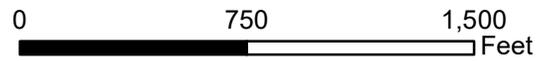
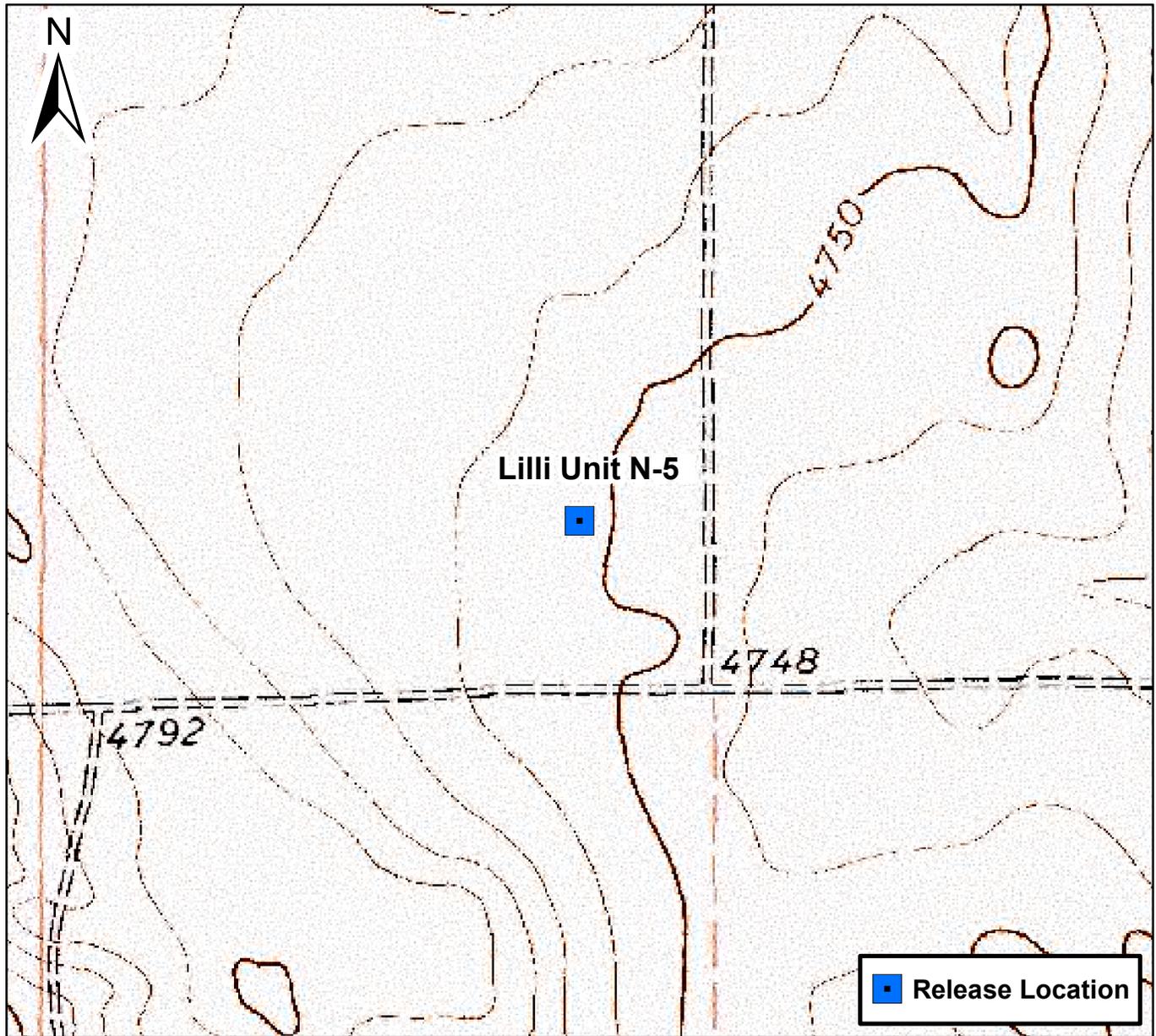


TABLE 1  
SOIL ANALYTICAL DATA  
NOBLE ENERGY, INC. - LILLI UNIT N-5 (FAC)

Soil Sample ID	Date	<sup>1</sup> 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 <sup>2</sup>		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 <sup>2,3</sup>		0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500			0.55	6	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
SS01@2.5'	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
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
BH01@4.5'	05/24/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	0.0087	<0.50	4,100	2,600	<0.0500	<0.0500	<0.0500 <sup>(4)</sup>	0.669	<0.0500	<0.0500	0.658	<0.0500	<0.0500	<0.0500	<0.0500	0.102	<0.0500	<0.0500
BH01@7.5-8.5'	05/24/22	0.68	<0.0050	5.2	66	41	12	6.4	1,200	8,700	2,700	<0.0500	<0.0500	<0.0500 <sup>(4)</sup>	<0.0500	<0.0500	<0.0500	0.942	<0.0500	<0.0500	<5 <sup>(4)</sup>	<0.0500	0.735	9.47	18.1
BH01@15-17.5'	05/24/22	25	0.0057	42	220	0.97	0.58	0.59	6,400	13,000	1,900	<0.0500	<0.0500	<0.0500 <sup>(4)</sup>	0.410	0.186	<0.0500	0.928	<0.0500	0.186	6.81	<0.0500	0.764	12.0	42.3
BH01@23-24'	05/24/22	0.025	<0.0050	0.25	3.5	0.62	0.12	0.18	17	1,000	520	<0.00500	<0.00500	<0.00500	0.0153	<0.00500	<0.00500	0.0307	<0.00500	<0.00500	0.0827	<0.00500	0.0206	0.358	0.588
BH02@4.5'	05/24/22	<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
BH02@7.5-8.5'	05/24/22	<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
BH02@22-24'	05/24/22	<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
BH03@4.5'	05/24/22	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	0.0306	<0.00500	<0.00500	0.0353	<0.00500	<0.00500	<0.00500	<0.00500	0.0264	<0.00500	<0.00500
BH03@7.5-8.5'	05/24/22	<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
BH03@15-17.5'	05/24/22	<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
BH03@17.5-19'	05/24/22	<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
BH04@4.5'	05/24/22	<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
BH04@7.5-8.5'	05/24/22	<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
BH04@15-17.5'	05/24/22	<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
BH04@20-22'	05/24/22	<0.0020	<0.0050	0.066	0.23	0.40	0.097	0.13	11	320	52	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0162	<0.00500	<0.00500	0.0552	<0.00500	<0.00500	0.107	0.188
BH04@23-24'	05/24/22	<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
BH05@4.5'	05/24/22	<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
BH05@7.5-8.5'	05/24/22	<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
BH05@15-17'	05/24/22	<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
BH05@23-24'	05/24/22	0.037	<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 <sup>2</sup>		6 - 8.3	<6	<4mmhos/cm	2
SS01@2.5'	03/31/22	8.15	0.153	0.180	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	0.0750	0.187	0.0212
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
BH01@4.5'	05/24/22	7.50	0.709	1.13	0.0902
BH01@7.5-8.5'	05/24/22	8.53	0.991	0.315	0.134
BH01@15-17.5'	05/24/22	8.37	2.95	1.07	0.131
BH01@23-24'	05/24/22	8.22	2.98	1.46	0.0436
BH02@4.5'	05/24/22	7.85	0.245	0.669	0.101
BH02@7.5-8.5'	05/24/22	8.41	0.416	0.415	0.0716
BH02@22-24'	05/24/22	8.48	0.526	0.444	0.0518
BH03@4.5'	05/24/22	8.35	0.694	0.779	0.117
BH03@7.5-8.5'	05/24/22	8.26	2.72	0.992	0.310
BH03@15-17.5'	05/24/22	7.82	3.07	1.73	0.300
BH03@17.5-19'	05/24/22	7.67	5.47</		



### Figure 1

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





DATE:	5/6/2022
DESIGNED BY:	JW
DRAWN BY:	LR

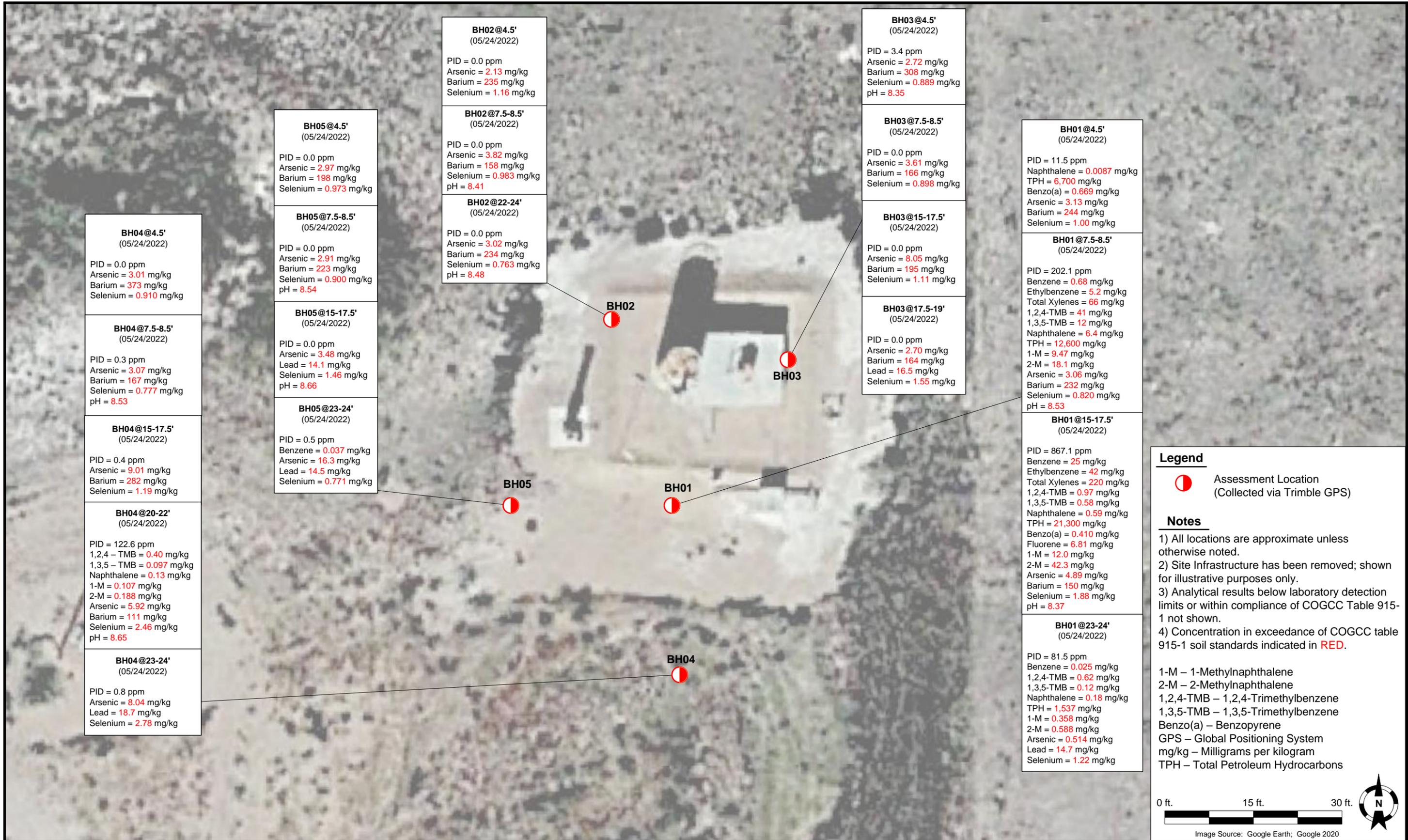


**Tasman, Inc.**  
 6855 W 119<sup>th</sup> Avenue  
 Broomfield, CO 80020

**Noble Energy, Inc. – DJ Basin**  
**Lilli Unit N-5 Facility**  
 SESW, Section 5, Township 8 North, Range 58 West  
 Weld County, Colorado

Decommissioning &  
 Soil Analytical Results Map  
 (03/31/2022 & 04/01/2022)

**FIGURE**  
 2



**BH04@4.5'**  
(05/24/2022)

PID = 0.0 ppm  
Arsenic = **3.01** mg/kg  
Barium = **373** mg/kg  
Selenium = **0.910** mg/kg

**BH04@7.5-8.5'**  
(05/24/2022)

PID = 0.3 ppm  
Arsenic = **3.07** mg/kg  
Barium = **167** mg/kg  
Selenium = **0.777** mg/kg  
pH = **8.53**

**BH04@15-17.5'**  
(05/24/2022)

PID = 0.4 ppm  
Arsenic = **9.01** mg/kg  
Barium = **282** mg/kg  
Selenium = **1.19** mg/kg

**BH04@20-22'**  
(05/24/2022)

PID = 122.6 ppm  
1,2,4-TMB = **0.40** mg/kg  
1,3,5-TMB = **0.097** mg/kg  
Naphthalene = **0.13** mg/kg  
1-M = **0.107** mg/kg  
2-M = **0.188** mg/kg  
Arsenic = **5.92** mg/kg  
Barium = **111** mg/kg  
Selenium = **2.46** mg/kg  
pH = **8.65**

**BH04@23-24'**  
(05/24/2022)

PID = 0.8 ppm  
Arsenic = **8.04** mg/kg  
Lead = **18.7** mg/kg  
Selenium = **2.78** mg/kg

**BH05@4.5'**  
(05/24/2022)

PID = 0.0 ppm  
Arsenic = **2.97** mg/kg  
Barium = **198** mg/kg  
Selenium = **0.973** mg/kg

**BH05@7.5-8.5'**  
(05/24/2022)

PID = 0.0 ppm  
Arsenic = **2.91** mg/kg  
Barium = **223** mg/kg  
Selenium = **0.900** mg/kg  
pH = **8.54**

**BH05@15-17.5'**  
(05/24/2022)

PID = 0.0 ppm  
Arsenic = **3.48** mg/kg  
Lead = **14.1** mg/kg  
Selenium = **1.46** mg/kg  
pH = **8.66**

**BH05@23-24'**  
(05/24/2022)

PID = 0.5 ppm  
Benzene = **0.037** mg/kg  
Arsenic = **16.3** mg/kg  
Lead = **14.5** mg/kg  
Selenium = **0.771** mg/kg

**BH02@4.5'**  
(05/24/2022)

PID = 0.0 ppm  
Arsenic = **2.13** mg/kg  
Barium = **235** mg/kg  
Selenium = **1.16** mg/kg

**BH02@7.5-8.5'**  
(05/24/2022)

PID = 0.0 ppm  
Arsenic = **3.82** mg/kg  
Barium = **158** mg/kg  
Selenium = **0.983** mg/kg  
pH = **8.41**

**BH02@22-24'**  
(05/24/2022)

PID = 0.0 ppm  
Arsenic = **3.02** mg/kg  
Barium = **234** mg/kg  
Selenium = **0.763** mg/kg  
pH = **8.48**

**BH03@4.5'**  
(05/24/2022)

PID = 3.4 ppm  
Arsenic = **2.72** mg/kg  
Barium = **308** mg/kg  
Selenium = **0.889** mg/kg  
pH = **8.35**

**BH03@7.5-8.5'**  
(05/24/2022)

PID = 0.0 ppm  
Arsenic = **3.61** mg/kg  
Barium = **166** mg/kg  
Selenium = **0.898** mg/kg

**BH03@15-17.5'**  
(05/24/2022)

PID = 0.0 ppm  
Arsenic = **8.05** mg/kg  
Barium = **195** mg/kg  
Selenium = **1.11** mg/kg

**BH03@17.5-19'**  
(05/24/2022)

PID = 0.0 ppm  
Arsenic = **2.70** mg/kg  
Barium = **164** mg/kg  
Lead = **16.5** mg/kg  
Selenium = **1.55** mg/kg

**BH01@4.5'**  
(05/24/2022)

PID = 11.5 ppm  
Naphthalene = **0.0087** mg/kg  
TPH = **6,700** mg/kg  
Benzo(a) = **0.669** mg/kg  
Arsenic = **3.13** mg/kg  
Barium = **244** mg/kg  
Selenium = **1.00** mg/kg

**BH01@7.5-8.5'**  
(05/24/2022)

PID = 202.1 ppm  
Benzene = **0.68** mg/kg  
Ethylbenzene = **5.2** mg/kg  
Total Xylenes = **66** mg/kg  
1,2,4-TMB = **41** mg/kg  
1,3,5-TMB = **12** mg/kg  
Naphthalene = **6.4** mg/kg  
TPH = **12,600** mg/kg  
1-M = **9.47** mg/kg  
2-M = **18.1** mg/kg  
Arsenic = **3.06** mg/kg  
Barium = **232** mg/kg  
Selenium = **0.820** mg/kg  
pH = **8.53**

**BH01@15-17.5'**  
(05/24/2022)

PID = 867.1 ppm  
Benzene = **25** mg/kg  
Ethylbenzene = **42** mg/kg  
Total Xylenes = **220** mg/kg  
1,2,4-TMB = **0.97** mg/kg  
1,3,5-TMB = **0.58** mg/kg  
Naphthalene = **0.59** mg/kg  
TPH = **21,300** mg/kg  
Benzo(a) = **0.410** mg/kg  
Fluorene = **6.81** mg/kg  
1-M = **12.0** mg/kg  
2-M = **42.3** mg/kg  
Arsenic = **4.89** mg/kg  
Barium = **150** mg/kg  
Selenium = **1.88** mg/kg  
pH = **8.37**

**BH01@23-24'**  
(05/24/2022)

PID = 81.5 ppm  
Benzene = **0.025** mg/kg  
1,2,4-TMB = **0.62** mg/kg  
1,3,5-TMB = **0.12** mg/kg  
Naphthalene = **0.18** mg/kg  
TPH = **1,537** mg/kg  
1-M = **0.358** mg/kg  
2-M = **0.588** mg/kg  
Arsenic = **0.514** mg/kg  
Lead = **14.7** mg/kg  
Selenium = **1.22** mg/kg

**Legend**

 Assessment Location  
(Collected via Trimble GPS)

**Notes**

- 1) All locations are approximate unless otherwise noted.
- 2) Site Infrastructure has been removed; shown for illustrative purposes only.
- 3) Analytical results below laboratory detection limits or within compliance of COGCC Table 915-1 not shown.
- 4) Concentration in exceedance of COGCC table 915-1 soil standards indicated in **RED**.

1-M – 1-Methylnaphthalene  
2-M – 2-Methylnaphthalene  
1,2,4-TMB – 1,2,4-Trimethylbenzene  
1,3,5-TMB – 1,3,5-Trimethylbenzene  
Benzo(a) – Benzopyrene  
GPS – Global Positioning System  
mg/kg – Milligrams per kilogram  
TPH – Total Petroleum Hydrocarbons

0 ft. 15 ft. 30 ft.

Image Source: Google Earth; Google 2020



DATE: 08/03/2022

DESIGNED BY: JW

DRAWN BY: JC



**Noble Energy, Inc. – DJ Basin**  
**Lilli Unit N-5 Facility**  
SESW, Section 5, Township 8 North, Range 58 West  
Weld County, Colorado

Site Assessment  
Soil Analytical Results Map  
(05/24/22)

FIGURE  
3

Boring/Well ID #: <b>BH01</b>	SITE NAME: <b>Lilli Unit 14-5</b>	CLIENT NAME: <b>Noble</b>
Date Started: <b>5/24/22</b>	Location: <b>New Raymer, CO</b>	
Date Completed: <b>5/24/22</b>	TOC Elevation: <b>N/A</b>	DTW: <b>N/A</b>
Type of Drill: <b>Geoprobe 7822DT</b>	Geologist: <b>Sarah Quattrochi</b>	
Bit Size: <b>2.375"</b>	Project Manager: <b>Jake Whritenour</b>	
Drilling Company: <b>Site Services</b>		

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description					
1	No well installed	HA	100	0.5		SC	clayey SAND, brn, moist, fgy sand, soft, no odor/no staining					
2												
3					5.6							
4					11.5			BH01 @ 4.5' 945				
5					20.1							
6					182.5							
7												
8				DP					202.1	BH01 @ 7.5-8.5' 1107		@ 5.5-24' Strong HC odor, grey/blue staining
9									320.2			@ 20-24' compacted, hard
10												
11									504.8			
12												
13												
14									610.2			
15												
16									867.1	BH01 @ 15-17.5'		
17											1127	
18								304.2				
19												
20												
21								180.6				
22												
23								320.2				
24								81.5	BH01 @ 23-24' 1140			Refusal @ 24' no well installed
25												

Boring/Well ID #: <b>BH02</b>		SITE NAME: <b>Lilli Unit 14-5</b>		CLIENT NAME: <b>Noble</b>				
Date Started: <b>5/24/22</b>		Location: <b>New Raymer</b>						
Date Completed: <b>5/24/22</b>		TOC Elevation: <b>N/A</b>		DTW: <b>N/A</b>				
Type of Drill: <b>Geoprobe 7822DT</b>		Geologist: <b>Sarah Quattrone</b>						
Bit Size: <b>2.375"</b>		Project Manager: <b>Jake Whitenour</b>						
Drilling Company: <b>Site Services</b>								
Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1	no wells installed			0.0		SC	clayey SAND, brn, moist, soft, fg sand, no odor / no staining	
2								
3		HA	100	0.0				
4					0.0	BH02 @ 4.5'		
5					0.0	1016		
6								
7					0.0			
8			DP		0.0	BH02 @ 2.5-8.5'	1344	
9					0.0			
10							SP	SAND, coarse, dry, brn, loose, no odor / no staining
11					0.0			
12								
13					0.0			
14							SC	clayey SAND, brn, firm, fg sand, dry, no odor / no staining
15								
16					no recovery			
17								@15-20' no recovery, crushed lines
18								
19								
20					0.0			
21								
22								
23					0.0	BH02 @ 22-24'		
24						1443		Refusal @ 24' no well installed
25								

Boring/Well ID #: BH03	SITE NAME: Lilli Unit 14-5	CLIENT NAME: Noble
Date Started: 5/24/22	Location: New Raymer, CO	
Date Completed: 5/24/22	TOC Elevation: N/A	DTW: N/A
Type of Drill: GeoProbe 2822 DT	Geologist: Sarah Quattrochi	
Bit Size: 2.375"	Project Manager: Jake Whitenour	

Drilling Company: Site Services

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1	NO Well installed	HA	100	0.1		SC	Clayey SAND, brn, moist, soft, fgy sand, no odor/no staining	
2								
3								
4								
5					3.4	BH03@4.5' 1000		
6					0.0			
7					0.0			
8			DP		0.0	BH03@ 7.5-8.5' 1458		
9					0.0			
10								
11				0.0		SP	SAND, dry, brn, loose, coarse, no odor/no staining	
12								
13				0.0				
14							@ 17-19 hard, compacted	
15								
16				0.0	BH03@ 15-17.5' 1515	CL	Silty CLAY, brn, dry, hard, no plast. no odor/no staining claystone?	
17								
18				0.0	BH03@ 17.5-19' 1520			
19								
20							Refusal @ 19.5' no well installed	
21								
22								
23								
24								
25								

Boring/Well ID #: BH04		SITE NAME: Lilli Unit 14-5		CLIENT NAME: Noble				
Date Started: 5/24/22		Location: New Raymer, CO						
Date Completed: 5/24/22		TOC Elevation: N/A		DTW: N/A				
Type of Drill: GeoProbe 7822 DT		Geologist: Sarah Covattochi						
Bit Size: 2.375"		Project Manager: Jake Whitenour						
Drilling Company: Site Services								
Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1	No well installed	HA	100	0.0	BH04@4.5' 1045	SC	layered SAND, brn, moist, fg sand, soft, no odor / no staining	
2				0.0				
3				0.0				
4				0.0				
5				0.0				
6		DP			0.2	BH04@7.5' 1210	CL	silty CLAY, brn / gray, soft, high plast, some fg sand, no odor / no staining
7					0.3			
8					0.5			
9					0.0			
10					0.0			
11	0.0							
12	0.0							
13	0.0							
14	0.0							
15	0.4				BH04@15-17.5' 1223			
16	0.2							
17	0.2							
18	0.2		Refusal @ 24' no well installed					
19	0.2							
20	0.2							
21	122.6	BH04@20-22' 1237						
22								
23								
24				2.5	BH04@23-24' 1237			
25				0.8				



# Borehole Logging Form

Boring/Well ID #: <b>BH05</b>	SITE NAME: <b>Lilli Unit 14-5</b>	CLIENT NAME: <b>Noble</b>
Date Started: <b>5/24/22</b>	Location: <b>New Raymer</b>	
Date Completed: <b>5/24/22</b>	TOC Elevation: <b>N/A</b>	DTW: <b>N/A Not Encountered</b>
Type of Drill: <b>Geoprobe 7822 DT</b>	Geologist: <b>Sarah Cosattrochi</b>	
Bit Size: <b>2.375"</b>	Project Manager: <b>Jake Whritenour</b>	
Drilling Company: <b>Site Services</b>		

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1	No well installed	HA	100	0.0		SC	clayey SAND, brn, moist, fgy sand, soft, no odor / no staining	
2				0.0				
3				0.0				
4				0.0	BH05 @ 4.5' 934			
5				0.0				
6				0.0				
7				0.0				
8				0.0	BH05 @ 7.5-8.5' 1252			
9		DP			0.0		CL	Silty CLAY, brn, soft, mod plast., no odor / no staining
10					0.0			
11	0.0							
12	0.0							
13	0.0							
14	0.0							
15	0.0							
16	0.0				BH05 @ 15-17.5' 1312			
17	0.0							
18	0.0							
19	0.0							
20	0.0							
21	0.0							
22	0.0							
23	0.0							
24	0.5		BH05 @ 23-24' 1325			Refusal @ 24' well not installed		
25								

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 13, 2022

Jacob Whritenour  
Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield, CO 80020  
RE: Noble - Lilli Unit 14-5  
Work Order #2205382

Enclosed are the results of analyses for samples received by Summit Scientific on 05/25/22 15:00. 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', written in a cursive style.

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:**  
06/13/22 12:46

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01@4.5'	2205382-01	Soil	05/24/22 09:45	05/25/22 15:00
BH01@7.5-8.5'	2205382-02	Soil	05/24/22 11:07	05/25/22 15:00
BH01@15-17.5'	2205382-03	Soil	05/24/22 11:27	05/25/22 15:00
BH01@23-24'	2205382-04	Soil	05/24/22 11:40	05/25/22 15:00
BH02@4.5'	2205382-05	Soil	05/24/22 10:16	05/25/22 15:00
BH02@7.5-8.5'	2205382-06	Soil	05/24/22 13:44	05/25/22 15:00
BH02@22-24'	2205382-07	Soil	05/24/22 14:43	05/25/22 15:00
BH03@4.5'	2205382-08	Soil	05/24/22 10:00	05/25/22 15:00
BH03@7.5-8.5'	2205382-09	Soil	05/24/22 14:58	05/25/22 15:00
BH03@15-17.5'	2205382-10	Soil	05/24/22 15:15	05/25/22 15:00
BH03@17.5-19'	2205382-11	Soil	05/24/22 15:20	05/25/22 15:00
BH04@4.5'	2205382-12	Soil	05/24/22 10:45	05/25/22 15:00
BH04@7.5-8.5'	2205382-13	Soil	05/24/22 12:10	05/25/22 15:00
BH04@15-17.5'	2205382-14	Soil	05/24/22 12:23	05/25/22 15:00
BH04@23-24'	2205382-15	Soil	05/24/22 12:37	05/25/22 15:00
BH05@4.5'	2205382-16	Soil	05/24/22 09:34	05/25/22 15:00
BH05@7.5-8.5'	2205382-17	Soil	05/24/22 12:52	05/25/22 15:00
BH05@15-17.5'	2205382-18	Soil	05/24/22 13:12	05/25/22 15:00
BH05@23-24'	2205382-19	Soil	05/24/22 13:25	05/25/22 15:00
BH04@20-22'	2205382-20	Soil	05/24/22 13:25	05/25/22 15:00

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

2205382.1

S<sub>2</sub>

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

Page 1 of 2

Client: Noble / Tasman Project Manager: Jake Whritenour  
 Address: 6855 W 119th Ave E-Mail: jwhritenour@tasman-geo.com  
 City/State/Zip: Broomfield, CO 80020  
 Phone: 303-487-1228 Project Name: Lilli Unit 14-5  
 Sampler Name: Sarah Wathroch Project Number:

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	Metals-915	EC, PH, SAR	Boron		
1	BH01 @ 4.5'	5/24/22	945	2			X			X				X	X	X	X	X	X	
2	BH01 @ 7.5-8.5'		1107																	
3	BH01 @ 15-17.5'		1127																	
4	BH01 @ 23-24'		1140																	
5	BH02 @ 4.5'		1016																	
6	BH02 @ 7.5-8.5'		1344																	
7	BH02 @ 22-24'		1443																	
8	BH03 @ 4.5'		1000																	
9	BH03 @ 7.5-8.5'		1458																	
10	BH03 @ 15-17.5'		1515																	

Relinquished by: <u>J. Wathroch</u>	Date/Time: <u>5/24/22 @ 1730</u>	Received by: <u>[Signature]</u>	Date/Time: <u>5/25/22 1500</u>	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/>	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Temperature Upon Receipt: <u>8.1</u>	Corrected Temperature <u>8.1</u>	HNO3 lot #	Sample Integrity: Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
IR gun correction: <u>0</u>	IR gun #: <u>1</u>				

# Summit Scientific

2205382.2

S<sub>2</sub>

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

Page 2 of 2

Client: Noble / Tasman Project Manager: Jake Whritenour  
 Address: 6855 W 119th Ave E-Mail: jwhritenour@tasman-geo.com  
 City/State/Zip: Broomfield, CO 80020  
 Phone: 303-487-1228 Project Name: Lilli Unit 14-5  
 Sampler Name: Sarah Quattrochi Project Number:

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	metals-915	EL, PH, SAR	Boron			
1	BH03 @ 17.5-19'	5/24/22	1520	2			X			X				X	X	X	X	X	X		
2	BH04 @ 4.5'		1045																		
3	BH04 @ 7.5-8.5'		1210																		
4	BH04 @ 15-17.5'		1223																		
5	BH04 @ 23-24'		1237																		
6	BH05 @ 4.5'		934																		
7	BH05 @ 7.5-8.5'		1252																		
8	BH05 @ 15-17.5'		1312																		
9	BH05 @ 23-24'		1325																		
10																					

Relinquished by: <u>S. Quattrochi</u>	Date/Time: <u>5/24/22 @ 1730</u>	Received by: <u>[Signature]</u>	Date/Time: <u>52522 1500</u>	<b>Turn Around Time</b> (Check) Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/>	<b>Notes:</b>
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Temperature Upon Receipt: <u>8.1</u>	Corrected Temperature <u>8.1</u>	HNO3 lot #			
IR gun correction: <u>0</u>	IR gun #: <u>1</u>			<b>Sample Integrity:</b> Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

S<sub>2</sub>

2/2

2205382

Sample Receipt Checklist

S2 Work Order#

Client: Noble Frisman

Client Project ID: Lilli Unit 14-5

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

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

Temp (°C)

Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6 °C <sup>(1)</sup> ? <b>NOTE:</b> 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 <sup>(1)</sup> ?	-			
Was adequate sample volume provided <sup>(1)</sup> ?	-			
If custody seals are present, are they intact <sup>(1)</sup> ?	-			
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 <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , 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 <sup>(1)</sup> ?	-			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	-			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	-			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	-			
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>			-	
Are samples preserved that require preservation <b>(excluding cooling)</b> <sup>(1)</sup> ? Note the type of preservative in the comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.			-	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.			-	
If dissolved metals are requested, were samples field filtered?			-	

Additional Comments (if any):

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

Custodian Printed Name

S2922

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:**  
06/13/22 12:46

**BH01@4.5'**  
**2205382-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/22 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BFE0642	05/27/22	05/28/22	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		"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.0087</b>	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **05/24/22 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0325	81.2 %		50-150		"	"	"	"	
<i>Surrogate: Toluene-d8</i>	0.0394	98.4 %		50-150		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0382	95.5 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/24/22 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>C10-C28 (DRO)</b>	<b>4100</b>	50		mg/kg	1	BFE0643	05/27/22	05/29/22	EPA 8015M	
<b>C28-C36 (ORO)</b>	<b>2600</b>	50		"	"	"	"	"	"	

Date Sampled: **05/24/22 09:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: o-Terphenyl</i>	18.5	148 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

**R-01**

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:**  
06/13/22 12:46

**BH01@4.5'**  
**2205382-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

**R-01**

Date Sampled: **05/24/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.0500	mg/kg	10	BFE0695	05/31/22	06/05/22	EPA 8270D SIM	
Anthracene	ND	0.0500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.0500	"	"	"	"	"	"	
<b>Benzo (a) pyrene</b>	<b>0.669</b>	0.0500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.0500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.0500	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.658</b>	0.0500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.0500	"	"	"	"	"	"	
Fluoranthene	ND	0.0500	"	"	"	"	"	"	
Fluorene	ND	0.0500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0500	"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.102</b>	0.0500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.0500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.0500	"	"	"	"	"	"	

Date Sampled: **05/24/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.00	%	40-150		"	"	"	"	S-02
Surrogate: Fluoranthene-d10	0.00	%	40-150		"	"	"	"	S-02

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/24/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0902</b>	0.0100	mg/L	1	BFF0137	06/06/22	06/07/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/24/22 09:45**

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

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:**  
06/13/22 12:46

**BH01@4.5'**  
**2205382-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.13	0.251	mg/kg dry	1	BFF0247	06/09/22	06/11/22	EPA 6020B	
Barium	244	0.502	"	"	"	"	"	"	
Cadmium	ND	0.251	"	"	"	"	"	"	
Copper	8.85	0.502	"	"	"	"	"	"	
Lead	11.7	0.251	"	"	"	"	"	"	
Nickel	7.67	0.502	"	"	"	"	"	"	
Selenium	1.00	0.326	"	"	"	"	"	"	
Silver	0.0459	0.0251	"	"	"	"	"	"	
Zinc	30.1	0.502	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/24/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFF0251	06/09/22	06/09/22	EPA 7196A	

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

Date Sampled: **05/24/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	709	0.0627	mg/L dry	1	BFF0122	06/06/22	06/08/22	EPA 6020B	
Magnesium	197	0.0627	"	"	"	"	"	"	
Sodium	82.9	0.0627	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/24/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.709	0.00100	units	1	BFF0198	06/08/22	06/08/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/24/22 09:45**

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:**  
06/13/22 12:46

**BH01@4.5'**  
**2205382-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

<b>% Solids</b>	<b>79.8</b>	%	1	BFE0745	05/31/22	05/31/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/24/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>1.13</b>	0.0100	mmhos/cm	1	BFF0126	06/06/22	06/07/22	EPA 120.1	

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

Date Sampled: **05/24/22 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>7.50</b>		pH Units	1	BFF0125	06/06/22	06/07/22	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH01@7.5-8.5'**  
**2205382-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/22 11:07**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Benzene</b>	<b>0.68</b>	0.20	mg/kg	100	BFE0642	05/27/22	05/29/22	EPA 8260B	
Toluene	ND	0.0050	"	1	"	"	05/29/22	"	
<b>Ethylbenzene</b>	<b>5.2</b>	0.50	"	100	"	"	05/29/22	"	
<b>Xylenes (total)</b>	<b>66</b>	1.0	"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>41</b>	0.50	"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>12</b>	0.50	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>6.4</b>	0.38	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1200</b>	50	"	"	"	"	"	"	

Date Sampled: **05/24/22 11:07**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0322	80.6 %	50-150	"	"	"	05/29/22	"	
<i>Surrogate: Toluene-d8</i>	0.0384	96.0 %	50-150	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0352	88.1 %	50-150	"	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/24/22 11:07**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>C10-C28 (DRO)</b>	<b>8700</b>	50	mg/kg	1	BFE0643	05/27/22	05/29/22	EPA 8015M	
<b>C28-C36 (ORO)</b>	<b>2700</b>	50	"	"	"	"	"	"	

Date Sampled: **05/24/22 11:07**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<i>Surrogate: o-Terphenyl</i>	6.84	54.8 %	30-150	"	"	"	"	"	

**PAH by EPA Method 8270D SIM**

**R-01**

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:**  
06/13/22 12:46

**BH01@7.5-8.5'**  
**2205382-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

**R-01**

Date Sampled: **05/24/22 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.0500	mg/kg	10	BFE0695	05/31/22	06/05/22	EPA 8270D SIM	
Anthracene	ND	0.0500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.0500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.0500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.0500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.0500	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.942</b>	0.0500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.0500	"	"	"	"	"	"	
Fluoranthene	ND	0.0500	"	"	"	"	"	"	
Fluorene	ND	5.00	"	1000	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0500	"	10	"	"	"	"	
<b>Pyrene</b>	<b>0.735</b>	0.0500	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>9.47</b>	0.0500	"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>18.1</b>	5.00	"	1000	"	"	"	"	

Date Sampled: **05/24/22 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.00	%	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0338	101 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/24/22 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.134</b>	0.0100	mg/L	1	BFF0137	06/06/22	06/07/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/24/22 11:07**

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH01@7.5-8.5'**  
**2205382-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.06	0.221	mg/kg dry	1	BFF0247	06/09/22	06/11/22	EPA 6020B	
Barium	232	0.443	"	"	"	"	"	"	
Cadmium	0.227	0.221	"	"	"	"	"	"	
Copper	4.32	0.443	"	"	"	"	"	"	
Lead	10.5	0.221	"	"	"	"	"	"	
Nickel	4.35	0.443	"	"	"	"	"	"	
Selenium	0.820	0.288	"	"	"	"	"	"	
Silver	ND	0.0221	"	"	"	"	"	"	
Zinc	16.7	0.443	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 05/24/22 11:07

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFF0251	06/09/22	06/09/22	EPA 7196A	

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

Date Sampled: 05/24/22 11:07

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	418	0.0553	mg/L dry	1	BFF0122	06/06/22	06/08/22	EPA 6020B	
Magnesium	101	0.0553	"	"	"	"	"	"	
Sodium	87.1	0.0553	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 05/24/22 11:07

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.991	0.00100	units	1	BFF0198	06/08/22	06/08/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 05/24/22 11:07

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:**  
06/13/22 12:46

**BH01@7.5-8.5'**  
**2205382-02 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

<b>% Solids</b>	<b>90.4</b>	%	1	BFE0745	05/31/22	05/31/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/24/22 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.315</b>	0.0100	mmhos/cm	1	BFF0126	06/06/22	06/07/22	EPA 120.1	

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

Date Sampled: **05/24/22 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.53</b>		pH Units	1	BFF0125	06/06/22	06/07/22	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH01@15-17.5'**  
**2205382-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/22 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	25	0.20	mg/kg	100	BFE0642	05/27/22	05/28/22	EPA 8260B	
Toluene	0.0057	0.0050	"	1	"	"	05/28/22	"	
Ethylbenzene	42	0.50	"	100	"	"	05/28/22	"	
Xylenes (total)	220	1.0	"	"	"	"	"	"	E
1,2,4-Trimethylbenzene	0.97	0.0050	"	1	"	"	05/28/22	"	
1,3,5-Trimethylbenzene	0.58	0.0050	"	"	"	"	"	"	
Naphthalene	0.59	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	6400	50	"	100	"	"	05/28/22	"	

Date Sampled: **05/24/22 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0284	70.9 %	50-150		"	"	05/28/22	"	
Surrogate: Toluene-d8	0.0401	100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.152	379 %	50-150		"	"	"	"	S-02

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/24/22 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	13000	50	mg/kg	1	BFE0643	05/27/22	05/29/22	EPA 8015M	
C28-C36 (ORO)	1900	50	"	"	"	"	"	"	

Date Sampled: **05/24/22 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	22.4	179 %	30-150		"	"	"	"	S-02

**PAH by EPA Method 8270D SIM**

**R-01**

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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:**  
06/13/22 12:46

**BH01@15-17.5'**  
**2205382-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

**R-01**

Date Sampled: **05/24/22 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.0500	mg/kg	10	BFE0695	05/31/22	06/05/22	EPA 8270D SIM	
Anthracene	ND	0.0500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.0500	"	"	"	"	"	"	
<b>Benzo (a) pyrene</b>	<b>0.410</b>	0.0500	"	"	"	"	"	"	
<b>Benzo (b) fluoranthene</b>	<b>0.186</b>	0.0500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.0500	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.928</b>	0.0500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.0500	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.186</b>	0.0500	"	"	"	"	"	"	
<b>Fluorene</b>	<b>6.81</b>	5.00	"	1000	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0500	"	10	"	"	"	"	
<b>Pyrene</b>	<b>0.764</b>	0.0500	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>12.0</b>	0.0500	"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>42.3</b>	5.00	"	1000	"	"	"	"	

Date Sampled: **05/24/22 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.196	588 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.00	%	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/24/22 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.131</b>	0.0100	mg/L	1	BFF0137	06/06/22	06/07/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/24/22 11:27**

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH01@15-17.5'**  
**2205382-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	4.89	0.260	mg/kg dry	1	BFF0247	06/09/22	06/11/22	EPA 6020B
Barium	150	0.520	"	"	"	"	"	"
Cadmium	0.364	0.260	"	"	"	"	"	"
Copper	8.44	0.520	"	"	"	"	"	"
Lead	13.6	0.260	"	"	"	"	"	"
Nickel	5.73	0.520	"	"	"	"	"	"
Selenium	1.88	0.338	"	"	"	"	"	"
Silver	0.0557	0.0260	"	"	"	"	"	"
Zinc	25.9	0.520	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 05/24/22 11:27

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFF0251	06/09/22	06/09/22	EPA 7196A	

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

Date Sampled: 05/24/22 11:27

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1440	0.0650	mg/L dry	1	BFF0122	06/06/22	06/08/22	EPA 6020B	
Magnesium	261	0.0650	"	"	"	"	"	"	
Sodium	463	0.0650	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 05/24/22 11:27

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.95	0.00100	units	1	BFF0198	06/08/22	06/08/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 05/24/22 11:27

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH01@15-17.5'**  
**2205382-03 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

% Solids	76.9	%	1	BFE0745	05/31/22	05/31/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/24/22 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.07	0.0100	mmhos/cm	1	BFF0126	06/06/22	06/07/22	EPA 120.1	

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

Date Sampled: **05/24/22 11:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.37		pH Units	1	BFF0125	06/06/22	06/07/22	EPA 9045D	

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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:**  
06/13/22 12:46

**BH01@23-24'**  
**2205382-04 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/22 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Benzene</b>	<b>0.025</b>	0.0020		mg/kg	1	BFE0642	05/27/22	05/28/22	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.25</b>	0.0050		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>3.5</b>	0.10		"	10	"	"	05/28/22	"	
<b>1,2,4-Trimethylbenzene</b>	<b>0.62</b>	0.0050		"	1	"	"	05/28/22	"	
<b>1,3,5-Trimethylbenzene</b>	<b>0.12</b>	0.0050		"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.18</b>	0.0038		"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>17</b>	0.50		"	"	"	"	"	"	

Date Sampled: **05/24/22 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0379	94.7 %		50-150		"	"	"	"	
<i>Surrogate: Toluene-d8</i>	0.0313	78.3 %		50-150		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0638	160 %		50-150		"	"	"	"	S-02

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/24/22 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>C10-C28 (DRO)</b>	<b>1000</b>	50		mg/kg	1	BFE0643	05/27/22	05/29/22	EPA 8015M	
<b>C28-C36 (ORO)</b>	<b>520</b>	50		"	"	"	"	"	"	

Date Sampled: **05/24/22 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: o-Terphenyl</i>	14.7	117 %		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: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH01@23-24'**  
**2205382-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0695	05/31/22	06/05/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
<b>Benzo (a) pyrene</b>	<b>0.0153</b>	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.0307</b>	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.0827</b>	0.0500	"	10	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	1	"	"	"	"	
<b>Pyrene</b>	<b>0.0206</b>	0.00500	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.358</b>	0.0500	"	10	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.588</b>	0.0500	"	"	"	"	"	"	

Date Sampled: **05/24/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0269	80.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0220	66.1 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/24/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0436</b>	0.0100	mg/L	1	BFF0137	06/06/22	06/07/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/24/22 11:40**

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:**  
06/13/22 12:46

**BH01@23-24'**  
**2205382-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.514	0.258	mg/kg dry	1	BFF0247	06/09/22	06/11/22	EPA 6020B	
Barium	52.2	0.516	"	"	"	"	"	"	
Cadmium	ND	0.258	"	"	"	"	"	"	
Copper	15.1	0.516	"	"	"	"	"	"	
Lead	14.7	0.258	"	"	"	"	"	"	
Nickel	4.24	0.516	"	"	"	"	"	"	
Selenium	1.22	0.336	"	"	"	"	"	"	
Silver	ND	0.0258	"	"	"	"	"	"	
Zinc	9.79	0.516	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/24/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFF0251	06/09/22	06/09/22	EPA 7196A	

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

Date Sampled: **05/24/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	312	0.0645	mg/L dry	1	BFF0122	06/06/22	06/08/22	EPA 6020B	
Magnesium	130	0.0645	"	"	"	"	"	"	
Sodium	248	0.0645	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/24/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.98	0.00100	units	1	BFF0198	06/08/22	06/08/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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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:**  
06/13/22 12:46

**BH01@23-24'**  
**2205382-04 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/24/22 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	77.5			%	1	BFE0745	05/31/22	05/31/22	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/24/22 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	1.46	0.0100		mmhos/cm	1	BFF0126	06/06/22	06/07/22	EPA 120.1	

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

Date Sampled: **05/24/22 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.22			pH Units	1	BFF0125	06/06/22	06/07/22	EPA 9045D	

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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:**  
06/13/22 12:46

**BH02@4.5'**  
**2205382-05 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/22 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0642	05/27/22	05/29/22	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: **05/24/22 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0332	82.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0361	90.3 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/24/22 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFE0643	05/27/22	05/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/24/22 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	14.0	112 %	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:**  
06/13/22 12:46

**BH02@4.5'**  
**2205382-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/22 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0695	05/31/22	06/05/22	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: **05/24/22 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0250	75.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0216	64.9 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/24/22 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.101</b>	0.0100	mg/L	1	BFF0137	06/06/22	06/07/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/24/22 10:16**

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:**  
06/13/22 12:46

**BH02@4.5'**  
**2205382-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.13	0.252	mg/kg dry	1	BFF0247	06/09/22	06/11/22	EPA 6020B	
Barium	235	0.504	"	"	"	"	"	"	
Cadmium	0.304	0.252	"	"	"	"	"	"	
Copper	8.78	0.504	"	"	"	"	"	"	
Lead	13.1	0.252	"	"	"	"	"	"	
Nickel	7.23	0.504	"	"	"	"	"	"	
Selenium	1.16	0.328	"	"	"	"	"	"	
Silver	0.0461	0.0252	"	"	"	"	"	"	
Zinc	33.1	0.504	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/24/22 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFF0251	06/09/22	06/09/22	EPA 7196A	

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

Date Sampled: **05/24/22 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1350	0.0630	mg/L dry	1	BFF0122	06/06/22	06/08/22	EPA 6020B	
Magnesium	202	0.0630	"	"	"	"	"	"	
Sodium	36.5	0.0630	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/24/22 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.245	0.00100	units	1	BFF0198	06/08/22	06/08/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/24/22 10:16**

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:**  
06/13/22 12:46

**BH02@4.5'**  
**2205382-05 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

<b>% Solids</b>	<b>79.3</b>	%	1	BFE0745	05/31/22	05/31/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/24/22 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.669</b>	0.0100	mmhos/cm	1	BFF0126	06/06/22	06/07/22	EPA 120.1	

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

Date Sampled: **05/24/22 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>7.85</b>		pH Units	1	BFF0125	06/06/22	06/07/22	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH02@7.5-8.5'**  
**2205382-06 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/22 13:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0642	05/27/22	05/28/22	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: **05/24/22 13:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0345	86.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0382	95.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0372	93.1 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/24/22 13:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFE0643	05/27/22	05/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/24/22 13:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	15.2	122 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH02@7.5-8.5'**  
**2205382-06 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/22 13:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0695	05/31/22	06/06/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/24/22 13:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0239	71.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0243	72.8 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/24/22 13:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0716</b>	0.0100	mg/L	1	BFF0137	06/06/22	06/07/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/24/22 13:44**

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH02@7.5-8.5'**  
**2205382-06 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.82	0.233	mg/kg dry	1	BFF0247	06/09/22	06/11/22	EPA 6020B	
Barium	158	0.467	"	"	"	"	"	"	
Cadmium	0.272	0.233	"	"	"	"	"	"	
Copper	5.59	0.467	"	"	"	"	"	"	
Lead	12.4	0.233	"	"	"	"	"	"	
Nickel	5.54	0.467	"	"	"	"	"	"	
Selenium	0.983	0.303	"	"	"	"	"	"	
Silver	ND	0.0233	"	"	"	"	"	"	
Zinc	21.6	0.467	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/24/22 13:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFF0251	06/09/22	06/09/22	EPA 7196A	

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

Date Sampled: **05/24/22 13:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	667	0.0583	mg/L dry	1	BFF0122	06/06/22	06/08/22	EPA 6020B	
Magnesium	185	0.0583	"	"	"	"	"	"	
Sodium	47.1	0.0583	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/24/22 13:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.416	0.00100	units	1	BFF0198	06/08/22	06/08/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/24/22 13:44**

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:**  
06/13/22 12:46

**BH02@7.5-8.5'**  
**2205382-06 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

% Solids	85.7	%	1	BFE0745	05/31/22	05/31/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/24/22 13:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>0.415</b>	0.0100	mmhos/cm	1	BFF0126	06/06/22	06/07/22	EPA 120.1	

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

Date Sampled: **05/24/22 13:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	<b>8.41</b>		pH Units	1	BFF0125	06/06/22	06/07/22	EPA 9045D	

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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:**  
06/13/22 12:46

**BH02@22-24'**  
**2205382-07 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/22 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0642	05/27/22	05/28/22	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: **05/24/22 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0354	88.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0385	96.3 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0362	90.4 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/24/22 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFE0643	05/27/22	05/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/24/22 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	14.4	115 %	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:**  
06/13/22 12:46

**BH02@22-24'**  
**2205382-07 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/22 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0695	05/31/22	06/06/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/24/22 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0272	81.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0271	81.3 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/24/22 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0518</b>	0.0100	mg/L	1	BFF0137	06/06/22	06/07/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/24/22 14:43**

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:**  
06/13/22 12:46

**BH02@22-24'**  
**2205382-07 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.02	0.221	mg/kg dry	1	BFF0247	06/09/22	06/11/22	EPA 6020B	
Barium	234	0.441	"	"	"	"	"	"	
Cadmium	0.233	0.221	"	"	"	"	"	"	
Copper	5.11	0.441	"	"	"	"	"	"	
Lead	9.08	0.221	"	"	"	"	"	"	
Nickel	4.91	0.441	"	"	"	"	"	"	
Selenium	0.763	0.287	"	"	"	"	"	"	
Silver	ND	0.0221	"	"	"	"	"	"	
Zinc	17.6	0.441	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/24/22 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFF0251	06/09/22	06/09/22	EPA 7196A	

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

Date Sampled: **05/24/22 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	579	0.0551	mg/L dry	1	BFF0122	06/06/22	06/08/22	EPA 6020B	
Magnesium	157	0.0551	"	"	"	"	"	"	
Sodium	55.4	0.0551	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/24/22 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.526	0.00100	units	1	BFF0198	06/08/22	06/08/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/24/22 14:43**

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:**  
06/13/22 12:46

**BH02@22-24'**  
**2205382-07 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

<b>% Solids</b>	<b>90.7</b>	%	1	BFE0745	05/31/22	05/31/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/24/22 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.444</b>	0.0100	mmhos/cm	1	BFF0126	06/06/22	06/07/22	EPA 120.1	

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

Date Sampled: **05/24/22 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.48</b>		pH Units	1	BFF0125	06/06/22	06/07/22	EPA 9045D	

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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:**  
06/13/22 12:46

**BH03@4.5'**  
**2205382-08 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0642	05/27/22	05/28/22	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: **05/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0331	82.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0390	97.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0371	92.8 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFE0643	05/27/22	05/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	15.6	125 %	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:**  
06/13/22 12:46

**BH03@4.5'**  
**2205382-08 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0695	05/31/22	06/06/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	"
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	"
<b>Benzo (a) pyrene</b>	<b>0.0306</b>	0.00500	"	"	"	"	"	"	"
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	"
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	"
<b>Chrysene</b>	<b>0.0353</b>	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	"	"	"	"	"	"	"
<b>Pyrene</b>	<b>0.0264</b>	0.00500	"	"	"	"	"	"	"
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	"
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	"

Date Sampled: **05/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0217	65.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0223	66.8 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.117</b>	0.0100	mg/L	1	BFF0137	06/06/22	06/07/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/24/22 10:00**

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:**  
06/13/22 12:46

**BH03@4.5'**  
**2205382-08 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.72	0.226	mg/kg dry	1	BFF0247	06/09/22	06/11/22	EPA 6020B	
Barium	308	0.452	"	"	"	"	"	"	
Cadmium	ND	0.226	"	"	"	"	"	"	
Copper	4.99	0.452	"	"	"	"	"	"	
Lead	9.25	0.226	"	"	"	"	"	"	
Nickel	4.73	0.452	"	"	"	"	"	"	
Selenium	0.889	0.294	"	"	"	"	"	"	
Silver	0.0247	0.0226	"	"	"	"	"	"	
Zinc	19.0	0.452	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFF0251	06/09/22	06/09/22	EPA 7196A	

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

Date Sampled: **05/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	832	0.0565	mg/L dry	1	BFF0122	06/06/22	06/08/22	EPA 6020B	
Magnesium	186	0.0565	"	"	"	"	"	"	
Sodium	85.0	0.0565	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.694	0.00100	units	1	BFF0198	06/08/22	06/08/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/24/22 10:00**

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH03@4.5'**  
**2205382-08 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

<b>% Solids</b>	<b>88.6</b>	%	1	BFE0745	05/31/22	05/31/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.779</b>	0.0100	mmhos/cm	1	BFF0126	06/06/22	06/07/22	EPA 120.1	

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

Date Sampled: **05/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.35</b>		pH Units	1	BFF0125	06/06/22	06/07/22	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH03@7.5-8.5'**  
**2205382-09 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/22 14:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0642	05/27/22	05/28/22	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: **05/24/22 14:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0315	78.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0380	95.1 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0359	89.8 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/24/22 14:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFE0643	05/27/22	05/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/24/22 14:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	15.1	121 %	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:**  
06/13/22 12:46

**BH03@7.5-8.5'**  
**2205382-09 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/22 14:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0695	05/31/22	06/06/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/24/22 14:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0223	67.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0196	58.9 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/24/22 14:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.310</b>	0.0100	mg/L	1	BFF0137	06/06/22	06/07/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/24/22 14:58**

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:**  
06/13/22 12:46

**BH03@7.5-8.5'**  
**2205382-09 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.61	0.232	mg/kg dry	1	BFF0247	06/09/22	06/11/22	EPA 6020B	
Barium	166	0.463	"	"	"	"	"	"	
Cadmium	ND	0.232	"	"	"	"	"	"	
Copper	5.39	0.463	"	"	"	"	"	"	
Lead	11.4	0.232	"	"	"	"	"	"	
Nickel	5.03	0.463	"	"	"	"	"	"	
Selenium	0.898	0.301	"	"	"	"	"	"	
Silver	ND	0.0232	"	"	"	"	"	"	
Zinc	18.7	0.463	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/24/22 14:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFF0251	06/09/22	06/09/22	EPA 7196A	

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

Date Sampled: **05/24/22 14:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	514	0.0579	mg/L dry	1	BFF0122	06/06/22	06/08/22	EPA 6020B	
Magnesium	176	0.0579	"	"	"	"	"	"	
Sodium	280	0.0579	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/24/22 14:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.72	0.00100	units	1	BFF0198	06/08/22	06/08/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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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:**  
06/13/22 12:46

**BH03@7.5-8.5'**  
**2205382-09 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/24/22 14:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.3		%	1	BFE0745	05/31/22	05/31/22	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/24/22 14:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.992	0.0100	mmhos/cm	1	BFF0126	06/06/22	06/07/22	EPA 120.1	

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

Date Sampled: **05/24/22 14:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.26		pH Units	1	BFF0125	06/06/22	06/07/22	EPA 9045D	

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

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH03@15-17.5'**  
**2205382-10 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/22 15:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BFE0642	05/27/22	05/28/22	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: **05/24/22 15:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0320	80.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0384	95.9 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0353	88.3 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/24/22 15:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BFE0643	05/27/22	05/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **05/24/22 15:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	14.3	114 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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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:**  
06/13/22 12:46

**BH03@15-17.5'**  
**2205382-10 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/22 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0695	05/31/22	06/06/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/24/22 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0241	72.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0222	66.7 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/24/22 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.300</b>	0.0100	mg/L	1	BFF0137	06/06/22	06/07/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/24/22 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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:**  
06/13/22 12:46

**BH03@15-17.5'**  
**2205382-10 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	8.05	0.281	mg/kg dry	1	BFF0247	06/09/22	06/11/22	EPA 6020B	
Barium	195	0.562	"	"	"	"	"	"	
Cadmium	ND	0.281	"	"	"	"	"	"	
Copper	9.20	0.562	"	"	"	"	"	"	
Lead	11.9	0.281	"	"	"	"	"	"	
Nickel	7.44	0.562	"	"	"	"	"	"	
Selenium	1.11	0.365	"	"	"	"	"	"	
Silver	0.0361	0.0281	"	"	"	"	"	"	
Zinc	29.8	0.562	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/24/22 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFF0251	06/09/22	06/09/22	EPA 7196A	

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

Date Sampled: **05/24/22 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1360	0.0702	mg/L dry	1	BFF0122	06/06/22	06/08/22	EPA 6020B	
Magnesium	302	0.0702	"	"	"	"	"	"	
Sodium	481	0.0702	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/24/22 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.07	0.00100	units	1	BFF0198	06/08/22	06/08/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/24/22 15:15**

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH03@15-17.5'**  
**2205382-10 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

% Solids	71.2	%	1	BFE0745	05/31/22	05/31/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/24/22 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.73	0.0100	mmhos/cm	1	BFF0126	06/06/22	06/07/22	EPA 120.1	

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

Date Sampled: **05/24/22 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.82		pH Units	1	BFF0125	06/06/22	06/07/22	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH03@17.5-19'**  
**2205382-11 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/22 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0642	05/27/22	05/28/22	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: **05/24/22 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0346	86.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	96.9 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0355	88.8 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/24/22 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFE0643	05/27/22	05/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/24/22 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	14.0	112 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Broomfield CO, 80020

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH03@17.5-19'**  
**2205382-11 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/22 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0695	05/31/22	06/06/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/24/22 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0221	66.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0195	58.5 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/24/22 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.172</b>	0.0100	mg/L	1	BFF0137	06/06/22	06/07/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/24/22 15:20**

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH03@17.5-19'**  
**2205382-11 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.70	0.302	mg/kg dry	1	BFF0247	06/09/22	06/11/22	EPA 6020B	
Barium	164	0.604	"	"	"	"	"	"	
Cadmium	ND	0.302	"	"	"	"	"	"	
Copper	9.90	0.604	"	"	"	"	"	"	
Lead	16.5	0.302	"	"	"	"	"	"	
Nickel	2.27	0.604	"	"	"	"	"	"	
Selenium	1.55	0.392	"	"	"	"	"	"	
Silver	0.0612	0.0302	"	"	"	"	"	"	
Zinc	20.3	0.604	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/24/22 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFF0251	06/09/22	06/09/22	EPA 7196A	

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

Date Sampled: **05/24/22 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	188	0.0755	mg/L dry	1	BFF0122	06/06/22	06/08/22	EPA 6020B	
Magnesium	111	0.0755	"	"	"	"	"	"	
Sodium	382	0.0755	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/24/22 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.47	0.00100	units	1	BFF0198	06/08/22	06/08/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/24/22 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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:**  
06/13/22 12:46

**BH03@17.5-19'**  
**2205382-11 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

<b>% Solids</b>	<b>66.3</b>	%	1	BFE0745	05/31/22	05/31/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/24/22 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>2.39</b>	0.0100	mmhos/cm	1	BFF0126	06/06/22	06/07/22	EPA 120.1	

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

Date Sampled: **05/24/22 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>7.67</b>		pH Units	1	BFF0125	06/06/22	06/07/22	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH04@4.5'**  
**2205382-12 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0642	05/27/22	05/28/22	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: **05/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0340	84.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.1 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0354	88.4 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFE0643	05/27/22	05/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	13.5	108 %	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: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH04@4.5'**  
**2205382-12 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0695	05/31/22	06/06/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0138	41.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0186	55.9 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.179</b>	0.0100	mg/L	1	BFF0137	06/06/22	06/07/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/24/22 10:45**

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: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH04@4.5'**  
**2205382-12 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.01	0.240	mg/kg dry	1	BFF0247	06/09/22	06/11/22	EPA 6020B
Barium	373	0.480	"	"	"	"	"	"
Cadmium	0.275	0.240	"	"	"	"	"	"
Copper	6.40	0.480	"	"	"	"	"	"
Lead	12.1	0.240	"	"	"	"	"	"
Nickel	6.32	0.480	"	"	"	"	"	"
Selenium	0.910	0.312	"	"	"	"	"	"
Silver	0.0322	0.0240	"	"	"	"	"	"
Zinc	25.0	0.480	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFF0251	06/09/22	06/09/22	EPA 7196A	

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

Date Sampled: **05/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	875	0.0600	mg/L dry	1	BFF0122	06/06/22	06/08/22	EPA 6020B	
Magnesium	177	0.0600	"	"	"	"	"	"	
Sodium	139	0.0600	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.12	0.00100	units	1	BFF0198	06/08/22	06/08/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/24/22 10:45**

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: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH04@4.5'**  
**2205382-12 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

<b>% Solids</b>	<b>83.3</b>	%	1	BFE0745	05/31/22	05/31/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>1.04</b>	0.0100	mmhos/cm	1	BFF0126	06/06/22	06/07/22	EPA 120.1	

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

Date Sampled: **05/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.14</b>		pH Units	1	BFF0125	06/06/22	06/07/22	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: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH04@7.5-8.5'**  
**2205382-13 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0642	05/27/22	05/28/22	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: **05/24/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0348	87.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0381	95.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0360	90.1 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/24/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFE0643	05/27/22	05/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/24/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	13.7	109 %	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: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH04@7.5-8.5'**  
**2205382-13 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0695	05/31/22	06/06/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/24/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0165	49.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0155	46.5 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/24/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.202</b>	0.0100	mg/L	1	BFF0137	06/06/22	06/07/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/24/22 12:10**

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH04@7.5-8.5'**  
**2205382-13 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.07	0.226	mg/kg dry	1	BFF0247	06/09/22	06/11/22	EPA 6020B	
Barium	167	0.453	"	"	"	"	"	"	
Cadmium	0.234	0.226	"	"	"	"	"	"	
Copper	4.62	0.453	"	"	"	"	"	"	
Lead	10.8	0.226	"	"	"	"	"	"	
Nickel	4.36	0.453	"	"	"	"	"	"	
Selenium	0.777	0.294	"	"	"	"	"	"	
Silver	ND	0.0226	"	"	"	"	"	"	
Zinc	18.6	0.453	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/24/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFF0251	06/09/22	06/09/22	EPA 7196A	

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

Date Sampled: **05/24/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	503	0.0566	mg/L dry	1	BFF0122	06/06/22	06/08/22	EPA 6020B	
Magnesium	132	0.0566	"	"	"	"	"	"	
Sodium	142	0.0566	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/24/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.46	0.00100	units	1	BFF0198	06/08/22	06/08/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/24/22 12:10**

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: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH04@7.5-8.5'**  
**2205382-13 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

<b>% Solids</b>	<b>88.3</b>	%	1	BFE0745	05/31/22	05/31/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/24/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.800</b>	0.0100	mmhos/cm	1	BFF0126	06/06/22	06/07/22	EPA 120.1	

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

Date Sampled: **05/24/22 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.53</b>		pH Units	1	BFF0125	06/06/22	06/07/22	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: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH04@15-17.5'**  
**2205382-14 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/22 12:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BFE0642	05/27/22	05/28/22	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: **05/24/22 12:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0351	87.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0391	97.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0355	88.7 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/24/22 12:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BFE0643	05/27/22	05/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **05/24/22 12:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	14.0	112 %		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: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH04@15-17.5'**  
**2205382-14 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/22 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0695	05/31/22	06/06/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/24/22 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0255	76.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0244	73.3 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/24/22 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.443</b>	0.0100	mg/L	1	BFF0137	06/06/22	06/07/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/24/22 12:23**

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: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH04@15-17.5'**  
**2205382-14 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	9.01	0.262	mg/kg dry	1	BFF0247	06/09/22	06/11/22	EPA 6020B	
Barium	282	0.524	"	"	"	"	"	"	
Cadmium	ND	0.262	"	"	"	"	"	"	
Copper	9.43	0.524	"	"	"	"	"	"	
Lead	11.4	0.262	"	"	"	"	"	"	
Nickel	8.37	0.524	"	"	"	"	"	"	
Selenium	1.19	0.341	"	"	"	"	"	"	
Silver	0.0360	0.0262	"	"	"	"	"	"	
Zinc	30.5	0.524	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/24/22 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFF0251	06/09/22	06/09/22	EPA 7196A	

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

Date Sampled: **05/24/22 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	778	0.0655	mg/L dry	1	BFF0122	06/06/22	06/08/22	EPA 6020B	
Magnesium	167	0.0655	"	"	"	"	"	"	
Sodium	227	0.0655	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/24/22 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.93	0.00100	units	1	BFF0198	06/08/22	06/08/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/24/22 12:23**

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:**  
06/13/22 12:46

**BH04@15-17.5'**  
**2205382-14 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

<b>% Solids</b>	<b>76.3</b>	%	1	BFE0745	05/31/22	05/31/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/24/22 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>1.33</b>	0.0100	mmhos/cm	1	BFF0126	06/06/22	06/07/22	EPA 120.1	

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

Date Sampled: **05/24/22 12:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.02</b>		pH Units	1	BFF0125	06/06/22	06/07/22	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH04@23-24'**  
**2205382-15 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/22 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0642	05/27/22	05/28/22	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: **05/24/22 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0345	86.3 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0356	89.0 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/24/22 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFE0643	05/27/22	05/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/24/22 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	14.2	114 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH04@23-24'**  
**2205382-15 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/22 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0695	05/31/22	06/06/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/24/22 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0225	67.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0224	67.1 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/24/22 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0457</b>	0.0100	mg/L	1	BFF0137	06/06/22	06/07/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/24/22 12:37**

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:**  
06/13/22 12:46

**BH04@23-24'**  
**2205382-15 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	8.04	0.256	mg/kg dry	1	BFF0247	06/09/22	06/11/22	EPA 6020B	
Barium	42.4	0.512	"	"	"	"	"	"	
Cadmium	ND	0.256	"	"	"	"	"	"	
Copper	10.8	0.512	"	"	"	"	"	"	
Lead	18.7	0.256	"	"	"	"	"	"	
Nickel	3.14	0.512	"	"	"	"	"	"	
Selenium	2.78	0.333	"	"	"	"	"	"	
Silver	0.0428	0.0256	"	"	"	"	"	"	
Zinc	9.20	0.512	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/24/22 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFF0251	06/09/22	06/09/22	EPA 7196A	

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

Date Sampled: **05/24/22 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1120	0.0640	mg/L dry	1	BFF0122	06/06/22	06/08/22	EPA 6020B	
Magnesium	332	0.0640	"	"	"	"	"	"	
Sodium	310	0.0640	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/24/22 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.09	0.00100	units	1	BFF0198	06/08/22	06/08/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/24/22 12:37**

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH04@23-24'**  
**2205382-15 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

<b>% Solids</b>	<b>78.1</b>	%	1	BFE0745	05/31/22	05/31/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/24/22 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>1.92</b>	0.0100	mmhos/cm	1	BFF0126	06/06/22	06/07/22	EPA 120.1	

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

Date Sampled: **05/24/22 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>7.38</b>		pH Units	1	BFF0125	06/06/22	06/07/22	EPA 9045D	

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Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH05@4.5'**  
**2205382-16 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0642	05/27/22	05/28/22	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: **05/24/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0320	79.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0390	97.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0359	89.7 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/24/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFE0643	05/27/22	05/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/24/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	14.5	116 %	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:**  
06/13/22 12:46

**BH05@4.5'**  
**2205382-16 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0695	05/31/22	06/06/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/24/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0221	66.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0197	59.2 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/24/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0971</b>	0.0100	mg/L	1	BFF0137	06/06/22	06/07/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/24/22 09:34**

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH05@4.5'**  
**2205382-16 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.97	0.234	mg/kg dry	1	BFF0247	06/09/22	06/11/22	EPA 6020B	
Barium	198	0.467	"	"	"	"	"	"	
Cadmium	0.257	0.234	"	"	"	"	"	"	
Copper	5.76	0.467	"	"	"	"	"	"	
Lead	10.9	0.234	"	"	"	"	"	"	
Nickel	5.57	0.467	"	"	"	"	"	"	
Selenium	0.973	0.304	"	"	"	"	"	"	
Silver	0.0277	0.0234	"	"	"	"	"	"	
Zinc	21.5	0.467	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 05/24/22 09:34

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFF0251	06/09/22	06/09/22	EPA 7196A	

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

Date Sampled: 05/24/22 09:34

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	943	0.0584	mg/L dry	1	BFF0122	06/06/22	06/08/22	EPA 6020B	
Magnesium	160	0.0584	"	"	"	"	"	"	
Sodium	46.7	0.0584	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 05/24/22 09:34

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.370	0.00100	units	1	BFF0198	06/08/22	06/08/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 05/24/22 09:34

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH05@4.5'**  
**2205382-16 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

<b>% Solids</b>	<b>85.6</b>	%	1	BFE0745	05/31/22	05/31/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/24/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.522</b>	0.0100	mmhos/cm	1	BFF0126	06/06/22	06/07/22	EPA 120.1	

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

Date Sampled: **05/24/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.28</b>		pH Units	1	BFF0125	06/06/22	06/07/22	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:**  
06/13/22 12:46

**BH05@7.5-8.5'**  
**2205382-17 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0642	05/27/22	05/28/22	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: **05/24/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0310	77.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0353	88.3 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/24/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFE0643	05/27/22	05/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/24/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	15.0	120 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH05@7.5-8.5'**  
**2205382-17 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0695	05/31/22	06/06/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/24/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0235	70.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0228	68.3 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/24/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.230</b>	0.0100	mg/L	1	BFF0137	06/06/22	06/07/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/24/22 12:52**

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:**  
06/13/22 12:46

**BH05@7.5-8.5'**  
**2205382-17 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.91	0.226	mg/kg dry	1	BFF0247	06/09/22	06/11/22	EPA 6020B
Barium	223	0.452	"	"	"	"	"	"
Cadmium	0.260	0.226	"	"	"	"	"	"
Copper	4.40	0.452	"	"	"	"	"	"
Lead	11.7	0.226	"	"	"	"	"	"
Nickel	4.40	0.452	"	"	"	"	"	"
Selenium	0.900	0.294	"	"	"	"	"	"
Silver	ND	0.0226	"	"	"	"	"	"
Zinc	17.6	0.452	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/24/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFF0251	06/09/22	06/09/22	EPA 7196A	

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

Date Sampled: **05/24/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	461	0.0565	mg/L dry	1	BFF0122	06/06/22	06/08/22	EPA 6020B	
Magnesium	115	0.0565	"	"	"	"	"	"	
Sodium	84.0	0.0565	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/24/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.907	0.00100	units	1	BFF0198	06/08/22	06/08/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/24/22 12:52**

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:**  
06/13/22 12:46

**BH05@7.5-8.5'**  
**2205382-17 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

% Solids	88.4	%	1	BFE0745	05/31/22	05/31/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/24/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.412	0.0100	mmhos/cm	1	BFF0126	06/06/22	06/07/22	EPA 120.1	

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

Date Sampled: **05/24/22 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.54		pH Units	1	BFF0125	06/06/22	06/07/22	EPA 9045D	

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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:**  
06/13/22 12:46

**BH05@15-17.5'**  
**2205382-18 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/22 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0642	05/27/22	05/28/22	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: **05/24/22 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0313	78.3 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0356	88.9 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/24/22 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFE0643	05/27/22	05/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/24/22 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	15.3	122 %	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:**  
06/13/22 12:46

**BH05@15-17.5'**  
**2205382-18 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/22 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0695	05/31/22	06/06/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/24/22 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0204	61.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0197	59.2 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/24/22 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.380</b>	0.0100	mg/L	1	BFF0137	06/06/22	06/07/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/24/22 13:12**

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:**  
06/13/22 12:46

**BH05@15-17.5'**  
**2205382-18 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.48	0.288	mg/kg dry	1	BFF0247	06/09/22	06/11/22	EPA 6020B	
Barium	75.5	0.577	"	"	"	"	"	"	
Cadmium	ND	0.288	"	"	"	"	"	"	
Copper	7.92	0.577	"	"	"	"	"	"	
Lead	14.1	0.288	"	"	"	"	"	"	
Nickel	4.19	0.577	"	"	"	"	"	"	
Selenium	1.46	0.375	"	"	"	"	"	"	
Silver	0.0459	0.0288	"	"	"	"	"	"	
Zinc	24.0	0.577	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/24/22 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFF0251	06/09/22	06/09/22	EPA 7196A	

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

Date Sampled: **05/24/22 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	626	0.0721	mg/L dry	1	BFF0122	06/06/22	06/08/22	EPA 6020B	
Magnesium	183	0.0721	"	"	"	"	"	"	
Sodium	293	0.0721	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/24/22 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.65	0.00100	units	1	BFF0198	06/08/22	06/08/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/24/22 13:12**

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:**  
06/13/22 12:46

**BH05@15-17.5'**  
**2205382-18 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

<b>% Solids</b>	<b>69.4</b>	%	1	BFE0745	05/31/22	05/31/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/24/22 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.662</b>	0.0100	mmhos/cm	1	BFF0126	06/06/22	06/07/22	EPA 120.1	

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

Date Sampled: **05/24/22 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.66</b>		pH Units	1	BFF0125	06/06/22	06/07/22	EPA 9045D	

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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:**  
06/13/22 12:46

**BH05@23-24'**  
**2205382-19 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.037</b>	0.0020	mg/kg	1	BFE0642	05/27/22	05/28/22	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: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0344	86.1 %	50-150		"	"	"	"	
<i>Surrogate: Toluene-d8</i>	0.0392	98.1 %	50-150		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0350	87.5 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFE0643	05/27/22	05/29/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>	13.3	106 %	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:**  
06/13/22 12:46

**BH05@23-24'**  
**2205382-19 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0695	05/31/22	06/06/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0253	76.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0227	68.0 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0501</b>	0.0100	mg/L	1	BFF0137	06/06/22	06/07/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/24/22 13:25**

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH05@23-24'**  
**2205382-19 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	16.3	0.256	mg/kg dry	1	BFF0247	06/09/22	06/11/22	EPA 6020B	
Barium	26.8	0.512	"	"	"	"	"	"	
Cadmium	ND	0.256	"	"	"	"	"	"	
Copper	9.08	0.512	"	"	"	"	"	"	
Lead	14.5	0.256	"	"	"	"	"	"	
Nickel	2.43	0.512	"	"	"	"	"	"	
Selenium	0.771	0.333	"	"	"	"	"	"	
Silver	0.0260	0.0256	"	"	"	"	"	"	
Zinc	10.1	0.512	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFF0251	06/09/22	06/09/22	EPA 7196A	

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

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	963	0.0640	mg/L dry	1	BFF0122	06/06/22	06/08/22	EPA 6020B	
Magnesium	349	0.0640	"	"	"	"	"	"	
Sodium	245	0.0640	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.72	0.00100	units	1	BFF0198	06/08/22	06/08/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/24/22 13:25**

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH05@23-24'**  
**2205382-19 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

% Solids	78.1	%	1	BFE0745	05/31/22	05/31/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.75	0.0100	mmhos/cm	1	BFF0126	06/06/22	06/07/22	EPA 120.1	

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

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.21		pH Units	1	BFF0125	06/06/22	06/07/22	EPA 9045D	

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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:**  
06/13/22 12:46

**BH04@20-22'**  
**2205382-20 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFE0642	05/27/22	05/28/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.066</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.23</b>	0.010	"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>0.40</b>	0.0050	"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>0.097</b>	0.0050	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.13</b>	0.0038	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>11</b>	0.50	"	"	"	"	"	"	

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0343	85.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0387	96.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0572	143 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>320</b>	50	mg/kg	1	BFE0643	05/27/22	05/29/22	EPA 8015M	
<b>C28-C36 (ORO)</b>	<b>52</b>	50	"	"	"	"	"	"	

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	15.3	123 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH04@20-22'**  
**2205382-20 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFE0695	05/31/22	06/06/22	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.0162</b>	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.0552</b>	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.107</b>	0.00500	"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.188</b>	0.00500	"	"	"	"	"	"	

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0231	69.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0244	73.1 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0604</b>	0.0100	mg/L	1	BFF0137	06/06/22	06/07/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/24/22 13:25**

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH04@20-22'**  
**2205382-20 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.92	0.270	mg/kg dry	1	BFF0247	06/09/22	06/11/22	EPA 6020B	
Barium	111	0.540	"	"	"	"	"	"	
Cadmium	ND	0.270	"	"	"	"	"	"	
Copper	8.92	0.540	"	"	"	"	"	"	
Lead	8.42	0.270	"	"	"	"	"	"	
Nickel	3.60	0.540	"	"	"	"	"	"	
Selenium	2.46	0.351	"	"	"	"	"	"	
Silver	0.109	0.0270	"	"	"	"	"	"	
Zinc	21.0	0.540	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFF0251	06/09/22	06/09/22	EPA 7196A	

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

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	320	0.0675	mg/L dry	1	BFF0122	06/06/22	06/08/22	EPA 6020B	
Magnesium	111	0.0675	"	"	"	"	"	"	
Sodium	159	0.0675	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.95	0.00100	units	1	BFF0198	06/08/22	06/08/22	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/24/22 13:25**

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

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**BH04@20-22'**  
**2205382-20 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

% Solids	74.1	%	1	BFE0745	05/31/22	05/31/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.328	0.0100	mmhos/cm	1	BFF0126	06/06/22	06/07/22	EPA 120.1	

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

Date Sampled: **05/24/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.65		pH Units	1	BFF0125	06/06/22	06/07/22	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### Summit Scientific

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

#### Batch BFE0642 - EPA 5030 Soil MS

##### Blank (BFE0642-BLK1)

Prepared: 05/27/22 Analyzed: 05/28/22

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	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0285		"	0.0400		71.3	50-150				
<i>Surrogate: Toluene-d8</i>	0.0389		"	0.0400		97.2	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0341		"	0.0400		85.4	50-150				

##### LCS (BFE0642-BS1)

Prepared: 05/27/22 Analyzed: 05/28/22

Benzene	0.0553	0.0020	mg/kg	0.0750		73.8	70-130				
Toluene	0.0569	0.0050	"	0.0750		75.8	70-130				
Ethylbenzene	0.0655	0.0050	"	0.0750		87.3	70-130				
m,p-Xylene	0.140	0.010	"	0.150		93.0	70-130				
o-Xylene	0.0633	0.0050	"	0.0750		84.4	70-130				
1,2,4-Trimethylbenzene	0.0638	0.0050	"	0.0750		85.1	70-130				
1,3,5-Trimethylbenzene	0.0666	0.0050	"	0.0750		88.8	70-130				
Naphthalene	0.0578	0.0038	"	0.0750		77.0	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0277		"	0.0400		69.2	50-150				
<i>Surrogate: Toluene-d8</i>	0.0382		"	0.0400		95.5	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0353		"	0.0400		88.2	50-150				

##### Matrix Spike (BFE0642-MS1)

Source: 2205382-01

Prepared: 05/27/22 Analyzed: 05/28/22

Benzene	0.0553	0.0020	mg/kg	0.0750	ND	73.7	70-130				
Toluene	0.0593	0.0050	"	0.0750	ND	79.1	70-130				
Ethylbenzene	0.0661	0.0050	"	0.0750	ND	88.1	70-130				
m,p-Xylene	0.142	0.010	"	0.150	ND	94.4	70-130				
o-Xylene	0.0648	0.0050	"	0.0750	ND	86.4	70-130				
1,2,4-Trimethylbenzene	0.0670	0.0050	"	0.0750	ND	89.4	70-130				
1,3,5-Trimethylbenzene	0.0703	0.0050	"	0.0750	ND	93.7	70-130				
Naphthalene	0.0634	0.0038	"	0.0750	0.00870	73.0	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0309		"	0.0400		77.2	50-150				
<i>Surrogate: Toluene-d8</i>	0.0391		"	0.0400		97.6	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0362		"	0.0400		90.5	50-150				

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

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

**Batch BFE0642 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (BFE0642-MSD1)</b>	<b>Source: 2205382-01</b>			<b>Prepared: 05/27/22 Analyzed: 05/28/22</b>						
Benzene	0.0540	0.0020	mg/kg	0.0750	ND	72.0	70-130	2.42	30	
Toluene	0.0589	0.0050	"	0.0750	ND	78.5	70-130	0.711	30	
Ethylbenzene	0.0672	0.0050	"	0.0750	ND	89.6	70-130	1.71	30	
m,p-Xylene	0.144	0.010	"	0.150	ND	96.0	70-130	1.68	30	
o-Xylene	0.0638	0.0050	"	0.0750	ND	85.1	70-130	1.49	30	
1,2,4-Trimethylbenzene	0.0662	0.0050	"	0.0750	ND	88.2	70-130	1.31	30	
1,3,5-Trimethylbenzene	0.0697	0.0050	"	0.0750	ND	92.9	70-130	0.815	30	
Naphthalene	0.0643	0.0038	"	0.0750	0.00870	74.1	70-130	1.32	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0301</i>		<i>"</i>	<i>0.0400</i>		<i>75.2</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0399</i>		<i>"</i>	<i>0.0400</i>		<i>99.8</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0373</i>		<i>"</i>	<i>0.0400</i>		<i>93.2</i>	<i>50-150</i>			

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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:**  
06/13/22 12:46

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BFE0643 - EPA 3550A**

**Blank (BFE0643-BLK1)**

Prepared: 05/27/22 Analyzed: 05/29/22

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

**LCS (BFE0643-BS1)**

Prepared: 05/27/22 Analyzed: 05/29/22

C10-C28 (DRO)	422	50	mg/kg	500	4090	NR	70-130			
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**Matrix Spike (BFE0643-MS1)**

Source: 2205382-01

Prepared: 05/27/22 Analyzed: 05/29/22

C10-C28 (DRO)	3530	50	mg/kg	500	4090	NR	70-130			QM-05
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**Matrix Spike Dup (BFE0643-MSD1)**

Source: 2205382-01

Prepared: 05/27/22 Analyzed: 05/29/22

C10-C28 (DRO)	3900	50	mg/kg	500	4090	NR	70-130	10.1	20	QM-05
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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Lilli Unit 14-5

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
06/13/22 12:46

**PAH by EPA Method 8270D SIM - Quality Control**

**Summit Scientific**

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

**Batch BFE0695 - EPA 5030 Soil MS**

**Blank (BFE0695-BLK1)**

Prepared: 05/31/22 Analyzed: 06/05/22

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	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0331</i>		"	<i>0.0333</i>		<i>99.3</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0311</i>		"	<i>0.0333</i>		<i>93.3</i>	<i>40-150</i>			

**LCS (BFE0695-BS1)**

Prepared: 05/31/22 Analyzed: 06/05/22

Acenaphthene	0.0293	0.00500	mg/kg	0.0333		87.8	31-137			
Anthracene	0.0312	0.00500	"	0.0333		93.6	30-120			
Benzo (a) anthracene	0.0263	0.00500	"	0.0333		78.9	30-120			
Benzo (a) pyrene	0.0284	0.00500	"	0.0333		85.2	30-120			
Benzo (b) fluoranthene	0.0283	0.00500	"	0.0333		84.9	30-120			
Benzo (k) fluoranthene	0.0316	0.00500	"	0.0333		94.8	30-120			
Chrysene	0.0289	0.00500	"	0.0333		86.8	30-120			
Dibenz (a,h) anthracene	0.0299	0.00500	"	0.0333		89.7	30-120			
Fluoranthene	0.0321	0.00500	"	0.0333		96.2	30-120			
Fluorene	0.0284	0.00500	"	0.0333		85.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0201	0.00500	"	0.0333		60.3	30-120			
Pyrene	0.0280	0.00500	"	0.0333		84.1	35-142			
1-Methylnaphthalene	0.0281	0.00500	"	0.0333		84.2	35-142			
2-Methylnaphthalene	0.0302	0.00500	"	0.0333		90.7	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0291</i>		"	<i>0.0333</i>		<i>87.2</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0302</i>		"	<i>0.0333</i>		<i>90.7</i>	<i>40-150</i>			

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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:**  
06/13/22 12:46

**PAH by EPA Method 8270D SIM - Quality Control**

**Summit Scientific**

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

**Batch BFE0695 - EPA 5030 Soil MS**

<b>Matrix Spike (BFE0695-MS1)</b>	<b>Source: 2205382-06</b>			<b>Prepared: 05/31/22 Analyzed: 06/10/22</b>							
Acenaphthene	0.0238	0.00500	mg/kg	0.0333	ND	71.5	31-137				
Anthracene	0.0251	0.00500	"	0.0333	ND	75.3	30-120				
Benzo (a) anthracene	0.0220	0.00500	"	0.0333	ND	65.9	30-120				
Benzo (a) pyrene	0.0240	0.00500	"	0.0333	ND	71.9	30-120				
Benzo (b) fluoranthene	0.0273	0.00500	"	0.0333	ND	81.9	30-120				
Benzo (k) fluoranthene	0.0309	0.00500	"	0.0333	ND	92.6	30-120				
Chrysene	0.0234	0.00500	"	0.0333	ND	70.1	30-120				
Dibenz (a,h) anthracene	0.0160	0.00500	"	0.0333	ND	48.1	30-120				
Fluoranthene	0.0244	0.00500	"	0.0333	ND	73.3	30-120				
Fluorene	0.0234	0.00500	"	0.0333	ND	70.2	30-120				
Indeno (1,2,3-cd) pyrene	0.0139	0.00500	"	0.0333	ND	41.7	30-120				
Pyrene	0.0234	0.00500	"	0.0333	ND	70.3	35-142				
1-Methylnaphthalene	0.0238	0.00500	"	0.0333	ND	71.4	15-130				
2-Methylnaphthalene	0.0245	0.00500	"	0.0333	ND	73.4	15-130				
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0225</i>		<i>"</i>	<i>0.0333</i>		<i>67.5</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0233</i>		<i>"</i>	<i>0.0333</i>		<i>69.8</i>	<i>40-150</i>				

<b>Matrix Spike Dup (BFE0695-MSD1)</b>	<b>Source: 2205382-06</b>			<b>Prepared: 05/31/22 Analyzed: 06/10/22</b>							
Acenaphthene	0.0238	0.00500	mg/kg	0.0333	ND	71.5	31-137	0.0881	30		
Anthracene	0.0243	0.00500	"	0.0333	ND	73.0	30-120	3.00	30		
Benzo (a) anthracene	0.0214	0.00500	"	0.0333	ND	64.3	30-120	2.41	30		
Benzo (a) pyrene	0.0232	0.00500	"	0.0333	ND	69.5	30-120	3.34	30		
Benzo (b) fluoranthene	0.0254	0.00500	"	0.0333	ND	76.3	30-120	6.99	30		
Benzo (k) fluoranthene	0.0286	0.00500	"	0.0333	ND	85.7	30-120	7.76	30		
Chrysene	0.0228	0.00500	"	0.0333	ND	68.4	30-120	2.47	30		
Dibenz (a,h) anthracene	0.0156	0.00500	"	0.0333	ND	46.8	30-120	2.74	30		
Fluoranthene	0.0256	0.00500	"	0.0333	ND	76.9	30-120	4.72	30		
Fluorene	0.0242	0.00500	"	0.0333	ND	72.6	30-120	3.37	30		
Indeno (1,2,3-cd) pyrene	0.0104	0.00500	"	0.0333	ND	31.1	30-120	29.2	30		
Pyrene	0.0237	0.00500	"	0.0333	ND	71.1	35-142	1.08	30		
1-Methylnaphthalene	0.0234	0.00500	"	0.0333	ND	70.2	15-130	1.69	50		
2-Methylnaphthalene	0.0225	0.00500	"	0.0333	ND	67.5	15-130	8.38	50		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0218</i>		<i>"</i>	<i>0.0333</i>		<i>65.5</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0243</i>		<i>"</i>	<i>0.0333</i>		<i>73.0</i>	<i>40-150</i>				

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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:**  
06/13/22 12:46

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

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

**Batch BFF0137 - EPA 3050B**

**Blank (BFF0137-BLK1)**

Prepared: 06/06/22 Analyzed: 06/07/22

Boron ND 0.0100 mg/L

**LCS (BFF0137-BS1)**

Prepared: 06/06/22 Analyzed: 06/07/22

Boron 5.30 0.0100 mg/L 5.00 106 80-120

**Duplicate (BFF0137-DUP1)**

Source: 2205382-01

Prepared: 06/06/22 Analyzed: 06/07/22

Boron 0.0937 0.0100 mg/L 0.0902 3.84 20

**Matrix Spike (BFF0137-MS1)**

Source: 2205382-01

Prepared: 06/06/22 Analyzed: 06/07/22

Boron 5.03 0.0100 mg/L 5.00 0.0902 98.8 75-125

**Matrix Spike Dup (BFF0137-MSD1)**

Source: 2205382-01

Prepared: 06/06/22 Analyzed: 06/07/22

Boron 5.01 0.0100 mg/L 5.00 0.0902 98.3 75-125 0.435 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:**  
06/13/22 12:46

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BFF0247 - EPA 3050B**

**Blank (BFF0247-BLK1)**

Prepared: 06/09/22 Analyzed: 06/11/22

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 (BFF0247-BS1)**

Prepared: 06/09/22 Analyzed: 06/11/22

Arsenic	41.2	0.200	mg/kg wet	40.0		103	80-120
Barium	43.6	0.400	"	40.0		109	80-120
Cadmium	2.17	0.200	"	2.00		109	80-120
Copper	40.4	0.400	"	40.0		101	80-120
Lead	20.7	0.200	"	20.0		103	80-120
Nickel	38.3	0.400	"	40.0		95.8	80-120
Selenium	3.82	0.260	"	4.00		95.5	80-120
Silver	2.13	0.0200	"	2.00		106	80-120
Zinc	41.7	0.400	"	40.0		104	80-120

**Duplicate (BFF0247-DUP1)**

Source: 2205382-01

Prepared: 06/09/22 Analyzed: 06/11/22

Arsenic	3.18	0.251	mg/kg dry	3.13		1.65	20
Barium	244	0.502	"	244		0.0178	20
Cadmium	0.233	0.251	"	0.231		0.727	20
Copper	8.78	0.502	"	8.85		0.774	20
Lead	11.7	0.251	"	11.7		0.403	20
Nickel	7.73	0.502	"	7.67		0.772	20
Selenium	0.929	0.326	"	1.00		7.52	20
Silver	0.0490	0.0251	"	0.0459		6.49	20
Zinc	29.9	0.502	"	30.1		0.799	20

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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:**  
06/13/22 12:46

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BFF0247 - EPA 3050B**

**Matrix Spike (BFF0247-MS1)**

Source: 2205382-01

Prepared: 06/09/22 Analyzed: 06/11/22

Arsenic	56.1	0.251	mg/kg dry	50.2	3.13	106	75-125				
Barium	321	0.502	"	50.2	244	153	75-125				QM-02
Cadmium	2.89	0.251	"	2.51	0.231	106	75-125				
Copper	57.7	0.502	"	50.2	8.85	97.4	75-125				
Lead	34.6	0.251	"	25.1	11.7	91.3	75-125				
Nickel	57.1	0.502	"	50.2	7.67	98.5	75-125				
Selenium	5.47	0.326	"	5.02	1.00	89.2	75-125				
Silver	2.54	0.0251	"	2.51	0.0459	99.6	75-125				
Zinc	82.8	0.502	"	50.2	30.1	105	75-125				

**Matrix Spike Dup (BFF0247-MSD1)**

Source: 2205382-01

Prepared: 06/09/22 Analyzed: 06/11/22

Arsenic	55.7	0.251	mg/kg dry	50.2	3.13	105	75-125	0.793	25		
Barium	315	0.502	"	50.2	244	142	75-125	1.74	25		QM-02
Cadmium	2.84	0.251	"	2.51	0.231	104	75-125	1.69	25		
Copper	56.7	0.502	"	50.2	8.85	95.5	75-125	1.71	25		
Lead	34.0	0.251	"	25.1	11.7	88.7	75-125	1.89	25		
Nickel	56.6	0.502	"	50.2	7.67	97.5	75-125	0.869	25		
Selenium	5.39	0.326	"	5.02	1.00	87.5	75-125	1.55	25		
Silver	2.50	0.0251	"	2.51	0.0459	98.0	75-125	1.54	25		
Zinc	82.3	0.502	"	50.2	30.1	104	75-125	0.565	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:**  
06/13/22 12:46

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

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

**Batch BFF0251 - 3060A Mod**

**Blank (BFF0251-BLK1)**

Prepared & Analyzed: 06/09/22

Chromium, Hexavalent      ND      0.30 mg/kg wet

**LCS (BFF0251-BS1)**

Prepared & Analyzed: 06/09/22

Chromium, Hexavalent      24.0      0.30 mg/kg wet      25.0      95.8      80-120

**Duplicate (BFF0251-DUP1)**

**Source: 2205382-01**

Prepared & Analyzed: 06/09/22

Chromium, Hexavalent      ND      0.30 mg/kg dry      ND      20

**Matrix Spike (BFF0251-MS1)**

**Source: 2205382-01**

Prepared & Analyzed: 06/09/22

Chromium, Hexavalent      32.7      0.30 mg/kg dry      31.3      ND      104      75-125

**Matrix Spike Dup (BFF0251-MSD1)**

**Source: 2205382-01**

Prepared & Analyzed: 06/09/22

Chromium, Hexavalent      33.5      0.30 mg/kg dry      31.3      ND      107      75-125      2.27      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:**  
06/13/22 12:46

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

**Summit Scientific**

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

**Batch BFF0122 - General Preparation**

**Blank (BFF0122-BLK1)**

Prepared: 06/06/22 Analyzed: 06/08/22

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

**LCS (BFF0122-BS1)**

Prepared: 06/06/22 Analyzed: 06/08/22

Calcium	647	0.0500	mg/L wet	500	129	70-130				
Magnesium	547	0.0500	"	500	109	70-130				
Sodium	520	0.0500	"	500	104	70-130				

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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:**  
 06/13/22 12:46

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

**Summit Scientific**

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

**Batch BFE0745 - General Preparation**

**Duplicate (BFE0745-DUP1)**

**Source: 2205382-01**

Prepared & Analyzed: 05/31/22

% Solids	80.5		%		79.8			0.971	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:**  
06/13/22 12:46

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

**Summit Scientific**

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

**Batch BFF0126 - General Preparation**

**Blank (BFF0126-BLK1)**

Prepared: 06/06/22 Analyzed: 06/07/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BFF0126-BS1)**

Prepared: 06/06/22 Analyzed: 06/07/22

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

**Duplicate (BFF0126-DUP1)**

**Source: 2205382-01**

Prepared: 06/06/22 Analyzed: 06/07/22

Specific Conductance (EC) 1.05 0.0100 mmhos/cm 1.13 6.70 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:**  
06/13/22 12:46

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

**Summit Scientific**

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

**Batch BFF0125 - General Preparation**

**LCS (BFF0125-BS1)**

Prepared: 06/06/22 Analyzed: 06/07/22

pH	9.07	pH Units	9.18	98.8	95-105
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**Duplicate (BFF0125-DUP1)**

Source: 2205382-01

Prepared: 06/06/22 Analyzed: 06/07/22

pH	7.52	pH Units	7.50	0.266	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:**  
06/13/22 12:46

### 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.
- R-01 The Reporting Limit for this analyte has been raised to account for matrix interference.
- 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.
- QM-02 The RPD and/or percent recovery for this QC sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
- 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