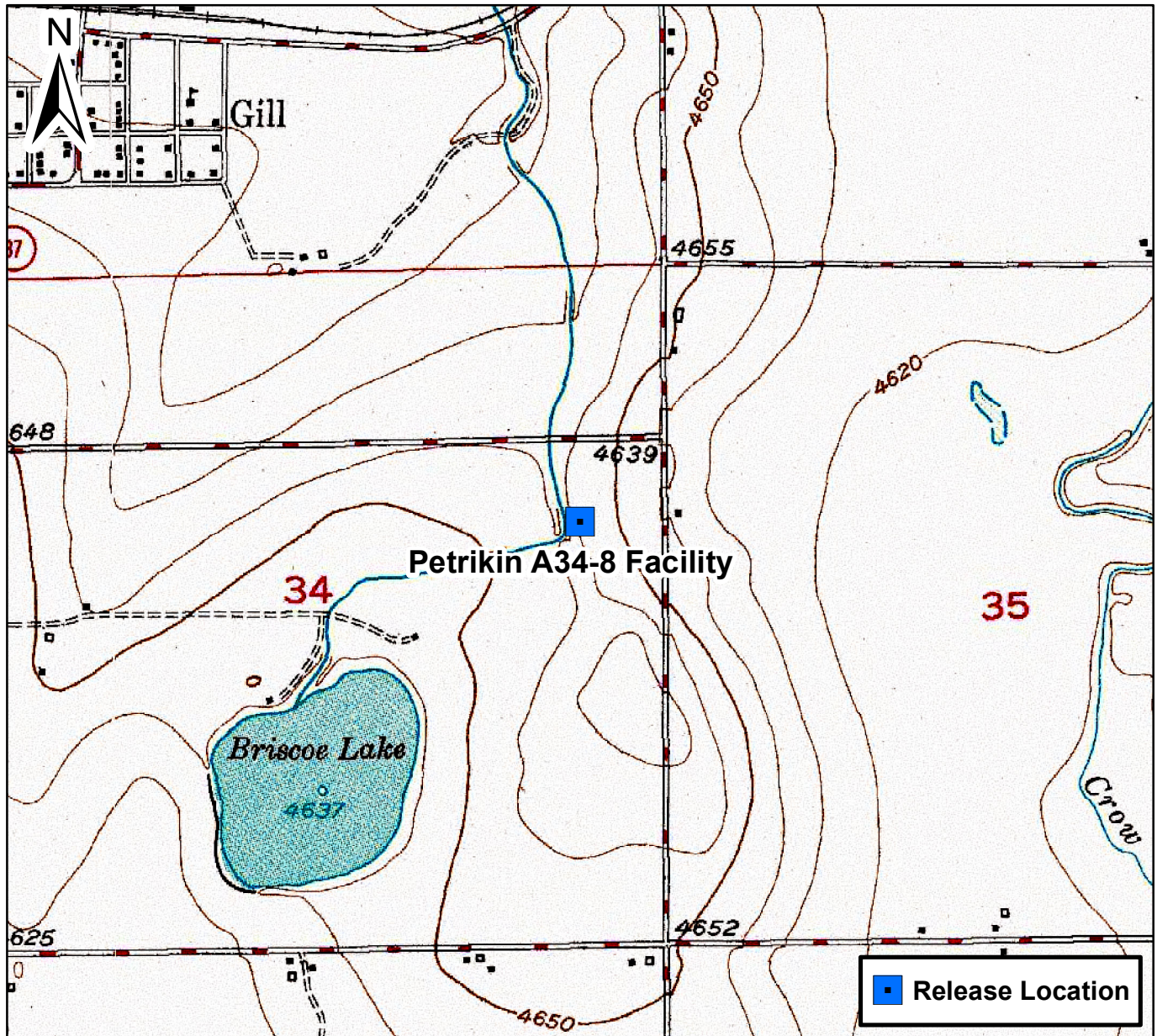
Benzo(a) = Benzopyrene

A,H = Dibenzoanthracene

1,2,3-CD = Indenopyrene

1-M = 1-methylnaphthalene

2-M = 2-methylnaphthalene

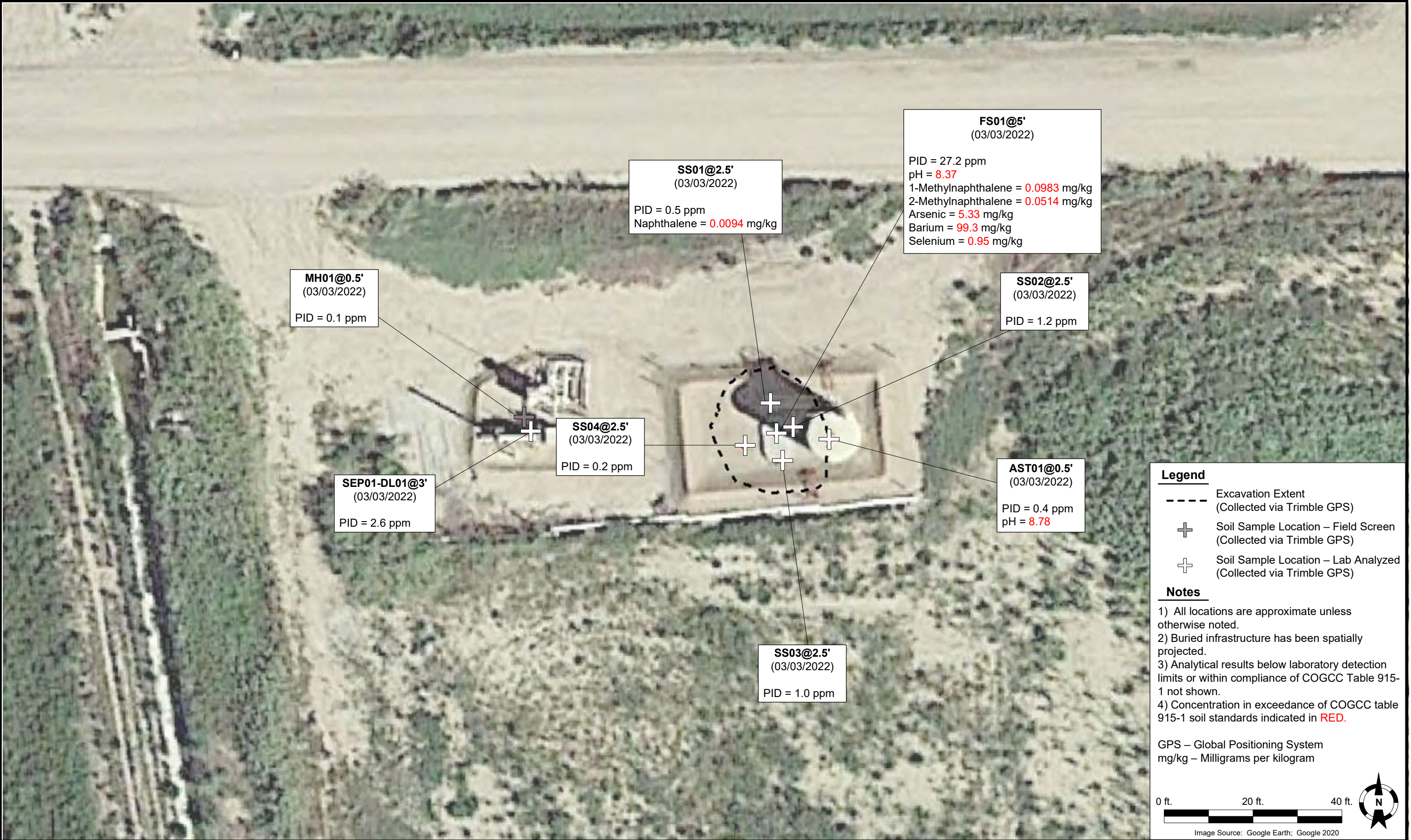


0 1,500 3,000 Feet

Figure 1

Site Location Map
 Petrikin A34-08 Facility
 SENE S34 T6N R64W
 Weld County, Colorado





Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 24, 2022

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Petrikin A34-08 (Fac)

Work Order #2203066

Enclosed are the results of analyses for samples received by Summit Scientific on 03/03/22 16:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Paul Shrewsbury
President



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

Project: Noble - Petrikin A34-08 (Fac)

Project Number: UWRWE-A1753-ABN

Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SEP01-DL01@3'	2203066-01	Soil	03/03/22 13:50	03/03/22 16:15
AST01@0.5'	2203066-02	Soil	03/03/22 13:55	03/03/22 16:15
SS01@2.5'	2203066-03	Soil	03/03/22 14:10	03/03/22 16:15
SS02@2.5'	2203066-04	Soil	03/03/22 14:15	03/03/22 16:15
SS03@2.5'	2203066-05	Soil	03/03/22 14:20	03/03/22 16:15
SS04@2.5'	2203066-06	Soil	03/03/22 14:25	03/03/22 16:15
FS01@5'	2203066-07	Soil	03/03/22 14:30	03/03/22 16:15

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

S₂

7203066

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

Client: Noble / Tasman Geosciences Project Manager: Jake Whritenour, Invoice:
 Address: 6855 W. 119th Ave. E-Mail: jwhritenour@tasman-geo.com/ Noble Group
 City/State/Zip: Broomfield / CO/ 80020
 Phone: 303-827-1511 Project Name: Eltrikh A34-08 (FAC)
 Sampler Name: Hunter Merlo Project Number: 1JWRWE-A1753-ABV

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	VOC - 915	TPH - 915	PAH - 915	pH, EC, SAR	Boron - HWS			
1	Sep01-DL01@3'	3/3/22	1350	2			X			X				X	X	X	X	X			
2	AST01@0.5'		1355	1																	
3	SS01@2.5'		1410	1																	
4	SS02@2.5'		1415	1																HOLD	
5	SS03@2.5'		1420	1																HOLD	
6	SS04@2.5'		1425	1																HOLD	
7	FS01@5'	✓	1430	✓										✓	✓	✓	✓	✓			
8																					
9																					
10																					

Relinquished by: <u>[Signature]</u>	Date/Time: <u>3/3/22</u> <u>1615</u>	Received by: <u>Tasman's Lock Box</u>	Date/Time: <u>3/3/22</u> <u>1615</u>	Turn Around Time (Check) ___ Same Day 72 hours ___ 24 hours <u>X</u> Standard ___ 48 hours ___ Sample Integrity: Temperature Upon Receipt: <u>5.2</u> Samples Intact: <u>(Yes)</u> No	Notes:
Relinquished by: <u>Tasman's Lock Box</u>	Date/Time:	Received by: <u>[Signature]</u>	Date/Time: <u>3-3-22</u> <u>1615</u>		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

Sample Receipt Checklist

S2 Work Order#

2203066

Client: Noble-Tasman Client Project ID: Petrikon A34-08(FAC)Shipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other ☐ Air ☐ Soil/Solid ☐ Water ☐ Other: ☐ Airbill #: _____Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

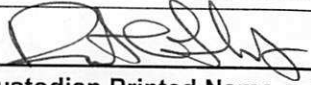
Temp (°C)

5.2

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
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"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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"/>	
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"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽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.

 Custodian Printed Name or Initials

3:322

Date/Time



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

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

SEP01-DL01@3'
2203066-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/03/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0100	03/07/22	03/08/22	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: **03/03/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.4 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		99.0 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.0 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/03/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	310	50	mg/kg	1	BFC0101	03/07/22	03/08/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/03/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		120 %	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 - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

SEP01-DL01@3'
2203066-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/03/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFC0092	03/05/22	03/06/22	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	0.0182	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: **03/03/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		49.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		48.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/03/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.436	0.0100	mg/L	1	BFC0211	03/11/22	03/13/22	EPA 6020B	

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

Date Sampled: **03/03/22 13:50**

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

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

SEP01-DL01@3'
2203066-01 (Soil)

Summit Scientific

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

Calcium	138	0.0573	mg/L dry	1	BFC0137	03/08/22	03/12/22	EPA 6020B
Magnesium	58.1	0.0573	"	"	"	"	"	"
Sodium	256	0.0573	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **03/03/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.61	0.00100	units	1	BFC0236	03/13/22	03/13/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/03/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.2		%	1	BFC0147	03/09/22	03/09/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/03/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.976	0.0100	mmhos/cm	1	BFC0073	03/04/22	03/04/22	EPA 120.1	

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

Date Sampled: **03/03/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.11		pH Units	1	BFC0072	03/04/22	03/04/22	EPA 9045D	

Summit Scientific

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

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

AST01@0.5'
2203066-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/03/22 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0100	03/07/22	03/08/22	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: **03/03/22 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		95.8 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		98.9 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.6 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/03/22 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0101	03/07/22	03/08/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/03/22 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		116 %	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 - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

AST01@0.5'
2203066-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/03/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFC0092	03/05/22	03/06/22	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: **03/03/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		55.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		55.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/03/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0328	0.0100	mg/L	1	BFC0211	03/11/22	03/13/22	EPA 6020B	

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

Date Sampled: **03/03/22 13:55**

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

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

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

AST01@0.5'
2203066-02 (Soil)

Summit Scientific

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

Calcium	10.1	0.0515	mg/L dry	1	BFC0137	03/08/22	03/12/22	EPA 6020B
Magnesium	4.82	0.0515	"	"	"	"	"	"
Sodium	7.68	0.0515	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **03/03/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.498	0.00100	units	1	BFC0236	03/13/22	03/13/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/03/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.1		%	1	BFC0147	03/09/22	03/09/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/03/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.130	0.0100	mmhos/cm	1	BFC0073	03/04/22	03/04/22	EPA 120.1	

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

Date Sampled: **03/03/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.78		pH Units	1	BFC0072	03/04/22	03/04/22	EPA 9045D	

Summit Scientific

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

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

SS01@2.5'
2203066-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/03/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0327	03/16/22	03/16/22	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	0.0094	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/03/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/03/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0328	03/16/22	03/17/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/03/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		85.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

SS01@2.5'
2203066-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/03/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFC0323	03/16/22	03/17/22	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: **03/03/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		54.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		51.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/03/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.578	0.0100	mg/L	1	BFC0308	03/15/22	03/19/22	EPA 6020B	

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

Date Sampled: **03/03/22 14:10**

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 - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

SS01@2.5'
2203066-03 (Soil)

Summit Scientific

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

Calcium	15.8	0.0580	mg/L dry	1	BFC0357	03/17/22	03/22/22	EPA 6020B
Magnesium	4.13	0.0580	"	"	"	"	"	"
Sodium	30.7	0.0580	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **03/03/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.78	0.00100	units	1	BFC0512	03/23/22	03/23/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/03/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.2		%	1	BFC0364	03/17/22	03/18/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/03/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.323	0.0100	mmhos/cm	1	BFC0390	03/18/22	03/18/22	EPA 120.1	

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

Date Sampled: **03/03/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.99		pH Units	1	BFC0389	03/18/22	03/18/22	EPA 9045D	

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

Project: Noble - Petrikin A34-08 (Fac)

Project Number: UWRWE-A1753-ABN

Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

SS02@2.5'
2203066-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/03/22 14:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0100	03/07/22	03/08/22	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: **03/03/22 14:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		95.1 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		98.3 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.4 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/03/22 14:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0101	03/07/22	03/08/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/03/22 14:15**

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

PAH by EPA Method 8270D SIM

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

Project: Noble - Petrikin A34-08 (Fac)

Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

SS02@2.5'
2203066-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/03/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFC0092	03/05/22	03/06/22	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: **03/03/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		48.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		54.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/03/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0497	0.0100	mg/L	1	BFC0211	03/11/22	03/13/22	EPA 6020B	

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

Date Sampled: **03/03/22 14:15**

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 - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

SS02@2.5'
2203066-04 (Soil)

Summit Scientific

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

Calcium	23.8	0.0545	mg/L dry	1	BFC0137	03/08/22	03/12/22	EPA 6020B
Magnesium	3.53	0.0545	"	"	"	"	"	"
Sodium	6.23	0.0545	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **03/03/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.315	0.00100	units	1	BFC0236	03/13/22	03/13/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/03/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.7		%	1	BFC0147	03/09/22	03/09/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/03/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.284	0.0100	mmhos/cm	1	BFC0073	03/04/22	03/04/22	EPA 120.1	

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

Date Sampled: **03/03/22 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.03		pH Units	1	BFC0072	03/04/22	03/04/22	EPA 9045D	

Summit Scientific

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

Project: Noble - Petrikin A34-08 (Fac)

Project Number: UWRWE-A1753-ABN

Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

SS03@2.5'
2203066-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/03/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0327	03/16/22	03/16/22	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: **03/03/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/03/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0328	03/16/22	03/17/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/03/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		86.1 %	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 - Petrikin A34-08 (Fac)

Project Number: UWRWE-A1753-ABN

Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

SS03@2.5'
2203066-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/03/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFC0323	03/16/22	03/17/22	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: **03/03/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		61.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		65.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/03/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.108	0.0100	mg/L	1	BFC0308	03/15/22	03/19/22	EPA 6020B	

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

Date Sampled: **03/03/22 14:20**

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 - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

SS03@2.5'
2203066-05 (Soil)

Summit Scientific

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

Calcium	17.9	0.0571	mg/L dry	1	BFC0357	03/17/22	03/22/22	EPA 6020B
Magnesium	3.71	0.0571	"	"	"	"	"	"
Sodium	17.7	0.0571	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **03/03/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.995	0.00100	units	1	BFC0512	03/23/22	03/23/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/03/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.5		%	1	BFC0295	03/15/22	03/16/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/03/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.236	0.0100	mmhos/cm	1	BFC0390	03/18/22	03/18/22	EPA 120.1	

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

Date Sampled: **03/03/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.18		pH Units	1	BFC0389	03/18/22	03/18/22	EPA 9045D	

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

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

SS04@2.5'
2203066-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/03/22 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFC0327	03/16/22	03/16/22	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: **03/03/22 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		93.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		99.3 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.3 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/03/22 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFC0328	03/16/22	03/17/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/03/22 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		86.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - Petrikin A34-08 (Fac)

Project Number: UWRWE-A1753-ABN

Project Manager: Jacob Whritenour

Reported:

03/24/22 11:48

SS04@2.5'
2203066-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/03/22 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFC0323	03/16/22	03/17/22	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: **03/03/22 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		71.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		70.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/03/22 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.431	0.0100	mg/L	1	BFC0308	03/15/22	03/19/22	EPA 6020B	

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

Date Sampled: **03/03/22 14:25**

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 - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

SS04@2.5'
2203066-06 (Soil)

Summit Scientific

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

Calcium	28.2	0.0585	mg/L dry	1	BFC0357	03/17/22	03/22/22	EPA 6020B
Magnesium	9.13	0.0585	"	"	"	"	"	"
Sodium	29.1	0.0585	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **03/03/22 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.22	0.00100	units	1	BFC0512	03/23/22	03/23/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/03/22 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.5		%	1	BFC0295	03/15/22	03/16/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/03/22 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.429	0.0100	mmhos/cm	1	BFC0390	03/18/22	03/18/22	EPA 120.1	

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

Date Sampled: **03/03/22 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.08		pH Units	1	BFC0389	03/18/22	03/18/22	EPA 9045D	

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

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

FS01@5'
2203066-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/03/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFC0100	03/07/22	03/08/22	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	0.95	0.50	"	"	"	"	"	"	

Date Sampled: **03/03/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		87.9 %	70-130		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	70-130		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.3 %	70-130		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/03/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	320	50	mg/kg	1	BFC0101	03/07/22	03/08/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/03/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		116 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

FS01@5'
2203066-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/03/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFC0092	03/05/22	03/06/22	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	0.0155	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0251	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0983	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0514	0.00500	"	"	"	"	"	"	

Date Sampled: **03/03/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		57.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		64.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/03/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.127	0.0100	mg/L	1	BFC0211	03/11/22	03/13/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/03/22 14:30**

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

Project: Noble - Petrikin A34-08 (Fac)

Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

FS01@5'
2203066-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	5.33	0.231	mg/kg dry	1	BFC0331	03/17/22	03/22/22	EPA 6020B
Barium	99.3	0.463	"	"	"	"	"	"
Cadmium	ND	0.231	"	"	"	"	"	"
Copper	7.99	0.463	"	"	"	"	"	"
Lead	7.07	0.231	"	"	"	"	"	"
Nickel	9.09	0.463	"	"	"	"	"	"
Selenium	0.950	0.301	"	"	"	"	"	"
Silver	0.0316	0.0231	"	"	"	"	"	"
Zinc	41.9	0.463	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/03/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFC0348	03/17/22	03/17/22	EPA 7196A	

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

Date Sampled: **03/03/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	36.9	0.0579	mg/L dry	1	BFC0137	03/08/22	03/12/22	EPA 6020B	
Magnesium	8.44	0.0579	"	"	"	"	"	"	
Sodium	40.9	0.0579	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/03/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.58	0.00100	units	1	BFC0236	03/13/22	03/13/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/03/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.
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Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

FS01@5'
2203066-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	86.4	%	1	BFC0147	03/09/22	03/09/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/03/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.372	0.0100	mmhos/cm	1	BFC0073	03/04/22	03/04/22	EPA 120.1	

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

Date Sampled: **03/03/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.37		pH Units	1	BFC0072	03/04/22	03/04/22	EPA 9045D	

Summit Scientific

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Project: Noble - Petrikin A34-08 (Fac)

Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

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 BFC0100 - EPA 5030 Soil MS

Blank (BFC0100-BLK1)

Prepared: 03/07/22 Analyzed: 03/08/22

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	0.0379		"	0.0400		94.8	70-130			
Surrogate: Toluene-d8	0.0402		"	0.0400		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.0379		"	0.0400		94.6	70-130			

LCS (BFC0100-BS1)

Prepared: 03/07/22 Analyzed: 03/08/22

Benzene	0.0590	0.0020	mg/kg	0.0750		78.7	70-130			
Toluene	0.0636	0.0050	"	0.0750		84.8	70-130			
Ethylbenzene	0.0639	0.0050	"	0.0750		85.2	70-130			
m,p-Xylene	0.136	0.010	"	0.150		90.6	70-130			
o-Xylene	0.0663	0.0050	"	0.0750		88.4	70-130			
1,2,4-Trimethylbenzene	0.0705	0.0050	"	0.0750		94.0	70-130			
1,3,5-Trimethylbenzene	0.0692	0.0050	"	0.0750		92.2	70-130			
Naphthalene	0.0594	0.0038	"	0.0750		79.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0388		"	0.0400		97.0	70-130			
Surrogate: Toluene-d8	0.0407		"	0.0400		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.0407		"	0.0400		102	70-130			

Matrix Spike (BFC0100-MS1)

Source: 2203052-02

Prepared: 03/07/22 Analyzed: 03/08/22

Benzene	0.0593	0.0020	mg/kg	0.0750	ND	79.1	70-130			
Toluene	0.0640	0.0050	"	0.0750	ND	85.3	70-130			
Ethylbenzene	0.0642	0.0050	"	0.0750	ND	85.6	70-130			
m,p-Xylene	0.138	0.010	"	0.150	ND	91.7	70-130			
o-Xylene	0.0668	0.0050	"	0.0750	ND	89.1	70-130			
1,2,4-Trimethylbenzene	0.0710	0.0050	"	0.0750	ND	94.6	70-130			
1,3,5-Trimethylbenzene	0.0687	0.0050	"	0.0750	ND	91.6	70-130			
Naphthalene	0.0716	0.0038	"	0.0750	ND	95.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0393		"	0.0400		98.2	70-130			
Surrogate: Toluene-d8	0.0406		"	0.0400		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100	70-130			

Summit Scientific

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

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

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	Notes

Batch BFC0100 - EPA 5030 Soil MS

Matrix Spike Dup (BFC0100-MSD1)		Source: 2203052-02			Prepared: 03/07/22 Analyzed: 03/08/22						
Benzene	0.0603	0.0020	mg/kg	0.0750	ND	80.4	70-130	1.66	30		
Toluene	0.0648	0.0050	"	0.0750	ND	86.4	70-130	1.26	30		
Ethylbenzene	0.0652	0.0050	"	0.0750	ND	86.9	70-130	1.53	30		
m,p-Xylene	0.138	0.010	"	0.150	ND	91.8	70-130	0.0654	30		
o-Xylene	0.0668	0.0050	"	0.0750	ND	89.0	70-130	0.0898	30		
1,2,4-Trimethylbenzene	0.0711	0.0050	"	0.0750	ND	94.8	70-130	0.211	30		
1,3,5-Trimethylbenzene	0.0688	0.0050	"	0.0750	ND	91.8	70-130	0.175	30		
Naphthalene	0.0762	0.0038	"	0.0750	ND	102	70-130	6.29	30		
<hr/>											
Surrogate: 1,2-Dichloroethane-d4	0.0410		"	0.0400		103	70-130				
Surrogate: Toluene-d8	0.0407		"	0.0400		102	70-130				
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	70-130				

Batch BFC0327 - EPA 5030 Soil MS

Blank (BFC0327-BLK1)		Prepared & Analyzed: 03/16/22									
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	"								
<hr/>											
Surrogate: 1,2-Dichloroethane-d4	0.0391		"	0.0400		97.6	50-150				
Surrogate: Toluene-d8	0.0413		"	0.0400		103	50-150				
Surrogate: 4-Bromofluorobenzene	0.0378		"	0.0400		94.6	50-150				

Summit Scientific

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

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFC0327 - EPA 5030 Soil MS

LCS (BFC0327-BS1)

Prepared & Analyzed: 03/16/22

Benzene	0.0599	0.0020	mg/kg	0.0750		79.9	70-130			
Toluene	0.0638	0.0050	"	0.0750		85.1	70-130			
Ethylbenzene	0.0660	0.0050	"	0.0750		88.0	70-130			
m,p-Xylene	0.140	0.010	"	0.150		93.4	70-130			
o-Xylene	0.0674	0.0050	"	0.0750		89.9	70-130			
1,2,4-Trimethylbenzene	0.0704	0.0050	"	0.0750		93.8	70-130			
1,3,5-Trimethylbenzene	0.0695	0.0050	"	0.0750		92.7	70-130			
Naphthalene	0.0632	0.0038	"	0.0750		84.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0381		"	0.0400		95.2	50-150			
Surrogate: Toluene-d8	0.0403		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.5	50-150			

Matrix Spike (BFC0327-MS1)

Source: 2203066-03

Prepared & Analyzed: 03/16/22

Benzene	0.0617	0.0020	mg/kg	0.0750	ND	82.3	70-130			
Toluene	0.0654	0.0050	"	0.0750	ND	87.2	70-130			
Ethylbenzene	0.0658	0.0050	"	0.0750	ND	87.7	70-130			
m,p-Xylene	0.141	0.010	"	0.150	ND	93.9	70-130			
o-Xylene	0.0687	0.0050	"	0.0750	ND	91.6	70-130			
1,2,4-Trimethylbenzene	0.0734	0.0050	"	0.0750	ND	97.9	70-130			
1,3,5-Trimethylbenzene	0.0715	0.0050	"	0.0750	ND	95.3	70-130			
Naphthalene	0.0716	0.0038	"	0.0750	0.00939	82.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0384		"	0.0400		96.1	50-150			
Surrogate: Toluene-d8	0.0407		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400		102	50-150			

Matrix Spike Dup (BFC0327-MSD1)

Source: 2203066-03

Prepared & Analyzed: 03/16/22

Benzene	0.0601	0.0020	mg/kg	0.0750	ND	80.2	70-130	2.61	30	
Toluene	0.0648	0.0050	"	0.0750	ND	86.4	70-130	0.968	30	
Ethylbenzene	0.0677	0.0050	"	0.0750	ND	90.3	70-130	2.97	30	
m,p-Xylene	0.144	0.010	"	0.150	ND	95.8	70-130	2.00	30	
o-Xylene	0.0690	0.0050	"	0.0750	ND	92.0	70-130	0.436	30	
1,2,4-Trimethylbenzene	0.0742	0.0050	"	0.0750	ND	99.0	70-130	1.06	30	
1,3,5-Trimethylbenzene	0.0731	0.0050	"	0.0750	ND	97.5	70-130	2.28	30	
Naphthalene	0.0635	0.0038	"	0.0750	0.00939	72.2	70-130	11.9	30	
Surrogate: 1,2-Dichloroethane-d4	0.0361		"	0.0400		90.2	50-150			
Surrogate: Toluene-d8	0.0402		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.4	50-150			

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

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

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 BFC0101 - EPA 3550A

Blank (BFC0101-BLK1)

Prepared: 03/07/22 Analyzed: 03/08/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BFC0101-BS1)

Prepared: 03/07/22 Analyzed: 03/08/22

C10-C28 (DRO)	501	50	mg/kg	500	100	70-130
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Matrix Spike (BFC0101-MS1)

Source: 2203052-02

Prepared: 03/07/22 Analyzed: 03/08/22

C10-C28 (DRO)	614	50	mg/kg	500	33.8	116	70-130
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Matrix Spike Dup (BFC0101-MSD1)

Source: 2203052-02

Prepared: 03/07/22 Analyzed: 03/08/22

C10-C28 (DRO)	589	50	mg/kg	500	33.8	111	70-130	4.20	20
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Batch BFC0328 - EPA 3550A

Blank (BFC0328-BLK1)

Prepared: 03/16/22 Analyzed: 03/17/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BFC0328-BS1)

Prepared: 03/16/22 Analyzed: 03/17/22

C10-C28 (DRO)	443	50	mg/kg	500	88.6	70-130
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Matrix Spike (BFC0328-MS1)

Source: 2203066-03

Prepared: 03/16/22 Analyzed: 03/17/22

C10-C28 (DRO)	429	50	mg/kg	500	27.7	80.2	70-130
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Matrix Spike Dup (BFC0328-MSD1)

Source: 2203066-03

Prepared: 03/16/22 Analyzed: 03/17/22

C10-C28 (DRO)	470	50	mg/kg	500	27.7	88.5	70-130	9.22	20
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

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 BFC0092 - EPA 5030 Soil MS

Blank (BFC0092-BLK1)

Prepared: 03/05/22 Analyzed: 03/06/22

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	0.0173		"	0.0333		51.8	40-150			
Surrogate: Fluoranthene-d10	0.0194		"	0.0333		58.1	40-150			

LCS (BFC0092-BS1)

Prepared: 03/05/22 Analyzed: 03/06/22

Acenaphthene	0.0222	0.00500	mg/kg	0.0333		66.7	31-137			
Anthracene	0.0253	0.00500	"	0.0333		75.9	30-120			
Benzo (a) anthracene	0.0228	0.00500	"	0.0333		68.3	30-120			
Benzo (a) pyrene	0.0204	0.00500	"	0.0333		61.3	30-120			
Benzo (b) fluoranthene	0.0187	0.00500	"	0.0333		56.2	30-120			
Benzo (k) fluoranthene	0.0208	0.00500	"	0.0333		62.5	30-120			
Chrysene	0.0227	0.00500	"	0.0333		68.2	30-120			
Dibenz (a,h) anthracene	0.0246	0.00500	"	0.0333		73.8	30-120			
Fluoranthene	0.0267	0.00500	"	0.0333		80.2	30-120			
Fluorene	0.0196	0.00500	"	0.0333		58.9	30-120			
Indeno (1,2,3-cd) pyrene	0.0277	0.00500	"	0.0333		83.0	30-120			
Pyrene	0.0224	0.00500	"	0.0333		67.1	35-142			
1-Methylnaphthalene	0.0195	0.00500	"	0.0333		58.5	35-142			
2-Methylnaphthalene	0.0196	0.00500	"	0.0333		58.9	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0203		"	0.0333		60.8	40-150			
Surrogate: Fluoranthene-d10	0.0247		"	0.0333		74.1	40-150			

Summit Scientific

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

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

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 BFC0092 - EPA 5030 Soil MS

Matrix Spike (BFC0092-MS1)

Source: 2203041-01

Prepared: 03/05/22 Analyzed: 03/06/22

Acenaphthene	0.0187	0.00500	mg/kg	0.0333	ND	56.2	31-137				
Anthracene	0.0211	0.00500	"	0.0333	ND	63.4	30-120				
Benzo (a) anthracene	0.0191	0.00500	"	0.0333	ND	57.3	30-120				
Benzo (a) pyrene	0.0163	0.00500	"	0.0333	ND	49.0	30-120				
Benzo (b) fluoranthene	0.0164	0.00500	"	0.0333	ND	49.2	30-120				
Benzo (k) fluoranthene	0.0184	0.00500	"	0.0333	ND	55.3	30-120				
Chrysene	0.0196	0.00500	"	0.0333	ND	58.7	30-120				
Dibenz (a,h) anthracene	0.0210	0.00500	"	0.0333	ND	62.9	30-120				
Fluoranthene	0.0231	0.00500	"	0.0333	ND	69.2	30-120				
Fluorene	0.0232	0.00500	"	0.0333	ND	69.7	30-120				
Indeno (1,2,3-cd) pyrene	0.0237	0.00500	"	0.0333	ND	71.2	30-120				
Pyrene	0.0205	0.00500	"	0.0333	ND	61.4	35-142				
1-Methylnaphthalene	0.0157	0.00500	"	0.0333	ND	47.2	15-130				
2-Methylnaphthalene	0.0152	0.00500	"	0.0333	ND	45.7	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0185		"	0.0333		55.4	40-150				
Surrogate: Fluoranthene-d10	0.0218		"	0.0333		65.4	40-150				

Matrix Spike Dup (BFC0092-MSD1)

Source: 2203041-01

Prepared: 03/05/22 Analyzed: 03/06/22

Acenaphthene	0.0224	0.00500	mg/kg	0.0333	ND	67.3	31-137	18.0	30		
Anthracene	0.0227	0.00500	"	0.0333	ND	68.0	30-120	6.99	30		
Benzo (a) anthracene	0.0210	0.00500	"	0.0333	ND	63.0	30-120	9.42	30		
Benzo (a) pyrene	0.0183	0.00500	"	0.0333	ND	54.9	30-120	11.2	30		
Benzo (b) fluoranthene	0.0185	0.00500	"	0.0333	ND	55.5	30-120	12.0	30		
Benzo (k) fluoranthene	0.0215	0.00500	"	0.0333	ND	64.4	30-120	15.1	30		
Chrysene	0.0216	0.00500	"	0.0333	ND	64.7	30-120	9.81	30		
Dibenz (a,h) anthracene	0.0229	0.00500	"	0.0333	ND	68.8	30-120	8.97	30		
Fluoranthene	0.0248	0.00500	"	0.0333	ND	74.3	30-120	7.08	30		
Fluorene	0.0236	0.00500	"	0.0333	ND	70.7	30-120	1.30	30		
Indeno (1,2,3-cd) pyrene	0.0247	0.00500	"	0.0333	ND	74.2	30-120	4.11	30		
Pyrene	0.0218	0.00500	"	0.0333	ND	65.4	35-142	6.17	30		
1-Methylnaphthalene	0.0203	0.00500	"	0.0333	ND	60.9	15-130	25.3	50		
2-Methylnaphthalene	0.0203	0.00500	"	0.0333	ND	61.0	15-130	28.8	50		
Surrogate: 2-Methylnaphthalene-d10	0.0201		"	0.0333		60.2	40-150				
Surrogate: Fluoranthene-d10	0.0239		"	0.0333		71.6	40-150				

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

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

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 BFC0323 - EPA 5030 Soil MS

Blank (BFC0323-BLK1)

Prepared: 03/16/22 Analyzed: 03/17/22

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	0.0220		"	0.0333		65.9	40-150			
Surrogate: Fluoranthene-d10	0.0219		"	0.0333		65.7	40-150			

LCS (BFC0323-BS1)

Prepared: 03/16/22 Analyzed: 03/17/22

Acenaphthene	0.0185	0.00500	mg/kg	0.0333		55.4	31-137			
Anthracene	0.0191	0.00500	"	0.0333		57.3	30-120			
Benzo (a) anthracene	0.0173	0.00500	"	0.0333		51.8	30-120			
Benzo (a) pyrene	0.0166	0.00500	"	0.0333		49.8	30-120			
Benzo (b) fluoranthene	0.0154	0.00500	"	0.0333		46.2	30-120			
Benzo (k) fluoranthene	0.0189	0.00500	"	0.0333		56.8	30-120			
Chrysene	0.0199	0.00500	"	0.0333		59.8	30-120			
Dibenz (a,h) anthracene	0.0204	0.00500	"	0.0333		61.2	30-120			
Fluoranthene	0.0214	0.00500	"	0.0333		64.3	30-120			
Fluorene	0.0194	0.00500	"	0.0333		58.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0233	0.00500	"	0.0333		69.9	30-120			
Pyrene	0.0200	0.00500	"	0.0333		59.9	35-142			
1-Methylnaphthalene	0.0156	0.00500	"	0.0333		46.7	35-142			
2-Methylnaphthalene	0.0179	0.00500	"	0.0333		53.8	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0192		"	0.0333		57.7	40-150			
Surrogate: Fluoranthene-d10	0.0233		"	0.0333		69.8	40-150			

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

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

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 BFC0323 - EPA 5030 Soil MS

Matrix Spike (BFC0323-MS1)

Source: 2203066-03

Prepared: 03/16/22 Analyzed: 03/19/22

Acenaphthene	0.0176	0.00500	mg/kg	0.0333	ND	52.8	31-137			
Anthracene	0.0191	0.00500	"	0.0333	ND	57.2	30-120			
Benzo (a) anthracene	0.0188	0.00500	"	0.0333	ND	56.5	30-120			
Benzo (a) pyrene	0.0221	0.00500	"	0.0333	ND	66.3	30-120			
Benzo (b) fluoranthene	0.0179	0.00500	"	0.0333	ND	53.6	30-120			
Benzo (k) fluoranthene	0.0200	0.00500	"	0.0333	ND	59.9	30-120			
Chrysene	0.0217	0.00500	"	0.0333	ND	65.1	30-120			
Dibenz (a,h) anthracene	0.0291	0.00500	"	0.0333	ND	87.4	30-120			
Fluoranthene	0.0208	0.00500	"	0.0333	ND	62.3	30-120			
Fluorene	0.0175	0.00500	"	0.0333	ND	52.6	30-120			
Indeno (1,2,3-cd) pyrene	0.0368	0.00500	"	0.0333	ND	110	30-120			
Pyrene	0.0217	0.00500	"	0.0333	ND	65.1	35-142			
1-Methylnaphthalene	0.0172	0.00500	"	0.0333	ND	51.6	15-130			
2-Methylnaphthalene	0.0171	0.00500	"	0.0333	ND	51.3	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0157		"	0.0333		47.0	40-150			
Surrogate: Fluoranthene-d10	0.0207		"	0.0333		62.0	40-150			

Matrix Spike Dup (BFC0323-MSD1)

Source: 2203066-03

Prepared: 03/16/22 Analyzed: 03/19/22

Acenaphthene	0.0133	0.00500	mg/kg	0.0333	ND	39.9	31-137	27.9	30	
Anthracene	0.0137	0.00500	"	0.0333	ND	41.1	30-120	32.7	30	QM-07
Benzo (a) anthracene	0.0150	0.00500	"	0.0333	ND	45.0	30-120	22.8	30	
Benzo (a) pyrene	0.0169	0.00500	"	0.0333	ND	50.8	30-120	26.5	30	
Benzo (b) fluoranthene	0.0143	0.00500	"	0.0333	ND	42.9	30-120	22.2	30	
Benzo (k) fluoranthene	0.0159	0.00500	"	0.0333	ND	47.7	30-120	22.6	30	
Chrysene	0.0166	0.00500	"	0.0333	ND	49.8	30-120	26.7	30	
Dibenz (a,h) anthracene	0.0208	0.00500	"	0.0333	ND	62.5	30-120	33.2	30	QM-07
Fluoranthene	0.0145	0.00500	"	0.0333	ND	43.5	30-120	35.6	30	QM-07
Fluorene	0.0120	0.00500	"	0.0333	ND	36.0	30-120	37.3	30	QM-07
Indeno (1,2,3-cd) pyrene	0.0307	0.00500	"	0.0333	ND	92.1	30-120	18.1	30	
Pyrene	0.0166	0.00500	"	0.0333	ND	49.8	35-142	26.6	30	
1-Methylnaphthalene	0.0133	0.00500	"	0.0333	ND	39.9	15-130	25.6	50	
2-Methylnaphthalene	0.0139	0.00500	"	0.0333	ND	41.8	15-130	20.3	50	
Surrogate: 2-Methylnaphthalene-d10	0.0144		"	0.0333		43.2	40-150			
Surrogate: Fluoranthene-d10	0.0159		"	0.0333		47.8	40-150			

Summit Scientific

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

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

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

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

Batch BFC0211 - EPA 3050B

Blank (BFC0211-BLK1)

Prepared: 03/11/22 Analyzed: 03/13/22

Boron ND 0.0100 mg/L

LCS (BFC0211-BS1)

Prepared: 03/11/22 Analyzed: 03/13/22

Boron 4.74 0.0100 mg/L 5.00 94.7 80-120

Duplicate (BFC0211-DUP1)

Source: 2203066-01

Prepared: 03/11/22 Analyzed: 03/13/22

Boron 0.424 0.0100 mg/L 0.436 2.69 20

Matrix Spike (BFC0211-MS1)

Source: 2203066-01

Prepared: 03/11/22 Analyzed: 03/13/22

Boron 4.99 0.0100 mg/L 5.00 0.436 91.1 75-125

Matrix Spike Dup (BFC0211-MSD1)

Source: 2203066-01

Prepared: 03/11/22 Analyzed: 03/13/22

Boron 5.36 0.0100 mg/L 5.00 0.436 98.4 75-125 7.06 25

Batch BFC0308 - EPA 3050B

Blank (BFC0308-BLK1)

Prepared: 03/15/22 Analyzed: 03/19/22

Boron ND 0.0100 mg/L

LCS (BFC0308-BS1)

Prepared: 03/15/22 Analyzed: 03/19/22

Boron 4.11 0.0100 mg/L 5.00 82.2 80-120

Duplicate (BFC0308-DUP1)

Source: 2202175-01

Prepared: 03/15/22 Analyzed: 03/19/22

Boron 0.171 0.0100 mg/L 0.175 2.42 20

Matrix Spike (BFC0308-MS1)

Source: 2202175-01

Prepared: 03/15/22 Analyzed: 03/19/22

Boron 4.31 0.0100 mg/L 5.00 0.175 82.7 75-125

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

Project: Noble - Petrikin A34-08 (Fac)

Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

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

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

Batch BFC0308 - EPA 3050B

Matrix Spike Dup (BFC0308-MSD1)

Source: 2202175-01

Prepared: 03/15/22 Analyzed: 03/19/22

Boron	4.40	0.0100	mg/L	5.00	0.175	84.5	75-125	2.03	25
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFC0331 - EPA 3050B

Blank (BFC0331-BLK1)

Prepared: 03/17/22 Analyzed: 03/22/22

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 (BFC0331-BS1)

Prepared: 03/17/22 Analyzed: 03/22/22

Arsenic	38.0	0.200	mg/kg wet	40.0	95.1	80-120
Barium	33.9	0.400	"	40.0	84.7	80-120
Cadmium	1.64	0.200	"	2.00	82.1	80-120
Copper	35.2	0.400	"	40.0	87.9	80-120
Lead	16.1	0.200	"	20.0	80.3	80-120
Nickel	34.8	0.400	"	40.0	87.0	80-120
Selenium	3.62	0.260	"	4.00	90.6	80-120
Silver	1.60	0.0200	"	2.00	80.1	80-120
Zinc	39.6	0.400	"	40.0	99.0	80-120

Duplicate (BFC0331-DUP1)

Source: 2203021-01

Prepared: 03/17/22 Analyzed: 03/22/22

Arsenic	3.48	0.234	mg/kg dry	3.43	1.43	20
Barium	75.5	0.469	"	74.4	1.50	20
Cadmium	0.103	0.234	"	0.102	0.936	20
Copper	7.13	0.469	"	6.94	2.61	20
Lead	5.74	0.234	"	5.69	0.827	20
Nickel	7.37	0.469	"	7.14	3.15	20
Selenium	0.864	0.305	"	0.829	4.18	20
Silver	0.0348	0.0234	"	0.0343	1.44	20
Zinc	28.9	0.469	"	28.6	1.16	20

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

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

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 BFC0331 - EPA 3050B

Matrix Spike (BFC0331-MS1)		Source: 2203021-01			Prepared: 03/17/22 Analyzed: 03/22/22					
Arsenic	51.7	0.234	mg/kg dry	46.9	3.43	103	75-125			
Barium	107	0.469	"	46.9	74.4	70.2	75-125			QR-03
Cadmium	2.14	0.234	"	2.34	0.102	87.1	75-125			
Copper	49.3	0.469	"	46.9	6.94	90.3	75-125			
Lead	24.2	0.234	"	23.4	5.69	78.7	75-125			
Nickel	49.8	0.469	"	46.9	7.14	91.1	75-125			
Selenium	4.80	0.305	"	4.69	0.829	84.6	75-125			
Silver	1.98	0.0234	"	2.34	0.0343	82.8	75-125			
Zinc	76.7	0.469	"	46.9	28.6	103	75-125			

Matrix Spike Dup (BFC0331-MSD1)		Source: 2203021-01			Prepared: 03/17/22 Analyzed: 03/22/22					
Arsenic	52.1	0.234	mg/kg dry	46.9	3.43	104	75-125	0.651	25	
Barium	109	0.469	"	46.9	74.4	74.8	75-125	1.96	25	QR-03
Cadmium	2.19	0.234	"	2.34	0.102	89.1	75-125	2.11	25	
Copper	49.8	0.469	"	46.9	6.94	91.3	75-125	0.959	25	
Lead	24.1	0.234	"	23.4	5.69	78.4	75-125	0.320	25	
Nickel	51.0	0.469	"	46.9	7.14	93.6	75-125	2.33	25	
Selenium	4.82	0.305	"	4.69	0.829	85.2	75-125	0.504	25	
Silver	2.02	0.0234	"	2.34	0.0343	84.7	75-125	2.26	25	
Zinc	77.3	0.469	"	46.9	28.6	104	75-125	0.804	25	

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

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

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 BFC0348 - 3060A Mod

Blank (BFC0348-BLK1)

Prepared & Analyzed: 03/17/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFC0348-BS1)

Prepared & Analyzed: 03/17/22

Chromium, Hexavalent 29.6 0.30 mg/kg wet 25.0 118 80-120

Duplicate (BFC0348-DUP1)

Source: 2203034-16

Prepared & Analyzed: 03/17/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFC0348-MS1)

Source: 2203034-16

Prepared & Analyzed: 03/17/22

Chromium, Hexavalent 35.7 0.30 mg/kg dry 32.2 ND 111 75-125

Matrix Spike Dup (BFC0348-MSD1)

Source: 2203034-16

Prepared & Analyzed: 03/17/22

Chromium, Hexavalent 37.8 0.30 mg/kg dry 32.2 ND 117 75-125 5.78 20

Summit Scientific

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

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

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

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

Batch BFC0137 - General Preparation

Blank (BFC0137-BLK1)

Prepared: 03/08/22 Analyzed: 03/12/22

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

LCS (BFC0137-BS1)

Prepared: 03/08/22 Analyzed: 03/12/22

Calcium	5.66	0.0500	mg/L wet	5.00	113	70-130
Magnesium	5.11	0.0500	"	5.00	102	70-130
Sodium	5.02	0.0500	"	5.00	100	70-130

Batch BFC0357 - General Preparation

Blank (BFC0357-BLK1)

Prepared: 03/17/22 Analyzed: 03/22/22

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

LCS (BFC0357-BS1)

Prepared: 03/17/22 Analyzed: 03/22/22

Calcium	6.01	0.0500	mg/L wet	5.00	120	70-130
Magnesium	5.56	0.0500	"	5.00	111	70-130
Sodium	5.56	0.0500	"	5.00	111	70-130

Summit Scientific

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

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

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 BFC0147 - General Preparation

Duplicate (BFC0147-DUP1)		Source: 2203064-01			Prepared & Analyzed: 03/09/22						
% Solids	89.8		%		89.8			0.0543		20	

Batch BFC0295 - General Preparation

Duplicate (BFC0295-DUP1)		Source: 2203054-01			Prepared: 03/15/22 Analyzed: 03/16/22						
% Solids	87.5		%		86.5			1.13		20	

Batch BFC0364 - General Preparation

Duplicate (BFC0364-DUP1)		Source: 2203066-03			Prepared: 03/17/22 Analyzed: 03/18/22						
% Solids	87.5		%		86.2			1.61		20	

Summit Scientific

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

Project: Noble - Petrikin A34-08 (Fac)
Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

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

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

Batch BFC0073 - General Preparation

Blank (BFC0073-BLK1)

Prepared & Analyzed: 03/04/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFC0073-BS1)

Prepared & Analyzed: 03/04/22

Specific Conductance (EC) 0.144 0.0100 mmhos/cm 0.150 96.1 95-105

Duplicate (BFC0073-DUP1)

Source: 2203054-01

Prepared & Analyzed: 03/04/22

Specific Conductance (EC) 0.429 0.0100 mmhos/cm 0.430 0.0931 20

Batch BFC0390 - General Preparation

Blank (BFC0390-BLK1)

Prepared & Analyzed: 03/18/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFC0390-BS1)

Prepared & Analyzed: 03/18/22

Specific Conductance (EC) 0.150 0.0100 mmhos/cm 0.150 100 95-105

Duplicate (BFC0390-DUP1)

Source: 2203066-03

Prepared & Analyzed: 03/18/22

Specific Conductance (EC) 0.316 0.0100 mmhos/cm 0.323 2.35 20

Summit Scientific

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

Project: Noble - Petrikin A34-08 (Fac)

Project Number: UWRWE-A1753-ABN

Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

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 BFC0072 - General Preparation

LCS (BFC0072-BS1)

Prepared & Analyzed: 03/04/22

pH	9.19		pH Units	9.18	100	95-105
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Duplicate (BFC0072-DUP1)

Source: 2203054-01

Prepared & Analyzed: 03/04/22

pH	8.74		pH Units	8.73		0.114	20
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Batch BFC0389 - General Preparation

LCS (BFC0389-BS1)

Prepared & Analyzed: 03/18/22

pH	9.14		pH Units	9.18	99.6	95-105
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Duplicate (BFC0389-DUP1)

Source: 2203066-03

Prepared & Analyzed: 03/18/22

pH	8.18		pH Units	7.99		2.35	20
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Summit Scientific

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

Project: Noble - Petrikin A34-08 (Fac)

Project Number: UWRWE-A1753-ABN
Project Manager: Jacob Whritenour

Reported:
03/24/22 11:48

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-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference