



Tank Battery Closure Checklist

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



Additional attachments (optional):		Pit Closure		Wellhead Closure		Flowline Closure		Partially Buried Vault Closure
Site Name & COGCC Facility Number: Lilli unit 14-5 FAC		Date: 3/31/2022						Remediation Project #: 20862
Associated Wells:		Age of Site:						Number of Photos Attached: 12
Location: (GPS coordinates of southeaster berm) 40.68566330, -103.8882416								Estimated Facility Size (acres):
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.) Good, no visible sign of erosion and corrosion								
USCS Soil Type: Well Graded Sand - 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								
Tanks								
Tank Contents	Produced Water	Crude Oil						
Size (barrels)								
Age								
Construction Material	Steele	Steele						
Tank type (AST/PBV, etc.)	PBV	AST						
Visual Integrity of Tank	Good	Good						
Condition of tank footprint	Good	Good						
PID Readings								
Soil impacts present at valves or hatches?	None observed	None observed						
PID Readings	0.0 - 0.0	0.0 - 0.0						
Sample taken? Location/ Sample ID#	yes, see below	yes, see below						
Photo Number(s)	1 - 5	6,7						
Other observations regarding tanks: Samples taken on all 4 sidewalls and base of excavation (SS01-04@2.5', FS01@4') Sample taken at base of AST, AST01@0.5' and AST02@0.5'.								
Separators								
Separator size								
Vertical or Horizontal	Vertical							
Age								
Soil impacts observed?	None observed							
PID Readings	0.0, 0.0, 22.8							
Sample taken? Location/ Sample ID#	yes, see below							
Photo Number(s)	8,13,14							
Other observations regarding separators: Samples taken at Dumphline bottom of seperator (SEP01-DL01@3', SEP01-DL02@4' and SEP01-DL03@3') Flowline was previously removed								
Third Party Equipment								
Type								
Age								

Third Party														
Removal Date														
Sample taken?														
PID Readings														
Photo Number(s)														
Other Facility Equipment														
Equipment type	FLARE	Meter House												
Equipment Condition	Good	Good												
Age														
Soil impacts observed during	None observed	None observed												
PID Readings	0.0	0.0												
Sample taken?	Yes, see below	yes, see below												
Photo Number(s)	9	10												
Other observations regarding other facility or third party equipment:														
Sample taken below meter house and flare. (MH01@0.5' & Flare01@0.5')														
Summary														
Was impacted soil identified?														
<div> <div>No</div> <div>Yes - less than 10 cubic yards</div> <div>Yes - more than 10 cubic yards</div> </div>														
Total number of samples field screened: 12					Total number of samples collected: 12									
Highest PID Reading: 22.8					Total number of samples submitted to lab for analysis: 10									
If more than 10 cubic yards of impacted soil were observed:														
Vertical extent:					Estimated spill volume:									
Lateral extent:					Volume of soil removed:									
Is additional investigation required?														
Was groundwater encountered during the investigation?														
<div> <div>No</div> <div>Yes - not impacted or in contact with impacted soils</div> <div>Yes - groundwater impacted and/or in contact with impacted soils</div> </div>														
Measured depth to groundwater:					Was remedial groundwater removal conducted? Yes No									
Date Groundwater was encountered:					Commencement date of removal:									
Sheen on groundwater? Yes No					Volume of groundwater removed prior to sampling:									
Free product observed? Yes No					Volume of groundwater removed post sampling:									
Total number of samples collected:					Total Volume of groundwater removed:									
Total number of samples submitted to lab for analysis:														


Photographic Log

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

Photographic Log

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



Photographic Log

							
Equipment ID: FS01 @4'		Equipment Type: Partially Buried Vault		Equipment ID: AST01 @0.5'		Equipment Type: Above Ground Storage Tank	
Material: Concrete		Volume:		Material: Steel		Volume:	
		Contents: Produced Water				Contents: Crude Oil	
Notes/Conditions:				Notes/Conditions:			

Photographic Log

											
Equipment ID: AST02 @ 0.5'		Equipment Type: Above Ground Storage Tank		Equipment ID: SEP01-DL01 @ 3'		Equipment Type: Separator					
Material: Steel		Volume:		Contents: Crude Oil		Material: Steel		Volume:		Contents: Oil/Gas/Water	
Notes/Conditions:						Notes/Conditions:					

Photographic Log

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

Photographic Log

									
						Equipment ID: BG01@2'		Equipment Type:	
						Material:	Volume:	Contents:	
						Notes/Conditions:			
Equipment ID: BG01@4'		Equipment Type:							
Material:	Volume:	Contents:							
Notes/Conditions:									

Photographic Log

					
Equipment ID: SEP01-DL02		Equipment Type: Dump Line	Equipment ID: SEP01-DL03		Equipment Type: Dump Line
Material: Steel	Volume:	Contents:	Material: Steel	Volume:	Contents:
Notes/Conditions: Soil sample location SEP01-DL02@4'. No hydrocarbon odor or staining.			Notes/Conditions: Soil sample location SEP01-DL03@3'. No hydrocarbon odor or staining.		

TABLE 1
SOIL SAMPLE LOCATIONS
NOBLE ENERGY, INC. - Lilli Unit 14-5 Facility

Soil Sample ID	Date	PID (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude ¹	Longitude	PDOP
SEP01-DL02@4'	04/01/22	0.0	No Staining	No Odor	Lab	40.68592885	-103.8881736	1.1
SEP01-DL03@3'	04/01/22	0.0	No Staining	No Odor	Lab	40.68583951	-103.8881891	1.3
SS01@2.5'	03/31/22	0.0	No Staining	No Odor	Lab	40.68564599	-103.8883366	1.2
SS02@2.5'	03/31/22	0.0	No Staining	No Odor	Lab	40.68562550	-103.8883080	1.1
SS03@2.5'	03/31/22	0.0	No Staining	No Odor	Lab	40.68559532	-103.8883381	1.0
SS04@2.5'	03/31/22	0.0	No Staining	No Odor	Lab	40.68561773	-103.8883621	1.0
FS01@4'	03/31/22	0.0	No Staining	No Odor	Lab	40.68561243	-103.8883403	1.1
AST01@0.5'	03/31/22	0.0	No Staining	No Odor	Lab	40.68561806	-103.8882834	1.0
AST02@0.5'	03/31/22	0.0	No Staining	No Odor	Lab	40.68561942	-103.8882324	0.9
SEP01-DL01@3'	03/31/22	22.8	No Staining	No Odor	Lab	40.68599086	-103.8881669	0.9
FLARE01@0.5	03/31/22	0.0	No Staining	No Odor	Grab	40.68597115	-103.8882442	1.0
MH01@0.5'	03/31/22	0.0	No Staining	No Odor	Grab	40.68592871	-103.8881108	1.0
BG01@2'	03/31/22	0.0	No Staining	No Odor	Lab	40.68613885	-103.8888993	1.0
BG01@4'	03/31/22	0.0	No Staining	No Odor	Lab	40.68614039	-103.8888974	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. - Lilli Unit 14-5 Facility

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-DL02@4'	04/01/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	490	400	<0.00500	<0.00500	<0.00500	0.0645	<0.00500	<0.00500	0.0488	<0.00500	<0.00500	<0.00500	<0.00500	0.00703	<0.00500	<0.00500
SEP01-DL03@3'	04/01/22	<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'	03/31/22	<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@4'	03/31/22	<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
AST01@0.5'	03/31/22	<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
AST02@0.5'	03/31/22	<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
SEP01-DL01@3'	03/31/22	<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
BG01@4'	03/31/22	<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

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
Residential SSL ²		6 - 8.3	<6	<4mmhos/cm	2
SEP01-DL02@4'	04/01/22	7.85	0.425	0.902	0.0543
SEP01-DL03@3'	04/01/22	7.88	0.588	0.488	0.0798
SS01@2.5'	03/31/22	8.15	0.153	0.18	0.0379
FS01@4'	03/31/22	7.92	0.141	0.222	0.0353
AST01@0.5'	03/31/22	6.96	0.0507	1.36	0.0468
AST02@0.5'	03/31/22	7.80	0.0733	0.207	0.0400
SEP01-DL01@3'	03/31/22	8.02	0.075	0.187	0.0212
BG01@4'	03/31/22	NA	NA	NA	NA

Soil Sample ID	Date	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL ²		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL ^{2,3}		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
SEP01-DL02@4'	04/01/22	2.85	248	0.255	<0.30	7.48	10.2	7.19	1.08	0.128	30.8
BG01@4'	03/31/22	3.77	379	0.252	<0.30	6.54	10.6	8.26	1.06	0.0812	30.9

Notes:

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

Definitions:

COGCC = Colorado Oil and Gas Conservation Commission

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

TPH-ORO = Total petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

SAR = Sodium Adsorption Ratio

EC = Electrical Conductivity

mmhos/cm = Millmhos per centimeter

mg/L = Milligrams per liter

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

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

NA = Not Ananalysed

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

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

Ben z(a) = Benzan thracene

Ben z(b) = Benzofluoranthene

Ben z(k) = Benzofluoranthene

Ben z(a) = Benzopyrene

A,H = Dibenzoanthracene

1,2,3-CD = Indenopyrene

1-M = 1-methylnaphthalene

2-M = 2-methylnaphthalene

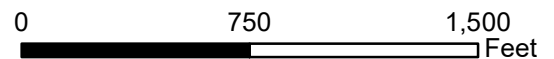
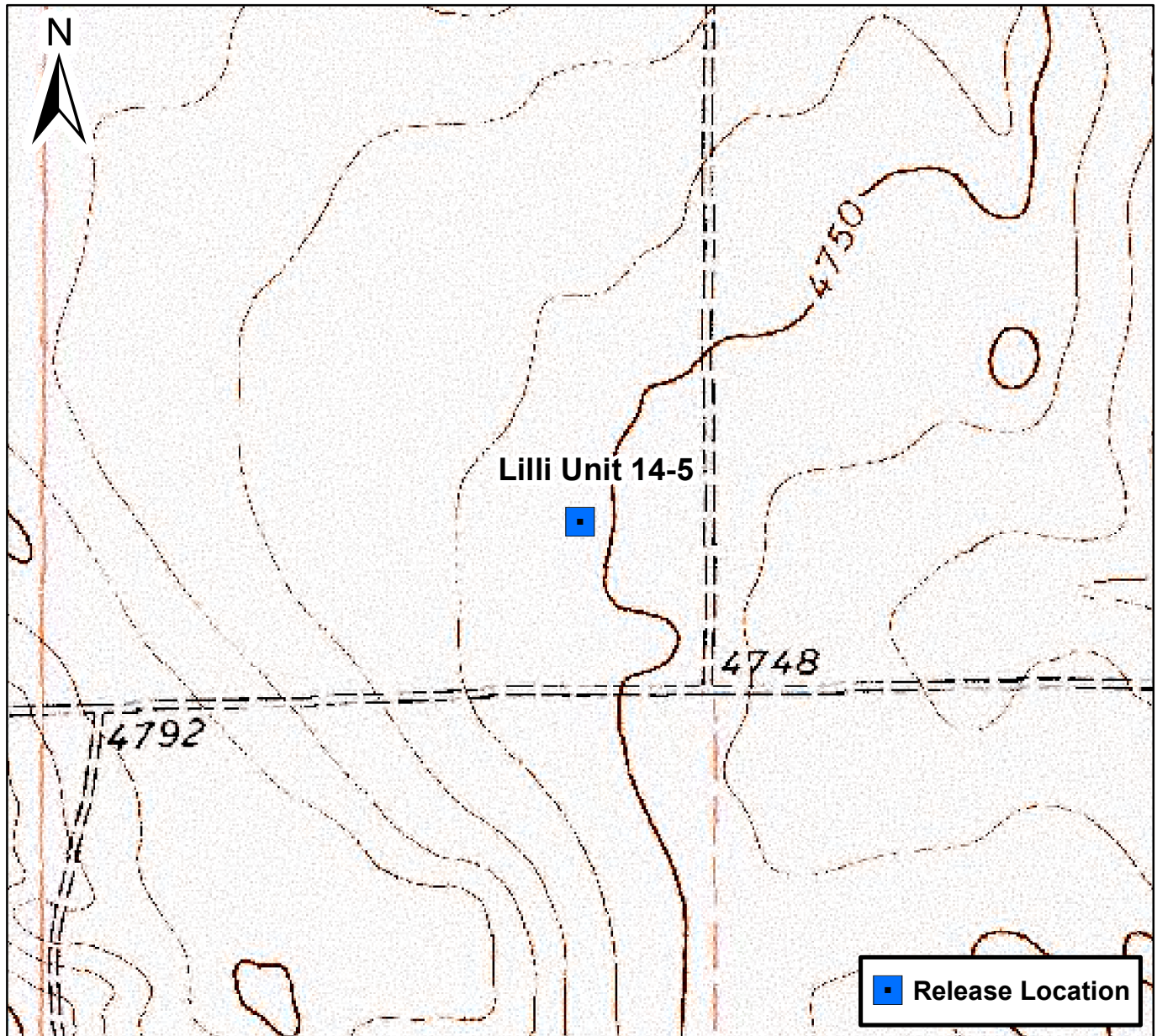


Figure 1

Site Location Map
Lilli Unit 14-5
SESW S5 T8N R58W
Weld County, Colorado





Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 04, 2022

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Lilli Unit 14-5

Work Order #2204021

Enclosed are the results of analyses for samples received by Summit Scientific on 04/01/22 17:28. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



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

Project: Noble - Lilli Unit 14-5

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
05/04/22 13:31

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SEP01-DL02@4'	2204021-01	Soil	04/01/22 10:20	04/01/22 17:28
SEP01-DL03@3'	2204021-02	Soil	04/01/22 10:30	04/01/22 17:28

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.

S_2

303-277-9310

Page 1 of 1

Project Number:

www.s2scientific.com



Sample Receipt Checklist

S2 Work Order# 2204021Client: Noble TassmanClient Project ID: Lilli unit 14-5Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #: _____

Matrix (check all that apply):

☐

Air

☒

Soil/Solid

☐

Water

☐

Other: _____

(Describe)

Temp (°C)

6.6

Thermometer ID: 61857155-K

	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"/>	<u>on ICE</u>
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, H2SO4, NaOH, HNO3, 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.[Signature]
Custodian Printed Name or Initials4.1.22
Date/Time



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

Project: Noble - Lilli Unit 14-5

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/04/22 13:31

SEP01-DL02@4'
2204021-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/01/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFD0041	04/04/22	04/07/22	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: **04/01/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		135 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/01/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	490	50	mg/kg	1	BFD0042	04/04/22	04/05/22	EPA 8015M	
C28-C36 (ORO)	400	50	"	"	"	"	"	"	

Date Sampled: **04/01/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		85.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Noble - Lilli Unit 14-5

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/04/22 13:31

SEP01-DL02@4'
2204021-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/01/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0046	04/04/22	04/05/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0645	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	0.0488	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	0.00703	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/01/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	52.8 %	40-150	"	"	"	"	"	"	
Surrogate: Fluoranthene-d10	39.8 %	40-150	"	"	"	"	"	"	S-02

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/01/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0543	0.0100	mg/L	1	BFD0094	04/05/22	04/10/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/01/22 10:20**

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 - Lilli Unit 14-5

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/04/22 13:31

SEP01-DL02@4'
2204021-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.85	0.250	mg/kg dry	1	BFD0564	04/26/22	05/03/22	EPA 6020B
Barium	248	0.499	"	"	"	"	"	"
Cadmium	0.255	0.250	"	"	"	"	"	"
Copper	7.48	0.499	"	"	"	"	"	"
Lead	10.2	0.250	"	"	"	"	"	"
Nickel	7.19	0.499	"	"	"	"	"	"
Selenium	1.08	0.324	"	"	"	"	"	"
Silver	0.128	0.0250	"	"	"	"	"	"
Zinc	30.8	0.499	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/01/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0388	04/19/22	04/19/22	EPA 7196A	

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

Date Sampled: **04/01/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	72.5	0.0624	mg/L dry	1	BFD0202	04/11/22	04/13/22	EPA 6020B	
Magnesium	17.1	0.0624	"	"	"	"	"	"	
Sodium	15.5	0.0624	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/01/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.425	0.00100	units	1	BFD0273	04/13/22	04/13/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/01/22 10:20**

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 - Lilli Unit 14-5

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/04/22 13:31

SEP01-DL02@4'
2204021-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	80.1	%	1	BFD0163	04/08/22	04/11/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/01/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.902	0.0100	mmhos/cm	1	BFD0229	04/12/22	04/12/22	EPA 120.1	

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

Date Sampled: **04/01/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.85		pH Units	1	BFD0228	04/12/22	04/12/22	EPA 9045D	

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Project: Noble - Lilli Unit 14-5

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/04/22 13:31

SEP01-DL03@3'
2204021-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/01/22 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0041	04/04/22	04/07/22	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: **04/01/22 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		142 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/01/22 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0042	04/04/22	04/05/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/01/22 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		89.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/04/22 13:31

SEP01-DL03@3'
2204021-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/01/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0046	04/04/22	04/05/22	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: **04/01/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		59.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		46.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/01/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0798	0.0100	mg/L	1	BFD0094	04/05/22	04/10/22	EPA 6020B	

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

Date Sampled: **04/01/22 10:30**

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/04/22 13:31

SEP01-DL03@3'
2204021-02 (Soil)

Summit Scientific

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

Calcium	33.3	0.0592	mg/L dry	1	BFD0202	04/11/22	04/13/22	EPA 6020B
Magnesium	8.55	0.0592	"	"	"	"	"	"
Sodium	14.7	0.0592	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **04/01/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.588	0.00100	units	1	BFD0273	04/13/22	04/13/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/01/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.5		%	1	BFD0163	04/08/22	04/11/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/01/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.488	0.0100	mmhos/cm	1	BFD0229	04/12/22	04/12/22	EPA 120.1	

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

Date Sampled: **04/01/22 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.88		pH Units	1	BFD0228	04/12/22	04/12/22	EPA 9045D	

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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - Lilli Unit 14-5

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/04/22 13:31

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 BFD0041 - EPA 5030 Soil MS

Blank (BFD0041-BLK1)

Prepared: 04/04/22 Analyzed: 04/07/22

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	0.0584		"	0.0400		146	50-150			
Surrogate: Toluene-d8	0.0414		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	50-150			

LCS (BFD0041-BS1)

Prepared: 04/04/22 Analyzed: 04/07/22

Benzene	0.0957	0.0020	mg/kg	0.100		95.7	70-130			
Toluene	0.103	0.0050	"	0.100		103	70-130			
Ethylbenzene	0.0885	0.0050	"	0.100		88.5	70-130			
m,p-Xylene	0.184	0.010	"	0.200		92.0	70-130			
o-Xylene	0.0954	0.0050	"	0.100		95.4	70-130			
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100		101	70-130			
1,3,5-Trimethylbenzene	0.0956	0.0050	"	0.100		95.6	70-130			
Naphthalene	0.105	0.0038	"	0.100		105	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0567		"	0.0400		142	50-150			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0436		"	0.0400		109	50-150			

Matrix Spike (BFD0041-MS1)

Source: 2204021-01

Prepared: 04/04/22 Analyzed: 04/07/22

Benzene	0.0860	0.0020	mg/kg	0.100	ND	86.0	70-130			
Toluene	0.0935	0.0050	"	0.100	ND	93.5	70-130			
Ethylbenzene	0.0789	0.0050	"	0.100	ND	78.9	70-130			
m,p-Xylene	0.167	0.010	"	0.200	ND	83.3	70-130			
o-Xylene	0.0854	0.0050	"	0.100	ND	85.4	70-130			
1,2,4-Trimethylbenzene	0.0950	0.0050	"	0.100	ND	95.0	70-130			
1,3,5-Trimethylbenzene	0.0887	0.0050	"	0.100	ND	88.7	70-130			
Naphthalene	0.111	0.0038	"	0.100	ND	111	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0556		"	0.0400		139	50-150			
Surrogate: Toluene-d8	0.0411		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0441		"	0.0400		110	50-150			

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

05/04/22 13:31

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 BFD0041 - EPA 5030 Soil MS

Matrix Spike Dup (BFD0041-MSD1)

Source: 2204021-01

Prepared: 04/04/22 Analyzed: 04/07/22

Benzene	0.0912	0.0020	mg/kg	0.100	ND	91.2	70-130	5.82	30	
Toluene	0.104	0.0050	"	0.100	ND	104	70-130	10.5	30	
Ethylbenzene	0.0935	0.0050	"	0.100	ND	93.5	70-130	17.0	30	
m,p-Xylene	0.195	0.010	"	0.200	ND	97.4	70-130	15.5	30	
o-Xylene	0.101	0.0050	"	0.100	ND	101	70-130	17.0	30	
1,2,4-Trimethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130	14.5	30	
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130	15.6	30	
Naphthalene	0.126	0.0038	"	0.100	ND	126	70-130	12.7	30	
Surrogate: 1,2-Dichloroethane-d4	0.0553		"	0.0400		138	50-150			
Surrogate: Toluene-d8	0.0413		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0442		"	0.0400		111	50-150			

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/04/22 13:31

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 BFD0042 - EPA 3550A

Blank (BFD0042-BLK1)

Prepared & Analyzed: 04/04/22

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

LCS (BFD0042-BS1)

Prepared & Analyzed: 04/04/22

C10-C28 (DRO)	448	50	mg/kg	500	89.7	70-130
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Matrix Spike (BFD0042-MS1)

Source: 2204021-01

Prepared & Analyzed: 04/04/22

C10-C28 (DRO)	990	50	mg/kg	500	494	99.3	70-130
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Matrix Spike Dup (BFD0042-MSD1)

Source: 2204021-01

Prepared: 04/04/22 Analyzed: 04/05/22

C10-C28 (DRO)	932	50	mg/kg	500	494	87.5	70-130	6.12	20
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Broomfield CO, 80020

Project: Noble - Lilli Unit 14-5

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/04/22 13:31

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 BFD0046 - EPA 5030 Soil MS

Blank (BFD0046-BLK1)

Prepared & Analyzed: 04/04/22

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	0.0178		"	0.0333		53.5	40-150			
Surrogate: Fluoranthene-d10	0.0161		"	0.0333		48.3	40-150			

LCS (BFD0046-BS1)

Prepared: 04/04/22 Analyzed: 04/05/22

Acenaphthene	0.0202	0.00500	mg/kg	0.0333		60.5	31-137			
Anthracene	0.0198	0.00500	"	0.0333		59.5	30-120			
Benzo (a) anthracene	0.0208	0.00500	"	0.0333		62.5	30-120			
Benzo (a) pyrene	0.0188	0.00500	"	0.0333		56.4	30-120			
Benzo (b) fluoranthene	0.0197	0.00500	"	0.0333		59.2	30-120			
Benzo (k) fluoranthene	0.0202	0.00500	"	0.0333		60.5	30-120			
Chrysene	0.0193	0.00500	"	0.0333		57.9	30-120			
Dibenz (a,h) anthracene	0.0202	0.00500	"	0.0333		60.6	30-120			
Fluoranthene	0.0204	0.00500	"	0.0333		61.2	30-120			
Fluorene	0.0177	0.00500	"	0.0333		53.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0295	0.00500	"	0.0333		88.4	30-120			
Pyrene	0.0212	0.00500	"	0.0333		63.6	35-142			
1-Methylnaphthalene	0.0211	0.00500	"	0.0333		63.2	35-142			
2-Methylnaphthalene	0.0188	0.00500	"	0.0333		56.4	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0194		"	0.0333		58.2	40-150			
Surrogate: Fluoranthene-d10	0.0201		"	0.0333		60.4	40-150			

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/04/22 13:31

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 BFD0046 - EPA 5030 Soil MS

Matrix Spike (BFD0046-MS1)

Source: 2204021-01

Prepared: 04/04/22 Analyzed: 04/05/22

Acenaphthene	0.0541	0.00500	mg/kg	0.0333	ND	162	31-137			S-02
Anthracene	0.0236	0.00500	"	0.0333	ND	70.7	30-120			
Benzo (a) anthracene	0.0235	0.00500	"	0.0333	ND	70.4	30-120			
Benzo (a) pyrene	0.0549	0.00500	"	0.0333	0.0645	NR	30-120			S-02
Benzo (b) fluoranthene	0.0352	0.00500	"	0.0333	ND	106	30-120			
Benzo (k) fluoranthene	0.0247	0.00500	"	0.0333	ND	74.1	30-120			
Chrysene	0.0518	0.00500	"	0.0333	0.0488	9.27	30-120			S-02
Dibenz (a,h) anthracene	0.0346	0.00500	"	0.0333	ND	104	30-120			
Fluoranthene	0.0166	0.00500	"	0.0333	ND	49.7	30-120			
Fluorene	0.0444	0.00500	"	0.0333	ND	133	30-120			S-02
Indeno (1,2,3-cd) pyrene	0.0394	0.00500	"	0.0333	ND	118	30-120			
Pyrene	0.0390	0.00500	"	0.0333	0.00703	95.9	35-142			
1-Methylnaphthalene	0.0265	0.00500	"	0.0333	ND	79.6	15-130			
2-Methylnaphthalene	0.0222	0.00500	"	0.0333	ND	66.6	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0222		"	0.0333		66.7	40-150			
Surrogate: Fluoranthene-d10	0.0174		"	0.0333		52.2	40-150			

Matrix Spike Dup (BFD0046-MSD1)

Source: 2204021-01

Prepared: 04/04/22 Analyzed: 04/05/22

Acenaphthene	0.0174	0.00500	mg/kg	0.0333	ND	52.1	31-137	103	30	S-02
Anthracene	0.0246	0.00500	"	0.0333	ND	73.9	30-120	4.34	30	
Benzo (a) anthracene	0.0270	0.00500	"	0.0333	ND	81.1	30-120	14.1	30	
Benzo (a) pyrene	0.0735	0.00500	"	0.0333	0.0645	26.9	30-120	28.9	30	S-02
Benzo (b) fluoranthene	0.0339	0.00500	"	0.0333	ND	102	30-120	3.96	30	
Benzo (k) fluoranthene	0.0175	0.00500	"	0.0333	ND	52.5	30-120	34.1	30	S-02
Chrysene	0.0814	0.00500	"	0.0333	0.0488	98.0	30-120	44.4	30	S-02
Dibenz (a,h) anthracene	0.0331	0.00500	"	0.0333	ND	99.4	30-120	4.19	30	
Fluoranthene	0.0183	0.00500	"	0.0333	ND	54.8	30-120	9.86	30	
Fluorene	0.00687	0.00500	"	0.0333	ND	20.6	30-120	146	30	S-02
Indeno (1,2,3-cd) pyrene	0.0604	0.00500	"	0.0333	ND	181	30-120	42.2	30	S-02
Pyrene	0.0453	0.00500	"	0.0333	0.00703	115	35-142	15.1	30	
1-Methylnaphthalene	0.0252	0.00500	"	0.0333	ND	75.6	15-130	5.08	50	
2-Methylnaphthalene	0.0247	0.00500	"	0.0333	ND	74.1	15-130	10.7	50	
Surrogate: 2-Methylnaphthalene-d10	0.0243		"	0.0333		72.9	40-150			
Surrogate: Fluoranthene-d10	0.0171		"	0.0333		51.4	40-150			

Summit Scientific

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



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

Project: Noble - Lilli Unit 14-5

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/04/22 13:31

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

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

Batch BFD0094 - EPA 3050B

Blank (BFD0094-BLK1)

Prepared: 04/05/22 Analyzed: 04/10/22

Boron ND 0.0100 mg/L

LCS (BFD0094-BS1)

Prepared: 04/05/22 Analyzed: 04/10/22

Boron 4.63 0.0100 mg/L 5.00 92.6 80-120

Duplicate (BFD0094-DUP1)

Source: 2203500-01

Prepared: 04/05/22 Analyzed: 04/10/22

Boron 0.0935 0.0100 mg/L 0.0915 2.16 20

Matrix Spike (BFD0094-MS1)

Source: 2203500-01

Prepared: 04/05/22 Analyzed: 04/10/22

Boron 4.75 0.0100 mg/L 5.00 0.0915 93.1 75-125

Matrix Spike Dup (BFD0094-MSD1)

Source: 2203500-01

Prepared: 04/05/22 Analyzed: 04/10/22

Boron 5.08 0.0100 mg/L 5.00 0.0915 99.7 75-125 6.70 25

Summit Scientific

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/04/22 13:31

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 BFD0564 - EPA 3050B

Blank (BFD0564-BLK1)

Prepared: 04/26/22 Analyzed: 05/03/22

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 (BFD0564-BS1)

Prepared: 04/26/22 Analyzed: 05/03/22

Arsenic	33.4	0.200	mg/kg wet	40.0	83.4	80-120
Barium	34.6	0.400	"	40.0	86.6	80-120
Cadmium	1.80	0.200	"	2.00	90.0	80-120
Copper	34.1	0.400	"	40.0	85.3	80-120
Lead	19.8	0.200	"	20.0	98.8	80-120
Nickel	33.1	0.400	"	40.0	82.6	80-120
Selenium	3.56	0.260	"	4.00	88.9	80-120
Silver	1.63	0.0200	"	2.00	81.6	80-120
Zinc	35.3	0.400	"	40.0	88.2	80-120

Duplicate (BFD0564-DUP1)

Source: 2203402-07

Prepared: 04/26/22 Analyzed: 05/03/22

Arsenic	1.48	0.213	mg/kg dry	1.50	0.924	20
Barium	52.0	0.426	"	53.6	3.16	20
Cadmium	0.0527	0.213	"	0.0569	7.76	20
Copper	4.17	0.426	"	4.24	1.71	20
Lead	4.50	0.213	"	4.61	2.60	20
Nickel	4.47	0.426	"	4.60	2.91	20
Selenium	0.367	0.277	"	0.381	3.60	20
Silver	0.0316	0.0213	"	0.0328	3.86	20
Zinc	21.4	0.426	"	22.1	3.35	20

Summit Scientific

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/04/22 13:31

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 BFD0564 - EPA 3050B

Matrix Spike (BFD0564-MS1)

Source: 2203402-07

Prepared: 04/26/22 Analyzed: 05/03/22

Arsenic	37.1	0.213	mg/kg dry	42.6	1.50	83.6	75-125
Barium	91.8	0.426	"	42.6	53.6	89.6	75-125
Cadmium	1.96	0.213	"	2.13	0.0569	89.5	75-125
Copper	40.1	0.426	"	42.6	4.24	84.2	75-125
Lead	24.2	0.213	"	21.3	4.61	92.1	75-125
Nickel	40.3	0.426	"	42.6	4.60	83.8	75-125
Selenium	3.77	0.277	"	4.26	0.381	79.5	75-125
Silver	1.73	0.0213	"	2.13	0.0328	79.6	75-125
Zinc	59.1	0.426	"	42.6	22.1	86.9	75-125

Matrix Spike Dup (BFD0564-MSD1)

Source: 2203402-07

Prepared: 04/26/22 Analyzed: 05/03/22

Arsenic	36.6	0.213	mg/kg dry	42.6	1.50	82.5	75-125	1.37	25
Barium	88.0	0.426	"	42.6	53.6	80.8	75-125	4.17	25
Cadmium	2.12	0.213	"	2.13	0.0569	96.8	75-125	7.61	25
Copper	39.0	0.426	"	42.6	4.24	81.5	75-125	2.91	25
Lead	21.1	0.213	"	21.3	4.61	77.4	75-125	13.8	25
Nickel	38.9	0.426	"	42.6	4.60	80.6	75-125	3.43	25
Selenium	3.60	0.277	"	4.26	0.381	75.6	75-125	4.46	25
Silver	1.85	0.0213	"	2.13	0.0328	85.5	75-125	6.94	25
Zinc	57.3	0.426	"	42.6	22.1	82.7	75-125	3.06	25

Summit Scientific

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/04/22 13:31

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 BFD0388 - 3060A Mod

Blank (BFD0388-BLK1)

Prepared & Analyzed: 04/19/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFD0388-BS1)

Prepared & Analyzed: 04/19/22

Chromium, Hexavalent 25.6 0.30 mg/kg wet 25.0 102 80-120

Duplicate (BFD0388-DUP1)

Source: 2202321-08

Prepared & Analyzed: 04/19/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFD0388-MS1)

Source: 2202321-08

Prepared & Analyzed: 04/19/22

Chromium, Hexavalent 26.3 0.30 mg/kg dry 26.2 ND 100 75-125

Matrix Spike Dup (BFD0388-MSD1)

Source: 2202321-08

Prepared & Analyzed: 04/19/22

Chromium, Hexavalent 29.5 0.30 mg/kg dry 26.2 ND 113 75-125 11.6 20

Summit Scientific

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/04/22 13:31

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

Summit Scientific

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

Batch BFD0202 - General Preparation

Blank (BFD0202-BLK1)

Prepared: 04/11/22 Analyzed: 04/13/22

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

LCS (BFD0202-BS1)

Prepared: 04/11/22 Analyzed: 04/13/22

Calcium	5.43	0.0500	mg/L wet	5.00	109	70-130
Magnesium	5.68	0.0500	"	5.00	114	70-130
Sodium	4.74	0.0500	"	5.00	94.8	70-130

Summit Scientific

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



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

Project: Noble - Lilli Unit 14-5

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/04/22 13:31

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

Summit Scientific

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

Batch BFD0163 - General Preparation

Duplicate (BFD0163-DUP1)		Source: 2203550-05		Prepared: 04/08/22 Analyzed: 04/11/22	
% Solids	97.5		%	98.0	0.542 20

Summit Scientific

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
05/04/22 13:31

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

Summit Scientific

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

Batch BFD0229 - General Preparation

Blank (BFD0229-BLK1)

Prepared & Analyzed: 04/12/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFD0229-BS1)

Prepared & Analyzed: 04/12/22

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

Duplicate (BFD0229-DUP1)

Source: 2203553-01

Prepared & Analyzed: 04/12/22

Specific Conductance (EC) 0.832 0.0100 mmhos/cm 0.843 1.35 20

Summit Scientific

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

05/04/22 13:31

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

Summit Scientific

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

Batch BFD0228 - General Preparation

LCS (BFD0228-BS1)

Prepared & Analyzed: 04/12/22

pH	9.07	pH Units	9.18	98.8	95-105
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Duplicate (BFD0228-DUP1)

Source: 2203553-01

Prepared & Analyzed: 04/12/22

pH	7.84	pH Units	7.65	2.45	20
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Summit Scientific

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
05/04/22 13:31

Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 02, 2022

Jacob Whritenour
Tasman Geosciences
6855 W. 119th Ave.
Broomfield, CO 80020
RE: Noble - Lilli Unit 14-5
Work Order #2204030

Enclosed are the results of analyses for samples received by Summit Scientific on 04/01/22 09:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury
President



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

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@2.5'	2204030-01	Soil	03/31/22 12:18	04/01/22 09:30
FS01@4'	2204030-05	Soil	03/31/22 12:26	04/01/22 09:30
AST01@0.5'	2204030-06	Soil	03/31/22 12:28	04/01/22 09:30
AST02@0.5'	2204030-07	Soil	03/31/22 12:30	04/01/22 09:30
SEP01-DL01@3'	2204030-08	Soil	03/31/22 13:19	04/01/22 09:30
BG01@4'	2204030-10	Soil	03/31/22 13:24	04/01/22 09:30

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

2204030

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

Page 1 of 1

Client: Noble / Tasman Project Manager: Jake Whritenour, Invoice: Wade Firestien
Address: 6855 W. 119th Ave E-Mail: jwhritenour@tasman-geo.com
City/State/Zip: Broomfield/ CO/ 80020
Phone: 303261-6246 Project Name: Lill Unit 14-5 (FAC)
Sampler Name: Stanley Gilbert Project Number: UWBWE-A1787-ABN

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	VOC - 915	TPH - 915	PAH - 915	pH, EC, SAR	Boron - HWS	HOLD		
1	SS01@2.5'	3/31/22	12:18	2			X			X				X	X	X	X	X		SAR, EC, PH By Saturated paste
2	SS02@2.5'		12:20				X			X				X	X	X	X	X		HOLD
3	SS03@2.5'		12:22				X			X				X	X	X	X	X		HOLD
4	SS04@2.5'		12:24				X			X				X	X	X	X	X		HOLD
5	FS01@4'		12:26				X			X				X	X	X	X	X		
6	AST01@0.5'		12:28				X			X				X	X	X	X	X		
7	AST02@0.5'		12:30				X			X				X	X	X	X	X		
8	SEP01-DL01@3'		13:19	↓			X			X				↓	↓	↓	↓	↓		
9	B601@2'		13:22	1			X			X				X	X	X	X	X		HOLD
10	B601@4'		13:24	1			X			X				X	X	X	X	X		HOLD

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
<i>[Signature]</i>	3/31/22 18:25	Tasman's Lock Box	3/31/22 18:25	Same Day	72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard	
Tasman's Lock Box	4122 0930	<i>[Signature]</i>	4122 0930	48 hours	X	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	Temperature Upon Receipt:	
					4.1	
				Samples Intact:	(Yes) No	

S₂

Sample Receipt Checklist

S2 Work Order# 2204030

Client: Noble/Tasman Client Project ID: Lilliunit 14-5(FAC)

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

	-			
--	---	--	--	--

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 4.1 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
Were all samples received intact ⁽¹⁾ ?	-			
Was adequate sample volume provided ⁽¹⁾ ?	-			
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⁾ ?	-			
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⁾ ?	-			
Is the COC properly relinquished by the client w/ date and time recorded ⁽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 ₂ SO 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.

 Custodian Printed Name

 RCH
 3 4.1.22
 Date/Time



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

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

SS01@2.5'
2204030-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFD0043	04/04/22	04/05/22	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: **03/31/22 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		136 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/31/22 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0044	04/04/22	04/05/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/31/22 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

SS01@2.5'
2204030-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/31/22 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0045	04/04/22	04/05/22	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: **03/31/22 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		65.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		57.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/31/22 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0379	0.0100	mg/L	1	BFD0140	04/07/22	04/14/22	EPA 6020B	

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

Date Sampled: **03/31/22 12:18**

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

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



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

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

SS01@2.5'
2204030-01 (Soil)

Summit Scientific

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

Calcium	18.6	0.0612	mg/L dry	1	BFD0233	04/12/22	04/17/22	EPA 6020B
Magnesium	3.70	0.0612	"	"	"	"	"	"
Sodium	2.76	0.0612	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **03/31/22 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.153	0.00100	units	1	BFD0332	04/17/22	04/17/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/31/22 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.7		%	1	BFD0199	04/11/22	04/11/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/31/22 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.180	0.0100	mmhos/cm	1	BFD0251	04/13/22	04/13/22	EPA 120.1	

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

Date Sampled: **03/31/22 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.15		pH Units	1	BFD0252	04/13/22	04/13/22	EPA 9045D	

Summit Scientific

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

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

FS01@4'
2204030-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 12:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0043	04/04/22	04/05/22	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: **03/31/22 12:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		141 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/31/22 12:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0044	04/04/22	04/05/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/31/22 12:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		87.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

FS01@4'
2204030-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/31/22 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0045	04/04/22	04/05/22	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: **03/31/22 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		76.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/31/22 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0353	0.0100	mg/L	1	BFD0140	04/07/22	04/14/22	EPA 6020B	

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

Date Sampled: **03/31/22 12:26**

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 - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

FS01@4'
2204030-05 (Soil)

Summit Scientific

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

Calcium	25.4	0.0598	mg/L dry	1	BFD0233	04/12/22	04/17/22	EPA 6020B
Magnesium	6.03	0.0598	"	"	"	"	"	"
Sodium	3.04	0.0598	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **03/31/22 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.141	0.00100	units	1	BFD0332	04/17/22	04/17/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/31/22 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.6		%	1	BFD0199	04/11/22	04/11/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/31/22 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.222	0.0100	mmhos/cm	1	BFD0251	04/13/22	04/13/22	EPA 120.1	

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

Date Sampled: **03/31/22 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.92		pH Units	1	BFD0252	04/13/22	04/13/22	EPA 9045D	

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

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

AST01@0.5'
2204030-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 12:28**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0043	04/04/22	04/05/22	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: **03/31/22 12:28**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		140 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/31/22 12:28**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0044	04/04/22	04/05/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/31/22 12:28**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		85.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

AST01@0.5'
2204030-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/31/22 12:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0045	04/04/22	04/05/22	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: **03/31/22 12:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		57.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		52.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/31/22 12:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0468	0.0100	mg/L	1	BFD0140	04/07/22	04/14/22	EPA 6020B	

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

Date Sampled: **03/31/22 12:28**

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 - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

AST01@0.5'
2204030-06 (Soil)

Summit Scientific

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

Calcium	126	0.0612	mg/L dry	1	BFD0233	04/12/22	04/17/22	EPA 6020B
Magnesium	21.4	0.0612	"	"	"	"	"	"
Sodium	2.34	0.0612	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **03/31/22 12:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0507	0.00100	units	1	BFD0332	04/17/22	04/17/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/31/22 12:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.8		%	1	BFD0199	04/11/22	04/11/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/31/22 12:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.36	0.0100	mmhos/cm	1	BFD0251	04/13/22	04/13/22	EPA 120.1	

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

Date Sampled: **03/31/22 12:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.96		pH Units	1	BFD0252	04/13/22	04/13/22	EPA 9045D	

Summit Scientific

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

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

AST02@0.5'
2204030-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFD0043	04/04/22	04/05/22	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: **03/31/22 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		144 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		104 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/31/22 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0044	04/04/22	04/05/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/31/22 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.6 %	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 - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

AST02@0.5'
2204030-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/31/22 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0045	04/04/22	04/05/22	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: **03/31/22 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		75.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		63.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/31/22 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0400	0.0100	mg/L	1	BFD0140	04/07/22	04/14/22	EPA 6020B	

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

Date Sampled: **03/31/22 12:30**

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 - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

AST02@0.5'
2204030-07 (Soil)

Summit Scientific

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

Calcium	18.4	0.0626	mg/L dry	1	BFD0233	04/12/22	04/17/22	EPA 6020B
Magnesium	5.14	0.0626	"	"	"	"	"	"
Sodium	1.38	0.0626	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **03/31/22 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0733	0.00100	units	1	BFD0332	04/17/22	04/17/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/31/22 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	79.9		%	1	BFD0199	04/11/22	04/11/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/31/22 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.207	0.0100	mmhos/cm	1	BFD0251	04/13/22	04/13/22	EPA 120.1	

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

Date Sampled: **03/31/22 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.80		pH Units	1	BFD0252	04/13/22	04/13/22	EPA 9045D	

Summit Scientific

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

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

SEP01-DL01@3'
2204030-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/31/22 13:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.020	mg/kg	10	BFD0043	04/04/22	04/05/22	EPA 8260B	
Toluene	ND	0.050	"	"	"	"	"	"	
Ethylbenzene	ND	0.050	"	"	"	"	"	"	
Xylenes (total)	ND	0.10	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.050	"	"	"	"	"	"	
Naphthalene	ND	0.038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	5.0	"	"	"	"	"	"	

Date Sampled: **03/31/22 13:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		136 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/31/22 13:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0044	04/04/22	04/05/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/31/22 13:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		88.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

SEP01-DL01@3'
2204030-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/31/22 13:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFD0045	04/04/22	04/05/22	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: **03/31/22 13:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		65.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		50.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/31/22 13:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0212	0.0100	mg/L	1	BFD0140	04/07/22	04/14/22	EPA 6020B	

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

Date Sampled: **03/31/22 13:19**

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 - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

SEP01-DL01@3'
2204030-08 (Soil)

Summit Scientific

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

Calcium	20.9	0.0660	mg/L dry	1	BFD0233	04/12/22	04/17/22	EPA 6020B
Magnesium	5.00	0.0660	"	"	"	"	"	"
Sodium	1.47	0.0660	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **03/31/22 13:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0750	0.00100	units	1	BFD0332	04/17/22	04/17/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/31/22 13:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	75.7		%	1	BFD0199	04/11/22	04/11/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/31/22 13:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.187	0.0100	mmhos/cm	1	BFD0251	04/13/22	04/13/22	EPA 120.1	

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

Date Sampled: **03/31/22 13:19**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.02		pH Units	1	BFD0252	04/13/22	04/13/22	EPA 9045D	

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

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

BG01@4'
2204030-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **03/31/22 13:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.77	0.237	mg/kg dry	1	BFD0538	04/25/22	04/30/22	EPA 6020B	
Barium	379	0.474	"	"	"	"	"	"	
Cadmium	0.252	0.237	"	"	"	"	"	"	
Copper	6.54	0.474	"	"	"	"	"	"	
Lead	10.6	0.237	"	"	"	"	"	"	
Nickel	8.26	0.474	"	"	"	"	"	"	
Selenium	1.06	0.308	"	"	"	"	"	"	
Silver	0.0812	0.0237	"	"	"	"	"	"	
Zinc	30.9	0.474	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/31/22 13:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0388	04/19/22	04/19/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/31/22 13:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	84.3		%	1	BFD0421	04/20/22	04/20/22	Calculation	

Summit Scientific

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

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFD0043 - EPA 5030 Soil MS

Blank (BFD0043-BLK1)

Prepared & Analyzed: 04/04/22

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	0.0556		"	0.0400		139	50-150			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0428		"	0.0400		107	50-150			

LCS (BFD0043-BS1)

Prepared & Analyzed: 04/04/22

Benzene	0.0836	0.0020	mg/kg	0.100		83.6	70-130			
Toluene	0.0996	0.0050	"	0.100		99.6	70-130			
Ethylbenzene	0.0940	0.0050	"	0.100		94.0	70-130			
m,p-Xylene	0.196	0.010	"	0.200		97.8	70-130			
o-Xylene	0.0980	0.0050	"	0.100		98.0	70-130			
1,2,4-Trimethylbenzene	0.107	0.0050	"	0.100		107	70-130			
1,3,5-Trimethylbenzene	0.103	0.0050	"	0.100		103	70-130			
Naphthalene	0.107	0.0038	"	0.100		107	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0500		"	0.0400		125	50-150			
Surrogate: Toluene-d8	0.0424		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0424		"	0.0400		106	50-150			

Matrix Spike (BFD0043-MS1)

Source: 2204022-01

Prepared & Analyzed: 04/04/22

Benzene	0.0919	0.0020	mg/kg	0.100	ND	91.9	70-130			
Toluene	0.104	0.0050	"	0.100	ND	104	70-130			
Ethylbenzene	0.0968	0.0050	"	0.100	ND	96.8	70-130			
m,p-Xylene	0.200	0.010	"	0.200	ND	100	70-130			
o-Xylene	0.102	0.0050	"	0.100	ND	102	70-130			
1,2,4-Trimethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130			
1,3,5-Trimethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130			
Naphthalene	0.129	0.0038	"	0.100	ND	129	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0509		"	0.0400		127	50-150			
Surrogate: Toluene-d8	0.0412		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0432		"	0.0400		108	50-150			

Summit Scientific

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

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

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

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

Batch BFD0043 - EPA 5030 Soil MS

Matrix Spike Dup (BFD0043-MSD1)		Source: 2204022-01			Prepared & Analyzed: 04/04/22					
Benzene	0.0948	0.0020	mg/kg	0.100	ND	94.8	70-130	3.12	30	
Toluene	0.107	0.0050	"	0.100	ND	107	70-130	2.54	30	
Ethylbenzene	0.0975	0.0050	"	0.100	ND	97.5	70-130	0.710	30	
m,p-Xylene	0.205	0.010	"	0.200	ND	102	70-130	2.40	30	
o-Xylene	0.103	0.0050	"	0.100	ND	103	70-130	1.44	30	
1,2,4-Trimethylbenzene	0.109	0.0050	"	0.100	ND	109	70-130	0.985	30	
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130	1.77	30	
Naphthalene	0.123	0.0038	"	0.100	ND	123	70-130	4.82	30	
Surrogate: 1,2-Dichloroethane-d4		0.0514	"	0.0400		128	50-150			
Surrogate: Toluene-d8		0.0412	"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene		0.0420	"	0.0400		105	50-150			

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

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFD0044 - EPA 3550A

Blank (BFD0044-BLK1)

Prepared & Analyzed: 04/04/22

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

LCS (BFD0044-BS1)

Prepared & Analyzed: 04/04/22

C10-C28 (DRO)	477	50	mg/kg	500	95.3	70-130
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Matrix Spike (BFD0044-MS1)

Source: 2204022-01

Prepared & Analyzed: 04/04/22

C10-C28 (DRO)	451	50	mg/kg	500	28.3	84.5	70-130
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Matrix Spike Dup (BFD0044-MSD1)

Source: 2204022-01

Prepared & Analyzed: 04/04/22

C10-C28 (DRO)	453	50	mg/kg	500	28.3	84.9	70-130	0.384	20
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFD0045 - EPA 5030 Soil MS

Blank (BFD0045-BLK1)

Prepared & Analyzed: 04/04/22

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	0.0224		"	0.0333		67.3	40-150			
Surrogate: Fluoranthene-d10	0.0195		"	0.0333		58.4	40-150			

LCS (BFD0045-BS1)

Prepared & Analyzed: 04/04/22

Acenaphthene	0.0213	0.00500	mg/kg	0.0333		64.0	31-137			
Anthracene	0.0218	0.00500	"	0.0333		65.3	30-120			
Benzo (a) anthracene	0.0213	0.00500	"	0.0333		63.9	30-120			
Benzo (a) pyrene	0.0246	0.00500	"	0.0333		73.7	30-120			
Benzo (b) fluoranthene	0.0245	0.00500	"	0.0333		73.4	30-120			
Benzo (k) fluoranthene	0.0270	0.00500	"	0.0333		81.1	30-120			
Chrysene	0.0223	0.00500	"	0.0333		66.8	30-120			
Dibenz (a,h) anthracene	0.0221	0.00500	"	0.0333		66.3	30-120			
Fluoranthene	0.0241	0.00500	"	0.0333		72.2	30-120			
Fluorene	0.0207	0.00500	"	0.0333		62.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0145	0.00500	"	0.0333		43.5	30-120			
Pyrene	0.0210	0.00500	"	0.0333		63.1	35-142			
1-Methylnaphthalene	0.0269	0.00500	"	0.0333		80.8	35-142			
2-Methylnaphthalene	0.0226	0.00500	"	0.0333		67.8	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0281		"	0.0333		84.3	40-150			
Surrogate: Fluoranthene-d10	0.0242		"	0.0333		72.5	40-150			

Summit Scientific

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFD0045 - EPA 5030 Soil MS

Matrix Spike (BFD0045-MS1)

Source: 2203554-01

Prepared & Analyzed: 04/04/22

Acenaphthene	0.0218	0.00500	mg/kg	0.0333	ND	65.4	31-137		
Anthracene	0.0206	0.00500	"	0.0333	ND	61.9	30-120		
Benzo (a) anthracene	0.0205	0.00500	"	0.0333	ND	61.4	30-120		
Benzo (a) pyrene	0.0240	0.00500	"	0.0333	ND	72.0	30-120		
Benzo (b) fluoranthene	0.0250	0.00500	"	0.0333	ND	75.0	30-120		
Benzo (k) fluoranthene	0.0265	0.00500	"	0.0333	ND	79.5	30-120		
Chrysene	0.0215	0.00500	"	0.0333	ND	64.5	30-120		
Dibenz (a,h) anthracene	0.0178	0.00500	"	0.0333	ND	53.4	30-120		
Fluoranthene	0.0246	0.00500	"	0.0333	ND	73.7	30-120		
Fluorene	0.0211	0.00500	"	0.0333	ND	63.2	30-120		
Indeno (1,2,3-cd) pyrene	0.0118	0.00500	"	0.0333	ND	35.5	30-120		
Pyrene	0.0204	0.00500	"	0.0333	ND	61.2	35-142		
1-Methylnaphthalene	0.0303	0.00500	"	0.0333	ND	90.9	15-130		
2-Methylnaphthalene	0.0234	0.00500	"	0.0333	ND	70.2	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0295		"	0.0333		88.4	40-150		
Surrogate: Fluoranthene-d10	0.0245		"	0.0333		73.4	40-150		

Matrix Spike Dup (BFD0045-MSD1)

Source: 2203554-01

Prepared & Analyzed: 04/04/22

Acenaphthene	0.0204	0.00500	mg/kg	0.0333	ND	61.3	31-137	6.47	30
Anthracene	0.0195	0.00500	"	0.0333	ND	58.4	30-120	5.88	30
Benzo (a) anthracene	0.0191	0.00500	"	0.0333	ND	57.4	30-120	6.79	30
Benzo (a) pyrene	0.0225	0.00500	"	0.0333	ND	67.5	30-120	6.44	30
Benzo (b) fluoranthene	0.0231	0.00500	"	0.0333	ND	69.4	30-120	7.75	30
Benzo (k) fluoranthene	0.0244	0.00500	"	0.0333	ND	73.2	30-120	8.21	30
Chrysene	0.0196	0.00500	"	0.0333	ND	58.8	30-120	9.11	30
Dibenz (a,h) anthracene	0.0153	0.00500	"	0.0333	ND	45.8	30-120	15.3	30
Fluoranthene	0.0233	0.00500	"	0.0333	ND	69.8	30-120	5.38	30
Fluorene	0.0197	0.00500	"	0.0333	ND	59.1	30-120	6.55	30
Indeno (1,2,3-cd) pyrene	0.0106	0.00500	"	0.0333	ND	31.7	30-120	11.2	30
Pyrene	0.0203	0.00500	"	0.0333	ND	61.0	35-142	0.337	30
1-Methylnaphthalene	0.0271	0.00500	"	0.0333	ND	81.2	15-130	11.3	50
2-Methylnaphthalene	0.0217	0.00500	"	0.0333	ND	65.0	15-130	7.68	50
Surrogate: 2-Methylnaphthalene-d10	0.0271		"	0.0333		81.2	40-150		
Surrogate: Fluoranthene-d10	0.0228		"	0.0333		68.4	40-150		

Summit Scientific

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

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

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

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

Batch BFD0140 - EPA 3050B

Blank (BFD0140-BLK1)

Prepared: 04/07/22 Analyzed: 04/14/22

Boron ND 0.0100 mg/L

LCS (BFD0140-BS1)

Prepared: 04/07/22 Analyzed: 04/14/22

Boron 5.09 0.0100 mg/L 5.00 102 80-120

Duplicate (BFD0140-DUP1)

Source: 2204024-01

Prepared: 04/07/22 Analyzed: 04/14/22

Boron 0.106 0.0100 mg/L 0.115 7.93 20

Matrix Spike (BFD0140-MS1)

Source: 2204024-01

Prepared: 04/07/22 Analyzed: 04/14/22

Boron 5.50 0.0100 mg/L 5.00 0.115 108 75-125

Matrix Spike Dup (BFD0140-MSD1)

Source: 2204024-01

Prepared: 04/07/22 Analyzed: 04/14/22

Boron 5.38 0.0100 mg/L 5.00 0.115 105 75-125 2.23 25

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

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

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 BFD0538 - EPA 3050B

Blank (BFD0538-BLK1)

Prepared: 04/25/22 Analyzed: 04/30/22

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 (BFD0538-BS1)

Prepared: 04/25/22 Analyzed: 04/30/22

Arsenic	45.2	0.200	mg/kg wet	40.0	113	80-120
Barium	39.4	0.400	"	40.0	98.5	80-120
Cadmium	2.28	0.200	"	2.00	114	80-120
Copper	41.0	0.400	"	40.0	103	80-120
Lead	20.9	0.200	"	20.0	105	80-120
Nickel	40.3	0.400	"	40.0	101	80-120
Selenium	4.00	0.260	"	4.00	100	80-120
Silver	2.06	0.0200	"	2.00	103	80-120
Zinc	44.6	0.400	"	40.0	112	80-120

Duplicate (BFD0538-DUP1)

Source: 2204029-08

Prepared: 04/25/22 Analyzed: 04/30/22

Arsenic	3.08	0.224	mg/kg dry	3.03	1.84	20
Barium	155	0.448	"	159	2.02	20
Cadmium	0.160	0.224	"	0.168	4.88	20
Copper	4.36	0.448	"	4.49	2.90	20
Lead	7.68	0.224	"	7.89	2.69	20
Nickel	3.58	0.448	"	3.70	3.33	20
Selenium	0.763	0.291	"	0.761	0.200	20
Silver	0.0448	0.0224	"	0.0508	12.5	20
Zinc	16.6	0.448	"	16.7	0.551	20

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

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFD0538 - EPA 3050B

Matrix Spike (BFD0538-MS1)			Source: 2204029-08		Prepared: 04/25/22 Analyzed: 04/30/22					
Arsenic	57.1	0.224	mg/kg dry	44.8	3.03	121	75-125			
Barium	238	0.448	"	44.8	159	176	75-125			QM-05
Cadmium	2.78	0.224	"	2.24	0.168	117	75-125			
Copper	47.0	0.448	"	44.8	4.49	94.9	75-125			
Lead	32.5	0.224	"	22.4	7.89	110	75-125			
Nickel	50.2	0.448	"	44.8	3.70	104	75-125			
Selenium	5.31	0.291	"	4.48	0.761	102	75-125			
Silver	2.38	0.0224	"	2.24	0.0508	104	75-125			
Zinc	70.9	0.448	"	44.8	16.7	121	75-125			

Matrix Spike Dup (BFD0538-MSD1)			Source: 2204029-08		Prepared: 04/25/22 Analyzed: 04/30/22					
Arsenic	61.4	0.224	mg/kg dry	44.8	3.03	130	75-125	7.35	25	QM-05
Barium	228	0.448	"	44.8	159	156	75-125	3.98	25	QM-05
Cadmium	2.72	0.224	"	2.24	0.168	114	75-125	2.24	25	
Copper	49.0	0.448	"	44.8	4.49	99.3	75-125	4.09	25	
Lead	31.5	0.224	"	22.4	7.89	105	75-125	3.34	25	
Nickel	51.5	0.448	"	44.8	3.70	107	75-125	2.65	25	
Selenium	5.32	0.291	"	4.48	0.761	102	75-125	0.112	25	
Silver	2.28	0.0224	"	2.24	0.0508	99.2	75-125	4.35	25	
Zinc	75.8	0.448	"	44.8	16.7	132	75-125	6.72	25	QM-05

Summit Scientific

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Tasman Geosciences
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Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFD0388 - 3060A Mod

Blank (BFD0388-BLK1)

Prepared & Analyzed: 04/19/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFD0388-BS1)

Prepared & Analyzed: 04/19/22

Chromium, Hexavalent 25.6 0.30 mg/kg wet 25.0 102 80-120

Duplicate (BFD0388-DUP1)

Source: 2202321-08

Prepared & Analyzed: 04/19/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFD0388-MS1)

Source: 2202321-08

Prepared & Analyzed: 04/19/22

Chromium, Hexavalent 26.3 0.30 mg/kg dry 26.2 ND 100 75-125

Matrix Spike Dup (BFD0388-MSD1)

Source: 2202321-08

Prepared & Analyzed: 04/19/22

Chromium, Hexavalent 29.5 0.30 mg/kg dry 26.2 ND 113 75-125 11.6 20

Summit Scientific

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

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

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

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

Batch BFD0233 - General Preparation

Blank (BFD0233-BLK1)

Prepared: 04/12/22 Analyzed: 04/16/22

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

LCS (BFD0233-BS1)

Prepared: 04/12/22 Analyzed: 04/16/22

Calcium	5.50	0.0500	mg/L wet	5.00	110	70-130
Magnesium	6.38	0.0500	"	5.00	128	70-130
Sodium	6.19	0.0500	"	5.00	124	70-130

Summit Scientific

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

Project: Noble - Lilli Unit 14-5

Project Number: UWRWE-A1787-ABN

Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

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

Summit Scientific

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

Batch BFD0199 - General Preparation

Duplicate (BFD0199-DUP1)

Source: 2204030-01

Prepared & Analyzed: 04/11/22

% Solids	83.4	%		81.7		2.07	20
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Batch BFD0421 - General Preparation

Duplicate (BFD0421-DUP1)

Source: 2202321-08

Prepared & Analyzed: 04/20/22

% Solids	95.4	%		95.6		0.151	20
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Summit Scientific

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Tasman Geosciences
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Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

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

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

Batch BFD0251 - General Preparation

Blank (BFD0251-BLK1)

Prepared & Analyzed: 04/13/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFD0251-BS1)

Prepared & Analyzed: 04/13/22

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 102 95-105

Duplicate (BFD0251-DUP1)

Source: 2204029-01

Prepared & Analyzed: 04/13/22

Specific Conductance (EC) 0.276 0.0100 mmhos/cm 0.278 0.506 20

Summit Scientific

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

Project: Noble - Lilli Unit 14-5

Project Number: UWRWE-A1787-ABN

Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

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

Summit Scientific

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

Batch BFD0252 - General Preparation

LCS (BFD0252-BS1)

Prepared & Analyzed: 04/13/22

pH	9.07	pH Units	9.18	98.8	95-105
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Duplicate (BFD0252-DUP1)

Source: 2204029-01

Prepared & Analyzed: 04/13/22

pH	7.54	pH Units	7.43	1.47	20
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Summit Scientific

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

Project: Noble - Lilli Unit 14-5
Project Number: UWRWE-A1787-ABN
Project Manager: Jacob Whritenour

Reported:
05/02/22 12:15

Notes and Definitions

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference