

**TABLE 1**  
**SOIL SAMPLE LOCATIONS**  
**NOBLE ENERGY, INC. - LD19-16**



Soil Sample ID	Date	PID Reading (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude	Longitude	PDOP
CS01@0.5'	12/27/22	783.7	HC Staining	HC Odor	Lab	40.73139374	-103.8991132	1.2
SS01@3'	02/03/23	32.5	No Staining	No Odor	Grab	40.73142114	-103.8993778	1.2
SS02@0.5'	02/03/23	1.6	No Staining	No Odor	Lab	40.73148248	-103.8993171	1.2
SS03@0.5'	02/03/23	437.2	No Staining	Slight HC Odor	Grab	40.73146371	-103.8993165	1.1
SS04@0.5'	02/03/23	21.9	No Staining	No Odor	Grab	40.73146427	-103.8992460	1.2
SS05@1'	02/03/23	336.7	No Staining	Slight HC Odor	Grab	40.73142094	-103.8993234	1.2
SS06@2.5'	02/03/23	17.4	No Staining	No Odor	Grab	40.73134779	-103.8993516	1.6
SS07@2.5'	02/03/23	3.9	No Staining	No Odor	Lab	40.73139796	-103.8992336	1.2
FS01@4.5'	02/17/23	305.0	No Staining	Slight HC Odor	Grab	40.73142234	-103.8993780	NM
SS08@3.5'	02/17/23	5.2	No Staining	No Odor	Lab	40.73143828	-103.8993787	NM
SS09@3.5'	02/17/23	6.1	No Staining	No Odor	Lab	40.73142228	-103.8993591	NM
SS10@3.5'	02/17/23	1.8	No Staining	No Odor	Lab	40.73140772	-103.8993789	NM
SS11@3.5'	02/17/23	2.2	No Staining	No Odor	Lab	40.73142253	-103.8993975	NM
FS02@1.5'	02/17/23	22.7	No Staining	Slight HC Odor	Grab	40.73144039	-103.8994539	NM
SS12@0.5'	02/17/23	81.7	No Staining	Slight HC Odor	Grab	40.73145825	-103.8994443	NM
SS13@0.5'	02/17/23	0.7	No Staining	No Odor	Lab	40.73142041	-103.8994660	NM
SS14@0.5'	02/17/23	5.5	No Staining	No Odor	Lab	40.73145386	-103.8994953	NM
SS15@1.5'	02/17/23	0.0	No Staining	No Odor	Lab	40.73136419	-103.8993510	NM
SS16@1.5'	02/17/23	0.2	No Staining	No Odor	Lab	40.7313499	-103.8993295	NM
SS17@1.5'	02/17/23	0.0	No Staining	No Odor	Lab	40.73134955	-103.8993737	NM
FS03@2.5'	02/17/23	0.1	No Staining	No Odor	Lab	40.73134992	-103.8993518	NM
SS18@1'	02/17/23	0.1	No Staining	No Odor	Lab	40.73131610	-103.8993730	NM
SS19@1'	02/17/23	0.0	No Staining	No Odor	Lab	40.73130418	-103.8993405	NM
SS20@1'	02/17/23	0.4	No Staining	No Odor	Lab	40.73130429	-103.8992925	NM
SS21@1'	02/17/23	0.2	No Staining	No Odor	Lab	40.73131611	-103.8992616	NM
SS22@1'	02/17/23	0.4	No Staining	No Odor	Lab	40.73132853	-103.8992910	NM
SS23@1'	02/17/23	0.4	No Staining	No Odor	Lab	40.73132873	-103.8993403	NM
FS04@2'	02/17/23	0.4	No Staining	No Odor	Lab	40.73131642	-103.8993460	NM
FS05@2'	02/17/23	0.3	No Staining	No Odor	Lab	40.73131637	-103.8992919	NM
FS06@2.5'	02/17/23	0.2	No Staining	No Odor	Lab	40.73140687	-103.8991501	NM
FS07@2.5'	02/17/23	16.8	No Staining	No Odor	Grab	40.73140687	-103.8991999	NM
FS08@2.5'	02/17/23	2.6	No Staining	No Odor	Lab	40.73140825	-103.8992701	NM
FS09@2.5'	02/17/23	0.5	No Staining	No Odor	Lab	40.73140800	-103.8993186	NM
FS10@2.5'	02/17/23	0.4	No Staining	No Odor	Lab	40.73143678	-103.8991878	NM
FS11@2.5'	02/17/23	0.7	No Staining	No Odor	Lab	40.73143859	-103.8992520	NM
FS12@2.5'	02/17/23	110.1	No Staining	Slight HC Odor	Grab	40.73144077	-103.8993059	NM
FS13@2.5'	02/17/23	4.2	No Staining	No Odor	Lab	40.73148000	-103.8992705	NM
FS14@2.5'	02/17/23	3.7	No Staining	No Odor	Lab	40.73148000	-103.8993206	NM
FS15@2.5'	02/17/23	5.7	No Staining	No Odor	Lab	40.73151075	-103.8992714	NM
FS16@2.5'	02/17/23	0.4	No Staining	No Odor	Lab	40.73151193	-103.8993193	NM
SS24@1.5'	02/17/23	0.5	No Staining	No Odor	Lab	40.73141192	-103.8990887	NM
SS25@1.5'	02/17/23	0.6	No Staining	No Odor	Lab	40.73138504	-103.8991407	NM
SS26@1.5'	02/17/23	1.0	No Staining	No Odor	Lab	40.73138622	-103.8992237	NM
SS27@1.5'	02/17/23	0.8	No Staining	No Odor	Lab	40.73138745	-103.8993099	NM
SS28@1.5'	02/17/23	0.6	No Staining	No Odor	Lab	40.73141351	-103.8993510	NM
SS29@1.5'	02/17/23	0.4	No Staining	No Odor	Lab	40.73146058	-103.8993513	NM

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**SOIL SAMPLE LOCATIONS**  
**NOBLE ENERGY, INC. - LD19-16**



Soil Sample ID	Date	PID Reading (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude	Longitude	PDOP
SS30@1.5'	02/17/23	0.5	No Staining	No Odor	Lab	40.73150265	-103.8993516	NM
SS31@1.5'	02/17/23	0.4	No Staining	No Odor	Lab	40.73153392	-103.8993176	NM
SS32@1.5'	02/17/23	0.2	No Staining	No Odor	Lab	40.73153308	-103.8992663	NM
SS33@1.5'	02/17/23	0.3	No Staining	No Odor	Lab	40.73149344	-103.8992338	NM
SS34@1.5'	02/17/23	0.2	No Staining	No Odor	Lab	40.73145354	-103.8991902	NM
SS35@1.5'	02/17/23	0.3	No Staining	No Odor	Lab	40.73144419	-103.8991218	NM
SS36@1.5'	03/01/23	0.0	No Staining	No Odor	Lab	40.73147736	-103.8992307	0.9
SS37@1.5'	03/01/23	0.1	No Staining	No Odor	Lab	40.73150281	-103.8992489	1.0
SS38@1.5'	03/01/23	3.0	No Staining	No Odor	Lab	40.73151294	-103.8992644	0.9
SS39@3.5'	03/01/23	0.6	No Staining	No Odor	Lab	40.73142195	-103.8993600	1.1
SS39@5'	03/01/23	0.0	No Staining	No Odor	Lab	40.73142195	-103.8993600	1.1
SS40@3.5'	03/01/23	0.5	No Staining	No Odor	Lab	40.73140989	-103.8993793	1.0
SS40@5'	03/01/23	0.0	No Staining	No Odor	Lab	40.73140989	-103.8993793	1.0
SS41@5'	03/01/23	0.0	No Staining	No Odor	Lab	40.73142274	-103.8993961	1.0
SS42@5'	03/01/23	0.0	No Staining	No Odor	Lab	40.73143481	-103.8993785	0.9
FS01@6'	03/01/23	0.0	No Staining	No Odor	Lab	40.73142249	-103.8993790	1.0
SS43@1.5'	03/03/23	0.1	No Staining	No Odor	Lab	40.73145632	-103.8991903	NM
SS44@1'	03/03/23	0.1	No Staining	No Odor	Lab	40.73145570	-103.8995097	NM
SS45@1'	03/03/23	0.2	No Staining	No Odor	Lab	40.73146684	-103.8994655	NM
SS46@1.5'	03/03/23	0.7	No Staining	No Odor	Lab	40.73145073	-103.8994232	NM
SS47@1.5'	03/03/23	0.6	No Staining	No Odor	Lab	40.73141853	-103.8994107	NM
SS48@1.5'	03/03/23	0.0	No Staining	No Odor	Lab	40.73140602	-103.8994506	NM
SS49@1'	03/03/23	0.1	No Staining	No Odor	Lab	40.73142455	-103.8994991	NM
FS17@3'	03/03/23	0.3	No Staining	No Odor	Lab	40.73144077	-103.8993059	NM
FS18@2.5'	03/03/23	0.2	No Staining	No Odor	Lab	40.73140687	-103.8991999	NM
FS19@2'	03/03/23	0.3	No Staining	No Odor	Lab	40.73144793	-103.8994824	NM
FS20@2.5'	03/03/23	0.3	No Staining	No Odor	Lab	40.73143099	-103.8994416	NM
BG01@1.5'	03/17/23	0.0	No Staining	No Odor	Lab	40.73285630	-103.8989977	3.4
BG01@3'	03/17/23	0.0	No Staining	No Odor	Lab	40.73285630	-103.8989977	3.4
BG02@1.5'	03/17/23	0.0	No Staining	No Odor	Lab	40.73284302	-103.8991175	3.4
BG02@3'	03/17/23	0.0	No Staining	No Odor	Lab	40.73284302	-103.8991175	3.4
BG03@1.5'	03/17/23	0.0	No Staining	No Odor	Lab	40.73284145	-103.8992330	3.4
BG03@3'	03/17/23	0.0	No Staining	No Odor	Lab	40.73284145	-103.8992330	3.4
BG04@1.5'	03/17/23	0.0	No Staining	No Odor	Lab	40.73292492	-103.8990571	2.5
BG04@3'	03/17/23	0.0	No Staining	No Odor	Lab	40.73292492	-103.8990571	2.5
BG05@1.5'	03/17/23	0.0	No Staining	No Odor	Lab	40.73292711	-103.8991647	3.2
BG05@3'	03/17/23	0.0	No Staining	No Odor	Lab	40.73292711	-103.8991647	3.2

Notes:

PID = Photo-ionization detector

HC = Hydrocarbon

ppm = parts per million

PDOP = Position dilution of precision

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



TABLE 2  
SOIL ANALYTICAL DATA  
NOBLE ENERGY, INC. - LD19-16



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
SS44@1'	03/03/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00540	<0.00500	<0.00500
SS45@1'	03/03/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS46@1.5'	03/03/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS47@1.5'	03/03/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS48@1.5'	03/03/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	0.00807	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0148	<0.00500	<0.00500	0.0134	<0.00500	<0.00500
SS49@1'	03/03/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS17@3'	03/03/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS18@2.5'	03/03/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS19@2'	03/03/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS20@2.5'	03/03/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
Residential SSL <sup>2</sup>		6 - 8.3	<6	<4mmhos/cm	2
CS01@0.5'	12/27/22	8.34	1.14	0.167	0.763
SS02@0.5'	02/03/23	8.24	0.199	0.177	0.128
SS07@2.5'	02/03/23	7.65	1.67	0.575	0.106
SS08@3.5'	02/17/23	7.42	1.37	0.855	0.133
SS09@3.5'	02/17/23	7.62	2.00	1.38	0.0881
SS10@3.5'	02/17/23	7.66	2.25	1.37	0.0900
SS11@3.5'	02/17/23	7.64	1.91	1.17	0.158
SS13@0.5'	02/17/23	7.88	0.477	0.234	0.0460
SS14@0.5'	02/17/23	8.02	0.607	0.273	0.147
SS15@1.5'	02/17/23	7.91	1.46	0.526	0.119
SS16@1.5'	02/17/23	7.71	1.65	0.858	0.101
SS17@1.5'	02/17/23	7.85	0.314	0.341	0.111
FS03@2.5'	02/17/23	7.77	1.38	0.687	0.114
SS18@1'	02/17/23	8.00	0.573	0.279	0.202
SS19@1'	02/17/23	7.84	0.314	0.296	0.113
SS20@1'	02/17/23	7.89	1.22	0.392	0.177
SS21@1'	02/17/23	7.85	1.59	0.606	0.248
SS22@1'	02/17/23	7.84	0.925	0.417	0.0960
SS23@1'	02/17/23	7.92	1.07	0.358	0.186
FS04@2'	02/17/23	7.84	1.69	0.354	0.120
FS05@2'	02/17/23	7.67	1.92	1.15	0.134
FS06@2.5'	02/17/23	7.83	1.68	0.637	0.115
FS08@2.5'	02/17/23	7.68	0.477	0.523	0.145
FS09@2.5'	02/17/23	7.95	0.667	0.505	0.205
FS10@2.5'	02/17/23	7.62	0.652	0.615	0.233
FS11@2.5'	02/17/23	7.64	0.851	0.681	0.214
FS13@2.5'	02/17/23	7.61	0.864	1.03	0.127
FS14@2.5'	02/17/23	7.71	0.735	0.560	0.0992
FS15@2.5'	02/17/23	7.62	0.699	0.759	0.163
FS16@2.5'	02/17/23	7.81	0.988	0.479	0.191
SS24@1.5'	02/17/23	8.08	0.752	0.334	0.0798
SS25@1.5'	02/17/23	7.82	0.996	0.418	0.309
SS26@1.5'	02/17/23	7.83	1.19	0.529	0.119
SS27@1.5'	02/17/23	7.84	0.962	0.560	0.105
SS28@1.5'	02/17/23	7.95	1.09	0.480	0.110
SS29@1.5'	02/17/23	7.88	0.782	0.377	0.0740

Soil Sample ID	Date	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL <sup>2</sup>		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL <sup>2,3</sup>		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
CS01@0.5'	12/27/22	1.65	63.5	0.0969	<0.30	2.87	3.17	2.38	<0.286	0.0115	15.5
SS02@0.5'	02/03/23	1.49	90.7	0.175	<0.30	1.67	5.50	2.20	<0.260	0.0136	7.15
SS07@2.5'	02/03/23	5.00	301	0.512	<0.30	3.96	12.2	3.98	0.255	0.0267	15.4
SS08@3.5'	02/17/23	4.15	382	0.250	<0.30	7.37	10.8	6.21	1.20	0.0221	23.5
SS09@3.5'	02/17/23	2.68	345	0.174	<0.30	5.55	7.65	5.10	1.28	0.0143	20.0
SS10@3.5'	02/17/23	2.70	386	0.190	<0.30	6.11	9.01	5.59	1.06	0.0167	21.8
SS11@3.5'	02/17/23	2.73	335	0.245	<0.30	6.83	10.8	5.98	1.24	0.0199	24.3
SS13@0.5'	02/17/23	1.11	190	0.0541	<0.30	3.04	4.35	3.47	0.635	0.0117	12.6
SS14@0.5'	02/17/23	2.04	264	0.0826	<0.30	4.16	4.99	4.27	0.894	0.0156	16.8
SS15@1.5'	02/17/23	3.36	739	0.176	<0.30	7.27	8.47	7.08	1.27	0.0361	27.3
SS16@1.5'	02/17/23	2.55	268	0.187	<0.30	6.28	11.4	5.45	0.862	0.0185	24.4
SS17@1.5'	02/17/23	1.73	319	0.0853	<0.30	3.98	5.52	4.50	0.971	0.0175	17.0
FS03@2.5'	02/17/23	3.10	303	0.223	<0.30	7.52	9.59	6.82	1.25	0.0182	28.8
SS18@1'	02/17/23	2.49	533	0.143	<0.30	5.75	7.00	5.52	0.955	0.0244	22.0
SS19@1'	02/17/23	1.16	138	0.0965	<0.30	4.87	5.24	5.30	0.869	0.0178	24.4
SS20@1'	02/17/23	3.10	385	0.124	<0.30	5.25	6.10	5.29	1.65	0.0242	20.3
SS21@1'	02/17/23	2.29	327	0.129	<0.30	4.61	5.87	4.72	0.858	0.0208	18.5
SS22@1'	02/17/23	2.44	366	0.156	<0.30	5.55	7.08	5.78	1.20	0.0255	21.4
SS23@1'	02/17/23	2.08	272	0.123	<0.30	5.02	7.10	5.19	0.969	0.0254	19.9
FS04@2'	02/17/23	2.84	566	0.154	<0.30	6.07	7.31	5.89	1.06	0.0254	22.8
FS05@2'	02/17/23	3.51	374	0.219	<0.30	7.45	11.7	6.81	1.23	0.0219	29.2
FS06@2.5'	02/17/23	3.03	343	0.134	<0.30	6.11	7.91	5.88	1.09	0.0266	24.5
FS08@2.5'	02/17/23	2.20	267	0.211	<0.30	5.78	10.7	5.12	1.10	0.0280	21.0
FS09@2.5'	02/17/23	2.70	315	0.237	<0.30	7.11	12.2	6.41	1.05	0.0207	27.2
FS10@2.5'	02/17/23	4.51	376	0.255	<0.30	8.28	12.5	6.72	1.40	0.0271	26.2
FS11@2.5'	02/17/23	3.94	377	0.251	<0.30	7.70	10.6	6.01	1.34	0.0253	23.9
FS13@2.5'	02/17/23	6.29	329	0.246	<0.30	6.94	11.2	5.63	1.55	0.0287	21.9
FS14@2.5'	02/17/23	5.31	359	0.285	<0.30	8.52	12.7	7.06	1.49	0.0269	26.9
FS15@2.5'	02/17/23	6.59	269	0.276	<0.30	7.39	11.4	6.32	1.44	0.0299	24.2
FS16@2.5'	02/17/23	5.29	554	0.199	<0.30	7.13	9.56	6.42	1.27	0.0229	26.7
SS24@1.5'	02/17/23	2.21	446	0.123	<0.30	4.84	6.32	5.03	1.02	0.0239	19.5
SS25@1.5'	02/17/23	2.09	235	0.0919	<0.30	4.51	5.95	4.72	0.928	0.0206	19.2
SS26@1.5'	02/17/23	2.69	323	0.153	<0.30	5.51	7.45	5.35	0.983	0.0203	21.8
SS27@1.5'	02/17/23	2.08	291	0.126	<0.30	5.25	7.47	5.20	0.956	0.0162	21.9
SS28@1.5'	02/17/23	4.04	336	0.157	<0.30	6.22	9.08	6.38	1.46	0.0192	25.8



TABLE 2  
SOIL ANALYTICAL DATA  
NOBLE ENERGY, INC. - LD19-16



Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
Residential SSL <sup>2</sup>		6 - 8.3	<6	<4mmhos/cm	2
SS30@1.5'	02/17/23	7.70	0.921	0.580	0.127
SS31@1.5'	02/17/23	7.94	0.565	0.353	0.138
SS32@1.5'	02/17/23	7.82	0.844	0.400	0.181
SS33@1.5'	02/17/23	7.79	1.30	0.515	0.119
SS34@1.5'	02/17/23	7.68	1.20	0.653	0.144
SS35@1.5'	02/17/23	7.44	1.66	0.750	0.317
SS36@1.5'	03/01/23	7.81	1.46	0.458	0.782
SS37@1.5'	03/01/23	7.63	0.988	0.660	0.118
SS38@1.5'	03/01/23	7.48	0.812	0.613	0.123
SS39@3.5'	03/01/23	7.70	0.474	0.505	0.134
SS39@5'	03/01/23	7.98	1.26	0.432	0.153
SS40@3.5'	03/01/23	7.66	0.323	0.440	0.101
SS40@5'	03/01/23	7.94	1.49	0.395	0.0885
SS41@5'	03/01/23	7.64	1.97	0.946	0.172
SS42@5'	03/01/23	7.77	2.31	0.834	0.329
FS01@6'	03/01/23	7.86	2.14	0.497	0.118
SS43@1.5'	03/03/23	7.96	0.605	0.191	0.720
SS44@1'	03/03/23	7.80	0.928	0.459	0.212
SS45@1'	03/03/23	7.83	0.823	0.453	0.189
SS46@1.5'	03/03/23	7.99	0.394	0.318	0.149
SS47@1.5'	03/03/23	7.93	0.358	0.326	0.175
SS48@1.5'	03/03/23	7.80	0.812	0.363	0.122
SS49@1'	03/03/23	7.94	0.857	0.372	0.186
FS17@3'	03/03/23	7.62	0.350	0.549	0.196
FS18@2.5'	03/03/23	7.84	1.75	0.588	0.216
FS19@2'	03/03/23	7.90	0.942	0.503	0.187
FS20@2.5'	03/03/23	8.12	0.714	0.398	0.177
BG01@1.5'	03/17/23	8.27	NA	NA	NA
BG01@3'	03/17/23	8.49	NA	NA	NA
BG02@1.5'	03/17/23	8.38	NA	NA	NA
BG02@3'	03/17/23	8.62	NA	NA	NA
BG03@1.5'	03/17/23	8.37	NA	NA	NA
BG03@3'	03/17/23	8.56	NA	NA	NA
BG04@1.5'	03/17/23	8.24	NA	NA	NA
BG04@3'	03/17/23	8.31	NA	NA	NA
BG05@1.5'	03/17/23	8.39	NA	NA	NA
BG05@3'	03/17/23	8.64	NA	NA	NA

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

Definitions:  
COGCC = Colorado Oil and Gas Conservation Commission  
TPH-GRO = Total petroleum hydrocarbons - gasoline range organics  
TPH-DRO = Total petroleum hydrocarbons - diesel range organics  
TPH-ORO = Total petroleum hydrocarbons - oil range organics  
mg/kg = Milligrams per kilogram  
SAR = Sodium Adsorption Ratio  
EC = Electrical Conductivity  
mmhos/cm = Millimhos per centimeter  
mg/L = Milligrams per liter  
< = Analytical result is less than the indicated laboratory reporting limit  
Highlighted results are equal to or exceed the COGCC Table 915-1 standard

1,2,4 - TMB = 1,2,4 Trimethylbenzene  
1,3,5 - TMB = 1,3,5 Trimethylbenzene  
Benz(a) = Benzantrhacene  
Benzo(b) = Benzofluoranthene  
Benzo(k) = Benzofluoranthene  
Benz(a) = Benzopyrene  
A,H = Dibenzoanthracene  
1,2,3-CD = Indenopyrene  
1-M = 1-methylnaphthalene  
2-M = 2-methylnaphthalene  
NA = Not Analyzed

Soil Sample ID	Date	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL <sup>2</sup>		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL <sup>2,3</sup>		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
SS29@1.5'	02/17/23	1.66	184	0.0110	<0.30	3.95	6.80	3.84	0.879	0.0124	15.9
SS30@1.5'	02/17/23	2.56	321	0.190	<0.30	6.64	9.62	5.85	0.996	0.0229	25.4
SS31@1.5'	02/17/23	2.73	485	0.172	<0.30	5.93	7.77	6.33	1.02	0.0242	24.5
SS32@1.5'	02/17/23	2.74	492	0.187	<0.30	7.36	8.77	6.94	1.10	0.0321	27.4
SS33@1.5'	02/17/23	2.82	296	0.281	<0.30	4.86	8.15	4.91	0.932	0.0187	18.3
SS34@1.5'	02/17/23	5.44	414	0.272	<0.30	8.08	12.8	7.42	1.68	0.0308	27.8
SS35@1.5'	02/17/23	2.19	293	0.121	<0.30	5.06	6.15	5.08	0.571	0.0257	18.7
SS36@1.5'	03/01/23	1.15	244	0.111	<0.30	3.92	3.95	2.93	0.310	0.0244	12.9
SS37@1.5'	03/01/23	5.49	383	0.247	<0.30	6.88	11.4	6.02	1.09	0.0322	23.1
SS38@1.5'	03/01/23	4.87	247	0.329	<0.30	6.85	12.3	5.56	1.31	0.0304	21.8
SS39@3.5'	03/01/23	3.66	344	0.237	<0.30	7.02	11.2	6.33	1.00	0.0278	24.3
SS39@5'	03/01/23	6.72	379	0.253	<0.30	8.12	10.6	7.04	1.31	0.0272	23.1
SS40@3.5'	03/01/23	4.56	332	0.268	<0.30	7.75	13.0	6.70	1.35	0.0312	25.5
SS40@5'	03/01/23	7.96	96.9	0.406	<0.30	8.12	13.7	7.72	1.24	0.0412	23.4
SS41@5'	03/01/23	16.9	357	0.473	<0.30	13.7	13.1	8.17	1.60	0.0420	24.0
SS42@5'	03/01/23	13.0	176	0.256	<0.30	11.1	8.70	7.66	1.74	0.0391	23.5
FS01@6'	03/01/23	5.61	197	0.275	<0.30	9.00	15.1	7.28	1.35	0.0453	22.8
SS43@1.5'	03/03/23	1.76	90.6	0.146	<0.30	2.63	5.32	2.82	<0.260	0.0141	10.7
SS44@1'	03/03/23	4.19	337	0.382	<0.30	5.14	13.2	4.59	0.276	0.0228	18.3
SS45@1'	03/03/23	3.53	584	0.457	<0.30	5.20	12.4	4.82	0.257	0.0238	19.3
SS46@1.5'	03/03/23	3.85	303	0.419	<0.30	5.35	14.0	4.72	<0.260	0.0209	19.5
SS47@1.5'	03/03/23	3.26	310	0.390	<0.30	5.27	14.9	4.67	0.180	0.0239	18.5
SS48@1.5'	03/03/23	3.15	497	0.282	<0.30	4.79	8.86	4.29	0.189	0.0255	16.3
SS49@1'	03/03/23	3.66	335	0.321	<0.30	4.78	11.7	4.47	0.210	0.0212	17.3
FS17@3'	03/03/23	5.03	300	0.394	<0.30	5.60	13.4	4.70	0.255	0.0261	17.5
FS18@2.5'	03/03/23	5.82	539	0.403	<0.30	5.39	14.5	4.98	0.330	0.0311	19.5
FS19@2'	03/03/23	4.03	323	0.387	<0.30	5.48	12.9	4.76	0.192	0.0199	19.1
FS20@2.5'	03/03/23	3.77	307	0.382	<0.30	5.03	14.8	4.46	<0.260	0.0175	18.1
BG01@1.5'	03/17/23	8.09	212	0.519	<0.30	6.22	14.5	5.23	0.509	0.0566	20.0
BG01@3'	03/17/23	6.97	161	0.446	<0.30	5.99	13.1	5.14	0.450	0.0524	19.5
BG02@1.5'	03/17/23	6.51	169	0.419	<0.30	5.55	13.2	5.22	0.435	0.0502	18.4
BG02@3'	03/17/23	5.34	146	0.336	<0.30	4.53	10.1	4.04	0.440	0.0441	13.9
BG03@1.5'	03/17/23	6.21	153	0.298	<0.30	4.61	11.7	3.99	0.440	0.0366	13.1
BG03@3'	03/17/23	7.12	209	0.360	<0.30	4.49	11.8	3.87	0.487	0.0476	14.4
BG04@1.5'	03/17/23	8.05	169	0.455	<0.30	5.80	13.3	5.24	0.507	0.0535	19.3
BG04@3'	03/17/23	7.00	167	0.422	<0.30	5.32	12.0	4.48	0.541	0.0568	17.3
BG05@1.5'	03/17/23	7.42	171	0.352	<0.30	5.22	13.5	4.42	0.517	0.0486	15.2
BG05@3'	03/17/23	6.99	136	0.281	<0.30	4.26	10.8	3.44	0.577	0.0487	12.6

## Photographic Log



<b>Equipment ID:</b>		<b>Equipment Type:</b>		<b>Equipment ID:</b>		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>		<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> Image of release.				<b>Notes/Conditions:</b> Image of release.			



## Photographic Log



Equipment ID:		Equipment Type:		Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: Image of release.				Notes/Conditions: Image of release location.			



## EXCAVATION SUMMARY REPORT

### Photographic and Sketch Log



SS01@  
3'

Site Sketch:

Notes:





**Direction:**

**Notes:** Ss02 @ 0.5'



**Direction:**

**Notes:** SS03 @ 0.5'





**Direction:**

**Notes:** SS04@0.5'



**Direction:**

**Notes:** SS05@1'





**Direction:**

**Notes:** SS06@2.5'



**Direction:**

**Notes:** SS07@2.5'





**View:** SS21 @1'

**Notes:**



**View:** SS22 @1'

**Notes:**





**View:** SS23@1'

**Notes:**



**View:** FS04@2'

**Notes:**





**View:** FS05@2'

**Notes:**



**View:** FS06@2.5'

**Notes:**





**View:** FS07@2.5'

**Notes:**



**View:** FS08@2.5'

**Notes:**





**View:** FS09@2.5'

**Notes:**



**View:** Fs10@2.5'

**Notes:**





**View:** FS11@2.5'

**Notes:**



**View:** FS12@2.5'

**Notes:**





**View:** FS13@2.5'

**Notes:**



**View:** FS14@2.5'

**Notes:**





**View:** FS15@2.5'

**Notes:**



**View:** FS16@2.5'

**Notes:**





**View:** SS24@1.5'

**Notes:**



**View:** SS25@1.5'

**Notes:**





**View:** SS26 @1.5'

**Notes:**



**View:** SS27 @1.5'

**Notes:**





**View:** SS28@1.5'

**Notes:**



**View:** SS29@1.5'

**Notes:**





**View:** SS30@1.5'

**Notes:**



**View:** SS31@1.5'

**Notes:**





**View:** SS32@1.5'

**Notes:**



**View:** SS33@1.5'

**Notes:**





**View:** SS34@1.5'

**Notes:**



**View:** SS35@1.5'

**Notes:**





**View:** FS02@1.5' FACING NW

**Notes:**



**View:** SS13@0.5'

**Notes:**





**View:** SS14@0.5'

**Notes:**



**View:** FS02 EXCAVATION FACING SE

**Notes:**





FS  
03



**View:** FS04 EXC FACING WEST

**Notes:**

**View:** FS03@2.5'

**Notes:**





**View:** FS15@1.5'

**Notes:**

**View:** FS16@1.5'

**Notes:**





**View:** FS17@1.5'

**Notes:**

**View:** SS18@1'

**Notes:**





**View:** SS19@1'

**Notes:**



**View:** SS20@1'

**Notes:**





**Direction:** North

**Notes:**

**Direction:** East

**Notes:**





**Direction:** south

**Notes:**

**Direction:** West

**Notes:**





**Direction:** West

**Notes:**

**Direction:** East

**Notes:**



## Photographic Log



<b>Equipment ID:</b>		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> Ss43@1.5'			



<b>Equipment ID:</b>		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> FS18@2.5'			



## Photographic Log

							
<b>Equipment ID:</b>		<b>Equipment Type:</b>		<b>Equipment ID:</b>		<b>Equipment Type:</b>	
<b>Material:</b>		<b>Volume:</b>		<b>Contents:</b>		<b>Material:</b>	
<b>Material:</b>		<b>Volume:</b>		<b>Contents:</b>		<b>Material:</b>	
<b>Notes/Conditions:</b> FS17@3'				<b>Notes/Conditions:</b> SS44@1'			



## Photographic Log



<b>Equipment ID:</b>		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> SS45@1'			



<b>Equipment ID:</b>		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> SS46@1.5'			



## Photographic Log



Equipment ID:		Equipment Type:		Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: SS47@1.5'				Notes/Conditions: SS48@1.5'			



## Photographic Log



Equipment ID:		Equipment Type:		Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: SS49@1'				Notes/Conditions: FS19@2'			



## Photographic Log



Equipment ID:		Equipment Type:		Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: FS20@2.5'				Notes/Conditions: WESTERN EXCAVATION AREA FACING SOUTHWEST			



## Photographic Log

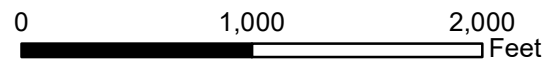
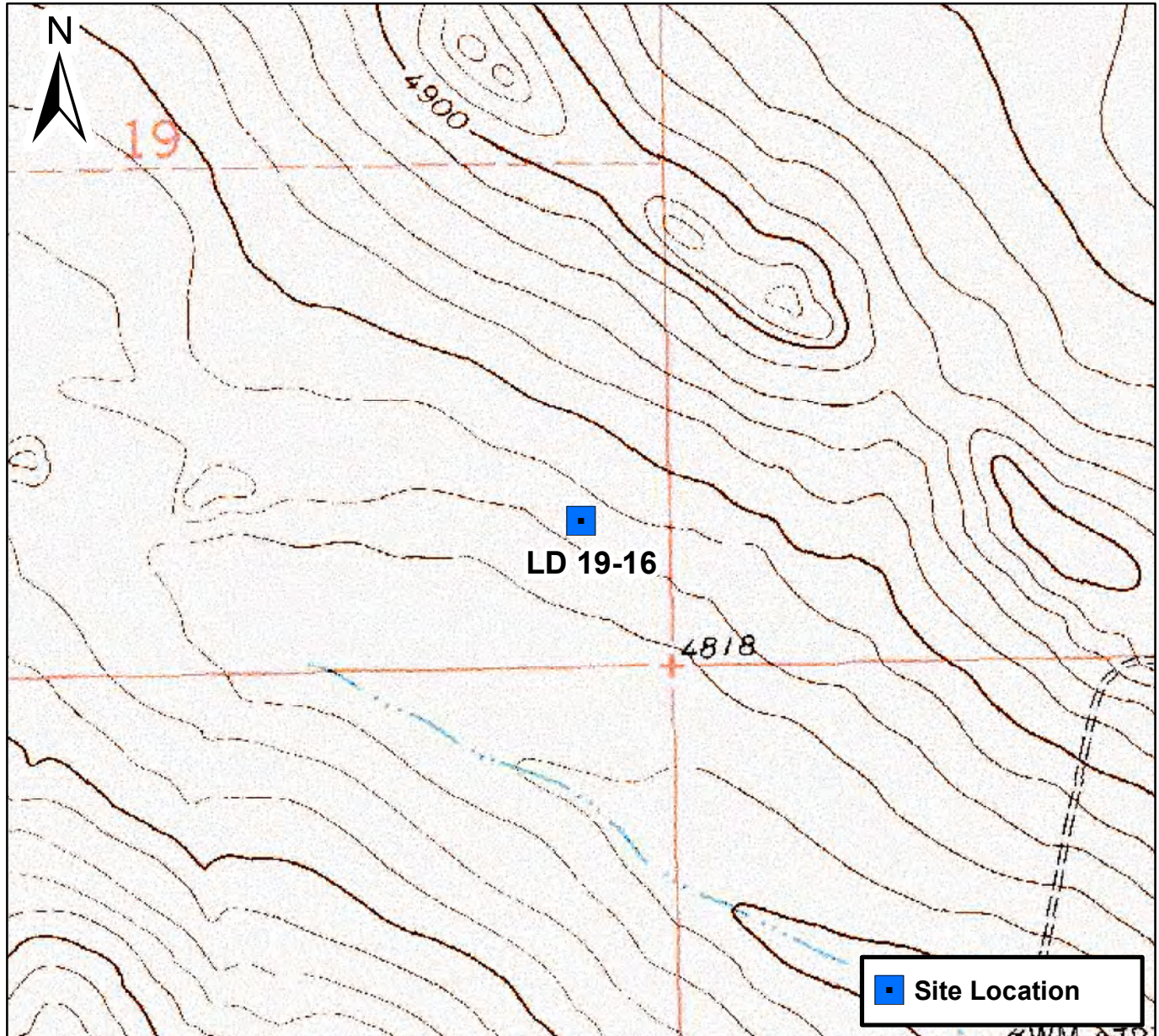


<b>Equipment ID:</b>		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> WESTERN EXCAVATION AREA FACING SOUTHEAST			



<b>Equipment ID:</b>		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> Soil scraped from southern end of fan building (view facing north) to remove TPH impacts from the former SS34@1.5' sample location.			



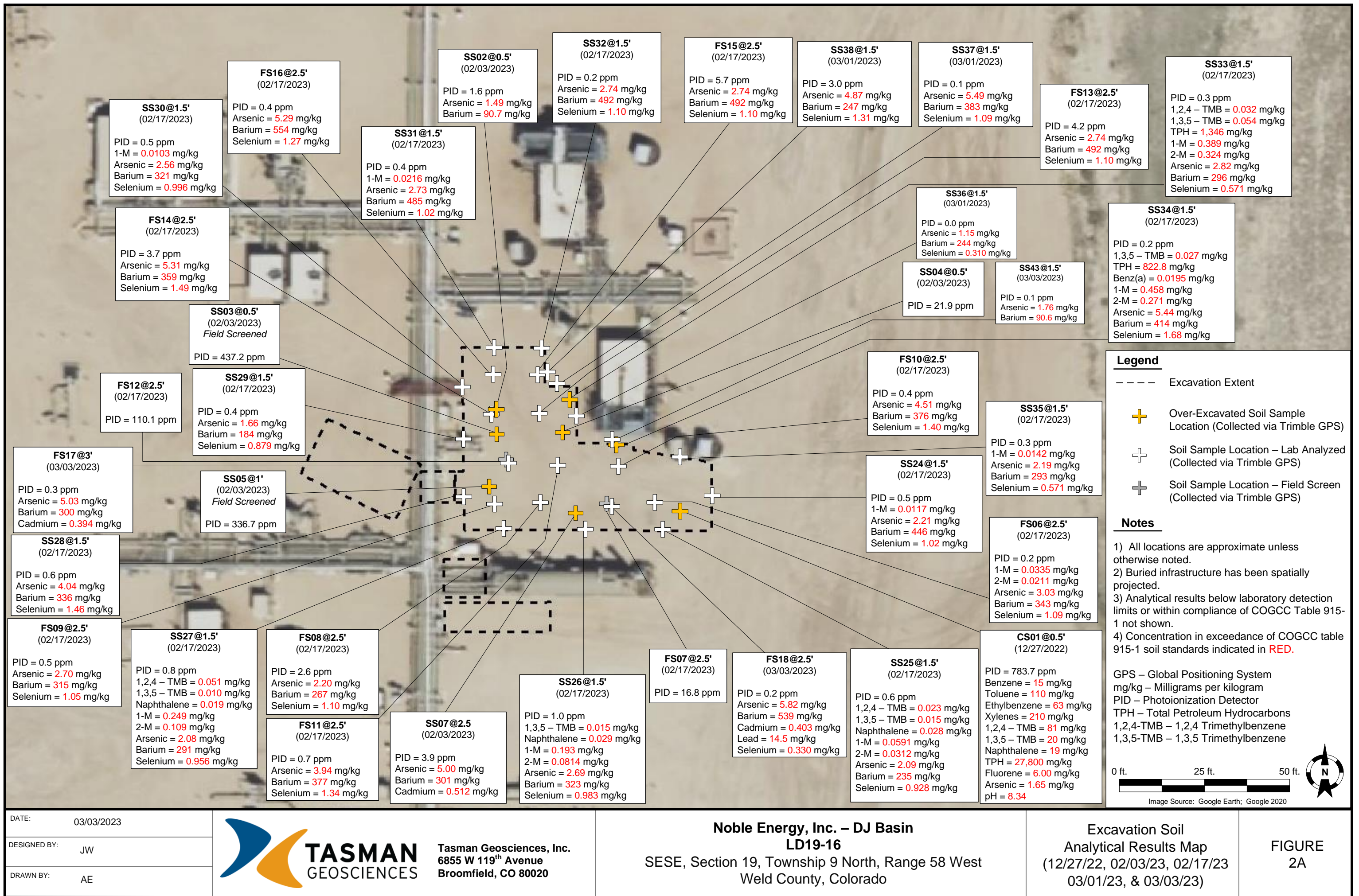


## Figure 1

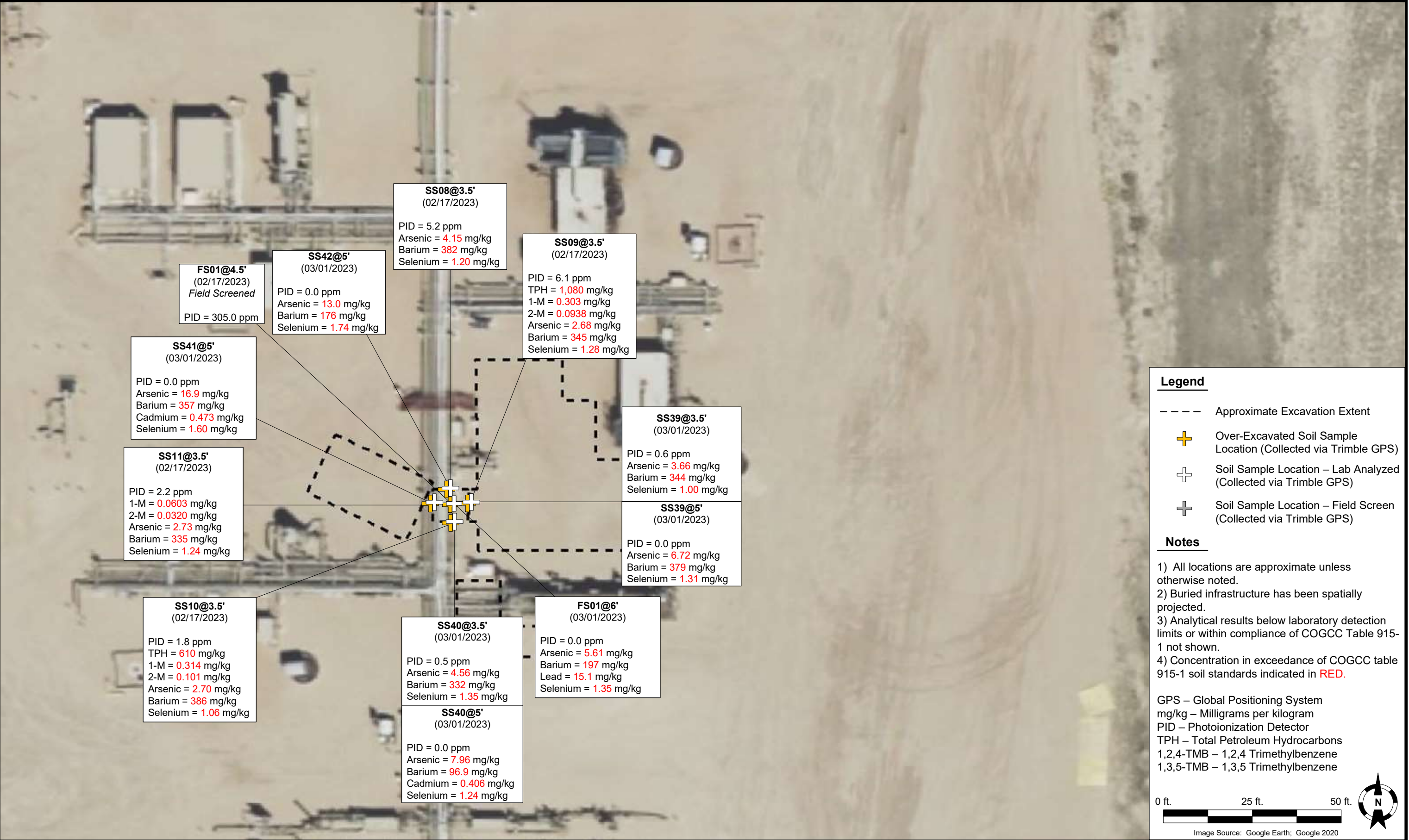
Site Location Map  
LD 19-16  
SESE S19 T9N R58W  
Weld County, Colorado










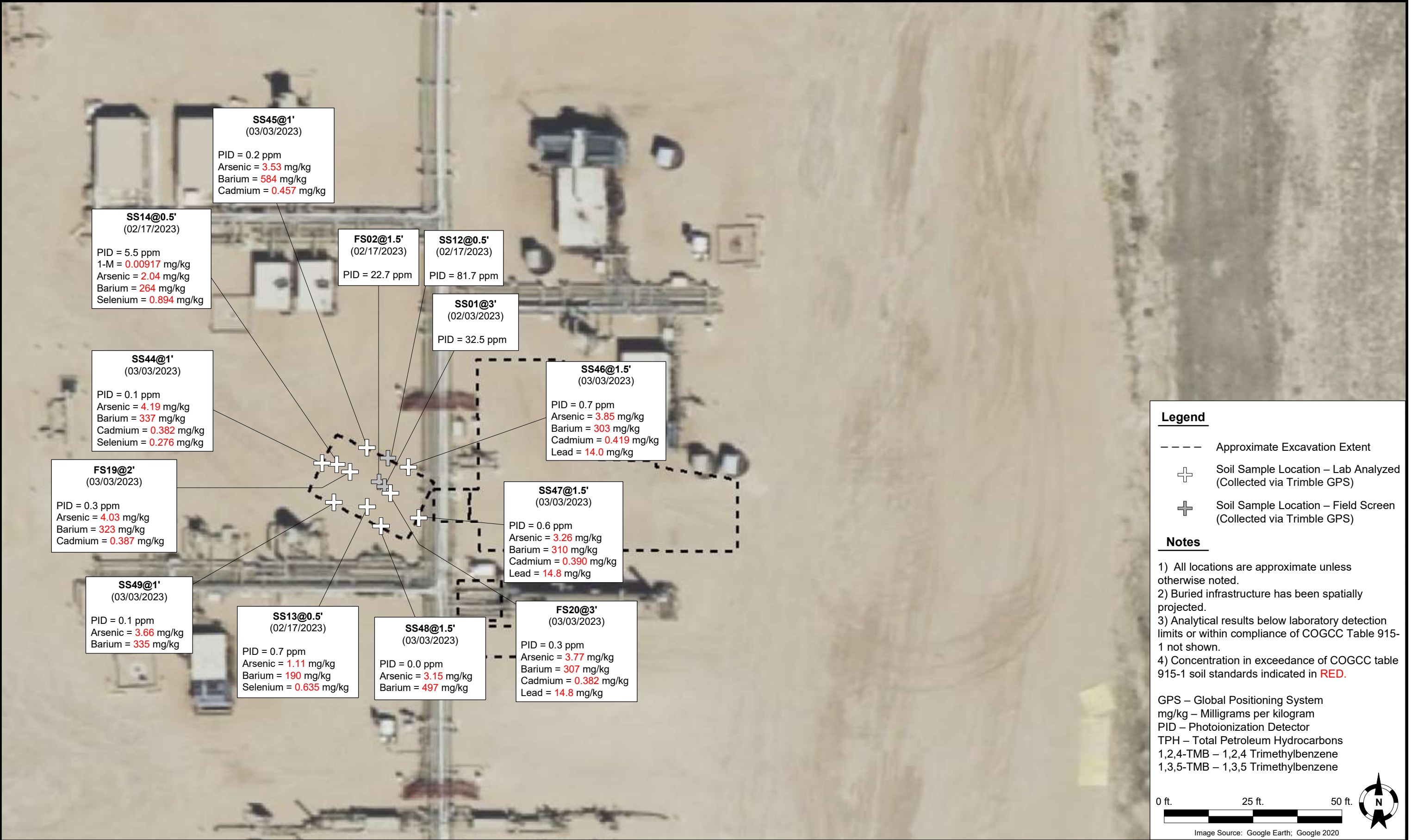






DATE: 02/20/2023	 <b>TASMAN</b> GEOSCIENCES	Tasman Geosciences, Inc. 6855 W 119 <sup>th</sup> Avenue Broomfield, CO 80020	<b>Noble Energy, Inc. – DJ Basin</b> <b>LD19-16</b> SESE, Section 19, Township 9 North, Range 58 West Weld County, Colorado	Excavation Soil Analytical Results Map (12/27/2022, 02/03/2023 & 02/17/2023)	FIGURE 2C
DESIGNED BY: JW					
DRAWN BY: AE					













DATE:	March 2023
DESIGNED BY:	JW
DRAWN BY:	JC



**Tasman, Inc.**  
6855 W. 119th Avenue  
Broomfield, Colorado 80020

**Noble Energy, Inc. – DJ Basin**  
**LD19-16**  
SESE, Section 19, Township 9 North, Range 58 West  
Weld County, Colorado

WATER WELL INVESTIGATION  
LOCATION MAP

Figure  
4



# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 04, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - LD19-16

Work Order #2212499

Enclosed are the results of analyses for samples received by Summit Scientific on 12/27/22 16:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely". The signature is written in a cursive, flowing style.

Scott Sheely For Paul Shrewsbury  
President





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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
01/04/23 10:51

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CS01@0.5'	2212499-01	Soil	12/27/22 14:55	12/27/22 16:45

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.*



2212499

# Summit Scientific

S<sub>2</sub>

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

Page 1 of 1

Client: Noble / Tasman Geosciences Project Manager: Jake Whritenour, Invoice: Dan Peterson  
Address: 6855 W. 119th Ave. E-Mail: jwhritenour@tasman-geo.com/ Noble Group  
City/State/Zip: Broomfield / CO/ 80020  
Phone: 303-827-1511 Project Name: LD19-16  
Sampler Name: Hunter Merlo Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions		
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	Metals- 915	VOC - 915	TPH - 915	PAH - 915	pH, EC, SAR	Boron - HWS				
1	C501 @ 0.5'	12/27/22	1455	3			X			X				X	X	X	X	X	X			pH, EC, SAR by saturated paste
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by: <u>Hunter Merlo</u>	Date/Time: <u>12/27/22</u> <u>1645</u>	Received by: <u>Summit</u>	Date/Time: <u>12/27/22</u> <u>1645</u>	<b>Turn Around Time</b> (Check) <input checked="" type="checkbox"/> Same Day <input type="checkbox"/> 24 hours <input type="checkbox"/> 48 hours <b>Sample Integrity:</b> Temperature Upon Receipt: <u>7.2</u> Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	<b>Notes:</b>
Relinquished by: <u>Summit</u>	Date/Time: <u>12/27/22</u> <u>1645</u>	Received by: <u>[Signature]</u>	Date/Time: <u>12/27/22</u> <u>1645</u>		
Relinquished by:	Date/Time:	Received by:	Date/Time:		



S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2212499Client: Noble/TrasmamClient Project ID: LD 19-16Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐Airbill #: ☐
☐ ☐ ☐ ☐ ☐

Matrix (Check all that apply)

Air

☐

Soil/Solid

☐

Water

☐

Other

☐

Temp (°C)

7.2

Thermometer #

1

	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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
If custody seals are present, are they intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	sameday
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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? <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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Custodian Printed Name

Date/Time

12.27.22





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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
01/04/23 10:51

**CS01@0.5'**  
**2212499-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **12/27/22 14:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	15	0.20	mg/kg	100	BFL0668	12/27/22	12/28/22	EPA 8260B	
Toluene	110	0.50	"	"	"	"	"	"	E
Ethylbenzene	63	0.50	"	"	"	"	"	"	E
Xylenes (total)	210	1.0	"	"	"	"	"	"	E
1,2,4-Trimethylbenzene	81	0.50	"	"	"	"	"	"	E
1,3,5-Trimethylbenzene	20	0.50	"	"	"	"	"	"	
Naphthalene	19	0.38	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	5200	50	"	"	"	"	"	"	

Date Sampled: **12/27/22 14:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0309	77.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0748	187 %	50-150		"	"	"	"	S-02
Surrogate: 4-Bromofluorobenzene	0.0539	135 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/27/22 14:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	20000	50	mg/kg	1	BFL0669	12/27/22	12/28/22	EPA 8015M	
C28-C36 (ORO)	2600	50	"	"	"	"	"	"	

Date Sampled: **12/27/22 14:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	38.8	310 %	30-150		"	"	"	"	S-02

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

01/04/23 10:51

**CS01@0.5'**  
**2212499-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **12/27/22 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.0500	mg/kg	10	BFL0671	12/28/22	12/28/22	EPA 8270D SIM	R-01
Anthracene	ND	0.0500	"	"	"	"	"	"	R-01
Benzo (a) anthracene	ND	0.0500	"	"	"	"	"	"	R-01
Benzo (a) pyrene	ND	0.0500	"	"	"	"	"	"	R-01
<b>Benzo (b) fluoranthene</b>	<b>0.268</b>	0.0500	"	"	"	"	"	"	R-01
Benzo (k) fluoranthene	ND	0.0500	"	"	"	"	"	"	R-01
<b>Chrysene</b>	<b>2.16</b>	0.500	"	100	"	"	"	"	
<b>Dibenz (a,h) anthracene</b>	<b>0.0334</b>	0.00500	"	1	"	"	"	"	
<b>Fluoranthene</b>	<b>0.0760</b>	0.0500	"	10	"	"	"	"	
<b>Fluorene</b>	<b>6.00</b>	0.500	"	100	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0500	"	10	"	"	"	"	R-01
<b>Pyrene</b>	<b>0.582</b>	0.0500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.0500	"	"	"	"	"	"	R-01
2-Methylnaphthalene	ND	0.0500	"	"	"	"	"	"	R-01

Date Sampled: **12/27/22 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0210	63.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0193	57.8 %	40-150		"	"	"	"	

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

Date Sampled: **12/27/22 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.763</b>	0.0100	mg/L	1	BFL0665	12/27/22	12/29/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **12/27/22 14:55**

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

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
01/04/23 10:51

**CS01@0.5'**  
**2212499-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.65	0.220	mg/kg dry	1	BFL0667	12/27/22	12/29/22	EPA 6020B
Barium	63.5	0.440	"	"	"	"	"	"
Cadmium	0.0969	0.220	"	"	"	"	"	"
Copper	2.87	0.440	"	"	"	"	"	"
Lead	3.17	0.220	"	"	"	"	"	"
Nickel	2.38	0.440	"	"	"	"	"	"
Selenium	ND	0.286	"	"	"	"	"	"
Silver	0.0115	0.0220	"	"	"	"	"	"
Zinc	15.5	0.440	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 12/27/22 14:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFL0749	12/30/22	12/30/22	EPA 7196A	

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

Date Sampled: 12/27/22 14:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	47.1	0.0551	mg/L dry	1	BFL0666	12/27/22	12/29/22	EPA 6020B	
Magnesium	10.9	0.0551	"	"	"	"	"	"	
Sodium	33.5	0.0551	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 12/27/22 14:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.14	0.00100	units	1	BFL0758	12/30/22	12/30/22	Calculation	

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

Date Sampled: 12/27/22 14:55

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
01/04/23 10:51

**CS01@0.5'**  
**2212499-01 (Soil)**

**Summit Scientific**

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

% Solids	90.8	%	1	BFL0695	12/28/22	12/29/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **12/27/22 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.167	0.0100	mmhos/cm	1	BFL0674	12/28/22	12/28/22	EPA 120.1	

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

Date Sampled: **12/27/22 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.34		pH Units	1	BFL0673	12/28/22	12/28/22	EPA 9045D	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
01/04/23 10:51

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

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

#### Batch BFL0668 - EPA 5030 Soil MS

##### Blank (BFL0668-BLK1)

Prepared: 12/27/22 Analyzed: 12/28/22

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	"							
Surrogate: 1,2-Dichloroethane-d4	0.0324		"	0.0400		80.9	50-150			
Surrogate: Toluene-d8	0.0421		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0372		"	0.0400		92.9	50-150			

##### LCS (BFL0668-BS1)

Prepared: 12/27/22 Analyzed: 12/28/22

Benzene	0.0544	0.0020	mg/kg	0.0750		72.5	70-130			
Toluene	0.0680	0.0050	"	0.0750		90.6	70-130			
Ethylbenzene	0.0686	0.0050	"	0.0750		91.4	70-130			
m,p-Xylene	0.148	0.010	"	0.150		98.5	70-130			
o-Xylene	0.0642	0.0050	"	0.0750		85.6	70-130			
1,2,4-Trimethylbenzene	0.0657	0.0050	"	0.0750		87.6	70-130			
1,3,5-Trimethylbenzene	0.0692	0.0050	"	0.0750		92.2	70-130			
Naphthalene	0.0685	0.0038	"	0.0750		91.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0272		"	0.0400		68.0	50-150			
Surrogate: Toluene-d8	0.0402		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0355		"	0.0400		88.6	50-150			

##### Matrix Spike (BFL0668-MS1)

Source: 2212495-01

Prepared: 12/27/22 Analyzed: 12/28/22

Benzene	0.0553	0.0020	mg/kg	0.0750	ND	73.7	70-130			
Toluene	0.0709	0.0050	"	0.0750	ND	94.6	70-130			
Ethylbenzene	0.0683	0.0050	"	0.0750	ND	91.0	70-130			
m,p-Xylene	0.146	0.010	"	0.150	ND	97.3	70-130			
o-Xylene	0.0649	0.0050	"	0.0750	ND	86.5	70-130			
1,2,4-Trimethylbenzene	0.0667	0.0050	"	0.0750	ND	88.9	70-130			
1,3,5-Trimethylbenzene	0.0707	0.0050	"	0.0750	ND	94.3	70-130			
Naphthalene	0.0757	0.0038	"	0.0750	0.00213	98.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0262		"	0.0400		65.6	50-150			
Surrogate: Toluene-d8	0.0401		"	0.0400		100	50-150			
Surrogate: 4-Bromofluorobenzene	0.0368		"	0.0400		92.1	50-150			

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

01/04/23 10:51

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

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

#### Batch BFL0668 - EPA 5030 Soil MS

##### Matrix Spike Dup (BFL0668-MSD1)

Source: 2212495-01

Prepared: 12/27/22 Analyzed: 12/28/22

Benzene	0.0535	0.0020	mg/kg	0.0750	ND	71.3	70-130	3.31	30	
Toluene	0.0671	0.0050	"	0.0750	ND	89.5	70-130	5.48	30	
Ethylbenzene	0.0650	0.0050	"	0.0750	ND	86.7	70-130	4.91	30	
m,p-Xylene	0.138	0.010	"	0.150	ND	91.9	70-130	5.69	30	
o-Xylene	0.0629	0.0050	"	0.0750	ND	83.9	70-130	3.10	30	
1,2,4-Trimethylbenzene	0.0653	0.0050	"	0.0750	ND	87.1	70-130	2.09	30	
1,3,5-Trimethylbenzene	0.0681	0.0050	"	0.0750	ND	90.8	70-130	3.80	30	
Naphthalene	0.0768	0.0038	"	0.0750	0.00213	99.5	70-130	1.42	30	
Surrogate: 1,2-Dichloroethane-d4	0.0269		"	0.0400		67.3	50-150			
Surrogate: Toluene-d8	0.0397		"	0.0400		99.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0366		"	0.0400		91.4	50-150			

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
01/04/23 10:51

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BFL0669 - EPA 3550A**

**Blank (BFL0669-BLK1)**

Prepared: 12/27/22 Analyzed: 12/28/22

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.9		"	12.5	103		30-150			

**LCS (BFL0669-BS1)**

Prepared: 12/27/22 Analyzed: 12/28/22

C10-C28 (DRO)	504	50	mg/kg	500	101		70-130			
Surrogate: o-Terphenyl	12.0		"	12.5	96.1		30-150			

**Matrix Spike (BFL0669-MS1)**

Source: 2212495-01

Prepared: 12/27/22 Analyzed: 12/28/22

C10-C28 (DRO)	459	50	mg/kg	500	50.3	81.7	70-130			
Surrogate: o-Terphenyl	9.09		"	12.5	72.7		30-150			

**Matrix Spike Dup (BFL0669-MSD1)**

Source: 2212495-01

Prepared: 12/27/22 Analyzed: 12/28/22

C10-C28 (DRO)	473	50	mg/kg	500	50.3	84.6	70-130	3.07	20	
Surrogate: o-Terphenyl	9.01		"	12.5	72.1		30-150			

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
01/04/23 10:51

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BFL0671 - EPA 5030 Soil MS

##### Blank (BFL0671-BLK1)

Prepared & Analyzed: 12/28/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0320		"	0.0333		96.1	40-150			
Surrogate: Fluoranthene-d10	0.0352		"	0.0333		106	40-150			

##### LCS (BFL0671-BS1)

Prepared & Analyzed: 12/28/22

Acenaphthene	0.0302	0.00500	mg/kg	0.0333		90.7	31-137			
Anthracene	0.0291	0.00500	"	0.0333		87.4	30-120			
Benzo (a) anthracene	0.0298	0.00500	"	0.0333		89.3	30-120			
Benzo (a) pyrene	0.0291	0.00500	"	0.0333		87.2	30-120			
Benzo (b) fluoranthene	0.0289	0.00500	"	0.0333		86.7	30-120			
Benzo (k) fluoranthene	0.0296	0.00500	"	0.0333		88.9	30-120			
Chrysene	0.0317	0.00500	"	0.0333		95.0	30-120			
Dibenz (a,h) anthracene	0.0255	0.00500	"	0.0333		76.4	30-120			
Fluoranthene	0.0291	0.00500	"	0.0333		87.2	30-120			
Fluorene	0.0295	0.00500	"	0.0333		88.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0201	0.00500	"	0.0333		60.4	30-120			
Pyrene	0.0321	0.00500	"	0.0333		96.4	35-142			
1-Methylnaphthalene	0.0141	0.00500	"	0.0333		42.2	35-142			
2-Methylnaphthalene	0.0251	0.00500	"	0.0333		75.3	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0322		"	0.0333		96.7	40-150			
Surrogate: Fluoranthene-d10	0.0306		"	0.0333		91.7	40-150			

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
01/04/23 10:51

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BFL0671 - EPA 5030 Soil MS

##### Matrix Spike (BFL0671-MS1)

Source: 2212495-02

Prepared & Analyzed: 12/28/22

Acenaphthene	0.0156	0.00500	mg/kg	0.0333	ND	46.7	31-137		
Anthracene	0.0154	0.00500	"	0.0333	ND	46.3	30-120		
Benzo (a) anthracene	0.0143	0.00500	"	0.0333	ND	43.0	30-120		
Benzo (a) pyrene	0.0136	0.00500	"	0.0333	ND	40.7	30-120		
Benzo (b) fluoranthene	0.0133	0.00500	"	0.0333	ND	39.8	30-120		
Benzo (k) fluoranthene	0.0133	0.00500	"	0.0333	ND	40.0	30-120		
Chrysene	0.0148	0.00500	"	0.0333	ND	44.3	30-120		
Dibenz (a,h) anthracene	0.0110	0.00500	"	0.0333	ND	33.1	30-120		
Fluoranthene	0.0148	0.00500	"	0.0333	ND	44.3	30-120		
Fluorene	0.0157	0.00500	"	0.0333	ND	47.2	30-120		
Indeno (1,2,3-cd) pyrene	0.0151	0.00500	"	0.0333	ND	45.2	30-120		
Pyrene	0.0159	0.00500	"	0.0333	ND	47.7	35-142		
1-Methylnaphthalene	0.00571	0.00500	"	0.0333	ND	17.1	15-130		
2-Methylnaphthalene	0.0149	0.00500	"	0.0333	ND	44.8	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0194		"	0.0333		58.2	40-150		
Surrogate: Fluoranthene-d10	0.0156		"	0.0333		46.8	40-150		

##### Matrix Spike Dup (BFL0671-MSD1)

Source: 2212495-02

Prepared & Analyzed: 12/28/22

Acenaphthene	0.0177	0.00500	mg/kg	0.0333	ND	53.1	31-137	12.8	30
Anthracene	0.0184	0.00500	"	0.0333	ND	55.1	30-120	17.4	30
Benzo (a) anthracene	0.0174	0.00500	"	0.0333	ND	52.2	30-120	19.5	30
Benzo (a) pyrene	0.0166	0.00500	"	0.0333	ND	49.8	30-120	20.1	30
Benzo (b) fluoranthene	0.0164	0.00500	"	0.0333	ND	49.2	30-120	21.0	30
Benzo (k) fluoranthene	0.0166	0.00500	"	0.0333	ND	49.8	30-120	21.9	30
Chrysene	0.0178	0.00500	"	0.0333	ND	53.5	30-120	18.7	30
Dibenz (a,h) anthracene	0.0149	0.00500	"	0.0333	ND	44.7	30-120	29.8	30
Fluoranthene	0.0178	0.00500	"	0.0333	ND	53.3	30-120	18.5	30
Fluorene	0.0179	0.00500	"	0.0333	ND	53.7	30-120	12.8	30
Indeno (1,2,3-cd) pyrene	0.0112	0.00500	"	0.0333	ND	33.7	30-120	29.0	30
Pyrene	0.0191	0.00500	"	0.0333	ND	57.4	35-142	18.3	30
1-Methylnaphthalene	0.00595	0.00500	"	0.0333	ND	17.8	15-130	4.14	50
2-Methylnaphthalene	0.0154	0.00500	"	0.0333	ND	46.2	15-130	3.08	50
Surrogate: 2-Methylnaphthalene-d10	0.0195		"	0.0333		58.6	40-150		
Surrogate: Fluoranthene-d10	0.0185		"	0.0333		55.4	40-150		

Summit Scientific

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





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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
01/04/23 10:51

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

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

**Batch BFL0665 - EPA 3050B**

**Blank (BFL0665-BLK1)**

Prepared: 12/27/22 Analyzed: 12/28/22

Boron ND 0.0100 mg/L

**LCS (BFL0665-BS1)**

Prepared: 12/27/22 Analyzed: 12/28/22

Boron 4.96 0.0100 mg/L 5.00 99.2 80-120

**Duplicate (BFL0665-DUP1)**

Source: 2212435-01

Prepared: 12/27/22 Analyzed: 12/28/22

Boron 0.659 0.0100 mg/L 0.626 5.07 20

**Matrix Spike (BFL0665-MS1)**

Source: 2212435-01

Prepared: 12/27/22 Analyzed: 12/29/22

Boron 4.56 0.0100 mg/L 5.00 0.626 78.7 75-125

**Matrix Spike Dup (BFL0665-MSD1)**

Source: 2212435-01

Prepared: 12/27/22 Analyzed: 12/29/22

Boron 4.45 0.0100 mg/L 5.00 0.626 76.4 75-125 2.59 25

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
01/04/23 10:51

### Total Metals by EPA 6020B - Quality Control

#### Summit Scientific

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

#### Batch BFL0667 - EPA 3050B

##### Blank (BFL0667-BLK1)

Prepared: 12/27/22 Analyzed: 12/29/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	0.115	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

##### LCS (BFL0667-BS1)

Prepared: 12/27/22 Analyzed: 12/29/22

Arsenic	34.0	0.200	mg/kg wet	40.0	85.0	80-120
Barium	33.9	0.400	"	40.0	84.8	80-120
Cadmium	1.75	0.200	"	2.00	87.5	80-120
Copper	36.0	0.400	"	40.0	90.1	80-120
Lead	19.7	0.200	"	20.0	98.5	80-120
Nickel	35.1	0.400	"	40.0	87.7	80-120
Selenium	3.53	0.260	"	4.00	88.2	80-120
Silver	1.78	0.0200	"	2.00	88.8	80-120
Zinc	35.7	0.400	"	40.0	89.3	80-120

##### Duplicate (BFL0667-DUP1)

Source: 2212453-01

Prepared: 12/27/22 Analyzed: 12/29/22

Arsenic	4.05	0.222	mg/kg dry	4.54	11.4	20
Barium	105	0.444	"	122	15.3	20
Cadmium	0.208	0.222	"	0.238	13.3	20
Copper	6.54	0.444	"	6.72	2.82	20
Lead	7.28	0.222	"	7.88	7.95	20
Nickel	7.66	0.444	"	7.76	1.21	20
Selenium	ND	0.289	"	ND		20
Silver	0.0458	0.0222	"	0.0484	5.66	20
Zinc	23.2	0.444	"	23.9	3.06	20

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
01/04/23 10:51

### Total Metals by EPA 6020B - Quality Control

#### Summit Scientific

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

#### Batch BFL0667 - EPA 3050B

Matrix Spike (BFL0667-MS1)		Source: 2212453-01			Prepared: 12/27/22		Analyzed: 12/29/22			
Arsenic	44.0	0.222	mg/kg dry	44.4	4.54	88.9	75-125			
Barium	168	0.444	"	44.4	122	102	75-125			
Cadmium	2.31	0.222	"	2.22	0.238	93.2	75-125			
Copper	44.3	0.444	"	44.4	6.72	84.5	75-125			
Lead	27.9	0.222	"	22.2	7.88	90.1	75-125			
Nickel	40.9	0.444	"	44.4	7.76	74.6	75-125			QM-05
Selenium	4.06	0.289	"	4.44	ND	91.3	75-125			
Silver	2.15	0.0222	"	2.22	0.0484	94.3	75-125			
Zinc	61.5	0.444	"	44.4	23.9	84.5	75-125			

Matrix Spike Dup (BFL0667-MSD1)		Source: 2212453-01			Prepared: 12/27/22		Analyzed: 12/29/22			
Arsenic	41.7	0.222	mg/kg dry	44.4	4.54	83.5	75-125	5.59	25	
Barium	135	0.444	"	44.4	122	29.3	75-125	21.5	25	QM-05
Cadmium	2.00	0.222	"	2.22	0.238	79.3	75-125	14.3	25	
Copper	44.4	0.444	"	44.4	6.72	84.7	75-125	0.240	25	
Lead	29.4	0.222	"	22.2	7.88	96.8	75-125	5.18	25	
Nickel	42.2	0.444	"	44.4	7.76	77.5	75-125	3.03	25	
Selenium	4.06	0.289	"	4.44	ND	91.3	75-125	0.0110	25	
Silver	1.83	0.0222	"	2.22	0.0484	80.3	75-125	15.7	25	
Zinc	58.6	0.444	"	44.4	23.9	78.2	75-125	4.68	25	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

01/04/23 10:51

### Hexavalent Chromium by EPA Method 7196 - Quality Control

#### Summit Scientific

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

#### Batch BFL0749 - 3060A Mod

##### Blank (BFL0749-BLK1)

Prepared & Analyzed: 12/30/22

Chromium, Hexavalent ND 0.30 mg/kg wet

##### LCS (BFL0749-BS1)

Prepared & Analyzed: 12/30/22

Chromium, Hexavalent 22.2 0.30 mg/kg wet 25.0 88.8 80-120

##### Duplicate (BFL0749-DUP1)

Source: 2212473-01

Prepared & Analyzed: 12/30/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

##### Matrix Spike (BFL0749-MS1)

Source: 2212473-01

Prepared & Analyzed: 12/30/22

Chromium, Hexavalent 25.6 0.30 mg/kg dry 28.5 ND 89.8 75-125

##### Matrix Spike Dup (BFL0749-MSD1)

Source: 2212473-01

Prepared & Analyzed: 12/30/22

Chromium, Hexavalent 25.8 0.30 mg/kg dry 28.5 ND 90.4 75-125 0.666 20

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

01/04/23 10:51

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

**Summit Scientific**

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

**Batch BFL0666 - General Preparation**

**Blank (BFL0666-BLK1)**

Prepared: 12/27/22 Analyzed: 12/29/22

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

**LCS (BFL0666-BS1)**

Prepared: 12/27/22 Analyzed: 12/29/22

Calcium	4.48	0.0500	mg/L wet	5.00	89.7	70-130
Magnesium	4.92	0.0500	"	5.00	98.3	70-130
Sodium	4.90	0.0500	"	5.00	98.0	70-130

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

01/04/23 10:51

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

#### Summit Scientific

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

#### Batch BFL0695 - General Preparation

**Duplicate (BFL0695-DUP1)**

**Source: 2212453-01**

Prepared: 12/28/22 Analyzed: 12/29/22

% Solids	89.8	%	90.0	0.203	20
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Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
01/04/23 10:51

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

**Summit Scientific**

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

**Batch BFL0674 - General Preparation**

**Blank (BFL0674-BLK1)**

Prepared & Analyzed: 12/28/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BFL0674-BS1)**

Prepared & Analyzed: 12/28/22

Specific Conductance (EC) 0.144 0.0100 mmhos/cm 0.150 96.0 95-105

**Duplicate (BFL0674-DUP1)**

**Source: 2212403-01**

Prepared & Analyzed: 12/28/22

Specific Conductance (EC) 0.108 0.0100 mmhos/cm 0.109 0.831 20

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

01/04/23 10:51

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

**Summit Scientific**

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

**Batch BFL0673 - General Preparation**

**LCS (BFL0673-BS1)**

Prepared & Analyzed: 12/28/22

pH	9.05	pH Units	9.18	98.6	95-105
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**Duplicate (BFL0673-DUP1)**

Source: 2212403-01

Prepared & Analyzed: 12/28/22

pH	6.65	pH Units	6.61	0.603	20
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Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
01/04/23 10:51

### 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.
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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

February 09, 2023

Jacob Whritenour  
Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield, CO 80020  
RE: Noble - LD19-16  
Work Order # 2302071

Enclosed are the results of analyses for samples received by Summit Scientific on 02/03/23 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Scott Sheely For Paul Shrewsbury  
President





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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/09/23 13:36

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS02@0.5'	2302071-01	Soil	02/03/23 13:07	02/03/23 16:30
SS07@2.5'	2302071-02	Soil	02/03/23 13:20	02/03/23 16:30

Summit Scientific



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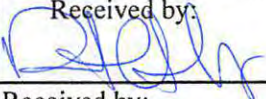
# SUMMIT SCIENTIFIC

4653 Table Mountain Drive  
Golden, CO 80403  
303-277-9310

Lab ID	Page 1 of 1
2302071	

Client: Noble / Tasman		Send Data To:		Send Invoice To:	
Address: 6855 W 19th Ave		Project Manager: JAKE WHRITENOUR		Company: Chevron	
City/State/Zip: Broomfield, CO 80020		E-Mail: jwhritenour@tasman-gc.com		Project Name/Location:	
Phone: 303-487-1228		Project Name: LD 19-16		AFE#:	
Sampler Name: SARAH QUATTROCHI		Project Number:		PO/Billing Codes:	
				Contact: Dan Peterson	

					Preservative				Matrix				Analysis Requested						Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	VOC-915	TPH	PAH-915	pH, EC, SAR	Boron	Metals-915		
1	SS02 @ 0.5'	2/3/23	1307	3			X			X			X	X	X	X	X	X		
2	SS07 @ 2.5'	2/3/23	1320	3			X			X			X	X	X	X	X	X		
3																				
4																				
5																				
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11																				
12																				
13																				
14																				
15																				

Relinquished by: 	Date/Time: 2/3/23 @ 1600	Received by: 52	Date/Time: 2/3/23 @ 1600	TAT Business Days	Field DO	Notes:
Relinquished by: 52	Date/Time: 2/3/23 @ 1630	Received by: 	Date/Time: 2/3/23 @ 1630	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Temperature Upon Receipt: 68.8 - 24	Corrected Temperature: 68	IR gun #: 1	HNO3 lot #:	Standard	X	Field Turb.

9.1



S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2302071Client: Noble Tazman Client Project ID: LD 19-16Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☐ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 9.1Thermometer # 1

	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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>OV-10E</u>
If custody seals are present, are they intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? <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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

AS  
Custodian Printed Name

2/3/23  
Date/Time



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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/09/23 13:36

**SS02@0.5'**  
**2302071-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/03/23 13:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0154	02/07/23	02/08/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/03/23 13:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		91.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		95.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/03/23 13:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0156	02/07/23	02/08/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/03/23 13:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		75.0 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/09/23 13:36

**SS02@0.5'**  
**2302071-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/03/23 13:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0150	02/07/23	02/08/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.00847</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/03/23 13:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		45.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		56.2 %		40-150		"	"	"	"	

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

Date Sampled: **02/03/23 13:07**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.128</b>	0.0100		mg/L	1	BGB0163	02/07/23	02/08/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/03/23 13:07**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/09/23 13:36

**SS02@0.5'**  
**2302071-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.49	0.219	0.184	mg/kg dry	1	BGB0204	02/08/23	02/08/23	EPA 6020B
Barium	90.7	0.437	0.346	"	"	"	"	"	"
Cadmium	0.175	0.219	0.00787	"	"	"	"	"	"
Copper	1.67	0.437	0.0229	"	"	"	"	"	"
Lead	5.50	0.219	0.0601	"	"	"	"	"	"
Nickel	2.20	0.437	0.0667	"	"	"	"	"	"
Selenium	ND	0.260	0.175	"	"	"	"	"	"
Silver	0.0136	0.0219	0.00292	"	"	"	"	"	"
Zinc	7.15	0.437	0.291	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 02/03/23 13:07

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0142	02/06/23	02/06/23	EPA 7196A	

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

Date Sampled: 02/03/23 13:07

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	499	0.0547		mg/L dry	1	BGB0113	02/05/23	02/07/23	EPA 6020B	
Magnesium	60.8	0.0547		"	"	"	"	"	"	
Sodium	17.7	0.0547		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 02/03/23 13:07

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.199	0.00100		units	1	BGB0217	02/08/23	02/08/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/09/23 13:36

**SS02@0.5'**  
**2302071-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/03/23 13:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	91.5			%	1	BGB0175	02/07/23	02/07/23	Calculation	

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

Date Sampled: **02/03/23 13:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.177	0.0100		mmhos/cm	1	BGB0127	02/06/23	02/06/23	EPA 120.1	

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

Date Sampled: **02/03/23 13:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.24			pH Units	1	BGB0126	02/06/23	02/06/23	EPA 9045D	

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
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Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/09/23 13:36

**SS07@2.5'**  
**2302071-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/03/23 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0154	02/07/23	02/08/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>0.0058</b>	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/03/23 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		81.1 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		92.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/03/23 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0156	02/07/23	02/08/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/03/23 13:20**

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

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
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Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/09/23 13:36

**SS07@2.5'**  
**2302071-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/03/23 13:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0150	02/07/23	02/08/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.00896</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/03/23 13:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		43.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		53.4 %		40-150		"	"	"	"	

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

Date Sampled: **02/03/23 13:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.106</b>	0.0100		mg/L	1	BGB0163	02/07/23	02/08/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/03/23 13:20**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/09/23 13:36

**SS07@2.5'**  
**2302071-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.00	0.267	0.225	mg/kg dry	1	BGB0204	02/08/23	02/08/23	EPA 6020B	
Barium	301	0.534	0.422	"	"	"	"	"	"	
Cadmium	0.512	0.267	0.00962	"	"	"	"	"	"	
Copper	3.96	0.534	0.0279	"	"	"	"	"	"	
Lead	12.2	0.267	0.0734	"	"	"	"	"	"	
Nickel	3.98	0.534	0.0815	"	"	"	"	"	"	
Selenium	0.255	0.260	0.175	"	"	"	"	"	"	
Silver	0.0267	0.0267	0.00357	"	"	"	"	"	"	
Zinc	15.4	0.534	0.355	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/03/23 13:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0142	02/06/23	02/06/23	EPA 7196A	

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

Date Sampled: **02/03/23 13:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	49.5	0.0668		mg/L dry	1	BGB0113	02/05/23	02/07/23	EPA 6020B	
Magnesium	10.5	0.0668		"	"	"	"	"	"	
Sodium	49.6	0.0668		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/03/23 13:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.67	0.00100		units	1	BGB0217	02/08/23	02/08/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/09/23 13:36

**SS07@2.5'**  
**2302071-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/03/23 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	74.9			%	1	BGB0175	02/07/23	02/07/23	Calculation	

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

Date Sampled: **02/03/23 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.575	0.0100		mmhos/cm	1	BGB0127	02/06/23	02/06/23	EPA 120.1	

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

Date Sampled: **02/03/23 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.65			pH Units	1	BGB0126	02/06/23	02/06/23	EPA 9045D	

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6855 W. 119th Ave.  
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Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/09/23 13:36

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

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

#### Batch BGB0154 - EPA 5030 Soil MS

##### Blank (BGB0154-BLK1)

Prepared & Analyzed: 02/07/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0404		"	0.0400		101	50-150			
Surrogate: Toluene-d8	0.0431		"	0.0400		108	50-150			
Surrogate: 4-Bromofluorobenzene	0.0465		"	0.0400		116	50-150			

##### LCS (BGB0154-BS1)

Prepared & Analyzed: 02/07/23

Benzene	0.0852	0.0020	mg/kg	0.100		85.2	70-130			
Toluene	0.0943	0.0050	"	0.100		94.3	70-130			
Ethylbenzene	0.100	0.0050	"	0.100		100	70-130			
m,p-Xylene	0.210	0.010	"	0.200		105	70-130			
o-Xylene	0.0989	0.0050	"	0.100		98.9	70-130			
1,2,4-Trimethylbenzene	0.0987	0.0050	"	0.100		98.7	70-130			
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100		102	70-130			
Naphthalene	0.0883	0.0038	"	0.100		88.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0297		"	0.0400		74.2	50-150			
Surrogate: Toluene-d8	0.0388		"	0.0400		97.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	50-150			

##### Matrix Spike (BGB0154-MS1)

Source: 2302057-01

Prepared & Analyzed: 02/07/23

Benzene	0.0822	0.0020	mg/kg	0.100	ND	82.2	70-130			
Toluene	0.0745	0.0050	"	0.100	ND	74.5	70-130			
Ethylbenzene	0.0975	0.0050	"	0.100	ND	97.5	70-130			
m,p-Xylene	0.196	0.010	"	0.200	ND	97.8	70-130			
o-Xylene	0.0918	0.0050	"	0.100	ND	91.8	70-130			
1,2,4-Trimethylbenzene	0.0838	0.0050	"	0.100	ND	83.8	70-130			
1,3,5-Trimethylbenzene	0.0873	0.0050	"	0.100	ND	87.3	70-130			
Naphthalene	0.0928	0.0038	"	0.100	ND	92.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0252		"	0.0400		62.9	50-150			
Surrogate: Toluene-d8	0.0315		"	0.0400		78.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0362		"	0.0400		90.4	50-150			

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/09/23 13:36

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

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

#### Batch BGB0154 - EPA 5030 Soil MS

Matrix Spike Dup (BGB0154-MSD1)	Source: 2302057-01			Prepared & Analyzed: 02/07/23						
Benzene	0.0824	0.0020	mg/kg	0.100	ND	82.4	70-130	0.219	30	
Toluene	0.0752	0.0050	"	0.100	ND	75.2	70-130	0.962	30	
Ethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130	2.91	30	
m,p-Xylene	0.201	0.010	"	0.200	ND	100	70-130	2.68	30	
o-Xylene	0.0949	0.0050	"	0.100	ND	94.9	70-130	3.28	30	
1,2,4-Trimethylbenzene	0.0872	0.0050	"	0.100	ND	87.2	70-130	3.97	30	
1,3,5-Trimethylbenzene	0.0906	0.0050	"	0.100	ND	90.6	70-130	3.78	30	
Naphthalene	0.0935	0.0038	"	0.100	ND	93.5	70-130	0.773	30	
Surrogate: 1,2-Dichloroethane-d4	0.0243		"	0.0400		60.8	50-150			
Surrogate: Toluene-d8	0.0330		"	0.0400		82.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0373		"	0.0400		93.2	50-150			

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/09/23 13:36

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BGB0156 - EPA 3550A**

**Blank (BGB0156-BLK1)**

Prepared & Analyzed: 02/07/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	8.88		"	12.5		71.1	30-150			

**LCS (BGB0156-BS1)**

Prepared & Analyzed: 02/07/23

C10-C28 (DRO)	398	50	mg/kg	500		79.7	70-130			
Surrogate: o-Terphenyl	10.6		"	12.5		84.6	30-150			

**Matrix Spike (BGB0156-MS1)**

Source: 2302057-01

Prepared & Analyzed: 02/07/23

C10-C28 (DRO)	387	50	mg/kg	500	10.8	75.3	70-130			
Surrogate: o-Terphenyl	9.06		"	12.5		72.5	30-150			

**Matrix Spike Dup (BGB0156-MSD1)**

Source: 2302057-01

Prepared & Analyzed: 02/07/23

C10-C28 (DRO)	460	50	mg/kg	500	10.8	89.8	70-130	17.1	20	
Surrogate: o-Terphenyl	9.01		"	12.5		72.1	30-150			

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/09/23 13:36

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGB0150 - EPA 5030 Soil MS

##### Blank (BGB0150-BLK1)

Prepared & Analyzed: 02/07/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0227		"	0.0333		68.0	40-150			
Surrogate: Fluoranthene-d10	0.0381		"	0.0333		114	40-150			

##### LCS (BGB0150-BS1)

Prepared & Analyzed: 02/07/23

Acenaphthene	0.0316	0.00500	mg/kg	0.0333		94.8	31-137			
Anthracene	0.0306	0.00500	"	0.0333		91.9	30-120			
Benzo (a) anthracene	0.0297	0.00500	"	0.0333		89.0	30-120			
Benzo (a) pyrene	0.0269	0.00500	"	0.0333		80.7	30-120			
Benzo (b) fluoranthene	0.0356	0.00500	"	0.0333		107	30-120			
Benzo (k) fluoranthene	0.0368	0.00500	"	0.0333		110	30-120			
Chrysene	0.0309	0.00500	"	0.0333		92.6	30-120			
Dibenz (a,h) anthracene	0.0166	0.00500	"	0.0333		49.7	30-120			
Fluoranthene	0.0310	0.00500	"	0.0333		92.9	30-120			
Fluorene	0.0314	0.00500	"	0.0333		94.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0164	0.00500	"	0.0333		49.3	30-120			
Pyrene	0.0320	0.00500	"	0.0333		96.0	35-142			
1-Methylnaphthalene	0.0244	0.00500	"	0.0333		73.3	35-142			
2-Methylnaphthalene	0.0224	0.00500	"	0.0333		67.3	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0289		"	0.0333		86.6	40-150			
Surrogate: Fluoranthene-d10	0.0313		"	0.0333		93.8	40-150			

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/09/23 13:36

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGB0150 - EPA 5030 Soil MS

##### Matrix Spike (BGB0150-MS1)

Source: 2302069-01

Prepared & Analyzed: 02/07/23

Acenaphthene	0.0228	0.00500	mg/kg	0.0333	ND	68.3	31-137				
Anthracene	0.0220	0.00500	"	0.0333	ND	66.1	30-120				
Benzo (a) anthracene	0.0246	0.00500	"	0.0333	ND	73.7	30-120				
Benzo (a) pyrene	0.0204	0.00500	"	0.0333	ND	61.2	30-120				
Benzo (b) fluoranthene	0.0254	0.00500	"	0.0333	ND	76.2	30-120				
Benzo (k) fluoranthene	0.0251	0.00500	"	0.0333	ND	75.2	30-120				
Chrysene	0.0226	0.00500	"	0.0333	ND	67.9	30-120				
Dibenz (a,h) anthracene	0.0147	0.00500	"	0.0333	ND	44.0	30-120				
Fluoranthene	0.0239	0.00500	"	0.0333	ND	71.6	30-120				
Fluorene	0.0236	0.00500	"	0.0333	ND	70.7	30-120				
Indeno (1,2,3-cd) pyrene	0.0153	0.00500	"	0.0333	ND	45.8	30-120				
Pyrene	0.0240	0.00500	"	0.0333	ND	72.0	35-142				
1-Methylnaphthalene	0.0182	0.00500	"	0.0333	ND	54.5	15-130				
2-Methylnaphthalene	0.0184	0.00500	"	0.0333	ND	55.3	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0207		"	0.0333		62.0	40-150				
Surrogate: Fluoranthene-d10	0.0253		"	0.0333		75.9	40-150				

##### Matrix Spike Dup (BGB0150-MSD1)

Source: 2302069-01

Prepared & Analyzed: 02/07/23

Acenaphthene	0.0254	0.00500	mg/kg	0.0333	ND	76.2	31-137	10.9	30
Anthracene	0.0241	0.00500	"	0.0333	ND	72.3	30-120	8.92	30
Benzo (a) anthracene	0.0276	0.00500	"	0.0333	ND	82.7	30-120	11.5	30
Benzo (a) pyrene	0.0231	0.00500	"	0.0333	ND	69.3	30-120	12.4	30
Benzo (b) fluoranthene	0.0279	0.00500	"	0.0333	ND	83.6	30-120	9.27	30
Benzo (k) fluoranthene	0.0268	0.00500	"	0.0333	ND	80.5	30-120	6.77	30
Chrysene	0.0248	0.00500	"	0.0333	ND	74.3	30-120	8.99	30
Dibenz (a,h) anthracene	0.0161	0.00500	"	0.0333	ND	48.2	30-120	9.10	30
Fluoranthene	0.0259	0.00500	"	0.0333	ND	77.7	30-120	8.22	30
Fluorene	0.0273	0.00500	"	0.0333	ND	81.8	30-120	14.6	30
Indeno (1,2,3-cd) pyrene	0.0162	0.00500	"	0.0333	ND	48.7	30-120	5.99	30
Pyrene	0.0267	0.00500	"	0.0333	ND	80.1	35-142	10.7	30
1-Methylnaphthalene	0.0280	0.00500	"	0.0333	ND	84.1	15-130	42.7	50
2-Methylnaphthalene	0.0258	0.00500	"	0.0333	ND	77.4	15-130	33.3	50
Surrogate: 2-Methylnaphthalene-d10	0.0243		"	0.0333		73.0	40-150		
Surrogate: Fluoranthene-d10	0.0256		"	0.0333		76.9	40-150		

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/09/23 13:36

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

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

**Batch BGB0163 - EPA 3050B**

**Blank (BGB0163-BLK1)**

Prepared: 02/07/23 Analyzed: 02/08/23

Boron ND 0.0100 mg/L

**LCS (BGB0163-BS1)**

Prepared: 02/07/23 Analyzed: 02/08/23

Boron 4.99 0.0100 mg/L 5.00 99.9 80-120

**Duplicate (BGB0163-DUP1)**

Source: 2302029-01

Prepared: 02/07/23 Analyzed: 02/08/23

Boron 0.0307 0.0100 mg/L 0.0891 97.5 20 QR-03

**Matrix Spike (BGB0163-MS1)**

Source: 2302029-01

Prepared: 02/07/23 Analyzed: 02/08/23

Boron 5.68 0.0100 mg/L 5.00 0.0891 112 75-125

**Matrix Spike Dup (BGB0163-MSD1)**

Source: 2302029-01

Prepared: 02/07/23 Analyzed: 02/08/23

Boron 5.65 0.0100 mg/L 5.00 0.0891 111 75-125 0.493 25

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/09/23 13:36

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BGB0204 - EPA 3050B**

**Blank (BGB0204-BLK1)**

Prepared & Analyzed: 02/08/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

**LCS (BGB0204-BS1)**

Prepared & Analyzed: 02/08/23

Arsenic	39.6	0.200	mg/kg wet	40.0	98.9	80-120
Barium	39.2	0.400	"	40.0	98.0	80-120
Cadmium	1.93	0.200	"	2.00	96.7	80-120
Copper	39.6	0.400	"	40.0	99.1	80-120
Lead	20.0	0.200	"	20.0	100	80-120
Nickel	38.4	0.400	"	40.0	96.0	80-120
Selenium	4.07	0.260	"	4.00	102	80-120
Silver	2.00	0.0200	"	2.00	100	80-120
Zinc	38.5	0.400	"	40.0	96.3	80-120

**Duplicate (BGB0204-DUP1)**

Source: 2301460-07

Prepared & Analyzed: 02/08/23

Arsenic	2.14	0.220	mg/kg dry	2.01	6.57	20
Barium	153	0.440	"	162	5.60	20
Cadmium	0.318	0.220	"	0.295	7.33	20
Copper	13.4	0.440	"	13.4	0.135	20
Lead	23.8	0.220	"	20.7	14.2	20
Nickel	4.66	0.440	"	4.81	3.09	20
Selenium	ND	0.260	"	ND		20
Silver	0.0568	0.0220	"	0.0718	23.3	20
Zinc	33.6	0.440	"	34.0	1.30	20

QR-04

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/09/23 13:36

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BGB0204 - EPA 3050B**

Matrix Spike (BGB0204-MS1)		Source: 2301460-07			Prepared & Analyzed: 02/08/23					
Arsenic	45.4	0.220	mg/kg dry	44.0	2.01	98.6	75-125			
Barium	415	0.440	"	44.0	162	575	75-125			QM-02
Cadmium	2.70	0.220	"	2.20	0.295	109	75-125			
Copper	44.3	0.440	"	44.0	13.4	70.2	75-125			QM-05
Lead	46.3	0.220	"	22.0	20.7	116	75-125			
Nickel	38.1	0.440	"	44.0	4.81	75.5	75-125			
Selenium	3.95	0.260	"	4.40	ND	89.6	75-125			
Silver	2.17	0.0220	"	2.20	0.0718	95.2	75-125			
Zinc	62.4	0.440	"	44.0	34.0	64.5	75-125			QM-05

Matrix Spike Dup (BGB0204-MSD1)		Source: 2301460-07			Prepared & Analyzed: 02/08/23					
Arsenic	45.9	0.220	mg/kg dry	44.0	2.01	99.6	75-125	1.03	25	
Barium	414	0.440	"	44.0	162	574	75-125	0.142	25	QM-02
Cadmium	2.48	0.220	"	2.20	0.295	99.3	75-125	8.38	25	
Copper	47.0	0.440	"	44.0	13.4	76.4	75-125	5.93	25	
Lead	44.7	0.220	"	22.0	20.7	109	75-125	3.38	25	
Nickel	37.5	0.440	"	44.0	4.81	74.2	75-125	1.49	25	QM-05
Selenium	4.44	0.260	"	4.40	ND	101	75-125	11.7	25	
Silver	2.25	0.0220	"	2.20	0.0718	99.1	75-125	3.84	25	
Zinc	67.7	0.440	"	44.0	34.0	76.6	75-125	8.18	25	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/09/23 13:36

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

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

**Batch BGB0142 - 3060A Mod**

**Blank (BGB0142-BLK1)**

Prepared & Analyzed: 02/06/23

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BGB0142-BS1)**

Prepared & Analyzed: 02/06/23

Chromium, Hexavalent 25.8 0.30 mg/kg wet 25.0 103 80-120

**Duplicate (BGB0142-DUP1)**

**Source: 2302057-03**

Prepared & Analyzed: 02/06/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BGB0142-MS1)**

**Source: 2302057-03**

Prepared & Analyzed: 02/06/23

Chromium, Hexavalent 30.9 0.30 mg/kg dry 29.3 ND 106 75-125

**Matrix Spike Dup (BGB0142-MSD1)**

**Source: 2302057-03**

Prepared & Analyzed: 02/06/23

Chromium, Hexavalent 35.1 0.30 mg/kg dry 29.3 ND 120 75-125 12.6 20

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

02/09/23 13:36

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

**Summit Scientific**

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

**Batch BGB0113 - General Preparation**

**Blank (BGB0113-BLK1)**

Prepared: 02/05/23 Analyzed: 02/07/23

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

**LCS (BGB0113-BS1)**

Prepared: 02/05/23 Analyzed: 02/07/23

Calcium	5.44	0.0500	mg/L wet	5.00	109	70-130
Magnesium	5.24	0.0500	"	5.00	105	70-130
Sodium	5.00	0.0500	"	5.00	100	70-130

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

02/09/23 13:36

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

#### Summit Scientific

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

#### Batch BGB0175 - General Preparation

##### Duplicate (BGB0175-DUP1)

Source: 2301422-01

Prepared & Analyzed: 02/07/23

% Solids	97.5	%	97.7	0.201	20
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Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/09/23 13:36

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

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

**Batch BGB0127 - General Preparation**

**Blank (BGB0127-BLK1)**

Prepared & Analyzed: 02/06/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BGB0127-BS1)**

Prepared & Analyzed: 02/06/23

Specific Conductance (EC) 0.148 0.0100 mmhos/cm 0.150 98.5 95-105

**Duplicate (BGB0127-DUP1)**

**Source: 2302040-01**

Prepared & Analyzed: 02/06/23

Specific Conductance (EC) 3.25 0.0100 mmhos/cm 3.30 1.65 20

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

02/09/23 13:36

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

**Summit Scientific**

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

**Batch BGB0126 - General Preparation**

**LCS (BGB0126-BS1)**

Prepared & Analyzed: 02/06/23

pH	9.10	pH Units	9.18	99.1	95-105
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**Duplicate (BGB0126-DUP1)**

**Source: 2302040-01**

Prepared & Analyzed: 02/06/23

pH	7.51	pH Units	7.48	0.400	20
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Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/09/23 13:36

### Notes and Definitions

QR-04	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
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.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference



# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

February 22, 2023

Jacob Whritenour  
Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield, CO 80020  
RE: Noble - LD19-16  
Work Order # 2302368

Enclosed are the results of analyses for samples received by Summit Scientific on 02/17/23 19:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Scott Sheely For Paul Shrewsbury  
President



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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS08@3.5'	2302368-01	Soil	02/17/23 11:27	02/17/23 19:30
SS09@3.5'	2302368-02	Soil	02/17/23 11:29	02/17/23 19:30
SS10@3.5'	2302368-03	Soil	02/17/23 11:32	02/17/23 19:30
SS11@3.5'	2302368-04	Soil	02/17/23 11:34	02/17/23 19:30
SS13@0.5'	2302368-05	Soil	02/17/23 11:36	02/17/23 19:30
SS14@0.5'	2302368-06	Soil	02/17/23 11:52	02/17/23 19:30
SS15@1.5'	2302368-07	Soil	02/17/23 12:54	02/17/23 19:30
SS16@1.5'	2302368-08	Soil	02/17/23 12:54	02/17/23 19:30
SS17@1.5'	2302368-09	Soil	02/17/23 12:55	02/17/23 19:30
FS03@2.5'	2302368-10	Soil	02/17/23 12:56	02/17/23 19:30
SS18@1'	2302368-11	Soil	02/17/23 12:58	02/17/23 19:30
SS19@1'	2302368-12	Soil	02/17/23 13:02	02/17/23 19:30
SS20@1'	2302368-13	Soil	02/17/23 13:06	02/17/23 19:30
SS21@1'	2302368-14	Soil	02/17/23 13:08	02/17/23 19:30
SS22@1'	2302368-15	Soil	02/17/23 13:11	02/17/23 19:30
SS23@1'	2302368-16	Soil	02/17/23 13:13	02/17/23 19:30
FS04@2'	2302368-17	Soil	02/17/23 13:17	02/17/23 19:30
FS05@2'	2302368-18	Soil	02/17/23 13:21	02/17/23 19:30
FS06@2.5'	2302368-19	Soil	02/17/23 15:17	02/17/23 19:30
FS08@2.5'	2302368-20	Soil	02/17/23 15:25	02/17/23 19:30
FS09@2.5'	2302368-21	Soil	02/17/23 15:26	02/17/23 19:30
FS10@2.5'	2302368-22	Soil	02/17/23 15:41	02/17/23 19:30
FS11@2.5'	2302368-23	Soil	02/17/23 15:44	02/17/23 19:30
FS13@2.5'	2302368-24	Soil	02/17/23 15:51	02/17/23 19:30
FS14@2.5'	2302368-25	Soil	02/17/23 15:52	02/17/23 19:30
FS15@2.5'	2302368-26	Soil	02/17/23 15:53	02/17/23 19:30
FS16@2.5'	2302368-27	Soil	02/17/23 15:54	02/17/23 19:30

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS24@1.5'	2302368-28	Soil	02/17/23 15:56	02/17/23 19:30
SS25@1.5'	2302368-29	Soil	02/17/23 15:58	02/17/23 19:30
SS26@1.5'	2302368-30	Soil	02/17/23 15:59	02/17/23 19:30
SS27@1.5'	2302368-31	Soil	02/17/23 16:10	02/17/23 19:30
SS28@1.5'	2302368-32	Soil	02/17/23 16:12	02/17/23 19:30
SS29@1.5'	2302368-33	Soil	02/17/23 16:30	02/17/23 19:30
SS30@1.5'	2302368-34	Soil	02/17/23 16:33	02/17/23 19:30
SS31@1.5'	2302368-35	Soil	02/17/23 16:38	02/17/23 19:30
SS32@1.5'	2302368-36	Soil	02/17/23 16:41	02/17/23 19:30
SS33@1.5'	2302368-37	Soil	02/17/23 16:48	02/17/23 19:30
SS34@1.5'	2302368-38	Soil	02/17/23 16:55	02/17/23 19:30
SS35@1.5'	2302368-39	Soil	02/17/23 17:00	02/17/23 19:30

Summit Scientific

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# SUMMIT SCIENTIFIC

4653 Table Mountain Drive  
Golden, CO 80403  
303-277-9310

Lab ID	Page 1 of 3
2302368.1	

Client: Noble / Tasman				Send Data To:				Send Invoice To:										
Address: 6855 W 119th Ave				Project Manager: JAKE WHITENOUR				Company:										
City/State/Zip: Broomfield, CO 80020				E-Mail: jwhitenour@tasman-geo.com				Project Name/Location:										
Phone: 2484109812				Project Name: LD A-16				AFE#:										
Sampler Name: SARAH QUATTROCHI				Project Number:				PO/Billing Codes:										
Contact:																		
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-q15	PAH-q15	TPH-q15	EC, SAR, pH	boreon	Metals-q15
1	SS08 @ 3.5'	2/17/23	1127	2			X			X			X	X	X	X	X	X
2	SS09 @ 3.5'		1129															
3	SS10 @ 3.5'		1132															
4	SS11 @ 3.5'		1134															
5	SS13 @ 0.5'		1136															
6	SS14 @ 0.5'		1152															
7	SS15 @ 1.5'		1254															
8	SS16 @ 1.5'		1254															
9	SS17 @ 1.5'		1255															
10	FS03 @ 2.5'		1256															
11	SS18 @ 1'		1258															
12	SS19 @ 1'		1302															
13	SS20 @ 1'		1306															
14	SS21 @ 1'		1308															
15	SS22 @ 1'		1311															
Relinquished by:		Date/Time:		Received by:		Date/Time:		TAT Business Days		Field DO		Notes:						
J. Smith		2/17/23 @ 1930		2-17-23		19:30		Same Day		X								
Relinquished by:		Date/Time:		Received by:		Date/Time:		1 Day		Field ORP								
								2 Days		Field pH								
Relinquished by:		Date/Time:		Received by:		Date/Time:		3 Days		Field Temp.								
								Standard		Field Turb.								
Temperature Upon Receipt: 7.1				Corrected Temperature				IR gun #:				HNO3 lot #:						



# SUMMIT SCIENTIFIC

4653 Table Mountain Drive  
Golden, CO 80403  
303-277-9310

Lab ID	Page 2 of 3
2302368.2	

Client: Noble/Tasman		Project Manager: JAKE WHRITENOUR		Company:	
Address: 10855 W 119th Ave		E-Mail: jwhritenour@tasman-geo.com		Project Name/Location:	
City/State/Zip: Broomfield, CO 80020		Project Name: LD 19-16		AFE#:	
Phone: 2484109812		Project Number:		PO/Billing Codes:	
Sampler Name: SARAH QUATTROCHI				Contact:	

				Preservative				Matrix				Analysis Requested						Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	VOC-q15	PAH-q15	TPH-q15	EC, SAR, pH	boron	metals-q15	
1	SS23 @ 1'	2/17/23	1313	2			X			X			X	X	X	X	X	X	
2	FS04 @ 2'		1317																
3	FS05 @ 2'		1321																
4	FS06 @ 2.5'		1517																
5	FS08 @ 2.5'		1525																
6	FS09 @ 2.5'		1526																
7	FS10 @ 2.5'		1541																
8	FS11 @ 2.5'		1544																
9	FS13 @ 2.5'		1551																
10	FS14 @ 2.5'		1552																
11	FS15 @ 2.5'		1553																
12	FS16 @ 2.5'		1554																
13	SS24 @ 1.5'		1556																
14	SS25 @ 1.5'		1558																
15	SS26 @ 1.5'		1559																

Relinquished by: JQH Lin	Date/Time: 2/17/23 9:30	Received by: [Signature]	Date/Time: 2-17-23 19:30	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 7.1	Corrected Temperature	IR gun #:	HNO3 lot #:			



# SUMMIT SCIENTIFIC

4653 Table Mountain Drive  
Golden, CO 80403  
303-277-9310

Lab ID	Page <u>3</u> of <u>3</u>
2302368.3	

Client: <u>Noble / Tasman</u>				Project Manager: <u>JAKE Whritenave</u>				Company:														
Address: <u>6855 W 119th Ave</u>				E-Mail: <u>jwhritenave@tasmangeo.com</u>				Project Name/Location:														
City/State/Zip: <u>Broomfield, CO</u>								AFE#:														
Phone: <u>2484109812</u>				Project Name: <u>LD 19-16</u>				PO/Billing Codes:														
Sampler Name: <u>SARA QUATTROCHI</u>				Project Number: <u>—</u>				Contact:														
				Preservative				Matrix				Analysis Requested				Special Instructions						
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	VOC - 915	TPH	PAH	benz	EC, SAR, pH	Metals - 915				
1	SS27 @ 1.5'	2/17/23	1610	2			X			X			X	X	X	X	X	X				
2	SS28 @ 1.5'		1612																			
3	SS29 @ 1.5'		1630																			
4	SS30 @ 1.5'		1633																			
5	SS31 @ 1.5'		1638																			
6	SS32 @ 1.5'		1641																			
7	SS33 @ 1.5'		1648																			
8	SS34 @ 1.5'		1655																			
9	SS35 @ 1.5'		1700																			
10																						
11																						
12																						
13																						
14																						
15																						

Relinquished by: <u>[Signature]</u>	Date/Time: <u>2/17/23 9:30</u>	Received by: <u>[Signature]</u>	Date/Time: <u>2-17-23 19:30</u>	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: <u>7.1</u>		Corrected Temperature		IR gun #:	HNO3 lot #:	



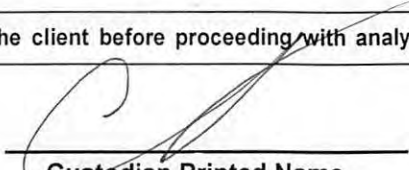
S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2302368

Client: Noble/Tasman Client Project ID: LD 19-16Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #:                     
☒ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 7.1 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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact? <sup>(1)</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	same day
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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? <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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):   				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

  
 Custodian Printed Name

2.17.23  
 Date/Time



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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS08@3.5'**  
**2302368-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 11:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 11:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		91.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		95.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.2 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 11:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 11:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		98.1 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS08@3.5'**  
**2302368-01 (Soil)**

### Summit Scientific

#### PAH by EPA Method 8270D SIM

Date Sampled: **02/17/23 11:27**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0575	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.00596</b>	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 11:27**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		48.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.4 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 11:27**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.133</b>	0.0100		mg/L	1	BGB0588	02/20/23	02/21/23	EPA 6020B	

#### Total Metals by EPA 6020B

Date Sampled: **02/17/23 11:27**

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

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS08@3.5'**  
**2302368-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.15	0.254	0.214	mg/kg dry	1	BGB0589	02/20/23	02/21/23	EPA 6020B	
Barium	382	0.509	0.402	"	"	"	"	"	"	
Cadmium	0.250	0.254	0.00915	"	"	"	"	"	"	
Copper	7.37	0.509	0.0266	"	"	"	"	"	"	
Lead	10.8	0.254	0.0699	"	"	"	"	"	"	
Nickel	6.21	0.509	0.0775	"	"	"	"	"	"	
Selenium	1.20	0.260	0.175	"	"	"	"	"	"	
Silver	0.0221	0.0254	0.00339	"	"	"	"	"	"	
Zinc	23.5	0.509	0.338	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 02/17/23 11:27

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: 02/17/23 11:27

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	62.8	0.0636		mg/L dry	1	BGB0570	02/19/23	02/20/23	EPA 6020B	
Magnesium	9.82	0.0636		"	"	"	"	"	"	
Sodium	44.1	0.0636		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 02/17/23 11:27

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.37	0.00100		units	1	BGB0643	02/21/23	02/21/23	Calculation	

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

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS08@3.5'**  
**2302368-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 11:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	78.7			%	1	BGB0600	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 11:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.855	0.0100		mmhos/cm	1	BGB0608	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 11:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.42			pH Units	1	BGB0609	02/20/23	02/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS09@3.5'**  
**2302368-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 11:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.015</b>	0.010		"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>0.0070</b>	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 11:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		93.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 11:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>930</b>	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
<b>C28-C36 (ORO)</b>	<b>150</b>	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 11:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		131 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS09@3.5'**  
**2302368-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 11:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0575	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.0493</b>	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.132</b>	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.0134</b>	0.00500		"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.303</b>	0.00500		"	"	"	"	"	"	E
<b>2-Methylnaphthalene</b>	<b>0.0938</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 11:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		62.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		74.8 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 11:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0881</b>	0.0100		mg/L	1	BGB0588	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 11:29**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS09@3.5'**  
**2302368-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.68	0.214	0.180	mg/kg dry	1	BGB0589	02/20/23	02/21/23	EPA 6020B	
Barium	345	0.428	0.338	"	"	"	"	"	"	
Cadmium	0.174	0.214	0.00771	"	"	"	"	"	"	
Copper	5.55	0.428	0.0224	"	"	"	"	"	"	
Lead	7.65	0.214	0.0588	"	"	"	"	"	"	
Nickel	5.10	0.428	0.0653	"	"	"	"	"	"	
Selenium	1.28	0.260	0.175	"	"	"	"	"	"	
Silver	0.0143	0.0214	0.00286	"	"	"	"	"	"	
Zinc	20.0	0.428	0.285	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 11:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 11:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	69.8	0.0535		mg/L dry	1	BGB0570	02/19/23	02/20/23	EPA 6020B	
Magnesium	12.9	0.0535		"	"	"	"	"	"	
Sodium	69.3	0.0535		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 11:29**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.00	0.00100		units	1	BGB0643	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS09@3.5'**  
**2302368-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 11:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	93.4			%	1	BGB0600	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 11:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.38	0.0100		mmhos/cm	1	BGB0608	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 11:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.62			pH Units	1	BGB0609	02/20/23	02/20/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS10@3.5'**  
**2302368-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 11:32**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	<b>0.0050</b>	0.0050		"	"	"	"	"	"	
Xylenes (total)	<b>0.015</b>	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 11:32**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		93.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 11:32**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	<b>460</b>	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	<b>150</b>	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 11:32**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		42.2 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS10@3.5'**  
**2302368-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 11:32**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0575	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.0510</b>	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.147</b>	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.0197</b>	0.00500		"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.314</b>	0.00500		"	"	"	"	"	"	E
<b>2-Methylnaphthalene</b>	<b>0.101</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 11:32**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		52.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		54.7 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 11:32**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0900</b>	0.0100		mg/L	1	BGB0588	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 11:32**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS10@3.5'**  
**2302368-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.70	0.216	0.182	mg/kg dry	1	BGB0589	02/20/23	02/21/23	EPA 6020B	
Barium	386	0.432	0.341	"	"	"	"	"	"	
Cadmium	0.190	0.216	0.00778	"	"	"	"	"	"	
Copper	6.11	0.432	0.0226	"	"	"	"	"	"	
Lead	9.01	0.216	0.0593	"	"	"	"	"	"	
Nickel	5.59	0.432	0.0659	"	"	"	"	"	"	
Selenium	1.06	0.260	0.175	"	"	"	"	"	"	
Silver	0.0167	0.0216	0.00288	"	"	"	"	"	"	
Zinc	21.8	0.432	0.287	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 11:32**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 11:32**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	70.4	0.0540		mg/L dry	1	BGB0570	02/19/23	02/20/23	EPA 6020B	
Magnesium	14.4	0.0540		"	"	"	"	"	"	
Sodium	79.4	0.0540		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 11:32**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.25	0.00100		units	1	BGB0643	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS10@3.5'**  
**2302368-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 11:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	92.6			%	1	BGB0600	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 11:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.37	0.0100		mmhos/cm	1	BGB0608	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 11:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.66			pH Units	1	BGB0609	02/20/23	02/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS11@3.5'**  
**2302368-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 11:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 11:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		100 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 11:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 11:34**

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

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS11@3.5'**  
**2302368-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 11:34**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0575	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.0118</b>	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.0317</b>	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.0603</b>	0.00500		"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.0320</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 11:34**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		50.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		63.4 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 11:34**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.158</b>	0.0100		mg/L	1	BGB0588	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 11:34**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS11@3.5'**  
**2302368-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.73	0.238	0.200	mg/kg dry	1	BGB0589	02/20/23	02/21/23	EPA 6020B	
Barium	335	0.475	0.375	"	"	"	"	"	"	
Cadmium	0.245	0.238	0.00855	"	"	"	"	"	"	
Copper	6.83	0.475	0.0248	"	"	"	"	"	"	
Lead	10.8	0.238	0.0653	"	"	"	"	"	"	
Nickel	5.98	0.475	0.0724	"	"	"	"	"	"	
Selenium	1.24	0.260	0.175	"	"	"	"	"	"	
Silver	0.0199	0.0238	0.00317	"	"	"	"	"	"	
Zinc	24.3	0.475	0.316	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 02/17/23 11:34

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: 02/17/23 11:34

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	70.6	0.0594		mg/L dry	1	BGB0570	02/19/23	02/20/23	EPA 6020B	
Magnesium	13.1	0.0594		"	"	"	"	"	"	
Sodium	66.5	0.0594		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 02/17/23 11:34

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.91	0.00100		units	1	BGB0643	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS11@3.5'**  
**2302368-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 11:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.2			%	1	BGB0600	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 11:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.17	0.0100		mmhos/cm	1	BGB0608	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 11:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.64			pH Units	1	BGB0609	02/20/23	02/20/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS13@0.5'**  
**2302368-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 11:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 11:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		90.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		93.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.9 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 11:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 11:36**

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

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS13@0.5'**  
**2302368-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0575	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		44.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		52.8 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0460</b>	0.0100		mg/L	1	BGB0588	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 11:36**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS13@0.5'**  
**2302368-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.11	0.241	0.203	mg/kg dry	1	BGB0589	02/20/23	02/21/23	EPA 6020B
Barium	190	0.482	0.381	"	"	"	"	"	"
Cadmium	0.0541	0.241	0.00868	"	"	"	"	"	"
Copper	3.04	0.482	0.0252	"	"	"	"	"	"
Lead	4.35	0.241	0.0663	"	"	"	"	"	"
Nickel	3.47	0.482	0.0735	"	"	"	"	"	"
Selenium	0.635	0.260	0.175	"	"	"	"	"	"
Silver	0.0117	0.0241	0.00322	"	"	"	"	"	"
Zinc	12.6	0.482	0.321	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	40.0	0.0603		mg/L dry	1	BGB0570	02/19/23	02/20/23	EPA 6020B	
Magnesium	4.85	0.0603		"	"	"	"	"	"	
Sodium	12.0	0.0603		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 11:36**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.477	0.00100		units	1	BGB0643	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS13@0.5'**  
**2302368-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 11:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	82.9			%	1	BGB0600	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 11:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.234	0.0100		mmhos/cm	1	BGB0608	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 11:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.88			pH Units	1	BGB0609	02/20/23	02/20/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS14@0.5'**  
**2302368-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 11:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 11:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		87.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		95.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.3 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 11:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 11:52**

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

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS14@0.5'**  
**2302368-06 (Soil)**

### Summit Scientific

#### PAH by EPA Method 8270D SIM

Date Sampled: **02/17/23 11:52**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0575	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.00917</b>	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 11:52**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		51.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		59.8 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 11:52**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.147</b>	0.0100		mg/L	1	BGB0588	02/20/23	02/21/23	EPA 6020B	

#### Total Metals by EPA 6020B

Date Sampled: **02/17/23 11:52**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS14@0.5'**  
**2302368-06 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.04	0.229	0.193	mg/kg dry	1	BGB0589	02/20/23	02/21/23	EPA 6020B	
Barium	264	0.458	0.362	"	"	"	"	"	"	
Cadmium	0.0826	0.229	0.00825	"	"	"	"	"	"	
Copper	4.16	0.458	0.0239	"	"	"	"	"	"	
Lead	4.99	0.229	0.0630	"	"	"	"	"	"	
Nickel	4.27	0.458	0.0699	"	"	"	"	"	"	
Selenium	0.894	0.260	0.175	"	"	"	"	"	"	
Silver	0.0156	0.0229	0.00306	"	"	"	"	"	"	
Zinc	16.8	0.458	0.305	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 11:52**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 11:52**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	55.2	0.0573		mg/L dry	1	BGB0570	02/19/23	02/20/23	EPA 6020B	
Magnesium	5.59	0.0573		"	"	"	"	"	"	
Sodium	17.7	0.0573		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 11:52**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.607	0.00100		units	1	BGB0643	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS14@0.5'**  
**2302368-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 11:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	87.3			%	1	BGB0600	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 11:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.273	0.0100		mmhos/cm	1	BGB0608	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 11:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.02			pH Units	1	BGB0609	02/20/23	02/20/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS15@1.5'**  
**2302368-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		93.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.4 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		121 %		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 - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS15@1.5'**  
**2302368-07 (Soil)**

### Summit Scientific

#### PAH by EPA Method 8270D SIM

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0575	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		40.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		64.8 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.119</b>	0.0100		mg/L	1	BGB0588	02/20/23	02/21/23	EPA 6020B	

#### Total Metals by EPA 6020B

Date Sampled: **02/17/23 12:54**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS15@1.5'**  
**2302368-07 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.36	0.255	0.215	mg/kg dry	1	BGB0589	02/20/23	02/21/23	EPA 6020B	
Barium	739	0.510	0.403	"	"	"	"	"	"	
Cadmium	0.176	0.255	0.00918	"	"	"	"	"	"	
Copper	7.27	0.510	0.0267	"	"	"	"	"	"	
Lead	8.47	0.255	0.0701	"	"	"	"	"	"	
Nickel	7.08	0.510	0.0778	"	"	"	"	"	"	
Selenium	1.27	0.260	0.175	"	"	"	"	"	"	
Silver	0.0361	0.0255	0.00340	"	"	"	"	"	"	
Zinc	27.3	0.510	0.339	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	78.6	0.0638		mg/L dry	1	BGB0570	02/19/23	02/20/23	EPA 6020B	
Magnesium	7.82	0.0638		"	"	"	"	"	"	
Sodium	50.7	0.0638		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.46	0.00100		units	1	BGB0643	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS15@1.5'**  
**2302368-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	78.4			%	1	BGB0600	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.526	0.0100		mmhos/cm	1	BGB0608	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.91			pH Units	1	BGB0609	02/20/23	02/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS16@1.5'**  
**2302368-08 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	<b>0.0068</b>	0.0050		"	"	"	"	"	"	
Xylenes (total)	<b>0.020</b>	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	<b>0.0080</b>	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		87.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.7 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		121 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS16@1.5'**  
**2302368-08 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0575	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.00738</b>	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.0187</b>	0.00500		"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.0152</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		57.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		80.4 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.101</b>	0.0100		mg/L	1	BGB0588	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 12:54**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS16@1.5'**  
**2302368-08 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	2.55	0.271	0.228	mg/kg dry	1	BGB0589	02/20/23	02/21/23	EPA 6020B
Barium	268	0.542	0.428	"	"	"	"	"	"
Cadmium	0.187	0.271	0.00975	"	"	"	"	"	"
Copper	6.28	0.542	0.0283	"	"	"	"	"	"
Lead	11.4	0.271	0.0744	"	"	"	"	"	"
Nickel	5.45	0.542	0.0826	"	"	"	"	"	"
Selenium	0.862	0.260	0.175	"	"	"	"	"	"
Silver	0.0185	0.0271	0.00362	"	"	"	"	"	"
Zinc	24.4	0.542	0.360	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	76.0	0.0677		mg/L dry	1	BGB0570	02/19/23	02/20/23	EPA 6020B	
Magnesium	12.6	0.0677		"	"	"	"	"	"	
Sodium	58.9	0.0677		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.65	0.00100		units	1	BGB0643	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS16@1.5'**  
**2302368-08 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	73.8			%	1	BGB0600	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.858	0.0100		mmhos/cm	1	BGB0608	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 12:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.71			pH Units	1	BGB0609	02/20/23	02/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS17@1.5'**  
**2302368-09 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		96.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		94.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.8 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		118 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS17@1.5'**  
**2302368-09 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BGB0575	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		53.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		50.1 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.111	0.0100		mg/L	1	BGB0588	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 12:55**

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

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS17@1.5'**  
**2302368-09 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.73	0.233	0.197	mg/kg dry	1	BGB0589	02/20/23	02/21/23	EPA 6020B
Barium	319	0.467	0.369	"	"	"	"	"	"
Cadmium	0.0853	0.233	0.00840	"	"	"	"	"	"
Copper	3.98	0.467	0.0244	"	"	"	"	"	"
Lead	5.52	0.233	0.0641	"	"	"	"	"	"
Nickel	4.50	0.467	0.0712	"	"	"	"	"	"
Selenium	0.971	0.260	0.175	"	"	"	"	"	"
Silver	0.0175	0.0233	0.00312	"	"	"	"	"	"
Zinc	17.0	0.467	0.310	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 12:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 12:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	36.0	0.0584		mg/L dry	1	BGB0570	02/19/23	02/20/23	EPA 6020B	
Magnesium	6.57	0.0584		"	"	"	"	"	"	
Sodium	7.81	0.0584		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 12:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.314	0.00100		units	1	BGB0643	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS17@1.5'**  
**2302368-09 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	85.7			%	1	BGB0600	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.341	0.0100		mmhos/cm	1	BGB0608	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.85			pH Units	1	BGB0609	02/20/23	02/20/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS03@2.5'**  
**2302368-10 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 12:56**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	<b>0.017</b>	0.0050		"	"	"	"	"	"	
Xylenes (total)	<b>0.063</b>	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	<b>0.033</b>	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	<b>0.0085</b>	0.0050		"	"	"	"	"	"	
Naphthalene	<b>0.015</b>	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	<b>1.1</b>	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 12:56**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		92.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.6 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 12:56**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 12:56**

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

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS03@2.5'**  
**2302368-10 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 12:56**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0575	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.00863</b>	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.0344</b>	0.00500		"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.0214</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 12:56**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		56.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		69.4 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 12:56**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.114</b>	0.0100		mg/L	1	BGB0588	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 12:56**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS03@2.5'**  
**2302368-10 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.10	0.258	0.217	mg/kg dry	1	BGB0589	02/20/23	02/21/23	EPA 6020B	
Barium	303	0.516	0.407	"	"	"	"	"	"	
Cadmium	0.223	0.258	0.00928	"	"	"	"	"	"	
Copper	7.52	0.516	0.0270	"	"	"	"	"	"	
Lead	9.59	0.258	0.0709	"	"	"	"	"	"	
Nickel	6.82	0.516	0.0787	"	"	"	"	"	"	
Selenium	1.25	0.260	0.175	"	"	"	"	"	"	
Silver	0.0182	0.0258	0.00344	"	"	"	"	"	"	
Zinc	28.8	0.516	0.343	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 02/17/23 12:56

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: 02/17/23 12:56

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	95.8	0.0645		mg/L dry	1	BGB0570	02/19/23	02/20/23	EPA 6020B	
Magnesium	11.0	0.0645		"	"	"	"	"	"	
Sodium	53.5	0.0645		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 02/17/23 12:56

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.38	0.00100		units	1	BGB0643	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS03@2.5'**  
**2302368-10 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 12:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	77.6			%	1	BGB0600	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 12:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.687	0.0100		mmhos/cm	1	BGB0608	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 12:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.77			pH Units	1	BGB0609	02/20/23	02/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS18@1'**  
**2302368-11 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 12:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 12:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		83.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		92.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.1 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 12:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 12:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		118 %		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 - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS18@1'**  
**2302368-11 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 12:58**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0575	02/20/23	02/22/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 12:58**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		44.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		66.9 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 12:58**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.202</b>	0.0100		mg/L	1	BGB0603	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 12:58**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS18@1'**  
**2302368-11 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	2.49	0.259	0.218	mg/kg dry	1	BGB0589	02/20/23	02/21/23	EPA 6020B
Barium	533	0.519	0.410	"	"	"	"	"	"
Cadmium	0.143	0.259	0.00933	"	"	"	"	"	"
Copper	5.75	0.519	0.0271	"	"	"	"	"	"
Lead	7.00	0.259	0.0712	"	"	"	"	"	"
Nickel	5.52	0.519	0.0791	"	"	"	"	"	"
Selenium	0.955	0.260	0.175	"	"	"	"	"	"
Silver	0.0244	0.0259	0.00346	"	"	"	"	"	"
Zinc	22.0	0.519	0.345	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 12:58**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 12:58**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	113	0.0648		mg/L dry	1	BGB0570	02/19/23	02/20/23	EPA 6020B	
Magnesium	9.47	0.0648		"	"	"	"	"	"	
Sodium	23.6	0.0648		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 12:58**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.573	0.00100		units	1	BGB0643	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS18@1'**  
**2302368-11 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 12:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	77.1			%	1	BGB0600	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 12:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.279	0.0100		mmhos/cm	1	BGB0608	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 12:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.00			pH Units	1	BGB0609	02/20/23	02/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS19@1'**  
**2302368-12 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 13:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		90.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.2 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 13:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		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 - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS19@1'**  
**2302368-12 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 13:02**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0575	02/20/23	02/22/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:02**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		50.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		75.1 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 13:02**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.113</b>	0.0100		mg/L	1	BGB0603	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 13:02**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS19@1'**  
**2302368-12 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.16	0.239	0.202	mg/kg dry	1	BGB0589	02/20/23	02/21/23	EPA 6020B	
Barium	138	0.478	0.378	"	"	"	"	"	"	
Cadmium	0.0965	0.239	0.00861	"	"	"	"	"	"	
Copper	4.87	0.478	0.0250	"	"	"	"	"	"	
Lead	5.24	0.239	0.0657	"	"	"	"	"	"	
Nickel	5.30	0.478	0.0730	"	"	"	"	"	"	
Selenium	0.869	0.260	0.175	"	"	"	"	"	"	
Silver	0.0178	0.0239	0.00319	"	"	"	"	"	"	
Zinc	24.4	0.478	0.318	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 02/17/23 13:02

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: 02/17/23 13:02

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	29.8	0.0598		mg/L dry	1	BGB0570	02/19/23	02/20/23	EPA 6020B	
Magnesium	5.85	0.0598		"	"	"	"	"	"	
Sodium	7.17	0.0598		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 02/17/23 13:02

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.314	0.00100		units	1	BGB0643	02/21/23	02/21/23	Calculation	

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

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS19@1'**  
**2302368-12 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 13:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.6			%	1	BGB0600	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 13:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.296	0.0100		mmhos/cm	1	BGB0608	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 13:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.84			pH Units	1	BGB0609	02/20/23	02/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS20@1'**  
**2302368-13 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 13:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		90.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		94.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 13:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		118 %		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 - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS20@1'**  
**2302368-13 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 13:06**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0575	02/20/23	02/22/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.00594</b>	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.0108</b>	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.00737</b>	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:06**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		54.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		73.4 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 13:06**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.177</b>	0.0100		mg/L	1	BGB0603	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 13:06**

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

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS20@1'**  
**2302368-13 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	3.10	0.233	0.196	mg/kg dry	1	BGB0589	02/20/23	02/21/23	EPA 6020B
Barium	385	0.465	0.368	"	"	"	"	"	"
Cadmium	0.124	0.233	0.00838	"	"	"	"	"	"
Copper	5.25	0.465	0.0243	"	"	"	"	"	"
Lead	6.10	0.233	0.0640	"	"	"	"	"	"
Nickel	5.29	0.465	0.0710	"	"	"	"	"	"
Selenium	1.65	0.260	0.175	"	"	"	"	"	"
Silver	0.0242	0.0233	0.00311	"	"	"	"	"	"
Zinc	20.3	0.465	0.310	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 13:06**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 13:06**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	36.1	0.0582		mg/L dry	1	BGB0570	02/19/23	02/20/23	EPA 6020B	
Magnesium	6.21	0.0582		"	"	"	"	"	"	
Sodium	30.1	0.0582		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 13:06**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.22	0.00100		units	1	BGB0643	02/21/23	02/21/23	Calculation	

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

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS20@1'**  
**2302368-13 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 13:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	85.9			%	1	BGB0600	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 13:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.392	0.0100		mmhos/cm	1	BGB0608	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 13:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.89			pH Units	1	BGB0609	02/20/23	02/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS21@1'**  
**2302368-14 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 13:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		84.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		94.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.9 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 13:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		115 %		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 - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS21@1'**  
**2302368-14 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 13:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0575	02/20/23	02/22/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		58.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		72.1 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 13:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.248</b>	0.0100		mg/L	1	BGB0603	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 13:08**

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

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS21@1'**  
**2302368-14 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.29	0.231	0.195	mg/kg dry	1	BGB0589	02/20/23	02/21/23	EPA 6020B	
Barium	327	0.463	0.365	"	"	"	"	"	"	
Cadmium	0.129	0.231	0.00833	"	"	"	"	"	"	
Copper	4.61	0.463	0.0242	"	"	"	"	"	"	
Lead	5.87	0.231	0.0636	"	"	"	"	"	"	
Nickel	4.72	0.463	0.0705	"	"	"	"	"	"	
Selenium	0.858	0.260	0.175	"	"	"	"	"	"	
Silver	0.0208	0.0231	0.00309	"	"	"	"	"	"	
Zinc	18.5	0.463	0.308	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 13:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 13:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	34.8	0.0578		mg/L dry	1	BGB0570	02/19/23	02/20/23	EPA 6020B	
Magnesium	7.76	0.0578		"	"	"	"	"	"	
Sodium	39.9	0.0578		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 13:08**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.59	0.00100		units	1	BGB0643	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS21@1'**  
**2302368-14 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 13:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	86.5			%	1	BGB0600	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 13:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.606	0.0100		mmhos/cm	1	BGB0608	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 13:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.85			pH Units	1	BGB0609	02/20/23	02/20/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS22@1'**  
**2302368-15 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 13:11**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:11**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		92.3 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		95.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.8 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 13:11**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	52	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:11**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		111 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS22@1'**  
**2302368-15 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 13:11**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0575	02/20/23	02/22/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:11**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		44.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		70.8 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 13:11**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0960</b>	0.0100		mg/L	1	BGB0603	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 13:11**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS22@1'**  
**2302368-15 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.44	0.215	0.181	mg/kg dry	1	BGB0589	02/20/23	02/21/23	EPA 6020B	
Barium	366	0.431	0.340	"	"	"	"	"	"	
Cadmium	0.156	0.215	0.00775	"	"	"	"	"	"	
Copper	5.55	0.431	0.0225	"	"	"	"	"	"	
Lead	7.08	0.215	0.0592	"	"	"	"	"	"	
Nickel	5.78	0.431	0.0657	"	"	"	"	"	"	
Selenium	1.20	0.260	0.175	"	"	"	"	"	"	
Silver	0.0255	0.0215	0.00287	"	"	"	"	"	"	
Zinc	21.4	0.431	0.286	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 02/17/23 13:11

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: 02/17/23 13:11

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	41.0	0.0538		mg/L dry	1	BGB0570	02/19/23	02/20/23	EPA 6020B	
Magnesium	6.07	0.0538		"	"	"	"	"	"	
Sodium	24.0	0.0538		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 02/17/23 13:11

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.925	0.00100		units	1	BGB0643	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS22@1'**  
**2302368-15 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 13:11**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	92.9			%	1	BGB0600	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 13:11**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.417	0.0100		mmhos/cm	1	BGB0608	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 13:11**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.84			pH Units	1	BGB0609	02/20/23	02/20/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS23@1'**  
**2302368-16 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 13:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		90.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		94.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.3 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 13:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		124 %		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 - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS23@1'**  
**2302368-16 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 13:13**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0575	02/20/23	02/22/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:13**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		45.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		63.0 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 13:13**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.186</b>	0.0100		mg/L	1	BGB0603	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 13:13**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS23@1'**  
**2302368-16 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.08	0.240	0.202	mg/kg dry	1	BGB0589	02/20/23	02/21/23	EPA 6020B	
Barium	272	0.480	0.380	"	"	"	"	"	"	
Cadmium	0.123	0.240	0.00865	"	"	"	"	"	"	
Copper	5.02	0.480	0.0251	"	"	"	"	"	"	
Lead	7.10	0.240	0.0660	"	"	"	"	"	"	
Nickel	5.19	0.480	0.0733	"	"	"	"	"	"	
Selenium	0.969	0.260	0.175	"	"	"	"	"	"	
Silver	0.0254	0.0240	0.00321	"	"	"	"	"	"	
Zinc	19.9	0.480	0.320	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 02/17/23 13:13

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: 02/17/23 13:13

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	35.6	0.0601		mg/L dry	1	BGB0570	02/19/23	02/20/23	EPA 6020B	
Magnesium	5.15	0.0601		"	"	"	"	"	"	
Sodium	25.9	0.0601		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 02/17/23 13:13

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.07	0.00100		units	1	BGB0643	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS23@1'**  
**2302368-16 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 13:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.2			%	1	BGB0600	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 13:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.358	0.0100		mmhos/cm	1	BGB0608	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 13:13**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.92			pH Units	1	BGB0609	02/20/23	02/20/23	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS04@2'**  
**2302368-17 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 13:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/18/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		88.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 13:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:17**

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

**PAH by EPA Method 8270D SIM**

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6855 W. 119th Ave.  
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Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS04@2'**  
**2302368-17 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 13:17**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0575	02/20/23	02/22/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.00788</b>	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.0191</b>	0.00500		"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.0152</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:17**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		50.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.5 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 13:17**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.120</b>	0.0100		mg/L	1	BGB0603	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 13:17**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS04@2'**  
**2302368-17 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.84	0.261	0.220	mg/kg dry	1	BGB0589	02/20/23	02/21/23	EPA 6020B	
Barium	566	0.521	0.412	"	"	"	"	"	"	
Cadmium	0.154	0.261	0.00938	"	"	"	"	"	"	
Copper	6.07	0.521	0.0272	"	"	"	"	"	"	
Lead	7.31	0.261	0.0716	"	"	"	"	"	"	
Nickel	5.89	0.521	0.0795	"	"	"	"	"	"	
Selenium	1.06	0.260	0.175	"	"	"	"	"	"	
Silver	0.0254	0.0261	0.00348	"	"	"	"	"	"	
Zinc	22.8	0.521	0.347	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 02/17/23 13:17

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: 02/17/23 13:17

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	47.1	0.0651		mg/L dry	1	BGB0570	02/19/23	02/20/23	EPA 6020B	
Magnesium	8.58	0.0651		"	"	"	"	"	"	
Sodium	47.9	0.0651		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 02/17/23 13:17

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.69	0.00100		units	1	BGB0643	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS04@2'**  
**2302368-17 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 13:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	76.8			%	1	BGB0600	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 13:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.354	0.0100		mmhos/cm	1	BGB0608	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 13:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.84			pH Units	1	BGB0609	02/20/23	02/20/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS05@2'**  
**2302368-18 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 13:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/18/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		81.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		99.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 13:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		110 %		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 - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS05@2'**  
**2302368-18 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 13:21**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0575	02/20/23	02/22/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 13:21**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		49.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		66.5 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 13:21**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.134</b>	0.0100		mg/L	1	BGB0603	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 13:21**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS05@2'**  
**2302368-18 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.51	0.269	0.227	mg/kg dry	1	BGB0589	02/20/23	02/21/23	EPA 6020B	
Barium	374	0.538	0.425	"	"	"	"	"	"	
Cadmium	0.219	0.269	0.00968	"	"	"	"	"	"	
Copper	7.45	0.538	0.0281	"	"	"	"	"	"	
Lead	11.7	0.269	0.0739	"	"	"	"	"	"	
Nickel	6.81	0.538	0.0820	"	"	"	"	"	"	
Selenium	1.23	0.260	0.175	"	"	"	"	"	"	
Silver	0.0219	0.0269	0.00359	"	"	"	"	"	"	
Zinc	29.2	0.538	0.358	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 02/17/23 13:21

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: 02/17/23 13:21

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	78.0	0.0672		mg/L dry	1	BGB0570	02/19/23	02/20/23	EPA 6020B	
Magnesium	15.5	0.0672		"	"	"	"	"	"	
Sodium	71.1	0.0672		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 02/17/23 13:21

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.92	0.00100		units	1	BGB0643	02/21/23	02/21/23	Calculation	

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

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS05@2'**  
**2302368-18 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 13:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	74.4			%	1	BGB0600	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 13:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.15	0.0100		mmhos/cm	1	BGB0608	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 13:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.67			pH Units	1	BGB0609	02/20/23	02/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS06@2.5'**  
**2302368-19 (Soil)**

### Summit Scientific

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

Date Sampled: **02/17/23 15:17**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/18/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:17**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.3 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.3 %		50-150		"	"	"	"	

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/17/23 15:17**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	100	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:17**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		121 %		30-150		"	"	"	"	

#### PAH by EPA Method 8270D SIM

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS06@2.5'**  
**2302368-19 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 15:17**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0575	02/20/23	02/22/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.0125</b>	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.0335</b>	0.00500		"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.0211</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:17**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		49.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		57.1 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 15:17**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.115</b>	0.0100		mg/L	1	BGB0603	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 15:17**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS06@2.5'**  
**2302368-19 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.03	0.229	0.193	mg/kg dry	1	BGB0589	02/20/23	02/21/23	EPA 6020B	
Barium	343	0.458	0.362	"	"	"	"	"	"	
Cadmium	0.134	0.229	0.00825	"	"	"	"	"	"	
Copper	6.11	0.458	0.0240	"	"	"	"	"	"	
Lead	7.91	0.229	0.0630	"	"	"	"	"	"	
Nickel	5.88	0.458	0.0699	"	"	"	"	"	"	
Selenium	1.09	0.260	0.175	"	"	"	"	"	"	
Silver	0.0266	0.0229	0.00306	"	"	"	"	"	"	
Zinc	24.5	0.458	0.305	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 02/17/23 15:17

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: 02/17/23 15:17

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	35.5	0.0573		mg/L dry	1	BGB0570	02/19/23	02/20/23	EPA 6020B	
Magnesium	7.07	0.0573		"	"	"	"	"	"	
Sodium	41.9	0.0573		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 02/17/23 15:17

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.68	0.00100		units	1	BGB0643	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS06@2.5'**  
**2302368-19 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	87.3			%	1	BGB0600	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 15:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.637	0.0100		mmhos/cm	1	BGB0608	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 15:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.83			pH Units	1	BGB0609	02/20/23	02/20/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS08@2.5'**  
**2302368-20 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/18/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		92.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 15:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		118 %		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 - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS08@2.5'**  
**2302368-20 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 15:25**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0575	02/20/23	02/22/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:25**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		41.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		52.7 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 15:25**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.145</b>	0.0100		mg/L	1	BGB0603	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 15:25**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS08@2.5'**  
**2302368-20 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.20	0.239	0.202	mg/kg dry	1	BGB0589	02/20/23	02/21/23	EPA 6020B	
Barium	267	0.479	0.378	"	"	"	"	"	"	
Cadmium	0.211	0.239	0.00862	"	"	"	"	"	"	
Copper	5.78	0.479	0.0250	"	"	"	"	"	"	
Lead	10.7	0.239	0.0658	"	"	"	"	"	"	
Nickel	5.12	0.479	0.0730	"	"	"	"	"	"	
Selenium	1.10	0.260	0.175	"	"	"	"	"	"	
Silver	0.0280	0.0239	0.00320	"	"	"	"	"	"	
Zinc	21.0	0.479	0.318	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 02/17/23 15:25

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: 02/17/23 15:25

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	107	0.0599		mg/L dry	1	BGB0570	02/19/23	02/20/23	EPA 6020B	
Magnesium	8.09	0.0599		"	"	"	"	"	"	
Sodium	19.0	0.0599		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 02/17/23 15:25

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.477	0.00100		units	1	BGB0643	02/21/23	02/21/23	Calculation	

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

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS08@2.5'**  
**2302368-20 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.5			%	1	BGB0600	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 15:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.523	0.0100		mmhos/cm	1	BGB0608	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 15:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.68			pH Units	1	BGB0609	02/20/23	02/20/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS09@2.5'**  
**2302368-21 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		83.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		99.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 15:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:26**

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

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS09@2.5'**  
**2302368-21 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 15:26**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0576	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.00942</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:26**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		43.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		64.2 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 15:26**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.205</b>	0.0100		mg/L	1	BGB0603	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 15:26**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS09@2.5'**  
**2302368-21 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.70	0.260	0.219	mg/kg dry	1	BGB0590	02/20/23	02/21/23	EPA 6020B	
Barium	315	0.520	0.411	"	"	"	"	"	"	
Cadmium	0.237	0.260	0.00936	"	"	"	"	"	"	
Copper	7.11	0.520	0.0272	"	"	"	"	"	"	
Lead	12.2	0.260	0.0715	"	"	"	"	"	"	
Nickel	6.41	0.520	0.0793	"	"	"	"	"	"	
Selenium	1.05	0.260	0.175	"	"	"	"	"	"	
Silver	0.0207	0.0260	0.00347	"	"	"	"	"	"	
Zinc	27.2	0.520	0.346	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 02/17/23 15:26

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: 02/17/23 15:26

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	332	0.0650		mg/L dry	1	BGB0571	02/19/23	02/21/23	EPA 6020B	
Magnesium	10.8	0.0650		"	"	"	"	"	"	
Sodium	45.3	0.0650		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 02/17/23 15:26

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.667	0.00100		units	1	BGB0664	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS09@2.5'**  
**2302368-21 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	76.9			%	1	BGB0601	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 15:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.505	0.0100		mmhos/cm	1	BGB0614	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 15:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.95			pH Units	1	BGB0613	02/20/23	02/20/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS10@2.5'**  
**2302368-22 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		84.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.9 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 15:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:41**

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

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS10@2.5'**  
**2302368-22 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 15:41**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0576	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.0116</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:41**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		45.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		54.0 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 15:41**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.233</b>	0.0100		mg/L	1	BGB0603	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 15:41**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS10@2.5'**  
**2302368-22 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.51	0.249	0.209	mg/kg dry	1	BGB0590	02/20/23	02/21/23	EPA 6020B	
Barium	376	0.497	0.393	"	"	"	"	"	"	
Cadmium	0.255	0.249	0.00895	"	"	"	"	"	"	
Copper	8.28	0.497	0.0260	"	"	"	"	"	"	
Lead	12.5	0.249	0.0683	"	"	"	"	"	"	
Nickel	6.72	0.497	0.0758	"	"	"	"	"	"	
Selenium	1.40	0.260	0.175	"	"	"	"	"	"	
Silver	0.0271	0.0249	0.00332	"	"	"	"	"	"	
Zinc	26.2	0.497	0.331	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 02/17/23 15:41

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: 02/17/23 15:41

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	145	0.0621		mg/L dry	1	BGB0571	02/19/23	02/21/23	EPA 6020B	
Magnesium	8.08	0.0621		"	"	"	"	"	"	
Sodium	29.8	0.0621		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 02/17/23 15:41

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.652	0.00100		units	1	BGB0664	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS10@2.5'**  
**2302368-22 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	80.5			%	1	BGB0601	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 15:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.615	0.0100		mmhos/cm	1	BGB0614	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 15:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.62			pH Units	1	BGB0613	02/20/23	02/20/23	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS11@2.5'**  
**2302368-23 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		81.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 15:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:44**

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

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS11@2.5'**  
**2302368-23 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 15:44**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0576	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.0114</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:44**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		54.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		57.1 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 15:44**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.214</b>	0.0100		mg/L	1	BGB0603	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 15:44**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS11@2.5'**  
**2302368-23 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.94	0.250	0.211	mg/kg dry	1	BGB0590	02/20/23	02/21/23	EPA 6020B	
Barium	377	0.500	0.395	"	"	"	"	"	"	
Cadmium	0.251	0.250	0.00900	"	"	"	"	"	"	
Copper	7.70	0.500	0.0261	"	"	"	"	"	"	
Lead	10.6	0.250	0.0687	"	"	"	"	"	"	
Nickel	6.01	0.500	0.0763	"	"	"	"	"	"	
Selenium	1.34	0.260	0.175	"	"	"	"	"	"	
Silver	0.0253	0.0250	0.00334	"	"	"	"	"	"	
Zinc	23.9	0.500	0.333	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 02/17/23 15:44

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: 02/17/23 15:44

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	134	0.0625		mg/L dry	1	BGB0571	02/19/23	02/21/23	EPA 6020B	
Magnesium	8.93	0.0625		"	"	"	"	"	"	
Sodium	37.7	0.0625		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 02/17/23 15:44

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.851	0.00100		units	1	BGB0664	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS11@2.5'**  
**2302368-23 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	80.0			%	1	BGB0601	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 15:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.681	0.0100		mmhos/cm	1	BGB0614	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 15:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.64			pH Units	1	BGB0613	02/20/23	02/20/23	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS13@2.5'**  
**2302368-24 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		86.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.8 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 15:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:51**

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

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS13@2.5'**  
**2302368-24 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 15:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0576	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		40.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		66.4 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 15:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.127</b>	0.0100		mg/L	1	BGB0603	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 15:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.  
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Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS13@2.5'**  
**2302368-24 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	6.29	0.246	0.207	mg/kg dry	1	BGB0590	02/20/23	02/21/23	EPA 6020B
Barium	329	0.492	0.389	"	"	"	"	"	"
Cadmium	0.246	0.246	0.00886	"	"	"	"	"	"
Copper	6.94	0.492	0.0257	"	"	"	"	"	"
Lead	11.2	0.246	0.0676	"	"	"	"	"	"
Nickel	5.63	0.492	0.0751	"	"	"	"	"	"
Selenium	1.55	0.260	0.175	"	"	"	"	"	"
Silver	0.0287	0.0246	0.00329	"	"	"	"	"	"
Zinc	21.9	0.492	0.327	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 15:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 15:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	113	0.0615		mg/L dry	1	BGB0571	02/19/23	02/21/23	EPA 6020B	
Magnesium	10.8	0.0615		"	"	"	"	"	"	
Sodium	35.9	0.0615		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 15:51**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.864	0.00100		units	1	BGB0664	02/21/23	02/21/23	Calculation	

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

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS13@2.5'**  
**2302368-24 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	81.2			%	1	BGB0601	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 15:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.03	0.0100		mmhos/cm	1	BGB0614	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 15:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.61			pH Units	1	BGB0613	02/20/23	02/20/23	EPA 9045D	

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Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS14@2.5'**  
**2302368-25 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		85.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		100 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 15:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		115 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS14@2.5'**  
**2302368-25 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 15:52**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0576	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:52**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		42.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		51.8 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 15:52**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0992</b>	0.0100		mg/L	1	BGB0603	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 15:52**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS14@2.5'**  
**2302368-25 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.31	0.266	0.224	mg/kg dry	1	BGB0590	02/20/23	02/21/23	EPA 6020B	
Barium	359	0.531	0.420	"	"	"	"	"	"	
Cadmium	0.285	0.266	0.00956	"	"	"	"	"	"	
Copper	8.52	0.531	0.0277	"	"	"	"	"	"	
Lead	12.7	0.266	0.0730	"	"	"	"	"	"	
Nickel	7.06	0.531	0.0810	"	"	"	"	"	"	
Selenium	1.49	0.260	0.175	"	"	"	"	"	"	
Silver	0.0269	0.0266	0.00355	"	"	"	"	"	"	
Zinc	26.9	0.531	0.353	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 02/17/23 15:52

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: 02/17/23 15:52

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	113	0.0664		mg/L dry	1	BGB0571	02/19/23	02/21/23	EPA 6020B	
Magnesium	7.53	0.0664		"	"	"	"	"	"	
Sodium	29.9	0.0664		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 02/17/23 15:52

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.735	0.00100		units	1	BGB0664	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS14@2.5'**  
**2302368-25 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	75.3			%	1	BGB0601	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 15:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.560	0.0100		mmhos/cm	1	BGB0614	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 15:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.71			pH Units	1	BGB0613	02/20/23	02/20/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS15@2.5'**  
**2302368-26 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		82.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 15:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		113 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS15@2.5'**  
**2302368-26 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 15:53**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0576	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:53**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		46.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.7 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 15:53**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.163</b>	0.0100		mg/L	1	BGB0603	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 15:53**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS15@2.5'**  
**2302368-26 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.59	0.257	0.217	mg/kg dry	1	BGB0590	02/20/23	02/21/23	EPA 6020B	
Barium	269	0.514	0.406	"	"	"	"	"	"	
Cadmium	0.276	0.257	0.00926	"	"	"	"	"	"	
Copper	7.39	0.514	0.0269	"	"	"	"	"	"	
Lead	11.4	0.257	0.0707	"	"	"	"	"	"	
Nickel	6.32	0.514	0.0785	"	"	"	"	"	"	
Selenium	1.44	0.260	0.175	"	"	"	"	"	"	
Silver	0.0299	0.0257	0.00343	"	"	"	"	"	"	
Zinc	24.2	0.514	0.342	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 02/17/23 15:53

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: 02/17/23 15:53

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	72.7	0.0643		mg/L dry	1	BGB0571	02/19/23	02/21/23	EPA 6020B	
Magnesium	10.6	0.0643		"	"	"	"	"	"	
Sodium	24.1	0.0643		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 02/17/23 15:53

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.699	0.00100		units	1	BGB0664	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS15@2.5'**  
**2302368-26 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	77.8			%	1	BGB0601	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 15:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.759	0.0100		mmhos/cm	1	BGB0614	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 15:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.62			pH Units	1	BGB0613	02/20/23	02/20/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS16@2.5'**  
**2302368-27 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		86.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.5 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 15:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		121 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS16@2.5'**  
**2302368-27 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 15:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0576	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		57.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		50.5 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 15:54**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.191	0.0100		mg/L	1	BGB0603	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 15:54**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS16@2.5'**  
**2302368-27 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.29	0.276	0.233	mg/kg dry	1	BGB0590	02/20/23	02/21/23	EPA 6020B	
Barium	554	0.553	0.437	"	"	"	"	"	"	
Cadmium	0.199	0.276	0.00995	"	"	"	"	"	"	
Copper	7.13	0.553	0.0289	"	"	"	"	"	"	
Lead	9.56	0.276	0.0759	"	"	"	"	"	"	
Nickel	6.42	0.553	0.0843	"	"	"	"	"	"	
Selenium	1.27	0.260	0.175	"	"	"	"	"	"	
Silver	0.0229	0.0276	0.00369	"	"	"	"	"	"	
Zinc	26.7	0.553	0.368	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 02/17/23 15:54

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: 02/17/23 15:54

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	90.7	0.0691		mg/L dry	1	BGB0571	02/19/23	02/21/23	EPA 6020B	
Magnesium	8.45	0.0691		"	"	"	"	"	"	
Sodium	36.7	0.0691		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 02/17/23 15:54

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.988	0.00100		units	1	BGB0664	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**FS16@2.5'**  
**2302368-27 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	72.4			%	1	BGB0601	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 15:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.479	0.0100		mmhos/cm	1	BGB0614	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 15:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.81			pH Units	1	BGB0613	02/20/23	02/20/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS24@1.5'**  
**2302368-28 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		89.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.9 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 15:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	110	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		131 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS24@1.5'**  
**2302368-28 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 15:56**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0576	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.00546</b>	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.0117</b>	0.00500		"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.0130</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:56**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		71.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		58.2 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 15:56**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0798</b>	0.0100		mg/L	1	BGB0603	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 15:56**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS24@1.5'**  
**2302368-28 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.21	0.237	0.200	mg/kg dry	1	BGB0590	02/20/23	02/21/23	EPA 6020B	
Barium	446	0.475	0.375	"	"	"	"	"	"	
Cadmium	0.123	0.237	0.00855	"	"	"	"	"	"	
Copper	4.84	0.475	0.0248	"	"	"	"	"	"	
Lead	6.32	0.237	0.0652	"	"	"	"	"	"	
Nickel	5.03	0.475	0.0724	"	"	"	"	"	"	
Selenium	1.02	0.260	0.175	"	"	"	"	"	"	
Silver	0.0239	0.0237	0.00317	"	"	"	"	"	"	
Zinc	19.5	0.475	0.316	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 15:56**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 15:56**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	69.1	0.0594		mg/L dry	1	BGB0571	02/19/23	02/21/23	EPA 6020B	
Magnesium	5.31	0.0594		"	"	"	"	"	"	
Sodium	24.1	0.0594		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 15:56**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.752	0.00100		units	1	BGB0664	02/21/23	02/21/23	Calculation	

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

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS24@1.5'**  
**2302368-28 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.2			%	1	BGB0601	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 15:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.334	0.0100		mmhos/cm	1	BGB0614	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 15:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.08			pH Units	1	BGB0613	02/20/23	02/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS25@1.5'**  
**2302368-29 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:58**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
<b>Toluene</b>	<b>0.020</b>	0.0050		"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.030</b>	0.0050		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.10</b>	0.010		"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>0.023</b>	0.0050		"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>0.015</b>	0.0050		"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.028</b>	0.0038		"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1.7</b>	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:58**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		89.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.5 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 15:58**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>90</b>	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:58**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		121 %		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 - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS25@1.5'**  
**2302368-29 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 15:58**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0576	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.0146</b>	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.0591</b>	0.00500		"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.0312</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:58**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		42.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		53.4 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 15:58**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.309</b>	0.0100		mg/L	1	BGB0604	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 15:58**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS25@1.5'**  
**2302368-29 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.09	0.228	0.192	mg/kg dry	1	BGB0590	02/20/23	02/21/23	EPA 6020B	
Barium	235	0.457	0.361	"	"	"	"	"	"	
Cadmium	0.0919	0.228	0.00822	"	"	"	"	"	"	
Copper	4.51	0.457	0.0239	"	"	"	"	"	"	
Lead	5.95	0.228	0.0628	"	"	"	"	"	"	
Nickel	4.72	0.457	0.0697	"	"	"	"	"	"	
Selenium	0.928	0.260	0.175	"	"	"	"	"	"	
Silver	0.0206	0.0228	0.00305	"	"	"	"	"	"	
Zinc	19.2	0.457	0.304	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 15:58**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 15:58**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	50.3	0.0571		mg/L dry	1	BGB0571	02/19/23	02/21/23	EPA 6020B	
Magnesium	5.32	0.0571		"	"	"	"	"	"	
Sodium	27.8	0.0571		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 15:58**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.996	0.00100		units	1	BGB0664	02/21/23	02/21/23	Calculation	

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

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS25@1.5'**  
**2302368-29 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	87.6			%	1	BGB0601	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 15:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.418	0.0100		mmhos/cm	1	BGB0614	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 15:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.82			pH Units	1	BGB0613	02/20/23	02/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS26@1.5'**  
**2302368-30 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:59**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
<b>Toluene</b>	<b>0.049</b>	0.0050		"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.014</b>	0.0050		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.077</b>	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>0.015</b>	0.0050		"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.029</b>	0.0038		"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1.7</b>	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:59**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		95.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 15:59**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>72</b>	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:59**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		121 %		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 - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS26@1.5'**  
**2302368-30 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 15:59**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0576	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.0287</b>	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.193</b>	0.00500		"	"	"	"	"	"	E
<b>2-Methylnaphthalene</b>	<b>0.0814</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 15:59**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		74.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		76.8 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 15:59**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.119</b>	0.0100		mg/L	1	BGB0604	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 15:59**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS26@1.5'**  
**2302368-30 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.69	0.248	0.209	mg/kg dry	1	BGB0590	02/20/23	02/21/23	EPA 6020B	
Barium	323	0.497	0.392	"	"	"	"	"	"	
Cadmium	0.153	0.248	0.00894	"	"	"	"	"	"	
Copper	5.51	0.497	0.0260	"	"	"	"	"	"	
Lead	7.45	0.248	0.0682	"	"	"	"	"	"	
Nickel	5.35	0.497	0.0757	"	"	"	"	"	"	
Selenium	0.983	0.260	0.175	"	"	"	"	"	"	
Silver	0.0203	0.0248	0.00332	"	"	"	"	"	"	
Zinc	21.8	0.497	0.330	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 02/17/23 15:59

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: 02/17/23 15:59

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	76.8	0.0621		mg/L dry	1	BGB0571	02/19/23	02/21/23	EPA 6020B	
Magnesium	6.69	0.0621		"	"	"	"	"	"	
Sodium	40.4	0.0621		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 02/17/23 15:59

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.19	0.00100		units	1	BGB0664	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS26@1.5'**  
**2302368-30 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 15:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	80.5			%	1	BGB0601	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 15:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.529	0.0100		mmhos/cm	1	BGB0614	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 15:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.83			pH Units	1	BGB0613	02/20/23	02/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS27@1.5'**  
**2302368-31 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 16:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	<b>0.020</b>	0.0050		"	"	"	"	"	"	
Ethylbenzene	<b>0.028</b>	0.0050		"	"	"	"	"	"	
Xylenes (total)	<b>0.11</b>	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	<b>0.051</b>	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	<b>0.010</b>	0.0050		"	"	"	"	"	"	
Naphthalene	<b>0.019</b>	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	<b>1.8</b>	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		91.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		99.7 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 16:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	<b>190</b>	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		138 %		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 - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS27@1.5'**  
**2302368-31 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 16:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0576	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.0388</b>	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.249</b>	0.00500		"	"	"	"	"	"	E
<b>2-Methylnaphthalene</b>	<b>0.109</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		66.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		68.2 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 16:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.105</b>	0.0100		mg/L	1	BGB0604	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 16:10**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS27@1.5'**  
**2302368-31 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.08	0.240	0.202	mg/kg dry	1	BGB0590	02/20/23	02/21/23	EPA 6020B	
Barium	291	0.479	0.378	"	"	"	"	"	"	
Cadmium	0.126	0.240	0.00862	"	"	"	"	"	"	
Copper	5.25	0.479	0.0250	"	"	"	"	"	"	
Lead	7.47	0.240	0.0658	"	"	"	"	"	"	
Nickel	5.20	0.479	0.0731	"	"	"	"	"	"	
Selenium	0.956	0.260	0.175	"	"	"	"	"	"	
Silver	0.0162	0.0240	0.00320	"	"	"	"	"	"	
Zinc	21.9	0.479	0.319	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 16:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 16:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	109	0.0599		mg/L dry	1	BGB0571	02/19/23	02/21/23	EPA 6020B	
Magnesium	7.15	0.0599		"	"	"	"	"	"	
Sodium	38.4	0.0599		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 16:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.962	0.00100		units	1	BGB0664	02/21/23	02/21/23	Calculation	

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

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS27@1.5'**  
**2302368-31 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 16:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.5			%	1	BGB0601	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 16:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.560	0.0100		mmhos/cm	1	BGB0614	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 16:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.84			pH Units	1	BGB0613	02/20/23	02/20/23	EPA 9045D	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS28@1.5'**  
**2302368-32 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 16:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		86.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 16:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:12**

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

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS28@1.5'**  
**2302368-32 (Soil)**

### Summit Scientific

#### PAH by EPA Method 8270D SIM

Date Sampled: **02/17/23 16:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0576	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		40.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		67.4 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 16:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.110</b>	0.0100		mg/L	1	BGB0604	02/20/23	02/21/23	EPA 6020B	

#### Total Metals by EPA 6020B

Date Sampled: **02/17/23 16:12**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS28@1.5'**  
**2302368-32 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.04	0.268	0.226	mg/kg dry	1	BGB0590	02/20/23	02/21/23	EPA 6020B	
Barium	336	0.536	0.424	"	"	"	"	"	"	
Cadmium	0.157	0.268	0.00965	"	"	"	"	"	"	
Copper	6.22	0.536	0.0280	"	"	"	"	"	"	
Lead	9.08	0.268	0.0737	"	"	"	"	"	"	
Nickel	6.38	0.536	0.0818	"	"	"	"	"	"	
Selenium	1.46	0.260	0.175	"	"	"	"	"	"	
Silver	0.0192	0.0268	0.00358	"	"	"	"	"	"	
Zinc	25.8	0.536	0.357	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 16:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 16:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	143	0.0670		mg/L dry	1	BGB0571	02/19/23	02/21/23	EPA 6020B	
Magnesium	6.96	0.0670		"	"	"	"	"	"	
Sodium	49.1	0.0670		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 16:12**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.09	0.00100		units	1	BGB0664	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS28@1.5'**  
**2302368-32 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 16:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	74.6			%	1	BGB0601	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 16:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.480	0.0100		mmhos/cm	1	BGB0614	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 16:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.95			pH Units	1	BGB0613	02/20/23	02/20/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS29@1.5'**  
**2302368-33 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 16:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
<b>Toluene</b>	<b>0.010</b>	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		87.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 16:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		134 %		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 - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS29@1.5'**  
**2302368-33 (Soil)**

### Summit Scientific

#### PAH by EPA Method 8270D SIM

Date Sampled: **02/17/23 16:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0576	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.0115</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		41.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		74.3 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 16:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0740</b>	0.0100		mg/L	1	BGB0604	02/20/23	02/21/23	EPA 6020B	

#### Total Metals by EPA 6020B

Date Sampled: **02/17/23 16:30**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS29@1.5'**  
**2302368-33 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.66	0.257	0.217	mg/kg dry	1	BGB0590	02/20/23	02/21/23	EPA 6020B	
Barium	184	0.515	0.406	"	"	"	"	"	"	
Cadmium	0.110	0.257	0.00926	"	"	"	"	"	"	
Copper	3.95	0.515	0.0269	"	"	"	"	"	"	
Lead	6.80	0.257	0.0707	"	"	"	"	"	"	
Nickel	3.84	0.515	0.0785	"	"	"	"	"	"	
Selenium	0.879	0.260	0.175	"	"	"	"	"	"	
Silver	0.0124	0.0257	0.00343	"	"	"	"	"	"	
Zinc	15.9	0.515	0.342	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 16:30**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 16:30**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	135	0.0643		mg/L dry	1	BGB0571	02/19/23	02/21/23	EPA 6020B	
Magnesium	6.59	0.0643		"	"	"	"	"	"	
Sodium	34.3	0.0643		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 16:30**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.782	0.00100		units	1	BGB0664	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS29@1.5'**  
**2302368-33 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 16:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	77.7			%	1	BGB0601	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 16:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.377	0.0100		mmhos/cm	1	BGB0614	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 16:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.88			pH Units	1	BGB0613	02/20/23	02/20/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS30@1.5'**  
**2302368-34 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 16:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.84</b>	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		87.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 16:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/19/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:33**

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

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS30@1.5'**  
**2302368-34 (Soil)**

### Summit Scientific

#### PAH by EPA Method 8270D SIM

Date Sampled: **02/17/23 16:33**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0576	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.0103</b>	0.00500		"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.0129</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:33**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		46.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		50.2 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 16:33**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.127</b>	0.0100		mg/L	1	BGB0604	02/20/23	02/21/23	EPA 6020B	

#### Total Metals by EPA 6020B

Date Sampled: **02/17/23 16:33**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS30@1.5'**  
**2302368-34 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	2.56	0.265	0.223	mg/kg dry	1	BGB0590	02/20/23	02/21/23	EPA 6020B
Barium	321	0.530	0.419	"	"	"	"	"	"
Cadmium	0.190	0.265	0.00954	"	"	"	"	"	"
Copper	6.64	0.530	0.0277	"	"	"	"	"	"
Lead	9.62	0.265	0.0728	"	"	"	"	"	"
Nickel	5.85	0.530	0.0808	"	"	"	"	"	"
Selenium	0.996	0.260	0.175	"	"	"	"	"	"
Silver	0.0229	0.0265	0.00354	"	"	"	"	"	"
Zinc	25.4	0.530	0.352	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 16:33**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 16:33**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	131	0.0662		mg/L dry	1	BGB0571	02/19/23	02/21/23	EPA 6020B	
Magnesium	8.67	0.0662		"	"	"	"	"	"	
Sodium	40.3	0.0662		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 16:33**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.921	0.00100		units	1	BGB0664	02/21/23	02/21/23	Calculation	

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

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS30@1.5'**  
**2302368-34 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 16:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	75.5			%	1	BGB0601	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 16:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.580	0.0100		mmhos/cm	1	BGB0614	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 16:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.70			pH Units	1	BGB0613	02/20/23	02/20/23	EPA 9045D	

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6855 W. 119th Ave.  
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Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS31@1.5'**  
**2302368-35 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 16:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		78.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 16:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/19/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		128 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS31@1.5'**  
**2302368-35 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/17/23 16:38**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0576	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.0216</b>	0.00500		"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.0130</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:38**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		53.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		81.4 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 16:38**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.138</b>	0.0100		mg/L	1	BGB0604	02/20/23	02/21/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **02/17/23 16:38**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS31@1.5'**  
**2302368-35 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.73	0.254	0.214	mg/kg dry	1	BGB0590	02/20/23	02/21/23	EPA 6020B	
Barium	485	0.507	0.401	"	"	"	"	"	"	
Cadmium	0.172	0.254	0.00913	"	"	"	"	"	"	
Copper	5.93	0.507	0.0265	"	"	"	"	"	"	
Lead	7.77	0.254	0.0697	"	"	"	"	"	"	
Nickel	6.33	0.507	0.0774	"	"	"	"	"	"	
Selenium	1.02	0.260	0.175	"	"	"	"	"	"	
Silver	0.0242	0.0254	0.00339	"	"	"	"	"	"	
Zinc	24.5	0.507	0.337	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 16:38**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 16:38**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	144	0.0634		mg/L dry	1	BGB0571	02/19/23	02/21/23	EPA 6020B	
Magnesium	6.20	0.0634		"	"	"	"	"	"	
Sodium	25.5	0.0634		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 16:38**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.565	0.00100		units	1	BGB0664	02/21/23	02/21/23	Calculation	

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

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6855 W. 119th Ave.  
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Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS31@1.5'**  
**2302368-35 (Soil)**

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

Date Sampled: **02/17/23 16:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	78.8			%	1	BGB0601	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 16:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.353	0.0100		mmhos/cm	1	BGB0614	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 16:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.94			pH Units	1	BGB0613	02/20/23	02/20/23	EPA 9045D	

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Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS32@1.5'**  
**2302368-36 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 16:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		87.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		104 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 16:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/19/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		132 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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6855 W. 119th Ave.  
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Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS32@1.5'**  
**2302368-36 (Soil)**

### Summit Scientific

#### PAH by EPA Method 8270D SIM

Date Sampled: **02/17/23 16:41**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0576	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.0110</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:41**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		44.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		54.1 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 16:41**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.181</b>	0.0100		mg/L	1	BGB0604	02/20/23	02/21/23	EPA 6020B	

#### Total Metals by EPA 6020B

Date Sampled: **02/17/23 16:41**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS32@1.5'**  
**2302368-36 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.74	0.244	0.206	mg/kg dry	1	BGB0590	02/20/23	02/21/23	EPA 6020B	
Barium	492	0.489	0.386	"	"	"	"	"	"	
Cadmium	0.187	0.244	0.00880	"	"	"	"	"	"	
Copper	7.36	0.489	0.0255	"	"	"	"	"	"	
Lead	8.77	0.244	0.0672	"	"	"	"	"	"	
Nickel	6.94	0.489	0.0746	"	"	"	"	"	"	
Selenium	1.10	0.260	0.175	"	"	"	"	"	"	
Silver	0.0321	0.0244	0.00326	"	"	"	"	"	"	
Zinc	27.4	0.489	0.325	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 02/17/23 16:41

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: 02/17/23 16:41

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	47.9	0.0611		mg/L dry	1	BGB0571	02/19/23	02/21/23	EPA 6020B	
Magnesium	5.40	0.0611		"	"	"	"	"	"	
Sodium	23.1	0.0611		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 02/17/23 16:41

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.844	0.00100		units	1	BGB0664	02/21/23	02/21/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS32@1.5'**  
**2302368-36 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 16:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	81.8			%	1	BGB0601	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 16:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.400	0.0100		mmhos/cm	1	BGB0614	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 16:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.82			pH Units	1	BGB0613	02/20/23	02/20/23	EPA 9045D	

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6855 W. 119th Ave.  
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Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS33@1.5'**  
**2302368-37 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 16:48**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	<b>0.021</b>	0.0050		"	"	"	"	"	"	
Ethylbenzene	<b>0.019</b>	0.0050		"	"	"	"	"	"	
Xylenes (total)	<b>0.12</b>	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	<b>0.032</b>	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	<b>0.054</b>	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	<b>6.0</b>	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:48**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		116 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 16:48**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	<b>1100</b>	50		mg/kg	1	BGB0557	02/17/23	02/19/23	EPA 8015M	
C28-C36 (ORO)	<b>240</b>	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:48**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		168 %		30-150		"	"	"	"	S-02

**PAH by EPA Method 8270D SIM**

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Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS33@1.5'**  
**2302368-37 (Soil)**

### Summit Scientific

#### PAH by EPA Method 8270D SIM

Date Sampled: **02/17/23 16:48**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0576	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.190</b>	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.389</b>	0.00500		"	"	"	"	"	"	E
<b>2-Methylnaphthalene</b>	<b>0.324</b>	0.00500		"	"	"	"	"	"	E

Date Sampled: **02/17/23 16:48**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		53.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		79.7 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 16:48**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.119</b>	0.0100		mg/L	1	BGB0604	02/20/23	02/21/23	EPA 6020B	

#### Total Metals by EPA 6020B

Date Sampled: **02/17/23 16:48**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.  
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Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS33@1.5'**  
**2302368-37 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.82	0.235	0.198	mg/kg dry	1	BGB0590	02/20/23	02/21/23	EPA 6020B	
Barium	296	0.470	0.371	"	"	"	"	"	"	
Cadmium	0.281	0.235	0.00846	"	"	"	"	"	"	
Copper	4.86	0.470	0.0246	"	"	"	"	"	"	
Lead	8.15	0.235	0.0646	"	"	"	"	"	"	
Nickel	4.91	0.470	0.0717	"	"	"	"	"	"	
Selenium	0.932	0.260	0.175	"	"	"	"	"	"	
Silver	0.0187	0.0235	0.00314	"	"	"	"	"	"	
Zinc	18.3	0.470	0.313	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 16:48**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 16:48**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	52.6	0.0588		mg/L dry	1	BGB0571	02/19/23	02/21/23	EPA 6020B	
Magnesium	6.28	0.0588		"	"	"	"	"	"	
Sodium	37.4	0.0588		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 16:48**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.30	0.00100		units	1	BGB0664	02/21/23	02/21/23	Calculation	

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

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Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS33@1.5'**  
**2302368-37 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 16:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	85.1			%	1	BGB0601	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 16:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.515	0.0100		mmhos/cm	1	BGB0614	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 16:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.79			pH Units	1	BGB0613	02/20/23	02/20/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS34@1.5'**  
**2302368-38 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 16:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.057</b>	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>0.027</b>	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>2.8</b>	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 16:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>630</b>	50		mg/kg	1	BGB0557	02/17/23	02/19/23	EPA 8015M	
<b>C28-C36 (ORO)</b>	<b>180</b>	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 16:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		136 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS34@1.5'**  
**2302368-38 (Soil)**

### Summit Scientific

#### PAH by EPA Method 8270D SIM

Date Sampled: **02/17/23 16:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0576	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
<b>Benzo (a) anthracene</b>	<b>0.0195</b>	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.0160</b>	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.00702</b>	0.00500		"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.146</b>	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.0126</b>	0.00500		"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.458</b>	0.00500		"	"	"	"	"	"	E
<b>2-Methylnaphthalene</b>	<b>0.271</b>	0.00500		"	"	"	"	"	"	E

Date Sampled: **02/17/23 16:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		56.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		77.5 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 16:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.144</b>	0.0100		mg/L	1	BGB0604	02/20/23	02/21/23	EPA 6020B	

#### Total Metals by EPA 6020B

Date Sampled: **02/17/23 16:55**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS34@1.5'**  
**2302368-38 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.44	0.250	0.211	mg/kg dry	1	BGB0590	02/20/23	02/21/23	EPA 6020B	
Barium	414	0.500	0.395	"	"	"	"	"	"	
Cadmium	0.272	0.250	0.00900	"	"	"	"	"	"	
Copper	8.08	0.500	0.0261	"	"	"	"	"	"	
Lead	12.8	0.250	0.0687	"	"	"	"	"	"	
Nickel	7.42	0.500	0.0763	"	"	"	"	"	"	
Selenium	1.68	0.260	0.175	"	"	"	"	"	"	
Silver	0.0308	0.0250	0.00334	"	"	"	"	"	"	
Zinc	27.8	0.500	0.333	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 16:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 16:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	78.1	0.0625		mg/L dry	1	BGB0571	02/19/23	02/21/23	EPA 6020B	
Magnesium	7.95	0.0625		"	"	"	"	"	"	
Sodium	41.5	0.0625		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 16:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.20	0.00100		units	1	BGB0664	02/21/23	02/21/23	Calculation	

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

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS34@1.5'**  
**2302368-38 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 16:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	80.0			%	1	BGB0601	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 16:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.653	0.0100		mmhos/cm	1	BGB0614	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 16:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.68			pH Units	1	BGB0613	02/20/23	02/20/23	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS35@1.5'**  
**2302368-39 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 17:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGB0556	02/17/23	02/19/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/17/23 17:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		89.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/17/23 17:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0557	02/17/23	02/19/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/17/23 17:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		126 %		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 - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS35@1.5'**  
**2302368-39 (Soil)**

### Summit Scientific

#### PAH by EPA Method 8270D SIM

Date Sampled: **02/17/23 17:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGB0576	02/20/23	02/21/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.00562</b>	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.0142</b>	0.00500		"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.0138</b>	0.00500		"	"	"	"	"	"	

Date Sampled: **02/17/23 17:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		62.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		72.2 %		40-150		"	"	"	"	

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

Date Sampled: **02/17/23 17:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.317</b>	0.0100		mg/L	1	BGB0604	02/20/23	02/21/23	EPA 6020B	

#### Total Metals by EPA 6020B

Date Sampled: **02/17/23 17:00**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS35@1.5'**  
**2302368-39 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	2.19	0.223	0.188	mg/kg dry	1	BGB0590	02/20/23	02/21/23	EPA 6020B
Barium	293	0.445	0.352	"	"	"	"	"	"
Cadmium	0.121	0.223	0.00801	"	"	"	"	"	"
Copper	5.06	0.445	0.0233	"	"	"	"	"	"
Lead	6.15	0.223	0.0612	"	"	"	"	"	"
Nickel	5.08	0.445	0.0679	"	"	"	"	"	"
Selenium	0.571	0.260	0.175	"	"	"	"	"	"
Silver	0.0257	0.0223	0.00297	"	"	"	"	"	"
Zinc	18.7	0.445	0.296	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **02/17/23 17:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGB0585	02/20/23	02/20/23	EPA 7196A	

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

Date Sampled: **02/17/23 17:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	54.8	0.0556		mg/L dry	1	BGB0571	02/19/23	02/21/23	EPA 6020B	
Magnesium	8.78	0.0556		"	"	"	"	"	"	
Sodium	50.3	0.0556		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/17/23 17:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.66	0.00100		units	1	BGB0664	02/21/23	02/21/23	Calculation	

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

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**SS35@1.5'**  
**2302368-39 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/17/23 17:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	89.9			%	1	BGB0601	02/20/23	02/20/23	Calculation	

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

Date Sampled: **02/17/23 17:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.750	0.0100		mmhos/cm	1	BGB0614	02/20/23	02/20/23	EPA 120.1	

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

Date Sampled: **02/17/23 17:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.44			pH Units	1	BGB0613	02/20/23	02/20/23	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

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

#### Batch BGB0556 - EPA 5030 Soil MS

##### Blank (BGB0556-BLK1)

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

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0382		"	0.0400		95.5	50-150			
Surrogate: Toluene-d8	0.0381		"	0.0400		95.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0377		"	0.0400		94.4	50-150			

##### Blank (BGB0556-BLK2)

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

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0317		"	0.0400		79.2	50-150			
Surrogate: Toluene-d8	0.0376		"	0.0400		94.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0380		"	0.0400		95.0	50-150			

##### LCS (BGB0556-BS1)

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

Benzene	0.0962	0.0020	mg/kg	0.100		96.2	70-130			
Toluene	0.0850	0.0050	"	0.100		85.0	70-130			
Ethylbenzene	0.104	0.0050	"	0.100		104	70-130			
m,p-Xylene	0.205	0.010	"	0.200		102	70-130			
o-Xylene	0.0968	0.0050	"	0.100		96.8	70-130			
1,2,4-Trimethylbenzene	0.0962	0.0050	"	0.100		96.2	70-130			
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100		102	70-130			
Naphthalene	0.0990	0.0038	"	0.100		99.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0319		"	0.0400		79.8	50-150			
Surrogate: Toluene-d8	0.0371		"	0.0400		92.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0365		"	0.0400		91.4	50-150			

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

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

#### Batch BGB0556 - EPA 5030 Soil MS

##### LCS (BGB0556-BS2)

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

Benzene	0.0933	0.0020	mg/kg	0.100		93.3	70-130			
Toluene	0.0860	0.0050	"	0.100		86.0	70-130			
Ethylbenzene	0.107	0.0050	"	0.100		107	70-130			
m,p-Xylene	0.213	0.010	"	0.200		107	70-130			
o-Xylene	0.101	0.0050	"	0.100		101	70-130			
1,2,4-Trimethylbenzene	0.0992	0.0050	"	0.100		99.2	70-130			
1,3,5-Trimethylbenzene	0.103	0.0050	"	0.100		103	70-130			
Naphthalene	0.0980	0.0038	"	0.100		98.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0294		"	0.0400		73.5	50-150			
Surrogate: Toluene-d8	0.0356		"	0.0400		88.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400		92.6	50-150			

##### Matrix Spike (BGB0556-MS1)

Source: 2302368-01

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

Benzene	0.0957	0.0020	mg/kg	0.100	ND	95.7	70-130			
Toluene	0.0916	0.0050	"	0.100	ND	91.6	70-130			
Ethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130			
m,p-Xylene	0.220	0.010	"	0.200	ND	110	70-130			
o-Xylene	0.103	0.0050	"	0.100	ND	103	70-130			
1,2,4-Trimethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130			
1,3,5-Trimethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130			
Naphthalene	0.0940	0.0038	"	0.100	ND	94.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0301		"	0.0400		75.3	50-150			
Surrogate: Toluene-d8	0.0367		"	0.0400		91.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0368		"	0.0400		92.1	50-150			

##### Matrix Spike (BGB0556-MS2)

Source: 2302368-02

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

Benzene	0.0889	0.0020	mg/kg	0.100	ND	88.9	70-130			
Toluene	0.0854	0.0050	"	0.100	ND	85.4	70-130			
Ethylbenzene	0.0974	0.0050	"	0.100	0.00462	92.7	70-130			
m,p-Xylene	0.193	0.010	"	0.200	0.0102	91.5	70-130			
o-Xylene	0.0926	0.0050	"	0.100	0.00435	88.2	70-130			
1,2,4-Trimethylbenzene	0.0956	0.0050	"	0.100	0.00705	88.5	70-130			
1,3,5-Trimethylbenzene	0.0940	0.0050	"	0.100	ND	94.0	70-130			
Naphthalene	0.107	0.0038	"	0.100	ND	107	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0333		"	0.0400		83.3	50-150			
Surrogate: Toluene-d8	0.0365		"	0.0400		91.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0359		"	0.0400		89.8	50-150			

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

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

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

**Batch BGB0556 - EPA 5030 Soil MS**

**Matrix Spike Dup (BGB0556-MSD1)**

Source: 2302368-01

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

Benzene	0.0945	0.0020	mg/kg	0.100	ND	94.5	70-130	1.26	30	
Toluene	0.0921	0.0050	"	0.100	ND	92.1	70-130	0.490	30	
Ethylbenzene	0.109	0.0050	"	0.100	ND	109	70-130	0.442	30	
m,p-Xylene	0.216	0.010	"	0.200	ND	108	70-130	1.60	30	
o-Xylene	0.104	0.0050	"	0.100	ND	104	70-130	0.464	30	
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130	1.95	30	
1,3,5-Trimethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130	0.397	30	
Naphthalene	0.0974	0.0038	"	0.100	ND	97.4	70-130	3.48	30	
Surrogate: 1,2-Dichloroethane-d4	0.0311		"	0.0400		77.7	50-150			
Surrogate: Toluene-d8	0.0364		"	0.0400		91.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0374		"	0.0400		93.5	50-150			

**Matrix Spike Dup (BGB0556-MSD2)**

Source: 2302368-02

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

Benzene	0.0963	0.0020	mg/kg	0.100	ND	96.3	70-130	8.00	30	
Toluene	0.0943	0.0050	"	0.100	ND	94.3	70-130	9.89	30	
Ethylbenzene	0.105	0.0050	"	0.100	0.00462	101	70-130	7.82	30	
m,p-Xylene	0.207	0.010	"	0.200	0.0102	98.6	70-130	7.08	30	
o-Xylene	0.0994	0.0050	"	0.100	0.00435	95.0	70-130	7.09	30	
1,2,4-Trimethylbenzene	0.102	0.0050	"	0.100	0.00705	94.5	70-130	6.09	30	
1,3,5-Trimethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130	7.23	30	
Naphthalene	0.108	0.0038	"	0.100	ND	108	70-130	1.34	30	
Surrogate: 1,2-Dichloroethane-d4	0.0315		"	0.0400		78.8	50-150			
Surrogate: Toluene-d8	0.0372		"	0.0400		93.1	50-150			
Surrogate: 4-Bromofluorobenzene	0.0361		"	0.0400		90.2	50-150			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BGB0557 - EPA 3550A**

**Blank (BGB0557-BLK1)**

Prepared: 02/17/23 Analyzed: 02/18/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	14.4		"	12.5		115	30-150			

**Blank (BGB0557-BLK2)**

Prepared: 02/17/23 Analyzed: 02/18/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	14.6		"	12.5		117	30-150			

**LCS (BGB0557-BS1)**

Prepared: 02/17/23 Analyzed: 02/18/23

C10-C28 (DRO)	390	50	mg/kg	500		78.0	70-130			
Surrogate: o-Terphenyl	14.5		"	12.5		116	30-150			

**LCS (BGB0557-BS2)**

Prepared: 02/17/23 Analyzed: 02/18/23

C10-C28 (DRO)	383	50	mg/kg	500		76.6	70-130			
Surrogate: o-Terphenyl	15.1		"	12.5		121	30-150			

**Matrix Spike (BGB0557-MS1)**

Source: 2302368-01

Prepared: 02/17/23 Analyzed: 02/18/23

C10-C28 (DRO)	440	50	mg/kg	500	30.3	81.9	70-130			
Surrogate: o-Terphenyl	13.0		"	12.5		104	30-150			

**Matrix Spike (BGB0557-MS2)**

Source: 2302368-04

Prepared: 02/17/23 Analyzed: 02/18/23

C10-C28 (DRO)	409	50	mg/kg	500	46.3	72.5	70-130			
Surrogate: o-Terphenyl	5.08		"	12.5		40.7	30-150			

**Matrix Spike Dup (BGB0557-MSD1)**

Source: 2302368-01

Prepared: 02/17/23 Analyzed: 02/18/23

C10-C28 (DRO)	465	50	mg/kg	500	30.3	87.0	70-130	5.63	20	
Surrogate: o-Terphenyl	13.7		"	12.5		110	30-150			

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Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

02/22/23 15:15

## Extractable Petroleum Hydrocarbons by 8015 - Quality Control

### Summit Scientific

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

#### Batch BGB0557 - EPA 3550A

##### Matrix Spike Dup (BGB0557-MSD2)

Source: 2302368-04

Prepared: 02/17/23 Analyzed: 02/18/23

C10-C28 (DRO)	437	50	mg/kg	500	46.3	78.1	70-130	6.68	20	
Surrogate: o-Terphenyl	9.64		"	12.5		77.1	30-150			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGB0575 - EPA 5030 Soil MS

##### Blank (BGB0575-BLK1)

Prepared: 02/20/23 Analyzed: 02/21/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0214		"	0.0333		64.1	40-150			
Surrogate: Fluoranthene-d10	0.0344		"	0.0333		103	40-150			

##### LCS (BGB0575-BS1)

Prepared: 02/20/23 Analyzed: 02/21/23

Acenaphthene	0.0341	0.00500	mg/kg	0.0333	102	31-137
Anthracene	0.0327	0.00500	"	0.0333	98.0	30-120
Benzo (a) anthracene	0.0325	0.00500	"	0.0333	97.4	30-120
Benzo (a) pyrene	0.0324	0.00500	"	0.0333	97.1	30-120
Benzo (b) fluoranthene	0.0294	0.00500	"	0.0333	88.2	30-120
Benzo (k) fluoranthene	0.0336	0.00500	"	0.0333	101	30-120
Chrysene	0.0365	0.00500	"	0.0333	109	30-120
Dibenz (a,h) anthracene	0.0236	0.00500	"	0.0333	70.8	30-120
Fluoranthene	0.0350	0.00500	"	0.0333	105	30-120
Fluorene	0.0348	0.00500	"	0.0333	105	30-120
Indeno (1,2,3-cd) pyrene	0.0250	0.00500	"	0.0333	75.1	30-120
Pyrene	0.0382	0.00500	"	0.0333	115	35-142
1-Methylnaphthalene	0.0282	0.00500	"	0.0333	84.7	35-142
2-Methylnaphthalene	0.0209	0.00500	"	0.0333	62.7	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0307		"	0.0333	92.0	40-150
Surrogate: Fluoranthene-d10	0.0356		"	0.0333	107	40-150

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGB0575 - EPA 5030 Soil MS

Matrix Spike (BGB0575-MS1)			Source: 2302368-01		Prepared: 02/20/23 Analyzed: 02/21/23					
Acenaphthene	0.0165	0.00500	mg/kg	0.0333	ND	49.6	31-137			
Anthracene	0.0164	0.00500	"	0.0333	ND	49.3	30-120			
Benzo (a) anthracene	0.0180	0.00500	"	0.0333	ND	54.1	30-120			
Benzo (a) pyrene	0.0154	0.00500	"	0.0333	ND	46.1	30-120			
Benzo (b) fluoranthene	0.0135	0.00500	"	0.0333	ND	40.6	30-120			
Benzo (k) fluoranthene	0.0142	0.00500	"	0.0333	ND	42.6	30-120			
Chrysene	0.0160	0.00500	"	0.0333	ND	48.0	30-120			
Dibenz (a,h) anthracene	0.0142	0.00500	"	0.0333	ND	42.5	30-120			
Fluoranthene	0.0181	0.00500	"	0.0333	ND	54.4	30-120			
Fluorene	0.0181	0.00500	"	0.0333	0.00304	45.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0148	0.00500	"	0.0333	ND	44.3	30-120			
Pyrene	0.0180	0.00500	"	0.0333	ND	53.9	35-142			
1-Methylnaphthalene	0.0180	0.00500	"	0.0333	0.00596	36.0	15-130			
2-Methylnaphthalene	0.0160	0.00500	"	0.0333	ND	48.0	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0157		"	0.0333		47.0	40-150			
Surrogate: Fluoranthene-d10	0.0185		"	0.0333		55.4	40-150			

Matrix Spike Dup (BGB0575-MSD1)			Source: 2302368-01		Prepared: 02/20/23 Analyzed: 02/21/23					
Acenaphthene	0.0170	0.00500	mg/kg	0.0333	ND	50.9	31-137	2.61	30	
Anthracene	0.0164	0.00500	"	0.0333	ND	49.1	30-120	0.266	30	
Benzo (a) anthracene	0.0172	0.00500	"	0.0333	ND	51.7	30-120	4.59	30	
Benzo (a) pyrene	0.0152	0.00500	"	0.0333	ND	45.5	30-120	1.23	30	
Benzo (b) fluoranthene	0.0135	0.00500	"	0.0333	ND	40.5	30-120	0.429	30	
Benzo (k) fluoranthene	0.0143	0.00500	"	0.0333	ND	43.0	30-120	1.12	30	
Chrysene	0.0156	0.00500	"	0.0333	ND	46.7	30-120	2.84	30	
Dibenz (a,h) anthracene	0.0164	0.00500	"	0.0333	ND	49.1	30-120	14.4	30	
Fluoranthene	0.0169	0.00500	"	0.0333	ND	50.7	30-120	6.89	30	
Fluorene	0.0178	0.00500	"	0.0333	0.00304	44.2	30-120	1.88	30	
Indeno (1,2,3-cd) pyrene	0.0153	0.00500	"	0.0333	ND	45.8	30-120	3.22	30	
Pyrene	0.0192	0.00500	"	0.0333	ND	57.6	35-142	6.62	30	
1-Methylnaphthalene	0.0197	0.00500	"	0.0333	0.00596	41.1	15-130	9.04	50	
2-Methylnaphthalene	0.0162	0.00500	"	0.0333	ND	48.7	15-130	1.48	50	
Surrogate: 2-Methylnaphthalene-d10	0.0173		"	0.0333		52.0	40-150			
Surrogate: Fluoranthene-d10	0.0173		"	0.0333		51.9	40-150			

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGB0576 - EPA 5030 Soil MS

##### Blank (BGB0576-BLK1)

Prepared & Analyzed: 02/20/23

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
Surrogate: 2-Methylnaphthalene-d10	0.0169		"	0.0333		50.7		40-150			
Surrogate: Fluoranthene-d10	0.0376		"	0.0333		113		40-150			

##### LCS (BGB0576-BS1)

Prepared & Analyzed: 02/20/23

Acenaphthene	0.0364	0.00500	mg/kg	0.0333		109		31-137			
Anthracene	0.0359	0.00500	"	0.0333		108		30-120			
Benzo (a) anthracene	0.0275	0.00500	"	0.0333		82.4		30-120			
Benzo (a) pyrene	0.0336	0.00500	"	0.0333		101		30-120			
Benzo (b) fluoranthene	0.0290	0.00500	"	0.0333		86.9		30-120			
Benzo (k) fluoranthene	0.0337	0.00500	"	0.0333		101		30-120			
Chrysene	0.0313	0.00500	"	0.0333		93.9		30-120			
Dibenz (a,h) anthracene	0.0274	0.00500	"	0.0333		82.3		30-120			
Fluoranthene	0.0362	0.00500	"	0.0333		109		30-120			
Fluorene	0.0376	0.00500	"	0.0333		113		30-120			
Indeno (1,2,3-cd) pyrene	0.0368	0.00500	"	0.0333		110		30-120			
Pyrene	0.0388	0.00500	"	0.0333		116		35-142			
1-Methylnaphthalene	0.0354	0.00500	"	0.0333		106		35-142			
2-Methylnaphthalene	0.0205	0.00500	"	0.0333		61.4		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0341		"	0.0333		102		40-150			
Surrogate: Fluoranthene-d10	0.0362		"	0.0333		108		40-150			

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGB0576 - EPA 5030 Soil MS

##### Matrix Spike (BGB0576-MS1)

Source: 2302368-21

Prepared & Analyzed: 02/20/23

Acenaphthene	0.0224	0.00500	mg/kg	0.0333	ND	67.2	31-137		
Anthracene	0.0250	0.00500	"	0.0333	ND	74.9	30-120		
Benzo (a) anthracene	0.0236	0.00500	"	0.0333	ND	70.9	30-120		
Benzo (a) pyrene	0.0203	0.00500	"	0.0333	ND	61.0	30-120		
Benzo (b) fluoranthene	0.0146	0.00500	"	0.0333	ND	43.8	30-120		
Benzo (k) fluoranthene	0.0163	0.00500	"	0.0333	ND	48.8	30-120		
Chrysene	0.0224	0.00500	"	0.0333	ND	67.2	30-120		
Dibenz (a,h) anthracene	0.0173	0.00500	"	0.0333	ND	51.8	30-120		
Fluoranthene	0.0249	0.00500	"	0.0333	ND	74.7	30-120		
Fluorene	0.0235	0.00500	"	0.0333	ND	70.5	30-120		
Indeno (1,2,3-cd) pyrene	0.0192	0.00500	"	0.0333	ND	57.7	30-120		
Pyrene	0.0253	0.00500	"	0.0333	ND	75.9	35-142		
1-Methylnaphthalene	0.0248	0.00500	"	0.0333	ND	74.3	15-130		
2-Methylnaphthalene	0.0184	0.00500	"	0.0333	0.00942	26.9	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0277		"	0.0333		83.0	40-150		
Surrogate: Fluoranthene-d10	0.0259		"	0.0333		77.8	40-150		

##### Matrix Spike Dup (BGB0576-MSD1)

Source: 2302368-21

Prepared & Analyzed: 02/20/23

Acenaphthene	0.0200	0.00500	mg/kg	0.0333	ND	60.1	31-137	11.2	30
Anthracene	0.0200	0.00500	"	0.0333	ND	59.9	30-120	22.2	30
Benzo (a) anthracene	0.0201	0.00500	"	0.0333	ND	60.2	30-120	16.2	30
Benzo (a) pyrene	0.0202	0.00500	"	0.0333	ND	60.6	30-120	0.650	30
Benzo (b) fluoranthene	0.0141	0.00500	"	0.0333	ND	42.2	30-120	3.77	30
Benzo (k) fluoranthene	0.0162	0.00500	"	0.0333	ND	48.5	30-120	0.789	30
Chrysene	0.0197	0.00500	"	0.0333	ND	59.1	30-120	12.7	30
Dibenz (a,h) anthracene	0.0202	0.00500	"	0.0333	ND	60.7	30-120	15.8	30
Fluoranthene	0.0217	0.00500	"	0.0333	ND	65.2	30-120	13.6	30
Fluorene	0.0206	0.00500	"	0.0333	ND	61.9	30-120	13.0	30
Indeno (1,2,3-cd) pyrene	0.0221	0.00500	"	0.0333	ND	66.2	30-120	13.7	30
Pyrene	0.0224	0.00500	"	0.0333	ND	67.2	35-142	12.2	30
1-Methylnaphthalene	0.0204	0.00500	"	0.0333	ND	61.3	15-130	19.0	50
2-Methylnaphthalene	0.0161	0.00500	"	0.0333	0.00942	20.1	15-130	13.1	50
Surrogate: 2-Methylnaphthalene-d10	0.0214		"	0.0333		64.2	40-150		
Surrogate: Fluoranthene-d10	0.0230		"	0.0333		69.0	40-150		

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

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

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

**Batch BGB0588 - EPA 3050B**

**Blank (BGB0588-BLK1)**

Prepared & Analyzed: 02/20/23

Boron ND 0.0100 mg/L

**LCS (BGB0588-BS1)**

Prepared: 02/20/23 Analyzed: 02/21/23

Boron 4.95 0.0100 mg/L 5.00 99.1 80-120

**Duplicate (BGB0588-DUP1)**

**Source: 2302363-01**

Prepared: 02/20/23 Analyzed: 02/21/23

Boron 0.139 0.0100 mg/L 0.141 1.74 20

**Matrix Spike (BGB0588-MS1)**

**Source: 2302363-01**

Prepared: 02/20/23 Analyzed: 02/21/23

Boron 5.83 0.0100 mg/L 5.00 0.141 114 75-125

**Matrix Spike Dup (BGB0588-MSD1)**

**Source: 2302363-01**

Prepared: 02/20/23 Analyzed: 02/21/23

Boron 5.75 0.0100 mg/L 5.00 0.141 112 75-125 1.47 25

**Batch BGB0603 - EPA 3050B**

**Blank (BGB0603-BLK1)**

Prepared: 02/20/23 Analyzed: 02/21/23

Boron ND 0.0100 mg/L

**LCS (BGB0603-BS1)**

Prepared: 02/20/23 Analyzed: 02/21/23

Boron 4.89 0.0100 mg/L 5.00 97.8 80-120

**Duplicate (BGB0603-DUP1)**

**Source: 2302311-01**

Prepared: 02/20/23 Analyzed: 02/21/23

Boron 0.0425 0.0100 mg/L 0.0609 35.6 20 QR-03

**Matrix Spike (BGB0603-MS1)**

**Source: 2302311-01**

Prepared: 02/20/23 Analyzed: 02/21/23

Boron 6.17 0.0100 mg/L 5.00 0.0609 122 75-125

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

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

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

**Batch BGB0603 - EPA 3050B**

<b>Matrix Spike Dup (BGB0603-MSD1)</b>		<b>Source: 2302311-01</b>			Prepared: 02/20/23 Analyzed: 02/21/23					
Boron	6.13	0.0100	mg/L	5.00	0.0609	121	75-125	0.696	25	

**Batch BGB0604 - EPA 3050B**

<b>Blank (BGB0604-BLK1)</b>		Prepared: 02/20/23 Analyzed: 02/21/23								
Boron	ND	0.0100	mg/L							

<b>LCS (BGB0604-BS1)</b>		Prepared: 02/20/23 Analyzed: 02/21/23								
Boron	4.73	0.0100	mg/L	5.00		94.7	80-120			

<b>Duplicate (BGB0604-DUP1)</b>		<b>Source: 2302335-01</b>			Prepared: 02/20/23 Analyzed: 02/21/23					
Boron	0.0790	0.0100	mg/L		0.0813			2.89	20	

<b>Matrix Spike (BGB0604-MS1)</b>		<b>Source: 2302335-01</b>			Prepared: 02/20/23 Analyzed: 02/21/23					
Boron	4.60	0.0100	mg/L	5.00	0.0813	90.5	75-125			

<b>Matrix Spike Dup (BGB0604-MSD1)</b>		<b>Source: 2302335-01</b>			Prepared: 02/20/23 Analyzed: 02/21/23					
Boron	4.57	0.0100	mg/L	5.00	0.0813	89.8	75-125	0.741	25	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BGB0589 - EPA 3050B**

**Blank (BGB0589-BLK1)**

Prepared: 02/20/23 Analyzed: 02/21/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

**LCS (BGB0589-BS1)**

Prepared: 02/20/23 Analyzed: 02/21/23

Arsenic	44.3	0.200	mg/kg wet	40.0	111	80-120
Barium	43.3	0.400	"	40.0	108	80-120
Cadmium	2.19	0.200	"	2.00	109	80-120
Copper	41.9	0.400	"	40.0	105	80-120
Lead	21.3	0.200	"	20.0	106	80-120
Nickel	41.8	0.400	"	40.0	104	80-120
Selenium	4.16	0.260	"	4.00	104	80-120
Silver	2.13	0.0200	"	2.00	106	80-120
Zinc	45.3	0.400	"	40.0	113	80-120

**Duplicate (BGB0589-DUP1)**

Source: 2302368-01

Prepared: 02/20/23 Analyzed: 02/21/23

Arsenic	4.07	0.254	mg/kg dry	4.15	1.72	20	QR-03
Barium	289	0.509	"	382	27.7	20	
Cadmium	0.219	0.254	"	0.250	13.1	20	
Copper	6.82	0.509	"	7.37	7.65	20	
Lead	9.03	0.254	"	10.8	17.4	20	
Nickel	5.86	0.509	"	6.21	5.79	20	
Selenium	1.35	0.260	"	1.20	11.7	20	
Silver	0.0189	0.0254	"	0.0221	15.7	20	
Zinc	22.6	0.509	"	23.5	3.65	20	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BGB0589 - EPA 3050B**

Matrix Spike (BGB0589-MS1)		Source: 2302368-01			Prepared: 02/20/23 Analyzed: 02/21/23					
Arsenic	62.3	0.254	mg/kg dry	50.9	4.15	114	75-125			
Barium	419	0.509	"	50.9	382	74.1	75-125			QM-05
Cadmium	2.73	0.254	"	2.54	0.250	97.6	75-125			
Copper	59.3	0.509	"	50.9	7.37	102	75-125			
Lead	32.6	0.254	"	25.4	10.8	86.1	75-125			
Nickel	61.2	0.509	"	50.9	6.21	108	75-125			
Selenium	6.73	0.260	"	5.09	1.20	109	75-125			
Silver	2.49	0.0254	"	2.54	0.0221	97.1	75-125			
Zinc	77.9	0.509	"	50.9	23.5	107	75-125			

Matrix Spike Dup (BGB0589-MSD1)		Source: 2302368-01			Prepared: 02/20/23 Analyzed: 02/21/23					
Arsenic	62.3	0.254	mg/kg dry	50.9	4.15	114	75-125	0.0175	25	
Barium	416	0.509	"	50.9	382	68.0	75-125	0.740	25	QM-05
Cadmium	2.68	0.254	"	2.54	0.250	95.5	75-125	1.93	25	
Copper	59.4	0.509	"	50.9	7.37	102	75-125	0.175	25	
Lead	32.3	0.254	"	25.4	10.8	84.8	75-125	1.02	25	
Nickel	60.4	0.509	"	50.9	6.21	107	75-125	1.20	25	
Selenium	7.01	0.260	"	5.09	1.20	114	75-125	4.14	25	
Silver	2.49	0.0254	"	2.54	0.0221	97.2	75-125	0.141	25	
Zinc	78.0	0.509	"	50.9	23.5	107	75-125	0.0535	25	

**Batch BGB0590 - EPA 3050B**

Blank (BGB0590-BLK1)		Prepared: 02/20/23 Analyzed: 02/21/23								
Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Cadmium	ND	0.200	"							
Copper	0.0701	0.400	"							
Lead	ND	0.200	"							
Nickel	ND	0.400	"							
Selenium	ND	0.260	"							
Silver	0.00346	0.0200	"							
Zinc	ND	0.400	"							

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BGB0590 - EPA 3050B**

**LCS (BGB0590-BS1)**

Prepared: 02/20/23 Analyzed: 02/21/23

Arsenic	47.6	0.200	mg/kg wet	40.0		119	80-120			
Barium	47.9	0.400	"	40.0		120	80-120			
Cadmium	2.24	0.200	"	2.00		112	80-120			
Copper	45.0	0.400	"	40.0		113	80-120			
Lead	21.9	0.200	"	20.0		110	80-120			
Nickel	45.4	0.400	"	40.0		113	80-120			
Selenium	4.63	0.260	"	4.00		116	80-120			
Silver	2.15	0.0200	"	2.00		107	80-120			
Zinc	47.2	0.400	"	40.0		118	80-120			

**Duplicate (BGB0590-DUP1)**

Source: 2302368-21

Prepared: 02/20/23 Analyzed: 02/21/23

Arsenic	2.79	0.260	mg/kg dry		2.70			3.55	20	
Barium	328	0.520	"		315			3.89	20	
Cadmium	0.227	0.260	"		0.237			4.50	20	
Copper	7.47	0.520	"		7.11			4.99	20	
Lead	11.8	0.260	"		12.2			3.75	20	
Nickel	6.60	0.520	"		6.41			2.86	20	
Selenium	1.20	0.260	"		1.05			13.2	20	
Silver	0.0199	0.0260	"		0.0207			3.80	20	
Zinc	28.9	0.520	"		27.2			5.91	20	

**Matrix Spike (BGB0590-MS1)**

Source: 2302368-21

Prepared: 02/20/23 Analyzed: 02/21/23

Arsenic	70.7	0.260	mg/kg dry	52.0	2.70	131	75-125			QM-05
Barium	439	0.520	"	52.0	315	238	75-125			QM-05
Cadmium	3.48	0.260	"	2.60	0.237	125	75-125			
Copper	72.4	0.520	"	52.0	7.11	126	75-125			QM-05
Lead	42.4	0.260	"	26.0	12.2	116	75-125			
Nickel	73.2	0.520	"	52.0	6.41	128	75-125			QM-05
Selenium	7.75	0.260	"	5.20	1.05	129	75-125			QM-05
Silver	3.05	0.0260	"	2.60	0.0207	117	75-125			
Zinc	101	0.520	"	52.0	27.2	141	75-125			QM-05

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BGB0590 - EPA 3050B**

Matrix Spike Dup (BGB0590-MSD1)		Source: 2302368-21			Prepared: 02/20/23 Analyzed: 02/21/23					
Arsenic	62.5	0.260	mg/kg dry	52.0	2.70	115	75-125	12.3	25	
Barium	370	0.520	"	52.0	315	105	75-125	17.1	25	
Cadmium	2.91	0.260	"	2.60	0.237	103	75-125	17.9	25	
Copper	61.2	0.520	"	52.0	7.11	104	75-125	16.8	25	
Lead	36.3	0.260	"	26.0	12.2	92.3	75-125	15.6	25	
Nickel	62.1	0.520	"	52.0	6.41	107	75-125	16.4	25	
Selenium	7.07	0.260	"	5.20	1.05	116	75-125	9.15	25	
Silver	2.71	0.0260	"	2.60	0.0207	103	75-125	11.9	25	
Zinc	86.9	0.520	"	52.0	27.2	115	75-125	14.8	25	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

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

**Batch BGB0585 - 3060A Mod**

**Blank (BGB0585-BLK1)**

Prepared & Analyzed: 02/20/23

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BGB0585-BS1)**

Prepared & Analyzed: 02/20/23

Chromium, Hexavalent 24.4 0.30 mg/kg wet 25.0 97.8 80-120

**Duplicate (BGB0585-DUP1)**

**Source: 2302368-03**

Prepared & Analyzed: 02/20/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BGB0585-MS1)**

**Source: 2302368-03**

Prepared & Analyzed: 02/20/23

Chromium, Hexavalent 23.9 0.30 mg/kg dry 27.0 ND 88.6 75-125

**Matrix Spike Dup (BGB0585-MSD1)**

**Source: 2302368-03**

Prepared & Analyzed: 02/20/23

Chromium, Hexavalent 27.8 0.30 mg/kg dry 27.0 ND 103 75-125 14.8 20

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

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

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

**Batch BGB0570 - General Preparation**

**Blank (BGB0570-BLK1)**

Prepared: 02/19/23 Analyzed: 02/20/23

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

**LCS (BGB0570-BS1)**

Prepared: 02/19/23 Analyzed: 02/20/23

Calcium	5.47	0.0500	mg/L wet	5.00	109	70-130
Magnesium	5.54	0.0500	"	5.00	111	70-130
Sodium	5.03	0.0500	"	5.00	101	70-130

**Batch BGB0571 - General Preparation**

**Blank (BGB0571-BLK1)**

Prepared: 02/19/23 Analyzed: 02/21/23

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

**LCS (BGB0571-BS1)**

Prepared: 02/19/23 Analyzed: 02/21/23

Calcium	5.06	0.0500	mg/L wet	5.00	101	70-130
Magnesium	5.27	0.0500	"	5.00	105	70-130
Sodium	5.27	0.0500	"	5.00	105	70-130

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

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

#### Summit Scientific

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

#### Batch BGB0600 - General Preparation

<b>Duplicate (BGB0600-DUP1)</b>		<b>Source: 2302368-01</b>			Prepared & Analyzed: 02/20/23						
% Solids	76.7		%		78.7			2.48		20	

#### Batch BGB0601 - General Preparation

<b>Duplicate (BGB0601-DUP1)</b>		<b>Source: 2302368-21</b>			Prepared & Analyzed: 02/20/23						
% Solids	78.6		%		76.9			2.15		20	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

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

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

**Batch BGB0608 - General Preparation**

**Blank (BGB0608-BLK1)**

Prepared & Analyzed: 02/20/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BGB0608-BS1)**

Prepared & Analyzed: 02/20/23

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

**Duplicate (BGB0608-DUP1)**

Source: 2302368-01

Prepared & Analyzed: 02/20/23

Specific Conductance (EC) 0.848 0.0100 mmhos/cm 0.855 0.775 20

**Batch BGB0614 - General Preparation**

**Blank (BGB0614-BLK1)**

Prepared & Analyzed: 02/20/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BGB0614-BS1)**

Prepared & Analyzed: 02/20/23

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

**Duplicate (BGB0614-DUP1)**

Source: 2302368-21

Prepared & Analyzed: 02/20/23

Specific Conductance (EC) 0.497 0.0100 mmhos/cm 0.505 1.60 20

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

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

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

**Batch BGB0609 - General Preparation**

**LCS (BGB0609-BS1)**

Prepared & Analyzed: 02/20/23

pH	9.06		pH Units	9.18		98.7	95-105
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**Duplicate (BGB0609-DUP1)**

**Source: 2302368-01**

Prepared & Analyzed: 02/20/23

pH	7.68		pH Units		7.42		3.44	20
----	------	--	----------	--	------	--	------	----

**Batch BGB0613 - General Preparation**

**LCS (BGB0613-BS1)**

Prepared & Analyzed: 02/20/23

pH	9.06		pH Units	9.18		98.7	95-105
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**Duplicate (BGB0613-DUP1)**

**Source: 2302368-21**

Prepared & Analyzed: 02/20/23

pH	8.04		pH Units		7.95		1.13	20
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Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
02/22/23 15:15

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

March 06, 2023

Jacob Whritenour  
Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield, CO 80020  
RE: Noble - LD19-16  
Work Order # 2303042

Enclosed are the results of analyses for samples received by Summit Scientific on 03/01/23 18:02. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely". The signature is written in a cursive, flowing style.

Scott Sheely For Paul Shrewsbury  
President



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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS36@1.5'	2303042-01	Soil	03/01/23 13:35	03/01/23 18:02
SS37@1.5'	2303042-02	Soil	03/01/23 13:40	03/01/23 18:02
SS38@1.5'	2303042-03	Soil	03/01/23 13:45	03/01/23 18:02
SS39@3.5'	2303042-04	Soil	03/01/23 13:50	03/01/23 18:02
SS39@5'	2303042-05	Soil	03/01/23 13:55	03/01/23 18:02
SS40@3.5'	2303042-06	Soil	03/01/23 14:00	03/01/23 18:02
SS40@5'	2303042-07	Soil	03/01/23 14:05	03/01/23 18:02
SS41@5'	2303042-08	Soil	03/01/23 14:10	03/01/23 18:02
SS42@5'	2303042-09	Soil	03/01/23 14:15	03/01/23 18:02
FS01@6'	2303042-10	Soil	03/01/23 14:20	03/01/23 18:02

Summit Scientific

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# SUMMIT SCIENTIFIC

4653 Table Mountain Drive  
Golden, CO 80403  
303-277-9310



2303042

Lab ID

Page 1 of 1

		<b>Send Data To:</b>	<b>Send Invoice To:</b>
Client: Noble / Tasman		Project Manager: Jake Whritenour	Company: Chevron
Address: 6855 W. 119th Ave		E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location: LD 19-16
City/State/Zip: Broomfield, CO 80020			AFE#:
Phone: 303-261-6246		Project Name: LD 19-16	PO/Billing Codes:
Sampler Name: Stanley Gilbert		Project Number:	Contact: Jason Reese

					Preservative				Matrix			Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	VOC - 915	TPH - 915	PAH - 915	pH, EC, SAR	Boron - HWS	Metals - 915	HOLD	pH, EC, SAR by saturated paste
1	SS36 @ 1.5'	3/1/23	13:35	2			X			X			X	X	X	X	X	X		
2	SS37 @ 1.5'		13:40																	
3	SS38 @ 1.5'		13:45																	
4	SS39 @ 3.5'		13:56																	
5	SS39 @ 5'		13:55																	
6	SS40 @ 3.5'		14:00																	
7	SS40 @ 5'		14:05																	
8	SS41 @ 5'		14:10																	
9	SS42 @ 5'		14:15																	
10	FS01 @ 6'		14:20																	
11																				
12																				
13																				
14																				
15																				

Relinquished by: 	Date/Time: 3/1/23 18:02	Received by: Tasman Lock Box	Date/Time: 3/1/23 18:02	TAT Business Days	Field DO	Notes:
				Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by: Tasman Lock Box	Date/Time: 3/2/23 18:02	Received by: 	Date/Time: 3/2/23 18:02	1 Day <input type="checkbox"/>	Field ORP	
				2 Days <input type="checkbox"/>	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days <input type="checkbox"/>	Field Temp.	
				Standard <input type="checkbox"/>	Field Turb.	
Temperature Upon Receipt: 9.9	Corrected Temperature: 9	IR gun #: 1	HNO3 lot #:			

S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2303042Client: Noble Frasmah Client Project ID: LD 11-16Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 9.9 Thermometer # 1

	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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
If custody seals are present, are they intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? <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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

AS  
Custodian Printed Name

3/1/23  
Date/Time



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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS36@1.5'**  
**2303042-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/01/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0038	03/01/23	03/02/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/01/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		99.7 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		108 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/01/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0039	03/01/23	03/02/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/01/23 13:35**

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

**PAH by EPA Method 8270D SIM**

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS36@1.5'**  
**2303042-01 (Soil)**

### Summit Scientific

#### PAH by EPA Method 8270D SIM

Date Sampled: **03/01/23 13:35**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0043	03/02/23	03/03/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/01/23 13:35**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		65.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		73.6 %		40-150		"	"	"	"	

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

Date Sampled: **03/01/23 13:35**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.782</b>	0.0100		mg/L	1	BGC0037	03/01/23	03/02/23	EPA 6020B	

#### Total Metals by EPA 6020B

Date Sampled: **03/01/23 13:35**

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

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS36@1.5'**  
**2303042-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.15	0.232	0.196	mg/kg dry	1	BGC0036	03/01/23	03/02/23	EPA 6020B
Barium	244	0.465	0.367	"	"	"	"	"	"
Cadmium	0.111	0.232	0.00836	"	"	"	"	"	"
Copper	3.92	0.465	0.0243	"	"	"	"	"	"
Lead	3.95	0.232	0.0638	"	"	"	"	"	"
Nickel	2.93	0.465	0.0708	"	"	"	"	"	"
Selenium	0.310	0.260	0.175	"	"	"	"	"	"
Silver	0.0244	0.0232	0.00310	"	"	"	"	"	"
Zinc	12.9	0.465	0.309	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/01/23 13:35**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0059	03/02/23	03/02/23	EPA 7196A	

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

Date Sampled: **03/01/23 13:35**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	43.7	0.0581		mg/L dry	1	BGC0041	03/01/23	03/02/23	EPA 6020B	
Magnesium	6.73	0.0581		"	"	"	"	"	"	
Sodium	39.3	0.0581		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/01/23 13:35**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.46	0.00100		units	1	BGC0092	03/03/23	03/03/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS36@1.5'**  
**2303042-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/01/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	86.1			%	1	BGC0066	03/02/23	03/03/23	Calculation	

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

Date Sampled: **03/01/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.458	0.0100		mmhos/cm	1	BGC0064	03/02/23	03/02/23	EPA 120.1	

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

Date Sampled: **03/01/23 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.81			pH Units	1	BGC0065	03/02/23	03/02/23	EPA 9045D	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS37@1.5'**  
**2303042-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/01/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0038	03/01/23	03/02/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/01/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		104 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		105 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/01/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0039	03/01/23	03/02/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/01/23 13:40**

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

**PAH by EPA Method 8270D SIM**

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS37@1.5'**  
**2303042-02 (Soil)**

### Summit Scientific

#### PAH by EPA Method 8270D SIM

Date Sampled: **03/01/23 13:40**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0043	03/02/23	03/03/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/01/23 13:40**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		44.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		61.6 %		40-150		"	"	"	"	

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

Date Sampled: **03/01/23 13:40**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.118</b>	0.0100		mg/L	1	BGC0037	03/01/23	03/02/23	EPA 6020B	

#### Total Metals by EPA 6020B

Date Sampled: **03/01/23 13:40**

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

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS37@1.5'**  
**2303042-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.49	0.250	0.211	mg/kg dry	1	BGC0036	03/01/23	03/02/23	EPA 6020B	
Barium	383	0.500	0.395	"	"	"	"	"	"	
Cadmium	0.247	0.250	0.00900	"	"	"	"	"	"	
Copper	6.88	0.500	0.0261	"	"	"	"	"	"	
Lead	11.4	0.250	0.0687	"	"	"	"	"	"	
Nickel	6.02	0.500	0.0762	"	"	"	"	"	"	
Selenium	1.09	0.260	0.175	"	"	"	"	"	"	
Silver	0.0322	0.0250	0.00334	"	"	"	"	"	"	
Zinc	23.1	0.500	0.332	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 03/01/23 13:40

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0059	03/02/23	03/02/23	EPA 7196A	

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

Date Sampled: 03/01/23 13:40

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	43.4	0.0625		mg/L dry	1	BGC0041	03/01/23	03/02/23	EPA 6020B	
Magnesium	6.24	0.0625		"	"	"	"	"	"	
Sodium	26.3	0.0625		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 03/01/23 13:40

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.988	0.00100		units	1	BGC0092	03/03/23	03/03/23	Calculation	

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

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS37@1.5'**  
**2303042-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/01/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	80.0			%	1	BGC0066	03/02/23	03/03/23	Calculation	

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

Date Sampled: **03/01/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.660	0.0100		mmhos/cm	1	BGC0064	03/02/23	03/02/23	EPA 120.1	

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

Date Sampled: **03/01/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.63			pH Units	1	BGC0065	03/02/23	03/02/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS38@1.5'**  
**2303042-03 (Soil)**

### Summit Scientific

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

Date Sampled: **03/01/23 13:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGC0038	03/01/23	03/02/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/01/23 13:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		105 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		115 %		50-150		"	"	"	"	

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/01/23 13:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0039	03/01/23	03/02/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/01/23 13:45**

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

#### PAH by EPA Method 8270D SIM

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS38@1.5'**  
**2303042-03 (Soil)**

### Summit Scientific

#### PAH by EPA Method 8270D SIM

Date Sampled: **03/01/23 13:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0043	03/02/23	03/03/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/01/23 13:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		42.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		75.5 %		40-150		"	"	"	"	

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

Date Sampled: **03/01/23 13:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.123</b>	0.0100		mg/L	1	BGC0037	03/01/23	03/02/23	EPA 6020B	

#### Total Metals by EPA 6020B

Date Sampled: **03/01/23 13:45**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS38@1.5'**  
**2303042-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.87	0.260	0.219	mg/kg dry	1	BGC0036	03/01/23	03/02/23	EPA 6020B	
Barium	247	0.520	0.411	"	"	"	"	"	"	
Cadmium	0.329	0.260	0.00936	"	"	"	"	"	"	
Copper	6.85	0.520	0.0272	"	"	"	"	"	"	
Lead	12.3	0.260	0.0715	"	"	"	"	"	"	
Nickel	5.56	0.520	0.0793	"	"	"	"	"	"	
Selenium	1.31	0.260	0.175	"	"	"	"	"	"	
Silver	0.0304	0.0260	0.00347	"	"	"	"	"	"	
Zinc	21.8	0.520	0.346	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 03/01/23 13:45

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0059	03/02/23	03/02/23	EPA 7196A	

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

Date Sampled: 03/01/23 13:45

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	105	0.0650		mg/L dry	1	BGC0041	03/01/23	03/02/23	EPA 6020B	
Magnesium	10.4	0.0650		"	"	"	"	"	"	
Sodium	32.6	0.0650		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 03/01/23 13:45

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.812	0.00100		units	1	BGC0092	03/03/23	03/03/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS38@1.5'**  
**2303042-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/01/23 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	76.9			%	1	BGC0066	03/02/23	03/03/23	Calculation	

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

Date Sampled: **03/01/23 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.613	0.0100		mmhos/cm	1	BGC0064	03/02/23	03/02/23	EPA 120.1	

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

Date Sampled: **03/01/23 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.48			pH Units	1	BGC0065	03/02/23	03/02/23	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS39@3.5'**  
**2303042-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/01/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0038	03/01/23	03/02/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/01/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		102 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		107 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		113 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/01/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0039	03/01/23	03/02/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/01/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		125 %		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 - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS39@3.5'**  
**2303042-04 (Soil)**

### Summit Scientific

#### PAH by EPA Method 8270D SIM

Date Sampled: **03/01/23 13:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0043	03/02/23	03/03/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/01/23 13:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		46.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		73.5 %		40-150		"	"	"	"	

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

Date Sampled: **03/01/23 13:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.134</b>	0.0100		mg/L	1	BGC0037	03/01/23	03/02/23	EPA 6020B	

#### Total Metals by EPA 6020B

Date Sampled: **03/01/23 13:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.  
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Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS39@3.5'**  
**2303042-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.66	0.265	0.223	mg/kg dry	1	BGC0036	03/01/23	03/02/23	EPA 6020B	
Barium	344	0.530	0.419	"	"	"	"	"	"	
Cadmium	0.237	0.265	0.00954	"	"	"	"	"	"	
Copper	7.02	0.530	0.0277	"	"	"	"	"	"	
Lead	11.2	0.265	0.0728	"	"	"	"	"	"	
Nickel	6.33	0.530	0.0808	"	"	"	"	"	"	
Selenium	1.00	0.260	0.175	"	"	"	"	"	"	
Silver	0.0278	0.0265	0.00354	"	"	"	"	"	"	
Zinc	24.3	0.530	0.352	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/01/23 13:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0059	03/02/23	03/02/23	EPA 7196A	

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

Date Sampled: **03/01/23 13:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	98.8	0.0662		mg/L dry	1	BGC0041	03/01/23	03/02/23	EPA 6020B	
Magnesium	10.8	0.0662		"	"	"	"	"	"	
Sodium	18.6	0.0662		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/01/23 13:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.474	0.00100		units	1	BGC0092	03/03/23	03/03/23	Calculation	

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

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS39@3.5'**  
**2303042-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/01/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	75.5			%	1	BGC0066	03/02/23	03/03/23	Calculation	

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

Date Sampled: **03/01/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.505	0.0100		mmhos/cm	1	BGC0064	03/02/23	03/02/23	EPA 120.1	

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

Date Sampled: **03/01/23 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.70			pH Units	1	BGC0065	03/02/23	03/02/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS39@5'**  
**2303042-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/01/23 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0038	03/01/23	03/02/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/01/23 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		95.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		106 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/01/23 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0039	03/01/23	03/02/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/01/23 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		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 - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS39@5'**  
**2303042-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/01/23 13:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0043	03/02/23	03/03/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/01/23 13:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		55.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		77.4 %		40-150		"	"	"	"	

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

Date Sampled: **03/01/23 13:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.153</b>	0.0100		mg/L	1	BGC0037	03/01/23	03/02/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/01/23 13:55**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS39@5'**  
**2303042-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	6.72	0.272	0.229	mg/kg dry	1	BGC0036	03/01/23	03/02/23	EPA 6020B
Barium	379	0.545	0.430	"	"	"	"	"	"
Cadmium	0.253	0.272	0.00980	"	"	"	"	"	"
Copper	8.12	0.545	0.0285	"	"	"	"	"	"
Lead	10.6	0.272	0.0748	"	"	"	"	"	"
Nickel	7.04	0.545	0.0831	"	"	"	"	"	"
Selenium	1.31	0.260	0.175	"	"	"	"	"	"
Silver	0.0272	0.0272	0.00364	"	"	"	"	"	"
Zinc	23.1	0.545	0.362	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/01/23 13:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0059	03/02/23	03/02/23	EPA 7196A	

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

Date Sampled: **03/01/23 13:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	39.5	0.0681		mg/L dry	1	BGC0041	03/01/23	03/02/23	EPA 6020B	
Magnesium	4.79	0.0681		"	"	"	"	"	"	
Sodium	31.5	0.0681		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/01/23 13:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.26	0.00100		units	1	BGC0092	03/03/23	03/03/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS39@5'**  
**2303042-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/01/23 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	73.4			%	1	BGC0066	03/02/23	03/03/23	Calculation	

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

Date Sampled: **03/01/23 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.432	0.0100		mmhos/cm	1	BGC0064	03/02/23	03/02/23	EPA 120.1	

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

Date Sampled: **03/01/23 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.98			pH Units	1	BGC0065	03/02/23	03/02/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS40@3.5'**  
**2303042-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/01/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0038	03/01/23	03/02/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/01/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		95.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		105 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/01/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0039	03/01/23	03/02/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/01/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		125 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS40@3.5'**  
**2303042-06 (Soil)**

### Summit Scientific

#### PAH by EPA Method 8270D SIM

Date Sampled: **03/01/23 14:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0043	03/02/23	03/03/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/01/23 14:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		51.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		67.9 %		40-150		"	"	"	"	

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

Date Sampled: **03/01/23 14:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.101</b>	0.0100		mg/L	1	BGC0037	03/01/23	03/02/23	EPA 6020B	

#### Total Metals by EPA 6020B

Date Sampled: **03/01/23 14:00**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS40@3.5'**  
**2303042-06 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.56	0.260	0.219	mg/kg dry	1	BGC0036	03/01/23	03/02/23	EPA 6020B	
Barium	332	0.519	0.410	"	"	"	"	"	"	
Cadmium	0.268	0.260	0.00934	"	"	"	"	"	"	
Copper	7.75	0.519	0.0271	"	"	"	"	"	"	
Lead	13.0	0.260	0.0713	"	"	"	"	"	"	
Nickel	6.70	0.519	0.0792	"	"	"	"	"	"	
Selenium	1.35	0.260	0.175	"	"	"	"	"	"	
Silver	0.0312	0.0260	0.00346	"	"	"	"	"	"	
Zinc	25.5	0.519	0.345	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/01/23 14:00**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0059	03/02/23	03/02/23	EPA 7196A	

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

Date Sampled: **03/01/23 14:00**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	120	0.0649		mg/L dry	1	BGC0041	03/01/23	03/02/23	EPA 6020B	
Magnesium	9.82	0.0649		"	"	"	"	"	"	
Sodium	13.7	0.0649		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/01/23 14:00**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.323	0.00100		units	1	BGC0092	03/03/23	03/03/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS40@3.5'**  
**2303042-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/01/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	77.1			%	1	BGC0066	03/02/23	03/03/23	Calculation	

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

Date Sampled: **03/01/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.440	0.0100		mmhos/cm	1	BGC0064	03/02/23	03/02/23	EPA 120.1	

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

Date Sampled: **03/01/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.66			pH Units	1	BGC0065	03/02/23	03/02/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS40@5'**  
**2303042-07 (Soil)**

### Summit Scientific

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

Date Sampled: **03/01/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGC0038	03/01/23	03/02/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/01/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		107 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		115 %		50-150		"	"	"	"	

#### Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/01/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0039	03/01/23	03/02/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/01/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		127 %		30-150		"	"	"	"	

#### PAH by EPA Method 8270D SIM

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS40@5'**  
**2303042-07 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/01/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0043	03/02/23	03/03/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/01/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		52.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		78.5 %		40-150		"	"	"	"	

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

Date Sampled: **03/01/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0885</b>	0.0100		mg/L	1	BGC0037	03/01/23	03/02/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/01/23 14:05**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS40@5'**  
**2303042-07 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	7.96	0.265	0.223	mg/kg dry	1	BGC0036	03/01/23	03/02/23	EPA 6020B	
Barium	96.9	0.530	0.418	"	"	"	"	"	"	
Cadmium	0.406	0.265	0.00953	"	"	"	"	"	"	
Copper	8.12	0.530	0.0277	"	"	"	"	"	"	
Lead	13.7	0.265	0.0728	"	"	"	"	"	"	
Nickel	7.72	0.530	0.0808	"	"	"	"	"	"	
Selenium	1.24	0.260	0.175	"	"	"	"	"	"	
Silver	0.0412	0.0265	0.00354	"	"	"	"	"	"	
Zinc	23.4	0.530	0.352	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/01/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0059	03/02/23	03/02/23	EPA 7196A	

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

Date Sampled: **03/01/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	43.1	0.0662		mg/L dry	1	BGC0041	03/01/23	03/02/23	EPA 6020B	
Magnesium	5.81	0.0662		"	"	"	"	"	"	
Sodium	39.4	0.0662		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/01/23 14:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.49	0.00100		units	1	BGC0092	03/03/23	03/03/23	Calculation	

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

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS40@5'**  
**2303042-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/01/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	75.5			%	1	BGC0066	03/02/23	03/03/23	Calculation	

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

Date Sampled: **03/01/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.395	0.0100		mmhos/cm	1	BGC0064	03/02/23	03/02/23	EPA 120.1	

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

Date Sampled: **03/01/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.94			pH Units	1	BGC0065	03/02/23	03/02/23	EPA 9045D	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS41@5'**  
**2303042-08 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/01/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0038	03/01/23	03/02/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/01/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		99.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		105 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/01/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0039	03/01/23	03/02/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/01/23 14:10**

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

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS41@5'**  
**2303042-08 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/01/23 14:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0043	03/02/23	03/03/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/01/23 14:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		46.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.8 %		40-150		"	"	"	"	

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

Date Sampled: **03/01/23 14:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.172</b>	0.0100		mg/L	1	BGC0037	03/01/23	03/02/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/01/23 14:10**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS41@5'**  
**2303042-08 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	16.9	0.274	0.231	mg/kg dry	1	BGC0036	03/01/23	03/02/23	EPA 6020B
Barium	357	0.549	0.434	"	"	"	"	"	"
Cadmium	0.473	0.274	0.00988	"	"	"	"	"	"
Copper	13.7	0.549	0.0287	"	"	"	"	"	"
Lead	13.1	0.274	0.0754	"	"	"	"	"	"
Nickel	8.17	0.549	0.0837	"	"	"	"	"	"
Selenium	1.60	0.260	0.175	"	"	"	"	"	"
Silver	0.0420	0.0274	0.00366	"	"	"	"	"	"
Zinc	24.0	0.549	0.365	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/01/23 14:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0059	03/02/23	03/02/23	EPA 7196A	

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

Date Sampled: **03/01/23 14:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	112	0.0686		mg/L dry	1	BGC0041	03/01/23	03/02/23	EPA 6020B	
Magnesium	17.5	0.0686		"	"	"	"	"	"	
Sodium	85.2	0.0686		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/01/23 14:10**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.97	0.00100		units	1	BGC0092	03/03/23	03/03/23	Calculation	

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

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS41@5'**  
**2303042-08 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/01/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	72.9			%	1	BGC0066	03/02/23	03/03/23	Calculation	

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

Date Sampled: **03/01/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.946	0.0100		mmhos/cm	1	BGC0064	03/02/23	03/02/23	EPA 120.1	

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

Date Sampled: **03/01/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.64			pH Units	1	BGC0065	03/02/23	03/02/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS42@5'**  
**2303042-09 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/01/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0038	03/01/23	03/02/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/01/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		97.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		108 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		115 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/01/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0039	03/01/23	03/02/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/01/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		126 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS42@5'**  
**2303042-09 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/01/23 14:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0043	03/02/23	03/03/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/01/23 14:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		60.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		86.8 %		40-150		"	"	"	"	

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

Date Sampled: **03/01/23 14:15**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.329</b>	0.0100		mg/L	1	BGC0037	03/01/23	03/02/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/01/23 14:15**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS42@5'**  
**2303042-09 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	13.0	0.280	0.236	mg/kg dry	1	BGC0036	03/01/23	03/02/23	EPA 6020B	
Barium	176	0.560	0.442	"	"	"	"	"	"	
Cadmium	0.256	0.280	0.0101	"	"	"	"	"	"	
Copper	11.1	0.560	0.0292	"	"	"	"	"	"	
Lead	8.70	0.280	0.0769	"	"	"	"	"	"	
Nickel	7.66	0.560	0.0854	"	"	"	"	"	"	
Selenium	1.74	0.260	0.175	"	"	"	"	"	"	
Silver	0.0391	0.0280	0.00374	"	"	"	"	"	"	
Zinc	23.5	0.560	0.372	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/01/23 14:15**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0059	03/02/23	03/02/23	EPA 7196A	

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

Date Sampled: **03/01/23 14:15**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	80.5	0.0700		mg/L dry	1	BGC0041	03/01/23	03/02/23	EPA 6020B	
Magnesium	13.6	0.0700		"	"	"	"	"	"	
Sodium	85.3	0.0700		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/01/23 14:15**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.31	0.00100		units	1	BGC0092	03/03/23	03/03/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**SS42@5'**  
**2303042-09 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/01/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	71.5			%	1	BGC0066	03/02/23	03/03/23	Calculation	

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

Date Sampled: **03/01/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.834	0.0100		mmhos/cm	1	BGC0064	03/02/23	03/02/23	EPA 120.1	

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

Date Sampled: **03/01/23 14:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.77			pH Units	1	BGC0065	03/02/23	03/02/23	EPA 9045D	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**FS01@6'**  
**2303042-10 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/01/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0038	03/01/23	03/02/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/01/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		101 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		107 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		115 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/01/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0039	03/01/23	03/02/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/01/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		126 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

03/06/23 14:17

**FS01@6'**  
**2303042-10 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/01/23 14:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0043	03/02/23	03/03/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/01/23 14:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		54.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		75.9 %		40-150		"	"	"	"	

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

Date Sampled: **03/01/23 14:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.118</b>	0.0100		mg/L	1	BGC0037	03/01/23	03/02/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/01/23 14:20**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**FS01@6'**  
**2303042-10 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.61	0.277	0.233	mg/kg dry	1	BGC0036	03/01/23	03/02/23	EPA 6020B	
Barium	197	0.554	0.437	"	"	"	"	"	"	
Cadmium	0.275	0.277	0.00997	"	"	"	"	"	"	
Copper	9.00	0.554	0.0289	"	"	"	"	"	"	
Lead	15.1	0.277	0.0761	"	"	"	"	"	"	
Nickel	7.28	0.554	0.0844	"	"	"	"	"	"	
Selenium	1.35	0.260	0.175	"	"	"	"	"	"	
Silver	0.0453	0.0277	0.00370	"	"	"	"	"	"	
Zinc	22.8	0.554	0.368	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 03/01/23 14:20

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0059	03/02/23	03/02/23	EPA 7196A	

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

Date Sampled: 03/01/23 14:20

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	40.6	0.0692		mg/L dry	1	BGC0041	03/01/23	03/02/23	EPA 6020B	
Magnesium	6.32	0.0692		"	"	"	"	"	"	
Sodium	55.5	0.0692		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 03/01/23 14:20

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.14	0.00100		units	1	BGC0092	03/03/23	03/03/23	Calculation	

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

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Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**FS01@6'**  
**2303042-10 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/01/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	72.2			%	1	BGC0066	03/02/23	03/03/23	Calculation	

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

Date Sampled: **03/01/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.497	0.0100		mmhos/cm	1	BGC0064	03/02/23	03/02/23	EPA 120.1	

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

Date Sampled: **03/01/23 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.86			pH Units	1	BGC0065	03/02/23	03/02/23	EPA 9045D	

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Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

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

#### Batch BGC0038 - EPA 5030 Soil MS

##### Blank (BGC0038-BLK1)

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

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0282		"	0.0400		70.6	50-150			
Surrogate: Toluene-d8	0.0383		"	0.0400		95.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0381		"	0.0400		95.2	50-150			

##### Blank (BGC0038-BLK2)

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

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0394		"	0.0400		98.4	50-150			
Surrogate: Toluene-d8	0.0421		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0464		"	0.0400		116	50-150			

##### LCS (BGC0038-BS1)

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

Benzene	0.0907	0.0020	mg/kg	0.100		90.7	70-130			
Toluene	0.0871	0.0050	"	0.100		87.1	70-130			
Ethylbenzene	0.104	0.0050	"	0.100		104	70-130			
m,p-Xylene	0.211	0.010	"	0.200		105	70-130			
o-Xylene	0.0970	0.0050	"	0.100		97.0	70-130			
1,2,4-Trimethylbenzene	0.0954	0.0050	"	0.100		95.4	70-130			
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100		102	70-130			
Naphthalene	0.0884	0.0038	"	0.100		88.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0235		"	0.0400		58.8	50-150			
Surrogate: Toluene-d8	0.0376		"	0.0400		94.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0375		"	0.0400		93.8	50-150			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

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

#### Batch BGC0038 - EPA 5030 Soil MS

##### LCS (BGC0038-BS2)

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

Benzene	0.105	0.0020	mg/kg	0.100		105	70-130
Toluene	0.105	0.0050	"	0.100		105	70-130
Ethylbenzene	0.0901	0.0050	"	0.100		90.1	70-130
m,p-Xylene	0.236	0.010	"	0.200		118	70-130
o-Xylene	0.110	0.0050	"	0.100		110	70-130
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100		101	70-130
1,3,5-Trimethylbenzene	0.103	0.0050	"	0.100		103	70-130
Naphthalene	0.0953	0.0038	"	0.100		95.3	70-130
Surrogate: 1,2-Dichloroethane-d4	0.0382		"	0.0400		95.6	50-150
Surrogate: Toluene-d8	0.0440		"	0.0400		110	50-150
Surrogate: 4-Bromofluorobenzene	0.0439		"	0.0400		110	50-150

##### Matrix Spike (BGC0038-MS1)

Source: 2303038-01

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

Benzene	0.0870	0.0020	mg/kg	0.100	ND	87.0	70-130
Toluene	0.0853	0.0050	"	0.100	ND	85.3	70-130
Ethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130
m,p-Xylene	0.208	0.010	"	0.200	ND	104	70-130
o-Xylene	0.0950	0.0050	"	0.100	ND	95.0	70-130
1,2,4-Trimethylbenzene	0.0967	0.0050	"	0.100	ND	96.7	70-130
1,3,5-Trimethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130
Naphthalene	0.0976	0.0038	"	0.100	ND	97.6	70-130
Surrogate: 1,2-Dichloroethane-d4	0.0251		"	0.0400		62.7	50-150
Surrogate: Toluene-d8	0.0368		"	0.0400		92.1	50-150
Surrogate: 4-Bromofluorobenzene	0.0363		"	0.0400		90.8	50-150

##### Matrix Spike (BGC0038-MS2)

Source: 2303044-02

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

Benzene	0.105	0.0020	mg/kg	0.100	ND	105	70-130
Toluene	0.101	0.0050	"	0.100	ND	101	70-130
Ethylbenzene	0.119	0.0050	"	0.100	ND	119	70-130
m,p-Xylene	0.236	0.010	"	0.200	ND	118	70-130
o-Xylene	0.111	0.0050	"	0.100	ND	111	70-130
1,2,4-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130
Naphthalene	0.0756	0.0038	"	0.100	ND	75.6	70-130
Surrogate: 1,2-Dichloroethane-d4	0.0389		"	0.0400		97.4	50-150
Surrogate: Toluene-d8	0.0422		"	0.0400		105	50-150
Surrogate: 4-Bromofluorobenzene	0.0451		"	0.0400		113	50-150

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

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

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

**Batch BGC0038 - EPA 5030 Soil MS**

**Matrix Spike Dup (BGC0038-MSD1)**

**Source: 2303038-01**

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

Benzene	0.0884	0.0020	mg/kg	0.100	ND	88.4	70-130	1.61	30	
Toluene	0.0873	0.0050	"	0.100	ND	87.3	70-130	2.33	30	
Ethylbenzene	0.109	0.0050	"	0.100	ND	109	70-130	6.53	30	
m,p-Xylene	0.217	0.010	"	0.200	ND	108	70-130	4.05	30	
o-Xylene	0.100	0.0050	"	0.100	ND	100	70-130	5.20	30	
1,2,4-Trimethylbenzene	0.0994	0.0050	"	0.100	ND	99.4	70-130	2.81	30	
1,3,5-Trimethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130	4.49	30	
Naphthalene	0.0903	0.0038	"	0.100	ND	90.3	70-130	7.73	30	
Surrogate: 1,2-Dichloroethane-d4	0.0245		"	0.0400		61.4	50-150			
Surrogate: Toluene-d8	0.0381		"	0.0400		95.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0374		"	0.0400		93.4	50-150			

**Matrix Spike Dup (BGC0038-MSD2)**

**Source: 2303044-02**

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

Benzene	0.105	0.0020	mg/kg	0.100	ND	105	70-130	0.343	30	
Toluene	0.103	0.0050	"	0.100	ND	103	70-130	2.27	30	
Ethylbenzene	0.122	0.0050	"	0.100	ND	122	70-130	2.76	30	
m,p-Xylene	0.241	0.010	"	0.200	ND	121	70-130	2.33	30	
o-Xylene	0.113	0.0050	"	0.100	ND	113	70-130	1.31	30	
1,2,4-Trimethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130	2.45	30	
1,3,5-Trimethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130	1.91	30	
Naphthalene	0.0781	0.0038	"	0.100	ND	78.1	70-130	3.32	30	
Surrogate: 1,2-Dichloroethane-d4	0.0393		"	0.0400		98.2	50-150			
Surrogate: Toluene-d8	0.0435		"	0.0400		109	50-150			
Surrogate: 4-Bromofluorobenzene	0.0450		"	0.0400		112	50-150			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BGC0039 - EPA 3550A**

**Blank (BGC0039-BLK1)**

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

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: <i>o</i> -Terphenyl	11.6		"	12.5		92.8	30-150			

**Blank (BGC0039-BLK2)**

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

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: <i>o</i> -Terphenyl	16.2		"	12.5		129	30-150			

**LCS (BGC0039-BS1)**

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

C10-C28 (DRO)	532	50	mg/kg	500		106	70-130			
Surrogate: <i>o</i> -Terphenyl	12.2		"	12.5		97.7	30-150			

**LCS (BGC0039-BS2)**

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

C10-C28 (DRO)	458	50	mg/kg	500		91.7	70-130			
Surrogate: <i>o</i> -Terphenyl	16.3		"	12.5		130	30-150			

**Matrix Spike (BGC0039-MS1)**

Source: 2303038-01

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

C10-C28 (DRO)	399	50	mg/kg	500	16.6	76.5	70-130			
Surrogate: <i>o</i> -Terphenyl	10.1		"	12.5		81.0	30-150			

**Matrix Spike (BGC0039-MS2)**

Source: 2303044-02

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

C10-C28 (DRO)	421	50	mg/kg	500	9.94	82.1	70-130			
Surrogate: <i>o</i> -Terphenyl	16.2		"	12.5		129	30-150			

**Matrix Spike Dup (BGC0039-MSD1)**

Source: 2303038-01

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

C10-C28 (DRO)	441	50	mg/kg	500	16.6	84.9	70-130	10.0	20	
Surrogate: <i>o</i> -Terphenyl	9.65		"	12.5		77.2	30-150			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

03/06/23 14:17

## 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 BGC0039 - EPA 3550A

##### Matrix Spike Dup (BGC0039-MSD2)

Source: 2303044-02

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

C10-C28 (DRO)	403	50	mg/kg	500	9.94	78.6	70-130	4.27	20	
Surrogate: o-Terphenyl	15.1		"	12.5		121	30-150			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGC0043 - EPA 5030 Soil MS

##### Blank (BGC0043-BLK1)

Prepared & Analyzed: 03/02/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0192		"	0.0333		57.6	40-150			
Surrogate: Fluoranthene-d10	0.0358		"	0.0333		108	40-150			

##### LCS (BGC0043-BS1)

Prepared & Analyzed: 03/02/23

Acenaphthene	0.0343	0.00500	mg/kg	0.0333		103	31-137			
Anthracene	0.0317	0.00500	"	0.0333		95.1	30-120			
Benzo (a) anthracene	0.0291	0.00500	"	0.0333		87.4	30-120			
Benzo (a) pyrene	0.0322	0.00500	"	0.0333		96.6	30-120			
Benzo (b) fluoranthene	0.0300	0.00500	"	0.0333		90.1	30-120			
Benzo (k) fluoranthene	0.0342	0.00500	"	0.0333		102	30-120			
Chrysene	0.0362	0.00500	"	0.0333		109	30-120			
Dibenz (a,h) anthracene	0.0241	0.00500	"	0.0333		72.3	30-120			
Fluoranthene	0.0326	0.00500	"	0.0333		97.8	30-120			
Fluorene	0.0349	0.00500	"	0.0333		105	30-120			
Indeno (1,2,3-cd) pyrene	0.0299	0.00500	"	0.0333		89.7	30-120			
Pyrene	0.0339	0.00500	"	0.0333		102	35-142			
1-Methylnaphthalene	0.0253	0.00500	"	0.0333		75.9	35-142			
2-Methylnaphthalene	0.0204	0.00500	"	0.0333		61.3	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0284		"	0.0333		85.1	40-150			
Surrogate: Fluoranthene-d10	0.0321		"	0.0333		96.3	40-150			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGC0043 - EPA 5030 Soil MS

##### Matrix Spike (BGC0043-MS1)

Source: 2303040-01

Prepared & Analyzed: 03/02/23

Acenaphthene	0.0226	0.00500	mg/kg	0.0333	ND	67.9	31-137				
Anthracene	0.0202	0.00500	"	0.0333	ND	60.6	30-120				
Benzo (a) anthracene	0.0217	0.00500	"	0.0333	ND	65.1	30-120				
Benzo (a) pyrene	0.0205	0.00500	"	0.0333	ND	61.5	30-120				
Benzo (b) fluoranthene	0.0192	0.00500	"	0.0333	ND	57.7	30-120				
Benzo (k) fluoranthene	0.0200	0.00500	"	0.0333	ND	60.1	30-120				
Chrysene	0.0217	0.00500	"	0.0333	ND	65.1	30-120				
Dibenz (a,h) anthracene	0.0168	0.00500	"	0.0333	ND	50.5	30-120				
Fluoranthene	0.0218	0.00500	"	0.0333	ND	65.4	30-120				
Fluorene	0.0233	0.00500	"	0.0333	ND	69.8	30-120				
Indeno (1,2,3-cd) pyrene	0.0182	0.00500	"	0.0333	ND	54.5	30-120				
Pyrene	0.0218	0.00500	"	0.0333	ND	65.3	35-142				
1-Methylnaphthalene	0.0192	0.00500	"	0.0333	ND	57.7	15-130				
2-Methylnaphthalene	0.0188	0.00500	"	0.0333	ND	56.4	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0199		"	0.0333		59.7	40-150				
Surrogate: Fluoranthene-d10	0.0232		"	0.0333		69.6	40-150				

##### Matrix Spike Dup (BGC0043-MSD1)

Source: 2303040-01

Prepared & Analyzed: 03/02/23

Acenaphthene	0.0250	0.00500	mg/kg	0.0333	ND	75.1	31-137	10.1	30		
Anthracene	0.0240	0.00500	"	0.0333	ND	72.0	30-120	17.2	30		
Benzo (a) anthracene	0.0260	0.00500	"	0.0333	ND	78.2	30-120	18.3	30		
Benzo (a) pyrene	0.0249	0.00500	"	0.0333	ND	74.7	30-120	19.3	30		
Benzo (b) fluoranthene	0.0237	0.00500	"	0.0333	ND	71.1	30-120	20.8	30		
Benzo (k) fluoranthene	0.0243	0.00500	"	0.0333	ND	72.9	30-120	19.2	30		
Chrysene	0.0244	0.00500	"	0.0333	ND	73.3	30-120	11.8	30		
Dibenz (a,h) anthracene	0.0208	0.00500	"	0.0333	ND	62.5	30-120	21.4	30		
Fluoranthene	0.0261	0.00500	"	0.0333	ND	78.4	30-120	18.2	30		
Fluorene	0.0263	0.00500	"	0.0333	ND	78.8	30-120	12.0	30		
Indeno (1,2,3-cd) pyrene	0.0236	0.00500	"	0.0333	ND	70.9	30-120	26.2	30		
Pyrene	0.0248	0.00500	"	0.0333	ND	74.3	35-142	12.9	30		
1-Methylnaphthalene	0.0229	0.00500	"	0.0333	ND	68.6	15-130	17.3	50		
2-Methylnaphthalene	0.0185	0.00500	"	0.0333	ND	55.6	15-130	1.48	50		
Surrogate: 2-Methylnaphthalene-d10	0.0246		"	0.0333		73.9	40-150				
Surrogate: Fluoranthene-d10	0.0278		"	0.0333		83.3	40-150				

Summit Scientific

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



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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

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

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

**Batch BGC0037 - EPA 3050B**

**Blank (BGC0037-BLK1)**

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

Boron ND 0.0100 mg/L

**LCS (BGC0037-BS1)**

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

Boron 4.76 0.0100 mg/L 5.00 95.1 80-120

**Duplicate (BGC0037-DUP1)**

**Source: 2303015-01**

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

Boron 0.152 0.0100 mg/L 0.149 2.50 20

**Matrix Spike (BGC0037-MS1)**

**Source: 2303015-01**

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

Boron 4.78 0.0100 mg/L 5.00 0.149 92.6 75-125

**Matrix Spike Dup (BGC0037-MSD1)**

**Source: 2303015-01**

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

Boron 4.99 0.0100 mg/L 5.00 0.149 96.9 75-125 4.39 25

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BGC0036 - EPA 3050B**

**Blank (BGC0036-BLK1)**

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

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	0.0586	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

**LCS (BGC0036-BS1)**

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

Arsenic	42.1	0.200	mg/kg wet	40.0	105	80-120
Barium	38.5	0.400	"	40.0	96.3	80-120
Cadmium	1.88	0.200	"	2.00	94.2	80-120
Copper	40.2	0.400	"	40.0	100	80-120
Lead	16.4	0.200	"	20.0	81.8	80-120
Nickel	39.9	0.400	"	40.0	99.8	80-120
Selenium	4.06	0.260	"	4.00	102	80-120
Silver	1.91	0.0200	"	2.00	95.5	80-120
Zinc	41.5	0.400	"	40.0	104	80-120

**Duplicate (BGC0036-DUP1)**

Source: 2303015-01

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

Arsenic	4.97	0.219	mg/kg dry	5.12	3.06	20	
Barium	45.9	0.437	"	44.0	4.21	20	
Cadmium	0.0993	0.219	"	0.0994	0.175	20	
Copper	5.93	0.437	"	5.99	1.06	20	
Lead	4.29	0.219	"	3.96	8.10	20	
Nickel	5.34	0.437	"	5.39	1.01	20	
Selenium	0.304	0.260	"	0.383	23.0	20	QR-04
Silver	0.0171	0.0219	"	0.00923	59.6	20	QR-01
Zinc	22.0	0.437	"	22.2	1.18	20	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BGC0036 - EPA 3050B**

Matrix Spike (BGC0036-MS1)		Source: 2303015-01			Prepared: 03/01/23 Analyzed: 03/02/23					
Arsenic	46.6	0.219	mg/kg dry	43.7	5.12	94.8	75-125			
Barium	46.3	0.437	"	43.7	44.0	5.25	75-125			QM-07
Cadmium	2.26	0.219	"	2.19	0.0994	98.7	75-125			
Copper	44.1	0.437	"	43.7	5.99	87.1	75-125			
Lead	19.5	0.219	"	21.9	3.96	71.2	75-125			QM-07
Nickel	43.9	0.437	"	43.7	5.39	88.1	75-125			
Selenium	4.77	0.260	"	4.37	0.383	100	75-125			
Silver	2.23	0.0219	"	2.19	0.00923	102	75-125			
Zinc	45.7	0.437	"	43.7	22.2	53.8	75-125			QM-07

Matrix Spike Dup (BGC0036-MSD1)		Source: 2303015-01			Prepared: 03/01/23 Analyzed: 03/02/23					
Arsenic	47.3	0.219	mg/kg dry	43.7	5.12	96.5	75-125	1.56	25	
Barium	45.7	0.437	"	43.7	44.0	3.93	75-125	1.26	25	QM-07
Cadmium	2.24	0.219	"	2.19	0.0994	98.0	75-125	0.728	25	
Copper	44.9	0.437	"	43.7	5.99	88.9	75-125	1.77	25	
Lead	21.6	0.219	"	21.9	3.96	80.8	75-125	10.1	25	
Nickel	44.8	0.437	"	43.7	5.39	90.2	75-125	2.08	25	
Selenium	4.24	0.260	"	4.37	0.383	88.2	75-125	11.9	25	
Silver	2.21	0.0219	"	2.19	0.00923	101	75-125	0.875	25	
Zinc	47.0	0.437	"	43.7	22.2	56.7	75-125	2.73	25	QM-07

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

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

**Batch BGC0059 - 3060A Mod**

**Blank (BGC0059-BLK1)**

Prepared & Analyzed: 03/02/23

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BGC0059-BS1)**

Prepared & Analyzed: 03/02/23

Chromium, Hexavalent 25.2 0.30 mg/kg wet 25.0 101 80-120

**Duplicate (BGC0059-DUP1)**

**Source: 2303015-21**

Prepared & Analyzed: 03/02/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BGC0059-MS1)**

**Source: 2303015-21**

Prepared & Analyzed: 03/02/23

Chromium, Hexavalent 28.4 0.30 mg/kg dry 27.8 ND 102 75-125

**Matrix Spike Dup (BGC0059-MSD1)**

**Source: 2303015-21**

Prepared & Analyzed: 03/02/23

Chromium, Hexavalent 28.6 0.30 mg/kg dry 27.8 ND 103 75-125 0.585 20

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

03/06/23 14:17

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

### Summit Scientific

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

#### Batch BGC0041 - General Preparation

##### Blank (BGC0041-BLK1)

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

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

##### LCS (BGC0041-BS1)

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

Calcium	4.66	0.0500	mg/L wet	5.00	93.3	70-130
Magnesium	5.14	0.0500	"	5.00	103	70-130
Sodium	5.11	0.0500	"	5.00	102	70-130

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

03/06/23 14:17

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

#### Summit Scientific

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

#### Batch BGC0066 - General Preparation

Duplicate (BGC0066-DUP1)

Source: 2303042-01

Prepared: 03/02/23 Analyzed: 03/03/23

% Solids	88.0	%	86.1	2.13	20
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Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

03/06/23 14:17

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

#### Summit Scientific

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

#### Batch BGC0064 - General Preparation

##### Blank (BGC0064-BLK1)

Prepared & Analyzed: 03/02/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

##### LCS (BGC0064-BS1)

Prepared & Analyzed: 03/02/23

Specific Conductance (EC) 0.157 0.0100 mmhos/cm 0.150 105 95-105

##### Duplicate (BGC0064-DUP1)

Source: 2303038-01

Prepared & Analyzed: 03/02/23

Specific Conductance (EC) 0.332 0.0100 mmhos/cm 0.332 0.120 20

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

03/06/23 14:17

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

**Summit Scientific**

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

**Batch BGC0065 - General Preparation**

**LCS (BGC0065-BS1)**

Prepared & Analyzed: 03/02/23

pH	9.08	pH Units	9.18	98.9	95-105
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**Duplicate (BGC0065-DUP1)**

**Source: 2303038-01**

Prepared & Analyzed: 03/02/23

pH	7.88	pH Units	7.84	0.509	20
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Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/06/23 14:17

### Notes and Definitions

QR-04	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference



# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

March 08, 2023

Jacob Whritenour  
Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield, CO 80020  
RE: Noble - LD19-16  
Work Order # 2303090

Enclosed are the results of analyses for samples received by Summit Scientific on 03/03/23 17:28. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Scott Sheely For Paul Shrewsbury  
President



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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS43@1.5'	2303090-01	Soil	03/03/23 10:50	03/03/23 17:28
SS44@1'	2303090-02	Soil	03/03/23 11:20	03/03/23 17:28
SS45@1'	2303090-03	Soil	03/03/23 11:25	03/03/23 17:28
SS46@1.5'	2303090-04	Soil	03/03/23 11:30	03/03/23 17:28
SS47@1.5'	2303090-05	Soil	03/03/23 11:33	03/03/23 17:28
SS48@1.5'	2303090-06	Soil	03/03/23 11:40	03/03/23 17:28
SS49@1'	2303090-07	Soil	03/03/23 11:45	03/03/23 17:28
FS17@3'	2303090-08	Soil	03/03/23 10:55	03/03/23 17:28
FS18@2.5'	2303090-09	Soil	03/03/23 11:00	03/03/23 17:28
FS19@2'	2303090-10	Soil	03/03/23 11:50	03/03/23 17:28
FS20@2.5'	2303090-11	Soil	03/03/23 11:55	03/03/23 17:28

Summit Scientific

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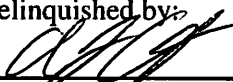


# SUMMIT SCIENTIFIC

4653 Table Mountain Drive  
Golden, CO 80403  
303-277-9310

Lab ID	Page      of
2303090	

		<b>Send Data To:</b>	<b>Send Invoice To:</b>
Client: Noble / Tasman		Project Manager: Jake Whritenour	Company: Chevron
Address: 6855 W. 119th Ave		E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location:
City/State/Zip: Broomfield, CO 80020			AFE#:
Phone: <del>303-261-6246</del> 303-808-3515		Project Name: LD 19-16	PO/Billing Codes:
Sampler Name: <del>Stanley Gilbert</del> Allan Engelhardt		Project Number:	Contact:

				Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	VOC - 915	TPH - 915	PAH - 915	pH,EC,SAR	Boron - HWS	Metals - 915	HOLD	
1	SS43@1.5'	3/3/23	1050	2			X			X			X	X	X	X	X	X		pH, EC, SAR by saturated paste
2	SS44@1'		1120				X			X			X	X	X	X	X	X		
3	SS45@1'		1125																	
4	SS46@1.5'		1130																	
5	SS47@1.5'		1135																	
6	SS48@1.5'		1140																	
7	SS49@1'		1145																	
8	FS17@3'		1055																	
9	FS18@2.5'		1100																	
10	FS19@2'		1150																	
11	FS20@2.5'	↓	1155	↓			↓			↓			↓	↓	↓	↓	↓	↓		
12																				
13																				
14																				
15																				

Relinquished by: 	Date/Time: 3/3/23 @ 1500	Received by: Tasman Lock Box	Date/Time:	TAT Business Days	Field DO	Notes:
				Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by: Tasman Lock Box	Date/Time: 3/3/23 1728	Received by: 	Date/Time: 3/3/23 1728	1 Day <input type="checkbox"/>	Field ORP	
				2 Days <input type="checkbox"/>	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days <input type="checkbox"/>	Field Temp.	
				Standard <input type="checkbox"/>	Field Turb.	
Temperature Upon Receipt: 11.3		Corrected Temperature: 		IR gun #: 1	HNO3 lot #:	

S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2303090Client: Noble/Tasman Client Project ID: LD 19-16Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☐ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☐ Other ☐Temp (°C) 11.3 Thermometer # 1

	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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>none</u>
If custody seals are present, are they intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Same day</u>
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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? <sup>(1)</sup>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? <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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

AS  
Custodian Printed Name

3/3/23  
Date/Time



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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS43@1.5'**  
**2303090-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/03/23 10:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGC0097	03/03/23	03/04/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/03/23 10:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		68.3 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		95.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.5 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/03/23 10:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0098	03/03/23	03/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/03/23 10:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		110 %		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 - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS43@1.5'**  
**2303090-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/03/23 10:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0123	03/06/23	03/06/23	EPA 8270D SIM	
<b>Anthracene</b>	<b>0.00507</b>	0.00500		"	"	"	"	"	"	
<b>Benzo (a) anthracene</b>	<b>0.00736</b>	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
<b>Benzo (b) fluoranthene</b>	<b>0.00706</b>	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.0133</b>	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.0123</b>	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/03/23 10:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		71.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		66.2 %		40-150		"	"	"	"	

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

Date Sampled: **03/03/23 10:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.720</b>	0.0100		mg/L	1	BGC0136	03/06/23	03/07/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/03/23 10:50**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS43@1.5'**  
**2303090-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.76	0.214	0.180	mg/kg dry	1	BGC0119	03/05/23	03/07/23	EPA 6020B	
Barium	90.6	0.428	0.338	"	"	"	"	"	"	
Cadmium	0.146	0.214	0.00770	"	"	"	"	"	"	
Copper	2.63	0.428	0.0223	"	"	"	"	"	"	
Lead	5.32	0.214	0.0588	"	"	"	"	"	"	
Nickel	2.82	0.428	0.0652	"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	
Silver	0.0141	0.0214	0.00285	"	"	"	"	"	"	
Zinc	10.7	0.428	0.284	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/03/23 10:50**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0109	03/04/23	03/04/23	EPA 7196A	

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

Date Sampled: **03/03/23 10:50**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	41.6	0.0535		mg/L dry	1	BGC0111	03/04/23	03/06/23	EPA 6020B	
Magnesium	6.54	0.0535		"	"	"	"	"	"	
Sodium	15.9	0.0535		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/03/23 10:50**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.605	0.00100		units	1	BGC0155	03/06/23	03/06/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS43@1.5'**  
**2303090-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/03/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	93.5			%	1	BGC0127	03/06/23	03/06/23	Calculation	

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

Date Sampled: **03/03/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.191	0.0100		mmhos/cm	1	BGC0113	03/05/23	03/05/23	EPA 120.1	

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

Date Sampled: **03/03/23 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.96			pH Units	1	BGC0112	03/05/23	03/05/23	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS44@1'**  
**2303090-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/03/23 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0097	03/03/23	03/04/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		68.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		94.9 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.4 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/03/23 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0098	03/03/23	03/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		115 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

03/08/23 13:26

**SS44@1'**  
**2303090-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/03/23 11:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0123	03/06/23	03/07/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.00540</b>	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		80.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		67.6 %		40-150		"	"	"	"	

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

Date Sampled: **03/03/23 11:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.212</b>	0.0100		mg/L	1	BGC0136	03/06/23	03/07/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/03/23 11:20**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS44@1'**  
**2303090-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	4.19	0.242	0.204	mg/kg dry	1	BGC0119	03/05/23	03/07/23	EPA 6020B
Barium	337	0.485	0.383	"	"	"	"	"	"
Cadmium	0.382	0.242	0.00873	"	"	"	"	"	"
Copper	5.14	0.485	0.0253	"	"	"	"	"	"
Lead	13.2	0.242	0.0666	"	"	"	"	"	"
Nickel	4.59	0.485	0.0739	"	"	"	"	"	"
Selenium	0.276	0.260	0.175	"	"	"	"	"	"
Silver	0.0228	0.0242	0.00324	"	"	"	"	"	"
Zinc	18.3	0.485	0.322	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/03/23 11:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0109	03/04/23	03/04/23	EPA 7196A	

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

Date Sampled: **03/03/23 11:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	112	0.0606		mg/L dry	1	BGC0111	03/04/23	03/06/23	EPA 6020B	
Magnesium	7.93	0.0606		"	"	"	"	"	"	
Sodium	37.7	0.0606		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/03/23 11:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.928	0.00100		units	1	BGC0155	03/06/23	03/06/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS44@1'**  
**2303090-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/03/23 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	82.5			%	1	BGC0127	03/06/23	03/06/23	Calculation	

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

Date Sampled: **03/03/23 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.459	0.0100		mmhos/cm	1	BGC0113	03/05/23	03/05/23	EPA 120.1	

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

Date Sampled: **03/03/23 11:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.80			pH Units	1	BGC0112	03/05/23	03/05/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS45@1'**  
**2303090-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/03/23 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0097	03/03/23	03/05/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		93.3 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		116 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/03/23 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0098	03/03/23	03/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:25**

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

**PAH by EPA Method 8270D SIM**

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS45@1'**  
**2303090-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/03/23 11:25**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0123	03/06/23	03/07/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:25**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		68.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.0 %		40-150		"	"	"	"	

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

Date Sampled: **03/03/23 11:25**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.189</b>	0.0100		mg/L	1	BGC0136	03/06/23	03/07/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/03/23 11:25**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS45@1'**  
**2303090-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	3.53	0.253	0.213	mg/kg dry	1	BGC0119	03/05/23	03/07/23	EPA 6020B
Barium	584	0.506	0.400	"	"	"	"	"	"
Cadmium	0.457	0.253	0.00912	"	"	"	"	"	"
Copper	5.20	0.506	0.0265	"	"	"	"	"	"
Lead	12.4	0.253	0.0696	"	"	"	"	"	"
Nickel	4.82	0.506	0.0772	"	"	"	"	"	"
Selenium	0.257	0.260	0.175	"	"	"	"	"	"
Silver	0.0238	0.0253	0.00338	"	"	"	"	"	"
Zinc	19.3	0.506	0.337	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/03/23 11:25**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0109	03/04/23	03/04/23	EPA 7196A	

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

Date Sampled: **03/03/23 11:25**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	118	0.0633		mg/L dry	1	BGC0111	03/04/23	03/06/23	EPA 6020B	
Magnesium	8.72	0.0633		"	"	"	"	"	"	
Sodium	34.4	0.0633		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/03/23 11:25**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.823	0.00100		units	1	BGC0155	03/06/23	03/06/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS45@1'**  
**2303090-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/03/23 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	79.0			%	1	BGC0127	03/06/23	03/06/23	Calculation	

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

Date Sampled: **03/03/23 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.453	0.0100		mmhos/cm	1	BGC0113	03/05/23	03/05/23	EPA 120.1	

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

Date Sampled: **03/03/23 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.83			pH Units	1	BGC0112	03/05/23	03/05/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS46@1.5'**  
**2303090-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/03/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0097	03/03/23	03/05/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		88.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		111 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/03/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0098	03/03/23	03/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:30**

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

**PAH by EPA Method 8270D SIM**

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS46@1.5'**  
**2303090-04 (Soil)**

### Summit Scientific

#### PAH by EPA Method 8270D SIM

Date Sampled: **03/03/23 11:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0123	03/06/23	03/07/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		63.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		63.0 %		40-150		"	"	"	"	

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

Date Sampled: **03/03/23 11:30**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.149</b>	0.0100		mg/L	1	BGC0136	03/06/23	03/07/23	EPA 6020B	

#### Total Metals by EPA 6020B

Date Sampled: **03/03/23 11:30**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS46@1.5'**  
**2303090-04 (Soil)**

### Summit Scientific

#### Total Metals by EPA 6020B

Arsenic	3.85	0.248	0.209	mg/kg dry	1	BGC0119	03/05/23	03/07/23	EPA 6020B
Barium	303	0.497	0.393	"	"	"	"	"	"
Cadmium	0.419	0.248	0.00894	"	"	"	"	"	"
Copper	5.35	0.497	0.0260	"	"	"	"	"	"
Lead	14.0	0.248	0.0683	"	"	"	"	"	"
Nickel	4.72	0.497	0.0758	"	"	"	"	"	"
Selenium	ND	0.260	0.175	"	"	"	"	"	"
Silver	0.0209	0.0248	0.00332	"	"	"	"	"	"
Zinc	19.5	0.497	0.330	"	"	"	"	"	"

#### Hexavalent Chromium by EPA Method 7196

Date Sampled: 03/03/23 11:30

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0109	03/04/23	03/04/23	EPA 7196A	

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

Date Sampled: 03/03/23 11:30

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	296	0.0621		mg/L dry	1	BGC0111	03/04/23	03/06/23	EPA 6020B	
Magnesium	13.0	0.0621		"	"	"	"	"	"	
Sodium	25.5	0.0621		"	"	"	"	"	"	

#### Calculated Analysis

Date Sampled: 03/03/23 11:30

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.394	0.00100		units	1	BGC0155	03/06/23	03/06/23	Calculation	

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

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

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS46@1.5'**  
**2303090-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/03/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	80.5			%	1	BGC0127	03/06/23	03/06/23	Calculation	

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

Date Sampled: **03/03/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.318	0.0100		mmhos/cm	1	BGC0113	03/05/23	03/05/23	EPA 120.1	

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

Date Sampled: **03/03/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.99			pH Units	1	BGC0112	03/05/23	03/05/23	EPA 9045D	

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS47@1.5'**  
**2303090-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/03/23 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0097	03/03/23	03/05/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		92.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		110 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		121 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/03/23 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0098	03/03/23	03/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		115 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS47@1.5'**  
**2303090-05 (Soil)**

### Summit Scientific

#### PAH by EPA Method 8270D SIM

Date Sampled: **03/03/23 11:33**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0123	03/06/23	03/07/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:33**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		54.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		57.7 %		40-150		"	"	"	"	

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

Date Sampled: **03/03/23 11:33**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.175</b>	0.0100		mg/L	1	BGC0136	03/06/23	03/07/23	EPA 6020B	

#### Total Metals by EPA 6020B

Date Sampled: **03/03/23 11:33**

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS47@1.5'**  
**2303090-05 (Soil)**

### Summit Scientific

#### Total Metals by EPA 6020B

Arsenic	3.26	0.249	0.210	mg/kg dry	1	BGC0119	03/05/23	03/07/23	EPA 6020B
Barium	310	0.498	0.393	"	"	"	"	"	"
Cadmium	0.390	0.249	0.00896	"	"	"	"	"	"
Copper	5.27	0.498	0.0260	"	"	"	"	"	"
Lead	14.9	0.249	0.0684	"	"	"	"	"	"
Nickel	4.67	0.498	0.0759	"	"	"	"	"	"
Selenium	0.180	0.260	0.175	"	"	"	"	"	"
Silver	0.0239	0.0249	0.00332	"	"	"	"	"	"
Zinc	18.5	0.498	0.331	"	"	"	"	"	"

#### Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/03/23 11:33**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0109	03/04/23	03/04/23	EPA 7196A	

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

Date Sampled: **03/03/23 11:33**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	316	0.0622		mg/L dry	1	BGC0111	03/04/23	03/06/23	EPA 6020B	
Magnesium	17.1	0.0622		"	"	"	"	"	"	
Sodium	24.1	0.0622		"	"	"	"	"	"	

#### Calculated Analysis

Date Sampled: **03/03/23 11:33**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.358	0.00100		units	1	BGC0155	03/06/23	03/06/23	Calculation	

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

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS47@1.5'**  
**2303090-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/03/23 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	80.4			%	1	BGC0127	03/06/23	03/06/23	Calculation	

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

Date Sampled: **03/03/23 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.326	0.0100		mmhos/cm	1	BGC0113	03/05/23	03/05/23	EPA 120.1	

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

Date Sampled: **03/03/23 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.93			pH Units	1	BGC0112	03/05/23	03/05/23	EPA 9045D	

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS48@1.5'**  
**2303090-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/03/23 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0097	03/03/23	03/05/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		92.1 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		112 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/03/23 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0098	03/03/23	03/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:40**

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

**PAH by EPA Method 8270D SIM**

Summit Scientific

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

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS48@1.5'**  
**2303090-06 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/03/23 11:40**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0123	03/06/23	03/07/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
<b>Benzo (a) anthracene</b>	<b>0.00807</b>	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		"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.0148</b>	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.0134</b>	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:40**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		75.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		70.4 %		40-150		"	"	"	"	

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

Date Sampled: **03/03/23 11:40**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.122</b>	0.0100		mg/L	1	BGC0136	03/06/23	03/07/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/03/23 11:40**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS48@1.5'**  
**2303090-06 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.15	0.260	0.219	mg/kg dry	1	BGC0119	03/05/23	03/07/23	EPA 6020B	
Barium	497	0.519	0.410	"	"	"	"	"	"	
Cadmium	0.282	0.260	0.00935	"	"	"	"	"	"	
Copper	4.79	0.519	0.0271	"	"	"	"	"	"	
Lead	8.86	0.260	0.0714	"	"	"	"	"	"	
Nickel	4.29	0.519	0.0792	"	"	"	"	"	"	
Selenium	0.189	0.260	0.175	"	"	"	"	"	"	
Silver	0.0255	0.0260	0.00347	"	"	"	"	"	"	
Zinc	16.3	0.519	0.345	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/03/23 11:40**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0109	03/04/23	03/04/23	EPA 7196A	

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction**

Date Sampled: **03/03/23 11:40**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	74.2	0.0649		mg/L dry	1	BGC0111	03/04/23	03/06/23	EPA 6020B	
Magnesium	7.31	0.0649		"	"	"	"	"	"	
Sodium	27.4	0.0649		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/03/23 11:40**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.812	0.00100		units	1	BGC0155	03/06/23	03/06/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS48@1.5'**  
**2303090-06 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/03/23 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	77.0			%	1	BGC0127	03/06/23	03/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **03/03/23 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.363	0.0100		mmhos/cm	1	BGC0113	03/05/23	03/05/23	EPA 120.1	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **03/03/23 11:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.80			pH Units	1	BGC0112	03/05/23	03/05/23	EPA 9045D	

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS49@1'**  
**2303090-07 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/03/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0097	03/03/23	03/05/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		90.3 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		114 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		120 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/03/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0098	03/03/23	03/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		118 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS49@1'**  
**2303090-07 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/03/23 11:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0123	03/06/23	03/07/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		76.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		77.1 %		40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **03/03/23 11:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.186</b>	0.0100		mg/L	1	BGC0136	03/06/23	03/07/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/03/23 11:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS49@1'**  
**2303090-07 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	3.66	0.247	0.208	mg/kg dry	1	BGC0119	03/05/23	03/07/23	EPA 6020B
Barium	335	0.493	0.389	"	"	"	"	"	"
Cadmium	0.321	0.247	0.00887	"	"	"	"	"	"
Copper	4.78	0.493	0.0258	"	"	"	"	"	"
Lead	11.7	0.247	0.0677	"	"	"	"	"	"
Nickel	4.47	0.493	0.0752	"	"	"	"	"	"
Selenium	0.210	0.260	0.175	"	"	"	"	"	"
Silver	0.0212	0.0247	0.00329	"	"	"	"	"	"
Zinc	17.3	0.493	0.328	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/03/23 11:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0109	03/04/23	03/04/23	EPA 7196A	

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction**

Date Sampled: **03/03/23 11:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	134	0.0616		mg/L dry	1	BGC0111	03/04/23	03/06/23	EPA 6020B	
Magnesium	6.85	0.0616		"	"	"	"	"	"	
Sodium	37.5	0.0616		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/03/23 11:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.857	0.00100		units	1	BGC0155	03/06/23	03/06/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**SS49@1'**  
**2303090-07 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/03/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	81.1			%	1	BGC0127	03/06/23	03/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **03/03/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.372	0.0100		mmhos/cm	1	BGC0113	03/05/23	03/05/23	EPA 120.1	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **03/03/23 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.94			pH Units	1	BGC0112	03/05/23	03/05/23	EPA 9045D	

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**FS17@3'**  
**2303090-08 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/03/23 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0097	03/03/23	03/05/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/03/23 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		91.7 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		109 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/03/23 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0098	03/03/23	03/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/03/23 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		116 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**FS17@3'**  
**2303090-08 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/03/23 10:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0123	03/06/23	03/07/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/03/23 10:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		70.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		73.4 %		40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **03/03/23 10:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.196</b>	0.0100		mg/L	1	BGC0136	03/06/23	03/07/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/03/23 10:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**FS17@3'**  
**2303090-08 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	5.03	0.256	0.216	mg/kg dry	1	BGC0119	03/05/23	03/07/23	EPA 6020B
Barium	300	0.512	0.404	"	"	"	"	"	"
Cadmium	0.394	0.256	0.00921	"	"	"	"	"	"
Copper	5.60	0.512	0.0267	"	"	"	"	"	"
Lead	13.4	0.256	0.0703	"	"	"	"	"	"
Nickel	4.70	0.512	0.0780	"	"	"	"	"	"
Selenium	0.255	0.260	0.175	"	"	"	"	"	"
Silver	0.0261	0.0256	0.00341	"	"	"	"	"	"
Zinc	17.5	0.512	0.340	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/03/23 10:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0109	03/04/23	03/04/23	EPA 7196A	

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction**

Date Sampled: **03/03/23 10:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	60.6	0.0639		mg/L dry	1	BGC0111	03/04/23	03/06/23	EPA 6020B	
Magnesium	10.4	0.0639		"	"	"	"	"	"	
Sodium	11.2	0.0639		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/03/23 10:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.350	0.00100		units	1	BGC0155	03/06/23	03/06/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**FS17@3'**  
**2303090-08 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/03/23 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	78.2			%	1	BGC0127	03/06/23	03/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **03/03/23 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.549	0.0100		mmhos/cm	1	BGC0113	03/05/23	03/05/23	EPA 120.1	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **03/03/23 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.62			pH Units	1	BGC0112	03/05/23	03/05/23	EPA 9045D	

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**FS18@2.5'**  
**2303090-09 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/03/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0097	03/03/23	03/05/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		96.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		112 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/03/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0098	03/03/23	03/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		120 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**FS18@2.5'**  
**2303090-09 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/03/23 11:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0123	03/06/23	03/07/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		63.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		63.8 %		40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **03/03/23 11:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.216</b>	0.0100		mg/L	1	BGC0136	03/06/23	03/07/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/03/23 11:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**FS18@2.5'**  
**2303090-09 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.82	0.247	0.208	mg/kg dry	1	BGC0119	03/05/23	03/07/23	EPA 6020B	
Barium	539	0.494	0.390	"	"	"	"	"	"	
Cadmium	0.403	0.247	0.00889	"	"	"	"	"	"	
Copper	5.39	0.494	0.0258	"	"	"	"	"	"	
Lead	14.5	0.247	0.0678	"	"	"	"	"	"	
Nickel	4.98	0.494	0.0753	"	"	"	"	"	"	
Selenium	0.330	0.260	0.175	"	"	"	"	"	"	
Silver	0.0311	0.0247	0.00330	"	"	"	"	"	"	
Zinc	19.5	0.494	0.328	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/03/23 11:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0109	03/04/23	03/04/23	EPA 7196A	

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction**

Date Sampled: **03/03/23 11:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	52.1	0.0617		mg/L dry	1	BGC0111	03/04/23	03/06/23	EPA 6020B	
Magnesium	7.86	0.0617		"	"	"	"	"	"	
Sodium	51.4	0.0617		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/03/23 11:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.75	0.00100		units	1	BGC0155	03/06/23	03/06/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**FS18@2.5'**  
**2303090-09 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/03/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	81.0			%	1	BGC0127	03/06/23	03/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **03/03/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.588	0.0100		mmhos/cm	1	BGC0113	03/05/23	03/05/23	EPA 120.1	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **03/03/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.84			pH Units	1	BGC0112	03/05/23	03/05/23	EPA 9045D	

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**FS19@2'**  
**2303090-10 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/03/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0097	03/03/23	03/06/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		95.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		112 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		118 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/03/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0098	03/03/23	03/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		116 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**FS19@2'**  
**2303090-10 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/03/23 11:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0123	03/06/23	03/07/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		68.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		59.0 %		40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **03/03/23 11:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.187</b>	0.0100		mg/L	1	BGC0136	03/06/23	03/07/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/03/23 11:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**FS19@2'**  
**2303090-10 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.03	0.249	0.210	mg/kg dry	1	BGC0119	03/05/23	03/07/23	EPA 6020B	
Barium	323	0.498	0.394	"	"	"	"	"	"	
Cadmium	0.387	0.249	0.00897	"	"	"	"	"	"	
Copper	5.48	0.498	0.0260	"	"	"	"	"	"	
Lead	12.9	0.249	0.0685	"	"	"	"	"	"	
Nickel	4.76	0.498	0.0760	"	"	"	"	"	"	
Selenium	0.192	0.260	0.175	"	"	"	"	"	"	
Silver	0.0199	0.0249	0.00333	"	"	"	"	"	"	
Zinc	19.1	0.498	0.331	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/03/23 11:50**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0109	03/04/23	03/04/23	EPA 7196A	

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction**

Date Sampled: **03/03/23 11:50**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	106	0.0623		mg/L dry	1	BGC0111	03/04/23	03/06/23	EPA 6020B	
Magnesium	9.05	0.0623		"	"	"	"	"	"	
Sodium	37.6	0.0623		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/03/23 11:50**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.942	0.00100		units	1	BGC0155	03/06/23	03/06/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**FS19@2'**  
**2303090-10 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/03/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	80.3			%	1	BGC0127	03/06/23	03/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **03/03/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.503	0.0100		mmhos/cm	1	BGC0113	03/05/23	03/05/23	EPA 120.1	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **03/03/23 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.90			pH Units	1	BGC0112	03/05/23	03/05/23	EPA 9045D	

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**FS20@2.5'**  
**2303090-11 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/03/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGC0097	03/03/23	03/06/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		90.7 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		112 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		118 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/03/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0098	03/03/23	03/05/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		112 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**FS20@2.5'**  
**2303090-11 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/03/23 11:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGC0123	03/06/23	03/07/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **03/03/23 11:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		57.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		52.9 %		40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **03/03/23 11:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.177</b>	0.0100		mg/L	1	BGC0136	03/06/23	03/07/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/03/23 11:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**FS20@2.5'**  
**2303090-11 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.77	0.243	0.205	mg/kg dry	1	BGC0119	03/05/23	03/07/23	EPA 6020B	
Barium	307	0.486	0.384	"	"	"	"	"	"	
Cadmium	0.382	0.243	0.00875	"	"	"	"	"	"	
Copper	5.03	0.486	0.0254	"	"	"	"	"	"	
Lead	14.8	0.243	0.0668	"	"	"	"	"	"	
Nickel	4.46	0.486	0.0741	"	"	"	"	"	"	
Selenium	ND	0.260	0.175	"	"	"	"	"	"	
Silver	0.0175	0.0243	0.00324	"	"	"	"	"	"	
Zinc	18.1	0.486	0.323	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/03/23 11:55**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0109	03/04/23	03/04/23	EPA 7196A	

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction**

Date Sampled: **03/03/23 11:55**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	121	0.0607		mg/L dry	1	BGC0111	03/04/23	03/06/23	EPA 6020B	
Magnesium	7.85	0.0607		"	"	"	"	"	"	
Sodium	30.0	0.0607		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/03/23 11:55**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.714	0.00100		units	1	BGC0155	03/06/23	03/06/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**FS20@2.5'**  
**2303090-11 (Soil)**

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**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/03/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	82.3			%	1	BGC0127	03/06/23	03/06/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **03/03/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.398	0.0100		mmhos/cm	1	BGC0113	03/05/23	03/05/23	EPA 120.1	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **03/03/23 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.12			pH Units	1	BGC0112	03/05/23	03/05/23	EPA 9045D	

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Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

#### Batch BGC0097 - EPA 5030 Soil MS

##### Blank (BGC0097-BLK1)

Prepared: 03/03/23 Analyzed: 03/06/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0400		99.6	50-150			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.5	50-150			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	50-150			

##### Blank (BGC0097-BLK2)

Prepared: 03/03/23 Analyzed: 03/06/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0371		"	0.0400		92.7	50-150			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	50-150			
Surrogate: 4-Bromofluorobenzene	0.0417		"	0.0400		104	50-150			

##### LCS (BGC0097-BS1)

Prepared: 03/03/23 Analyzed: 03/06/23

Benzene	0.0801	0.0020	mg/kg	0.100		80.1	70-130			
Toluene	0.0786	0.0050	"	0.100		78.6	70-130			
Ethylbenzene	0.0796	0.0050	"	0.100		79.6	70-130			
m,p-Xylene	0.232	0.010	"	0.200		116	70-130			
o-Xylene	0.0769	0.0050	"	0.100		76.9	70-130			
1,2,4-Trimethylbenzene	0.0863	0.0050	"	0.100		86.3	70-130			
1,3,5-Trimethylbenzene	0.0855	0.0050	"	0.100		85.5	70-130			
Naphthalene	0.114	0.0038	"	0.100		114	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0409		"	0.0400		102	50-150			
Surrogate: Toluene-d8	0.0396		"	0.0400		99.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0422		"	0.0400		105	50-150			

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

#### Batch BGC0097 - EPA 5030 Soil MS

##### LCS (BGC0097-BS2)

Prepared: 03/03/23 Analyzed: 03/06/23

Benzene	0.0882	0.0020	mg/kg	0.100		88.2	70-130			
Toluene	0.129	0.0050	"	0.100		129	70-130			
Ethylbenzene	0.117	0.0050	"	0.100		117	70-130			
m,p-Xylene	0.235	0.010	"	0.200		117	70-130			
o-Xylene	0.109	0.0050	"	0.100		109	70-130			
1,2,4-Trimethylbenzene	0.124	0.0050	"	0.100		124	70-130			
1,3,5-Trimethylbenzene	0.124	0.0050	"	0.100		124	70-130			
Naphthalene	0.0980	0.0038	"	0.100		98.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0388		"	0.0400		97.1	50-150			
Surrogate: Toluene-d8	0.0406		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	50-150			

##### Matrix Spike (BGC0097-MS1)

Source: 2303088-01

Prepared: 03/03/23 Analyzed: 03/06/23

Benzene	0.0955	0.0020	mg/kg	0.100	ND	95.5	70-130			
Toluene	0.108	0.0050	"	0.100	ND	108	70-130			
Ethylbenzene	0.118	0.0050	"	0.100	ND	118	70-130			
m,p-Xylene	0.240	0.010	"	0.200	ND	120	70-130			
o-Xylene	0.108	0.0050	"	0.100	ND	108	70-130			
1,2,4-Trimethylbenzene	0.127	0.0050	"	0.100	ND	127	70-130			
1,3,5-Trimethylbenzene	0.125	0.0050	"	0.100	ND	125	70-130			
Naphthalene	0.105	0.0038	"	0.100	ND	105	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		102	50-150			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	50-150			

##### Matrix Spike (BGC0097-MS2)

Source: 2303092-06

Prepared: 03/03/23 Analyzed: 03/06/23

Benzene	0.0872	0.0020	mg/kg	0.100	ND	87.2	70-130			
Toluene	0.129	0.0050	"	0.100	ND	129	70-130			
Ethylbenzene	0.124	0.0050	"	0.100	ND	124	70-130			
m,p-Xylene	0.249	0.010	"	0.200	ND	125	70-130			
o-Xylene	0.112	0.0050	"	0.100	ND	112	70-130			
1,2,4-Trimethylbenzene	0.130	0.0050	"	0.100	ND	130	70-130			
1,3,5-Trimethylbenzene	0.129	0.0050	"	0.100	ND	129	70-130			
Naphthalene	0.107	0.0038	"	0.100	ND	107	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0410		"	0.0400		103	50-150			
Surrogate: Toluene-d8	0.0403		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0427		"	0.0400		107	50-150			

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch BGC0097 - EPA 5030 Soil MS**

**Matrix Spike Dup (BGC0097-MSD1)**

**Source: 2303088-01**

Prepared: 03/03/23 Analyzed: 03/06/23

Benzene	0.0899	0.0020	mg/kg	0.100	ND	89.9	70-130	6.08	30	
Toluene	0.105	0.0050	"	0.100	ND	105	70-130	3.30	30	
Ethylbenzene	0.112	0.0050	"	0.100	ND	112	70-130	5.46	30	
m,p-Xylene	0.258	0.010	"	0.200	ND	129	70-130	7.10	30	
o-Xylene	0.104	0.0050	"	0.100	ND	104	70-130	4.07	30	
1,2,4-Trimethylbenzene	0.125	0.0050	"	0.100	ND	125	70-130	0.976	30	
1,3,5-Trimethylbenzene	0.121	0.0050	"	0.100	ND	121	70-130	3.43	30	
Naphthalene	0.115	0.0038	"	0.100	ND	115	70-130	9.14	30	
Surrogate: 1,2-Dichloroethane-d4	0.0420		"	0.0400		105	50-150			
Surrogate: Toluene-d8	0.0411		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	50-150			

**Matrix Spike Dup (BGC0097-MSD2)**

**Source: 2303092-06**

Prepared: 03/03/23 Analyzed: 03/06/23

Benzene	0.111	0.0020	mg/kg	0.100	ND	111	70-130	24.2	30	
Toluene	0.112	0.0050	"	0.100	ND	112	70-130	14.6	30	
Ethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130	20.2	30	
m,p-Xylene	0.261	0.010	"	0.200	ND	130	70-130	4.39	30	
o-Xylene	0.128	0.0050	"	0.100	ND	128	70-130	12.7	30	
1,2,4-Trimethylbenzene	0.129	0.0050	"	0.100	ND	129	70-130	1.11	30	
1,3,5-Trimethylbenzene	0.130	0.0050	"	0.100	ND	130	70-130	0.924	30	
Naphthalene	0.114	0.0038	"	0.100	ND	114	70-130	6.29	30	
Surrogate: 1,2-Dichloroethane-d4	0.0393		"	0.0400		98.2	50-150			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	50-150			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch BGC0098 - EPA 3550A**

**Blank (BGC0098-BLK1)**

Prepared: 03/03/23 Analyzed: 03/04/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	15.6		"	12.5		125	30-150			

**Blank (BGC0098-BLK2)**

Prepared: 03/03/23 Analyzed: 03/04/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	14.5		"	12.5		116	30-150			

**LCS (BGC0098-BS1)**

Prepared: 03/03/23 Analyzed: 03/04/23

C10-C28 (DRO)	432	50	mg/kg	500		86.3	70-130			
Surrogate: o-Terphenyl	15.3		"	12.5		123	30-150			

**LCS (BGC0098-BS2)**

Prepared: 03/03/23 Analyzed: 03/04/23

C10-C28 (DRO)	448	50	mg/kg	500		89.5	70-130			
Surrogate: o-Terphenyl	16.4		"	12.5		132	30-150			

**Matrix Spike (BGC0098-MS1)**

Source: 2303088-01

Prepared: 03/03/23 Analyzed: 03/04/23

C10-C28 (DRO)	477	50	mg/kg	500	9.80	93.4	70-130			
Surrogate: o-Terphenyl	14.2		"	12.5		113	30-150			

**Matrix Spike (BGC0098-MS2)**

Source: 2303092-06

Prepared: 03/03/23 Analyzed: 03/04/23

C10-C28 (DRO)	488	50	mg/kg	500	65.0	84.6	70-130			
Surrogate: o-Terphenyl	15.2		"	12.5		122	30-150			

**Matrix Spike Dup (BGC0098-MSD1)**

Source: 2303088-01

Prepared: 03/03/23 Analyzed: 03/04/23

C10-C28 (DRO)	497	50	mg/kg	500	9.80	97.4	70-130	4.03	20	
Surrogate: o-Terphenyl	15.0		"	12.5		120	30-150			

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Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**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 BGC0098 - EPA 3550A**

**Matrix Spike Dup (BGC0098-MSD2)**

**Source: 2303092-06**

Prepared: 03/03/23 Analyzed: 03/04/23

C10-C28 (DRO)	471	50	mg/kg	500	65.0	81.2	70-130	3.57	20	
Surrogate: o-Terphenyl	14.1		"	12.5		113	30-150			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

Reporting				Spike	Source	%REC			RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

#### Batch BGC0123 - EPA 5030 Soil MS

##### Blank (BGC0123-BLK1)

Prepared & Analyzed: 03/06/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0491		"	0.0333		147	40-150			
Surrogate: Fluoranthene-d10	0.0269		"	0.0333		80.8	40-150			

##### LCS (BGC0123-BS1)

Prepared & Analyzed: 03/06/23

Acenaphthene	0.0308	0.00500	mg/kg	0.0333		92.5	31-137			
Anthracene	0.0334	0.00500	"	0.0333		100	30-120			
Benzo (a) anthracene	0.0257	0.00500	"	0.0333		77.0	30-120			
Benzo (a) pyrene	0.0338	0.00500	"	0.0333		101	30-120			
Benzo (b) fluoranthene	0.0293	0.00500	"	0.0333		87.9	30-120			
Benzo (k) fluoranthene	0.0311	0.00500	"	0.0333		93.3	30-120			
Chrysene	0.0325	0.00500	"	0.0333		97.5	30-120			
Dibenz (a,h) anthracene	0.0323	0.00500	"	0.0333		96.8	30-120			
Fluoranthene	0.0364	0.00500	"	0.0333		109	30-120			
Fluorene	0.0399	0.00500	"	0.0333		120	30-120			
Indeno (1,2,3-cd) pyrene	0.0322	0.00500	"	0.0333		96.7	30-120			
Pyrene	0.0332	0.00500	"	0.0333		99.7	35-142			
1-Methylnaphthalene	0.0330	0.00500	"	0.0333		99.0	35-142			
2-Methylnaphthalene	0.0303	0.00500	"	0.0333		90.8	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0333		"	0.0333		99.9	40-150			
Surrogate: Fluoranthene-d10	0.0355		"	0.0333		107	40-150			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

#### Batch BGC0123 - EPA 5030 Soil MS

##### Matrix Spike (BGC0123-MS1)

Source: 2303077-01

Prepared & Analyzed: 03/06/23

Acenaphthene	0.0188	0.00500	mg/kg	0.0333	ND	56.5	31-137			
Anthracene	0.0212	0.00500	"	0.0333	ND	63.7	30-120			
Benzo (a) anthracene	0.0187	0.00500	"	0.0333	ND	56.1	30-120			
Benzo (a) pyrene	0.0198	0.00500	"	0.0333	ND	59.3	30-120			
Benzo (b) fluoranthene	0.0156	0.00500	"	0.0333	ND	46.7	30-120			
Benzo (k) fluoranthene	0.0163	0.00500	"	0.0333	ND	48.8	30-120			
Chrysene	0.0165	0.00500	"	0.0333	ND	49.4	30-120			
Dibenz (a,h) anthracene	0.0213	0.00500	"	0.0333	ND	63.9	30-120			
Fluoranthene	0.0248	0.00500	"	0.0333	ND	74.3	30-120			
Fluorene	0.0278	0.00500	"	0.0333	ND	83.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0188	0.00500	"	0.0333	ND	56.5	30-120			
Pyrene	0.0221	0.00500	"	0.0333	ND	66.4	35-142			
1-Methylnaphthalene	0.0233	0.00500	"	0.0333	ND	70.0	15-130			
2-Methylnaphthalene	0.0256	0.00500	"	0.0333	ND	76.8	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0260		"	0.0333		78.0	40-150			
Surrogate: Fluoranthene-d10	0.0259		"	0.0333		77.7	40-150			

##### Matrix Spike Dup (BGC0123-MSD1)

Source: 2303077-01

Prepared & Analyzed: 03/06/23

Acenaphthene	0.0185	0.00500	mg/kg	0.0333	ND	55.5	31-137	1.87	30	
Anthracene	0.0227	0.00500	"	0.0333	ND	68.0	30-120	6.58	30	
Benzo (a) anthracene	0.0209	0.00500	"	0.0333	ND	62.8	30-120	11.3	30	
Benzo (a) pyrene	0.0212	0.00500	"	0.0333	ND	63.7	30-120	7.22	30	
Benzo (b) fluoranthene	0.0165	0.00500	"	0.0333	ND	49.4	30-120	5.54	30	
Benzo (k) fluoranthene	0.0175	0.00500	"	0.0333	ND	52.6	30-120	7.46	30	
Chrysene	0.0180	0.00500	"	0.0333	ND	53.9	30-120	8.81	30	
Dibenz (a,h) anthracene	0.0234	0.00500	"	0.0333	ND	70.2	30-120	9.39	30	
Fluoranthene	0.0252	0.00500	"	0.0333	ND	75.7	30-120	1.84	30	
Fluorene	0.0290	0.00500	"	0.0333	ND	87.0	30-120	4.35	30	
Indeno (1,2,3-cd) pyrene	0.0220	0.00500	"	0.0333	ND	66.1	30-120	15.7	30	
Pyrene	0.0233	0.00500	"	0.0333	ND	69.8	35-142	5.04	30	
1-Methylnaphthalene	0.0220	0.00500	"	0.0333	ND	65.9	15-130	6.10	50	
2-Methylnaphthalene	0.0242	0.00500	"	0.0333	ND	72.5	15-130	5.81	50	
Surrogate: 2-Methylnaphthalene-d10	0.0244		"	0.0333		73.1	40-150			
Surrogate: Fluoranthene-d10	0.0256		"	0.0333		76.8	40-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch BGC0136 - EPA 3050B**

**Blank (BGC0136-BLK1)**

Prepared: 03/06/23 Analyzed: 03/07/23

Boron ND 0.0100 mg/L

**LCS (BGC0136-BS1)**

Prepared: 03/06/23 Analyzed: 03/07/23

Boron 5.68 0.0100 mg/L 5.00 114 80-120

**Duplicate (BGC0136-DUP1)**

**Source: 2303074-02**

Prepared: 03/06/23 Analyzed: 03/07/23

Boron 0.0866 0.0100 mg/L 0.0995 13.8 20

**Matrix Spike (BGC0136-MS1)**

**Source: 2303074-02**

Prepared: 03/06/23 Analyzed: 03/07/23

Boron 5.59 0.0100 mg/L 5.00 0.0995 110 75-125

**Matrix Spike Dup (BGC0136-MSD1)**

**Source: 2303074-02**

Prepared: 03/06/23 Analyzed: 03/07/23

Boron 5.66 0.0100 mg/L 5.00 0.0995 111 75-125 1.30 25

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch BGC0119 - EPA 3050B**

**Blank (BGC0119-BLK1)**

Prepared: 03/05/23 Analyzed: 03/07/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

**LCS (BGC0119-BS1)**

Prepared: 03/05/23 Analyzed: 03/07/23

Arsenic	46.4	0.200	mg/kg wet	40.0	116	80-120
Barium	45.6	0.400	"	40.0	114	80-120
Cadmium	2.34	0.200	"	2.00	117	80-120
Copper	44.5	0.400	"	40.0	111	80-120
Lead	20.4	0.200	"	20.0	102	80-120
Nickel	46.2	0.400	"	40.0	116	80-120
Selenium	4.71	0.260	"	4.00	118	80-120
Silver	2.35	0.0200	"	2.00	117	80-120
Zinc	47.6	0.400	"	40.0	119	80-120

**Duplicate (BGC0119-DUP1)**

Source: 2303079-01

Prepared: 03/05/23 Analyzed: 03/07/23

Arsenic	2.93	0.216	mg/kg dry	2.87	2.04	20
Barium	59.9	0.432	"	61.8	3.12	20
Cadmium	0.134	0.216	"	0.129	3.61	20
Copper	2.59	0.432	"	2.54	2.17	20
Lead	4.57	0.216	"	4.14	9.85	20
Nickel	3.12	0.432	"	3.02	3.36	20
Selenium	ND	0.260	"	ND		20
Silver	0.0104	0.0216	"	0.0134	25.5	20
Zinc	10.6	0.432	"	10.3	3.03	20

QR-01

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch BGC0119 - EPA 3050B**

Matrix Spike (BGC0119-MS1)		Source: 2303079-01			Prepared: 03/05/23		Analyzed: 03/07/23			
Arsenic	51.9	0.216	mg/kg dry	43.2	2.87	113	75-125			
Barium	103	0.432	"	43.2	61.8	95.6	75-125			
Cadmium	2.69	0.216	"	2.16	0.129	118	75-125			
Copper	45.1	0.432	"	43.2	2.54	98.5	75-125			
Lead	28.6	0.216	"	21.6	4.14	113	75-125			
Nickel	44.4	0.432	"	43.2	3.02	95.8	75-125			
Selenium	5.63	0.260	"	4.32	ND	130	75-125			QM-07
Silver	2.51	0.0216	"	2.16	0.0134	116	75-125			
Zinc	50.6	0.432	"	43.2	10.3	93.1	75-125			

Matrix Spike Dup (BGC0119-MSD1)		Source: 2303079-01			Prepared: 03/05/23		Analyzed: 03/07/23			
Arsenic	52.9	0.216	mg/kg dry	43.2	2.87	116	75-125	2.07	25	
Barium	107	0.432	"	43.2	61.8	105	75-125	3.78	25	
Cadmium	2.79	0.216	"	2.16	0.129	123	75-125	3.71	25	
Copper	44.9	0.432	"	43.2	2.54	97.9	75-125	0.588	25	
Lead	29.9	0.216	"	21.6	4.14	119	75-125	4.30	25	
Nickel	44.5	0.432	"	43.2	3.02	95.9	75-125	0.0467	25	
Selenium	5.26	0.260	"	4.32	ND	122	75-125	6.77	25	
Silver	2.61	0.0216	"	2.16	0.0134	120	75-125	3.63	25	
Zinc	50.4	0.432	"	43.2	10.3	92.7	75-125	0.368	25	

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch BGC0109 - 3060A Mod**

**Blank (BGC0109-BLK1)**

Prepared & Analyzed: 03/04/23

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BGC0109-BS1)**

Prepared & Analyzed: 03/04/23

Chromium, Hexavalent 23.4 0.30 mg/kg wet 25.0 93.4 80-120

**Duplicate (BGC0109-DUP1)**

**Source: 2303088-01**

Prepared & Analyzed: 03/04/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BGC0109-MS1)**

**Source: 2303088-01**

Prepared & Analyzed: 03/04/23

Chromium, Hexavalent 22.3 0.30 mg/kg dry 27.7 ND 80.4 75-125

**Matrix Spike Dup (BGC0109-MSD1)**

**Source: 2303088-01**

Prepared & Analyzed: 03/04/23

Chromium, Hexavalent 21.2 0.30 mg/kg dry 27.7 ND 76.4 75-125 5.10 20

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

03/08/23 13:26

## 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 BGC0111 - General Preparation

##### Blank (BGC0111-BLK1)

Prepared: 03/04/23 Analyzed: 03/06/23

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

##### LCS (BGC0111-BS1)

Prepared: 03/04/23 Analyzed: 03/06/23

Calcium	4.86	0.0500	mg/L wet	5.00	97.1	70-130
Magnesium	5.05	0.0500	"	5.00	101	70-130
Sodium	4.97	0.0500	"	5.00	99.5	70-130

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

03/08/23 13:26

### 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 BGC0127 - General Preparation

**Duplicate (BGC0127-DUP1)**

**Source: 2303088-01**

Prepared & Analyzed: 03/06/23

% Solids	89.8	%		90.2		0.392	20
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Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

03/08/23 13:26

### Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

#### Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

#### Batch BGC0113 - General Preparation

##### Blank (BGC0113-BLK1)

Prepared & Analyzed: 03/05/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

##### LCS (BGC0113-BS1)

Prepared & Analyzed: 03/05/23

Specific Conductance (EC) 0.150 0.0100 mmhos/cm 0.150 99.8 95-105

##### Duplicate (BGC0113-DUP1)

Source: 2303090-01

Prepared & Analyzed: 03/05/23

Specific Conductance (EC) 0.189 0.0100 mmhos/cm 0.191 0.946 20

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

03/08/23 13:26

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control**

**Summit Scientific**

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

**Batch BGC0112 - General Preparation**

**LCS (BGC0112-BS1)**

Prepared & Analyzed: 03/05/23

pH	9.15	pH Units	9.18	99.7	95-105
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**Duplicate (BGC0112-DUP1)**

**Source: 2303090-01**

Prepared & Analyzed: 03/05/23

pH	7.85	pH Units	7.96	1.39	20
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Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/08/23 13:26

### Notes and Definitions

QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

March 23, 2023

Jacob Whritenour  
Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield, CO 80020  
RE: Noble - LD19-16  
Work Order # 2303461

Enclosed are the results of analyses for samples received by Summit Scientific on 03/17/23 17:32. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is written over a light blue rectangular background.

Scott Sheely For Paul Shrewsbury  
President



Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/23/23 14:27

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BG01@1.5'	2303461-01	Soil	03/17/23 09:15	03/17/23 17:32
BG01@3'	2303461-02	Soil	03/17/23 09:15	03/17/23 17:32
BG02@1.5'	2303461-03	Soil	03/17/23 09:20	03/17/23 17:32
BG02@3'	2303461-04	Soil	03/17/23 09:20	03/17/23 17:32
BG03@1.5'	2303461-05	Soil	03/17/23 09:25	03/17/23 17:32
BG03@3'	2303461-06	Soil	03/17/23 09:25	03/17/23 17:32
BG04@1.5'	2303461-07	Soil	03/17/23 09:30	03/17/23 17:32
BG04@3'	2303461-08	Soil	03/17/23 09:30	03/17/23 17:32
BG05@1.5'	2303461-09	Soil	03/17/23 09:35	03/17/23 17:32
BG05@3'	2303461-10	Soil	03/17/23 09:35	03/17/23 17:32

Summit Scientific

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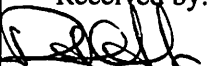
# SUMMIT SCIENTIFIC

4653 Table Mountain Drive  
Golden, CO 80403  
303-277-9310

Lab ID	Page 1 of 1
2303461	

Send Data To:		Send Invoice To:
Client: Noble / Tasman	Project Manager: Jake Whritenour	Company: Chevron
Address: 6855 W. 119th Ave	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location:
City/State/Zip: Broomfield, CO 80020		AFE#:
Phone: <del>303-261-6246</del> 303-828-3515	Project Name: LD 19-16	PO/Billing Codes:
Sampler Name: Stanley Gilbert Allan Engelhardt	Project Number:	Contact:

					Preservative				Matrix			Analysis Requested								Special Instructions		
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	VOC - 915	TPH - 915	PAH - 915	pH,EC,SAR	Boron - HWS	Metals - 915	HOLD	pH	pH, EC, SAR by saturated paste	
1	B601@1.5'	3/17/23	0915	2			X			X								X		X		
2	B601@3'		0915																			
3	B602@1.5'		0920																			
4	B602@3'		0920																			
5	B603@1.5'		0925																			
6	B603@3'		0925																			
7	B604@1.5'		0920																			
8	B604@3'		0920																			
9	B605@1.5'		0925																			
10	B605@3'		0925																			
11																						
12																						
13																						
14																						
15																						

Relinquished by: 	Date/Time: 3/17/23 - 1700	Received by: Tasman Lock Box	Date/Time:	TAT Business Days	Field DO	Notes:
Relinquished by: Tasman Lock Box	Date/Time: 3/17/23 1732	Received by: 	Date/Time: 3/17/23 1732	Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 8.8	Corrected Temperature: 8	IR gun #: 1	HNO3 lot #:			

S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2303461Client: Noble Fasmann Client Project ID: LD 19-100Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 8.8Thermometer # 1

	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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? <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.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name

Date/Time

3.17.25



Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/23/23 14:27

**BG01@1.5'**  
**2303461-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **03/17/23 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	8.09	0.224	0.189	mg/kg dry	1	BGC0586	03/19/23	03/20/23	EPA 6020B	
Barium	212	0.449	0.355	"	"	"	"	"	"	
Cadmium	0.519	0.224	0.00808	"	"	"	"	"	"	
Copper	6.22	0.449	0.0235	"	"	"	"	"	"	
Lead	14.5	0.224	0.0617	"	"	"	"	"	"	
Nickel	5.23	0.449	0.0684	"	"	"	"	"	"	
Selenium	0.509	0.260	0.175	"	"	"	"	"	"	
Silver	0.0566	0.0224	0.00300	"	"	"	"	"	"	
Zinc	20.0	0.449	0.298	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/17/23 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0717	03/21/23	03/21/23	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/17/23 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	89.1			%	1	BGC0695	03/21/23	03/22/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **03/17/23 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.27			pH Units	1	BGC0605	03/20/23	03/20/23	EPA 9045D	

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/23/23 14:27

**BG01@3'**  
**2303461-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **03/17/23 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	6.97	0.224	0.189	mg/kg dry	1	BGC0586	03/19/23	03/20/23	EPA 6020B	
Barium	161	0.448	0.354	"	"	"	"	"	"	
Cadmium	0.446	0.224	0.00807	"	"	"	"	"	"	
Copper	5.99	0.448	0.0234	"	"	"	"	"	"	
Lead	13.1	0.224	0.0616	"	"	"	"	"	"	
Nickel	5.14	0.448	0.0684	"	"	"	"	"	"	
Selenium	0.450	0.260	0.175	"	"	"	"	"	"	
Silver	0.0524	0.0224	0.00299	"	"	"	"	"	"	
Zinc	19.5	0.448	0.298	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/17/23 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0717	03/21/23	03/21/23	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/17/23 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	89.2			%	1	BGC0695	03/21/23	03/22/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **03/17/23 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.49			pH Units	1	BGC0605	03/20/23	03/20/23	EPA 9045D	

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/23/23 14:27

**BG02@1.5'**  
**2303461-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **03/17/23 09:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	6.51	0.226	0.191	mg/kg dry	1	BGC0586	03/19/23	03/20/23	EPA 6020B	
Barium	169	0.453	0.358	"	"	"	"	"	"	
Cadmium	0.419	0.226	0.00815	"	"	"	"	"	"	
Copper	5.55	0.453	0.0236	"	"	"	"	"	"	
Lead	13.2	0.226	0.0622	"	"	"	"	"	"	
Nickel	5.22	0.453	0.0690	"	"	"	"	"	"	
Selenium	0.435	0.260	0.175	"	"	"	"	"	"	
Silver	0.0502	0.0226	0.00302	"	"	"	"	"	"	
Zinc	18.4	0.453	0.301	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/17/23 09:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0717	03/21/23	03/21/23	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/17/23 09:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	88.4			%	1	BGC0695	03/21/23	03/22/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **03/17/23 09:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.38			pH Units	1	BGC0605	03/20/23	03/20/23	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/23/23 14:27

**BG02@3'**  
**2303461-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **03/17/23 09:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	5.34	0.225	0.189	mg/kg dry	1	BGC0586	03/19/23	03/20/23	EPA 6020B	
Barium	146	0.450	0.355	"	"	"	"	"	"	
Cadmium	0.336	0.225	0.00810	"	"	"	"	"	"	
Copper	4.53	0.450	0.0235	"	"	"	"	"	"	
Lead	10.1	0.225	0.0618	"	"	"	"	"	"	
Nickel	4.04	0.450	0.0686	"	"	"	"	"	"	
Selenium	0.440	0.260	0.175	"	"	"	"	"	"	
Silver	0.0441	0.0225	0.00300	"	"	"	"	"	"	
Zinc	13.9	0.450	0.299	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/17/23 09:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0717	03/21/23	03/21/23	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/17/23 09:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	88.9			%	1	BGC0695	03/21/23	03/22/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **03/17/23 09:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.62			pH Units	1	BGC0605	03/20/23	03/20/23	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/23/23 14:27

**BG03@1.5'**  
**2303461-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **03/17/23 09:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	6.21	0.221	0.186	mg/kg dry	1	BGC0586	03/19/23	03/20/23	EPA 6020B	
Barium	153	0.441	0.349	"	"	"	"	"	"	
Cadmium	0.298	0.221	0.00794	"	"	"	"	"	"	
Copper	4.61	0.441	0.0231	"	"	"	"	"	"	
Lead	11.7	0.221	0.0606	"	"	"	"	"	"	
Nickel	3.99	0.441	0.0673	"	"	"	"	"	"	
Selenium	0.440	0.260	0.175	"	"	"	"	"	"	
Silver	0.0366	0.0221	0.00295	"	"	"	"	"	"	
Zinc	13.1	0.441	0.294	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/17/23 09:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0717	03/21/23	03/21/23	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/17/23 09:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	90.6			%	1	BGC0695	03/21/23	03/22/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **03/17/23 09:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.37			pH Units	1	BGC0605	03/20/23	03/20/23	EPA 9045D	

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/23/23 14:27

**BG03@3'**  
**2303461-06 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **03/17/23 09:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	7.12	0.222	0.187	mg/kg dry	1	BGC0586	03/19/23	03/20/23	EPA 6020B	
Barium	209	0.445	0.352	"	"	"	"	"	"	
Cadmium	0.360	0.222	0.00801	"	"	"	"	"	"	
Copper	4.49	0.445	0.0233	"	"	"	"	"	"	
Lead	11.8	0.222	0.0611	"	"	"	"	"	"	
Nickel	3.87	0.445	0.0679	"	"	"	"	"	"	
Selenium	0.487	0.260	0.175	"	"	"	"	"	"	
Silver	0.0476	0.0222	0.00297	"	"	"	"	"	"	
Zinc	14.4	0.445	0.296	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/17/23 09:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0717	03/21/23	03/21/23	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/17/23 09:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	89.9			%	1	BGC0695	03/21/23	03/22/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **03/17/23 09:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.56			pH Units	1	BGC0605	03/20/23	03/20/23	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/23/23 14:27

**BG04@1.5'**  
**2303461-07 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **03/17/23 09:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	8.05	0.225	0.189	mg/kg dry	1	BGC0586	03/19/23	03/20/23	EPA 6020B	
Barium	169	0.450	0.355	"	"	"	"	"	"	
Cadmium	0.455	0.225	0.00809	"	"	"	"	"	"	
Copper	5.80	0.450	0.0235	"	"	"	"	"	"	
Lead	13.3	0.225	0.0618	"	"	"	"	"	"	
Nickel	5.24	0.450	0.0686	"	"	"	"	"	"	
Selenium	0.507	0.260	0.175	"	"	"	"	"	"	
Silver	0.0535	0.0225	0.00300	"	"	"	"	"	"	
Zinc	19.3	0.450	0.299	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/17/23 09:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0717	03/21/23	03/21/23	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/17/23 09:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	88.9			%	1	BGC0695	03/21/23	03/22/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **03/17/23 09:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.24			pH Units	1	BGC0605	03/20/23	03/20/23	EPA 9045D	

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/23/23 14:27

**BG04@3'**  
**2303461-08 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **03/17/23 09:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	7.00	0.224	0.188	mg/kg dry	1	BGC0586	03/19/23	03/20/23	EPA 6020B	
Barium	167	0.447	0.353	"	"	"	"	"	"	
Cadmium	0.422	0.224	0.00805	"	"	"	"	"	"	
Copper	5.32	0.447	0.0234	"	"	"	"	"	"	
Lead	12.0	0.224	0.0615	"	"	"	"	"	"	
Nickel	4.48	0.447	0.0682	"	"	"	"	"	"	
Selenium	0.541	0.260	0.175	"	"	"	"	"	"	
Silver	0.0568	0.0224	0.00299	"	"	"	"	"	"	
Zinc	17.3	0.447	0.298	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/17/23 09:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0717	03/21/23	03/21/23	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/17/23 09:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	89.4			%	1	BGC0695	03/21/23	03/22/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **03/17/23 09:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.31			pH Units	1	BGC0605	03/20/23	03/20/23	EPA 9045D	

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/23/23 14:27

**BG05@1.5'**  
**2303461-09 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **03/17/23 09:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	7.42	0.225	0.190	mg/kg dry	1	BGC0586	03/19/23	03/20/23	EPA 6020B	
Barium	171	0.450	0.356	"	"	"	"	"	"	
Cadmium	0.352	0.225	0.00811	"	"	"	"	"	"	
Copper	5.22	0.450	0.0235	"	"	"	"	"	"	
Lead	13.5	0.225	0.0619	"	"	"	"	"	"	
Nickel	4.42	0.450	0.0687	"	"	"	"	"	"	
Selenium	0.517	0.260	0.175	"	"	"	"	"	"	
Silver	0.0486	0.0225	0.00301	"	"	"	"	"	"	
Zinc	15.2	0.450	0.299	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/17/23 09:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0717	03/21/23	03/21/23	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/17/23 09:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	88.8			%	1	BGC0695	03/21/23	03/22/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **03/17/23 09:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.39			pH Units	1	BGC0605	03/20/23	03/20/23	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/23/23 14:27

**BG05@3'**  
**2303461-10 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Date Sampled: **03/17/23 09:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	6.99	0.223	0.188	mg/kg dry	1	BGC0586	03/19/23	03/20/23	EPA 6020B	
Barium	136	0.447	0.353	"	"	"	"	"	"	
Cadmium	0.281	0.223	0.00805	"	"	"	"	"	"	
Copper	4.26	0.447	0.0234	"	"	"	"	"	"	
Lead	10.8	0.223	0.0614	"	"	"	"	"	"	
Nickel	3.44	0.447	0.0682	"	"	"	"	"	"	
Selenium	0.577	0.260	0.175	"	"	"	"	"	"	
Silver	0.0487	0.0223	0.00298	"	"	"	"	"	"	
Zinc	12.6	0.447	0.297	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/17/23 09:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGC0717	03/21/23	03/21/23	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/17/23 09:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	89.5			%	1	BGC0695	03/21/23	03/22/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **03/17/23 09:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.64			pH Units	1	BGC0605	03/20/23	03/20/23	EPA 9045D	

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - LD19-16

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
03/23/23 14:27

## Total Metals by EPA 6020B - Quality Control

### Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

#### Batch BGC0586 - EPA 3050B

##### Blank (BGC0586-BLK1)

Prepared: 03/19/23 Analyzed: 03/20/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

##### LCS (BGC0586-BS1)

Prepared: 03/19/23 Analyzed: 03/20/23

Arsenic	42.4	0.200	mg/kg wet	40.0	106	80-120
Barium	42.0	0.400	"	40.0	105	80-120
Cadmium	2.13	0.200	"	2.00	107	80-120
Copper	47.0	0.400	"	40.0	118	80-120
Lead	21.2	0.200	"	20.0	106	80-120
Nickel	46.1	0.400	"	40.0	115	80-120
Selenium	4.21	0.260	"	4.00	105	80-120
Silver	2.19	0.0200	"	2.00	109	80-120
Zinc	44.4	0.400	"	40.0	111	80-120

##### Duplicate (BGC0586-DUP1)

Source: 2303460-01

Prepared: 03/19/23 Analyzed: 03/20/23

Arsenic	3.59	0.224	mg/kg dry	4.04	11.8	20
Barium	100	0.449	"	105	5.25	20
Cadmium	0.223	0.224	"	0.255	13.3	20
Copper	5.66	0.449	"	6.06	6.80	20
Lead	7.56	0.224	"	8.31	9.45	20
Nickel	7.21	0.449	"	7.61	5.31	20
Selenium	ND	0.260	"	ND		20
Silver	0.0332	0.0224	"	0.0359	7.79	20
Zinc	24.8	0.449	"	25.6	3.29	20

Summit Scientific

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**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch BGC0586 - EPA 3050B**

Matrix Spike (BGC0586-MS1)		Source: 2303460-01			Prepared: 03/19/23 Analyzed: 03/20/23					
Arsenic	48.0	0.224	mg/kg dry	44.9	4.04	98.1	75-125			
Barium	141	0.449	"	44.9	105	78.7	75-125			
Cadmium	2.51	0.224	"	2.24	0.255	101	75-125			
Copper	35.5	0.449	"	44.9	6.06	65.5	75-125			QM-07
Lead	29.7	0.224	"	22.4	8.31	95.4	75-125			
Nickel	37.2	0.449	"	44.9	7.61	65.9	75-125			QM-07
Selenium	3.87	0.260	"	4.49	ND	86.2	75-125			
Silver	2.29	0.0224	"	2.24	0.0359	101	75-125			
Zinc	54.8	0.449	"	44.9	25.6	65.2	75-125			QM-07

Matrix Spike Dup (BGC0586-MSD1)		Source: 2303460-01			Prepared: 03/19/23 Analyzed: 03/20/23					
Arsenic	47.2	0.224	mg/kg dry	44.9	4.04	96.1	75-125	1.87	25	
Barium	142	0.449	"	44.9	105	80.5	75-125	0.571	25	
Cadmium	2.55	0.224	"	2.24	0.255	102	75-125	1.61	25	
Copper	35.4	0.449	"	44.9	6.06	65.4	75-125	0.152	25	QM-07
Lead	30.3	0.224	"	22.4	8.31	98.0	75-125	1.89	25	
Nickel	36.9	0.449	"	44.9	7.61	65.4	75-125	0.647	25	QM-07
Selenium	3.79	0.260	"	4.49	ND	84.6	75-125	1.86	25	
Silver	2.32	0.0224	"	2.24	0.0359	102	75-125	1.40	25	
Zinc	54.2	0.449	"	44.9	25.6	63.8	75-125	1.11	25	QM-07

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**Reported:**  
03/23/23 14:27

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch BGC0717 - 3060A Mod**

**Blank (BGC0717-BLK1)**

Prepared & Analyzed: 03/21/23

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BGC0717-BS1)**

Prepared & Analyzed: 03/21/23

Chromium, Hexavalent 24.2 0.30 mg/kg wet 25.0 96.8 80-120

**Duplicate (BGC0717-DUP1)**

**Source: 2303460-01**

Prepared & Analyzed: 03/21/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BGC0717-MS1)**

**Source: 2303460-01**

Prepared & Analyzed: 03/21/23

Chromium, Hexavalent 26.9 0.30 mg/kg dry 28.0 ND 96.0 75-125

**Matrix Spike Dup (BGC0717-MSD1)**

**Source: 2303460-01**

Prepared & Analyzed: 03/21/23

Chromium, Hexavalent 26.9 0.30 mg/kg dry 28.0 ND 96.0 75-125 0.00 20

Summit Scientific

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Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
03/23/23 14:27

### Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

#### Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

#### Batch BGC0695 - General Preparation

Duplicate (BGC0695-DUP1)

Source: 2303460-01

Prepared: 03/21/23 Analyzed: 03/22/23

% Solids	89.4	%		89.2		0.229	20
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Summit Scientific

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Project: Noble - LD19-16

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**

03/23/23 14:27

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control**

**Summit Scientific**

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

**Batch BGC0605 - General Preparation**

**LCS (BGC0605-BS1)**

Prepared & Analyzed: 03/20/23

pH	9.21	pH Units	9.18	100	95-105
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**Duplicate (BGC0605-DUP1)**

**Source: 2303441-01**

Prepared & Analyzed: 03/20/23

pH	7.97	pH Units	7.89	1.01	20
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Summit Scientific

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Project Number: [none]

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**Reported:**  
03/23/23 14:27

### Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference