

THIRD QUARTER 2019 SITE MONITORING DATA

MOSIER 23-12

COGCC SPILL TRACKING # 448998

COGCC REMEDIATION # 10158

Prepared for:



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TABLE 1
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - MOSIER 23-12F

Monitoring Well ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft. BTOC)	Depth to Water (ft.) ⁽¹⁾	Depth to LNAPL (ft.) ⁽¹⁾	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
BH01	01/19/17	NM	13.57	12.57	8.65	3.92	NM
BH01	02/21/17	Well Destroyed During Excavation					
BH02	01/19/17	NM	NM	14.47	11.16	3.31	NM
BH02	02/21/17	Well Destroyed During Excavation					
BH04	01/19/17	NM	NM	15.53	11.41	4.12	NM
BH04	02/21/17	Well Destroyed During Excavation					
BH07	01/19/17	NM	NM	11.36	10.71	0.65	NM
BH07	02/21/17	Well Destroyed During Excavation					
BH09	01/19/17	NM	NM	11.65	11.57	0.08	NM
BH09	02/21/17	Well Destroyed During Excavation					
BH13	10/20/17	4729.82	11.29	6.00	ND	ND	4723.82
BH13	01/19/18	4729.82	11.24	7.40	ND	ND	4722.42
BH13	04/18/18	4729.82	11.23	8.95	ND	ND	4720.87
BH13	07/09/18	4729.82	11.32	8.28	ND	ND	4721.54
BH13	10/05/18	4729.82	11.31	7.75	ND	ND	4722.07
BH13	01/03/19	4729.82	11.28	9.07	ND	ND	4720.75
BH13	04/12/19	4729.82	11.37	10.44	ND	ND	4719.38
BH13	07/09/19	4729.82	11.30	9.71	ND	ND	4720.25
BH14	10/20/17	4729.82	14.76	6.00	ND	ND	4723.82
BH14	01/19/18	4729.82	14.64	7.40	ND	ND	4722.42
BH14	04/18/18	4729.82	14.63	8.94	ND	ND	4720.88
BH14	07/09/18	4729.82	14.48	8.28	ND	ND	4721.54
BH14	10/05/18	4729.82	14.44	7.70	ND	ND	4722.12
BH14	01/03/19	4729.82	14.44	9.08	ND	ND	4720.74
BH14	04/12/19	4729.82	14.42	10.47	ND	ND	4719.35
BH14	07/09/19	4729.82	14.40	10.05	ND	ND	4719.86
BH15	10/20/17	4730.14	11.22	6.43	ND	ND	4723.71
BH15	01/19/18	4730.14	11.20	7.85	ND	ND	4722.29
BH15	04/18/18	4730.14	11.22	9.37	ND	ND	4720.77
BH15	07/09/18	4730.14	11.26	8.69	ND	ND	4721.45
BH15	10/05/18	4730.14	11.24	8.16	ND	ND	4721.98
BH15	01/03/19	4730.14	11.23	9.52	ND	ND	4720.62
BH15	04/12/19	4730.14	11.29	10.91	ND	ND	4719.23
BH15	07/09/19	4730.14	11.25	10.87	ND	ND	4719.69
BH16	10/20/17	4729.88	11.21	6.21	ND	ND	4723.67
BH16	01/19/18	4729.88	11.13	7.57	ND	ND	4722.31
BH16	04/18/18	4729.88	11.14	9.15	ND	ND	4720.73
BH16	07/09/18	4729.88	11.30	8.46	ND	ND	4721.42
BH16	10/05/18	4729.88	11.27	7.92	ND	ND	4721.96
BH16	01/03/19	4729.88	11.26	9.27	ND	ND	4720.61
BH16	04/12/19	4729.88	11.33	10.71	ND	ND	4719.17
BH16	07/09/19	4729.88	11.27	10.49	ND	ND	4719.7

TABLE 1
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - MOSIER 23-12F

Monitoring Well ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft. BTOC)	Depth to Water (ft.) ⁽¹⁾	Depth to LNAPL (ft.) ⁽¹⁾	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
BH17	10/20/17	4729.71	11.24	6.02	ND	ND	4723.69
BH17	01/19/18	4729.71	11.20	7.39	ND	ND	4722.32
BH17	04/18/18	4729.71	11.20	8.98	ND	ND	4720.73
BH17	07/09/18	4729.71	11.23	8.27	ND	ND	4721.44
BH17	10/05/18	4729.71	11.21	7.74	ND	ND	4721.97
BH17	01/03/19	4729.71	11.21	9.09	ND	ND	4720.62
BH17	04/12/19	4729.71	11.25	10.42	ND	ND	4719.29
BH17	07/09/19	4729.71	11.20	10.28	ND	ND	4719.7
BH18	10/20/17	4729.50	11.62	5.77	ND	ND	4723.73
BH18	01/19/18	4729.50	11.47	7.15	ND	ND	4722.35
BH18	04/18/18	4729.50	11.39	8.70	ND	ND	4720.80
BH18	07/09/18	4729.50	11.53	8.03	ND	ND	4721.47
BH18	10/05/18	4729.50	11.50	7.48	ND	ND	4722.02
BH18	01/03/19	4729.50	11.55	8.83	ND	ND	4720.67
BH18	04/12/19	4729.50	11.56	10.18	ND	ND	4719.32
BH18	07/09/19	4729.50	11.52	9.99	ND	ND	4719.74
BH19	10/20/17	4729.73	11.40	5.94	ND	ND	4723.79
BH19	01/19/18	4729.73	11.35	7.32	ND	ND	4722.41
BH19	04/18/18	4729.73	11.35	8.88	ND	ND	4720.85
BH19	07/09/18	4729.73	11.60	8.19	ND	ND	4721.54
BH19	10/05/18	4729.73	11.58	7.66	ND	ND	4722.07
BH19	01/03/19	4729.73	11.58	8.99	ND	ND	4720.74
BH19	04/12/19	4729.73	11.64	10.42	ND	ND	4719.31
BH19	07/09/19	4729.73	11.59	10.22	ND	ND	4719.83
BH20	10/20/17	4731.78	13.52	7.96	ND	ND	4723.82
BH20	01/19/18	4731.78	13.44	9.34	ND	ND	4722.44
BH20	04/18/18	4731.78	13.43	10.92	ND	ND	4720.86
BH20	07/09/18	4731.78	13.64	10.23	ND	ND	4721.55
BH20	10/05/18	4731.78	13.63	9.69	ND	ND	4722.09
BH20	01/03/19	4731.78	13.64	11.02	ND	ND	4720.76
BH20	04/12/19	4731.78	13.73	12.42	ND	ND	4719.36
BH20	07/09/19	4731.78	13.68	9.93	ND	ND	4719.84
BH21	12/18/17	4730.34	14.25	7.78	ND	ND	4722.56
BH21	01/19/18	4730.34	14.26	8.12	ND	ND	4722.22
BH21	04/18/18	4730.34	14.18	9.66	ND	ND	4720.68
BH21	07/09/18	4730.34	14.19	9.96	ND	ND	4720.38
BH21	10/05/18	4730.34	14.18	8.42	ND	ND	4721.92
BH21	01/03/19	4730.34	14.10	9.82	ND	ND	4720.52
BH21	04/12/19	4730.34	14.15	11.20	ND	ND	4719.14
BH21	07/09/19	4730.34	14.20	12.14	ND	ND	4718.61
BH22	12/18/17	4729.78	15.55	7.16	ND	ND	4722.62
BH22	01/19/18	4729.78	15.45	7.52	ND	ND	4722.26

TABLE 1
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - MOSIER 23-12F

Monitoring Well ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft. BTOC)	Depth to Water (ft.) ⁽¹⁾	Depth to LNAPL (ft.) ⁽¹⁾	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
BH22	04/18/18	4729.78	15.35	9.09	ND	ND	4720.69
BH22	07/09/18	4729.78	15.32	8.38	ND	ND	4721.40
BH22	10/05/18	4729.78	15.29	7.84	ND	ND	4721.94
BH22	01/03/19	4729.78	15.27	9.22	ND	ND	4720.56
BH22	04/12/19	4729.78	15.33	10.64	10.59	0.05	4719.18
BH22	07/09/19	4729.78	15.33	10.29	ND	ND	4719.67
BH23	12/18/17	4732.23	18.86	9.62	ND	ND	4722.61
BH23	01/19/18	4732.23	18.85	9.99	ND	ND	4722.24
BH23	04/18/18	4732.23	18.73	11.57	ND	ND	4720.66
BH23	07/09/18	4732.23	18.65	10.88	ND	ND	4721.35
BH23	10/05/18	4732.23	18.63	10.32	ND	ND	4721.91
BH23	01/03/19	4732.23	18.55	11.69	ND	ND	4720.54
BH23	04/12/19	4732.23	18.41	13.11	ND	ND	4719.12
BH23	07/09/19	4732.23	18.45	9.57	ND	ND	4719.64
BH24	12/18/17	4732.40	17.75	9.69	ND	ND	4722.71
BH24	01/19/18	4732.40	17.79	10.09	ND	ND	4722.31
BH24	04/18/18	4732.40	17.76	11.69	ND	ND	4720.71
BH24	07/09/18	4732.40	17.55	10.98	ND	ND	4721.42
BH24	10/05/18	4732.40	17.50	10.45	ND	ND	4721.95
BH24	01/03/19	4732.40	17.52	11.80	ND	ND	4720.60
BH24	04/12/19	4732.40	17.49	13.24	ND	ND	4719.16
BH24	07/09/19	4731.98	17.04	9.74	ND	ND	4719.67
BH25	12/18/17	4732.80	18.84	10.26	ND	ND	4722.54
BH25	01/19/18	4732.80	18.80	10.62	ND	ND	4722.18
BH25	04/18/18	4732.80	18.79	12.16	ND	ND	4720.64
BH25	07/09/18	4732.80	18.78	11.46	ND	ND	4721.34
BH25	10/05/18	4732.80	18.82	10.92	ND	ND	4721.88
BH25	01/03/19	4732.80	18.80	12.32	ND	ND	4720.48
BH25	04/12/19	4732.80	18.74	13.70	ND	ND	4719.10
BH25	07/09/19	4732.00	17.73	9.68	ND	ND	4719.63
BH26	01/19/18	4729.59	15.41	7.40	ND	ND	4722.19
BH26	04/18/18	4729.59	15.36	8.99	ND	ND	4720.60
BH26	07/09/18	4729.59	10.99	8.27	ND	ND	4721.32
BH26	10/05/18	4729.59	15.15	7.73	ND	ND	4721.86
BH26	01/03/19	4729.59	15.15	9.10	ND	ND	4720.49
BH26	04/12/19	4729.59	14.98	10.53	ND	ND	4719.06
BH26	07/09/19	4729.59	14.97	9.53	ND	ND	4719.59
BH27	01/19/18	4730.27	14.42	8.12	ND	ND	4722.15
BH27	04/18/18	4730.27	14.40	9.71	ND	ND	4720.56
BH27	07/09/18	4730.27	14.39	8.99	ND	ND	4721.28
BH27	10/05/18	4730.27	14.34	8.45	ND	ND	4721.82
BH27	01/03/19	4730.27	14.33	9.84	ND	ND	4720.43

TABLE 1
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - MOSIER 23-12F

Monitoring Well ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft. BTOC)	Depth to Water (ft.) ⁽¹⁾	Depth to LNAPL (ft.) ⁽¹⁾	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
BH27	04/12/19	4730.27	14.40	11.25	ND	ND	4719.02
BH27	07/09/19	4730.27	14.43	9.55	ND	ND	4719.56
BH28	01/19/18	4731.71	14.01	9.64	ND	ND	4722.07
BH28	04/18/18	4731.71	14.59	11.17	ND	ND	4720.54
BH28	07/09/18	4731.71	14.62	10.47	ND	ND	4721.24
BH28	10/05/18	4731.71	14.59	9.92	ND	ND	4721.79
BH28	01/03/19	4731.71	14.57	11.35	ND	ND	4720.36
BH28	04/12/19	4731.71	14.68	12.72	ND	ND	4718.99
BH28	07/09/19	4731.71	14.64	9.50	ND	ND	4719.53
BH29	01/19/18	4732.48	14.69	10.41	ND	ND	4722.07
BH29	04/18/18	4732.48	14.66	11.91	ND	ND	4720.57
BH29	07/09/18	4732.48	14.74	11.18	ND	ND	4721.30
BH29	10/05/18	4732.48	14.70	10.65	ND	ND	4721.83
BH29	01/03/19	4732.48	14.69	12.08	ND	ND	4720.40
BH29	04/12/19	4732.48	14.79	13.43	ND	ND	4719.05
BH29	07/09/19	4732.48	14.71	9.74	ND	ND	4719.58
BH30	01/19/18	4732.25	14.46	10.07	ND	ND	4722.18
BH30	04/18/18	4732.25	14.41	11.59	ND	ND	4720.66
BH30	07/09/18	4732.25	14.49	10.87	ND	ND	4721.38
BH30	10/05/18	4732.25	14.48	10.35	ND	ND	4721.9
BH30	01/03/19	4732.25	14.42	11.78	ND	ND	4720.47
BH30	04/12/19	4732.25	14.57	13.09	ND	ND	4719.16
BH30	07/09/19	4732.25	14.57	10.05	ND	ND	4719.64
BH31	07/09/18	4732.56	17.67	10.94	ND	ND	4721.62
BH31	10/05/18	4732.56	17.6	10.41	ND	ND	4722.15
BH31	01/03/19	4732.56	17.58	11.73	ND	ND	4720.83
BH31	04/12/19	4732.56	17.50	13.11	ND	ND	4719.45
BH31	07/09/19	4732.56	17.51	9.72	ND	ND	4719.85
BH32	07/09/18	4732.49	17.81	10.93	ND	ND	4721.56
BH32	10/05/18	4732.49	17.77	10.41	ND	ND	4722.08
BH32	01/03/19	4732.49	17.75	11.75	ND	ND	4720.74
BH32	04/12/19	4732.49	17.79	13.10	ND	ND	4719.39
BH32	07/09/19	4732.49	17.74	9.47	ND	ND	4719.88
BH33	07/09/18	4730.34	15.49	8.88	ND	ND	4721.46
BH33	10/05/18	4730.34	15.44	8.35	ND	ND	4721.99
BH33	01/03/19	4730.34	15.35	9.72	ND	ND	4720.62
BH33	04/12/19	4730.34	15.31	11.07	ND	ND	4719.27
BH33	07/09/19	4730.34	15.31	10.62	ND	ND	4719.77

NOTES:

ft. = Feet

AMSL = Above mean sea level

TABLE 1
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - MOSIER 23-12F

Monitoring Well ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft. BTOC)	Depth to Water (ft.) ⁽¹⁾	Depth to LNAPL (ft.) ⁽¹⁾	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
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BTOC = Below top of casing

LNAPL = Light non-aqueous phase liquid

ND = Not Detected

NM = Not Measured

Soil borings BH03, BH05, BH06, BH08, BH10-BH12 were not converted to monitoring wells.

1) Depth to water measurements collected prior to third quarter 2019 were measured from top of well casing. Subsequent measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.

* Groundwater elevation was corrected for product thickness (when present) using the following calculation:

Groundwater elevation = (TOC Elevation - Measured Depth to Water)+(LNAPL Thickness in Well x LNAPL Relative Density)

LNAPL relative density was estimated to be 0.75

TABLE 2
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - MOSIER 23-12F

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Standard		5	560	700	1,400
BH01	01/19/17	Not Sampled - 3.92' LNAPL Present			
BH01	02/21/17	Well Destroyed During Excavation			
BH02	01/19/17	Not Sampled - 3.31' LNAPL Present			
BH02	02/21/17	Well Destroyed During Excavation			
BH04	01/19/17	Not Sampled - 4.12' LNAPL Present			
BH04	02/21/17	Well Destroyed During Excavation			
BH07	01/19/17	Not Sampled - 0.65' LNAPL Present			
BH07	02/21/17	Well Destroyed During Excavation			
BH09	01/19/17	Not Sampled - 0.08' LNAPL Present			
BH09	02/21/17	Well Destroyed During Excavation			
BH13	10/20/17	<1.0	<1.0	<1.0	<2.0
BH13	01/19/18	40	<1.0	<1.0	<2.0
BH13	04/18/18	55	<1.0	<1.0	<2.0
BH13	07/09/18	6	<1.0	<1.0	<2.0
BH13	10/05/18	1	<1.0	<1.0	<2.0
BH13	01/03/19	<1.0	<1.0	<1.0	<2.0
BH13	04/12/19	<1.0	<1.0	<1.0	<2.0
BH13	07/09/19	11	<1.0	<1.0	<2.0
BH14	10/20/17	<1.0	<1.0	<1.0	<2.0
BH14	01/19/18	<1.0	<1.0	<1.0	<2.0
BH14	04/18/18	18	<1.0	<1.0	<2.0
BH14	07/09/18	4.5	<1.0	<1.0	<2.0
BH14	10/05/18	2.3	<1.0	<1.0	<2.0
BH14	01/03/19	1.4	<1.0	<1.0	<2.0
BH14	04/12/19	14	<1.0	<1.0	<2.0
BH14	07/09/19	1.0	<1.0	<1.0	<2.0
BH15	10/20/17	5,900	5,800	340	2,900
BH15	01/19/18	6,800	4,300	440	5,200
BH15	04/18/18	7,100	3,000	490	5,900
BH15	07/09/18	11,000	520	710	7,200
BH15	10/05/18	6,000	66	16	4,900
BH15	01/03/19	15,000	2,200	21,000	7,600
BH15	04/12/19	Insufficeint Water - No sample collected			
BH15	07/09/19	960	5.1	46	290
BH16	10/20/17	1,600	1.6	9.9	<2.0
BH16	01/19/18	1,400	<1.0	7.3	<2.0
BH16	04/18/18	980	<1.0	<1.0	<2.0
BH16	07/09/18	900	<1.0	<1.0	<2.0
BH16	10/05/18	10	<1.0	<1.0	<2.0
BH16	01/03/19	420	<1.0	<1.0	<2.0
BH16	04/12/19	12	<1.0	<1.0	<2.0
BH16	07/09/19	910	<1.0	2.1	5.8

TABLE 2
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - MOSIER 23-12F

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Standard		5	560	700	1,400
BH17	10/20/17	150	<1.0	<1.0	<2.0
BH17	01/19/18	270	1.2	1.2	2.2
BH17	04/18/18	210	<1.0	<1.0	<2.0
BH17	07/09/18	120	<1.0	<1.0	<2.0
BH17	10/05/18	36	<1.0	<1.0	<2.0
BH17	01/03/19	9.5	1.2	<1.0	<2.0
BH17	04/12/19	25	<1.0	<1.0	<2.0
BH17	07/09/19	120	<1.0	<1.0	<2.0
BH18	10/20/17	<1.0	<1.0	<1.0	640
BH18	01/19/18	990	15	67	1,700
BH18	04/18/18	530	1.1	2.0	21
BH18	07/09/18	110	<1.0	8.1	66
BH18	10/05/18	19	<1.0	1.5	16
BH18	01/03/19	38	<1.0	<1.0	5.2
BH18	04/12/19	870	140	80	830
BH18	07/09/19	190	62	16	150
BH19	10/20/17	51	<1.0	<1.0	460
BH19	01/19/18	470	990	32	560
BH19	04/18/18	87	340	9.8	170
BH19	07/09/18	51	63	4.5	62
BH19	10/05/18	41	69	3.3	57
BH19	01/03/19	130	80	8.1	130
BH19	04/12/19	130	240	8.2	170
BH19	07/09/19	98	250	6.6	190
BH20	10/20/17	<1.0	<1.0	<1.0	<2.0
BH20	01/19/18	<1.0	<1.0	<1.0	<2.0
BH20	04/18/18	<1.0	<1.0	<1.0	<2.0
BH20	07/09/18	<1.0	<1.0	<1.0	<2.0
BH20	10/05/18	<1.0	<1.0	<1.0	<2.0
BH20	01/03/19	<1.0	<1.0	<1.0	<2.0
BH20	04/12/19	<1.0	<1.0	<1.0	<2.0
BH20	07/09/19	<1.0	<1.0	<1.0	<2.0
BH21	12/18/17	31	<1.0	<1.0	<2.0
BH21	01/19/18	4.0	<1.0	<1.0	<2.0
BH21	04/18/18	27	<1.0	<1.0	<2.0
BH21	07/09/18	7.4	<1.0	<1.0	<2.0
BH21	10/05/18	<1.0	<1.0	<1.0	<2.0
BH21	01/03/19	2.8	<1.0	<1.0	<2.0
BH21	04/12/19	<1.0	<1.0	<1.0	<2.0
BH21	07/09/19	<1.0	<1.0	<1.0	<2.0
BH22	12/18/17	6800	15,000	510	8,000
BH22	01/19/18	5,100	8,400	320	4,500
BH22	04/18/18	5,900	7,000	340	4,200

TABLE 2
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - MOSIER 23-12F

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Standard		5	560	700	1,400
BH22	07/09/18	2,100	1,900	110	6,000
BH22	10/05/18	25	18	1.2	13
BH22	01/03/19	9,800	7,400	99	830
BH22	04/12/19	2,000	16,000	910	16,000
BH22	07/09/19	1,400	2,000	77	1,900
BH23	12/18/17	510	4.2	<1.0	3.7
BH23	01/19/18	310	<1.0	210	420
BH23	04/18/18	21	3.8	<1.0	3.6
BH23	07/09/18	12	<1.0	<1.0	<2.0
BH23	10/05/18	1.0	1.4	<1.0	<2.0
BH23	01/03/19	<1.0	<1.0	<1.0	<2.0
BH23	04/12/19	<1.0	<1.0	<1.0	<2.0
BH23	07/09/19	31	<1.0	<1.0	<2.0
BH24	12/18/17	<1.0	<1.0	<1.0	<2.0
BH24	01/19/18	<1.0	<1.0	<1.0	<2.0
BH24	04/18/18	<1.0	<1.0	<1.0	<2.0
BH24	07/09/18	<1.0	<1.0	<1.0	<2.0
BH24	10/05/18	<1.0	<1.0	<1.0	<2.0
BH24	01/03/19	<1.0	<1.0	<1.0	<2.0
BH24	04/12/19	<1.0	<1.0	<1.0	<2.0
BH24	07/09/19	<1.0	<1.0	<1.0	<2.0
BH25	12/18/17	29	<1.0	<1.0	<2.0
BH25	01/19/18	240	<1.0	<1.0	<2.0
BH25	04/18/18	1,100	<1.0	<1.0	<2.0
BH25	07/09/18	3,800	<1.0	<1.0	13
BH25	10/05/18	3,800	1.1	<1.0	52
BH25	01/03/19	3,900	<1.0	860	7,600
BH25	04/12/19	910	180	18	160
BH25	07/09/19	5,800	3,000	150	2,200
BH26	01/19/18	<1.0	<1.0	<1.0	<2.0
BH26	04/18/18	<1.0	<1.0	<1.0	<2.0
BH26	07/09/18	1.0	<1.0	<1.0	<2.0
BH26	10/05/18	<1.0	<1.0	<1.0	<2.0
BH26	01/03/19	<1.0	<1.0	<1.0	<2.0
BH26	04/12/19	<1.0	<1.0	<1.0	<2.0
BH26	07/09/19	<1.0	<1.0	<1.0	<2.0
BH27	01/19/18	<1.0	<1.0	<1.0	<2.0
BH27	04/18/18	14	<1.0	<1.0	<2.0
BH27	07/09/18	<1.0	<1.0	<1.0	<2.0
BH27	10/05/18	<1.0	<1.0	<1.0	<2.0
BH27	01/03/19	<1.0	<1.0	<1.0	<2.0
BH27	04/12/19	<1.0	<1.0	<1.0	<2.0

TABLE 2
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - MOSIER 23-12F

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Standard		5	560	700	1,400
BH27	07/09/19	1.3	<1.0	<1.0	<2.0
BH28	01/19/18	<1.0	<1.0	<1.0	<2.0
BH28	04/18/18	<1.0	<1.0	<1.0	<2.0
BH28	07/09/18	<1.0	<1.0	<1.0	<2.0
BH28	10/05/18	<1.0	<1.0	<1.0	<2.0
BH28	01/03/19	3.2	<1.0	<1.0	<2.0
BH28	04/12/19	<1.0	<1.0	<1.0	<2.0
BH28	07/09/19	<1.0	<1.0	<1.0	<2.0
BH29	01/19/18	<1.0	<1.0	<1.0	<2.0
BH29	04/18/18	<1.0	<1.0	<1.0	<2.0
BH29	07/09/18	<1.0	<1.0	<1.0	<2.0
BH29	10/05/18	<1.0	<1.0	<1.0	<2.0
BH29	01/03/19	<1.0	<1.0	<1.0	<2.0
BH29	04/12/19	<1.0	<1.0	<1.0	<2.0
BH29	07/09/19	<1.0	<1.0	<1.0	<2.0
BH30	01/19/18	<1.0	<1.0	<1.0	<2.0
BH30	04/18/18	<1.0	<1.0	<1.0	<2.0
BH30	07/09/18	<1.0	<1.0	<1.0	<2.0
BH30	10/05/18	<1.0	<1.0	<1.0	<2.0
BH30	01/03/19	<1.0	<1.0	<1.0	<2.0
BH30	04/12/19	<1.0	<1.0	<1.0	<2.0
BH30	07/09/19	<1.0	<1.0	<1.0	<2.0
BH31	07/09/18	<1.0	<1.0	<1.0	<2.0
BH31	10/05/18	<1.0	<1.0	<1.0	<2.0
BH31	01/03/19	<1.0	<1.0	<1.0	<2.0
BH31	04/12/19	<1.0	<1.0	<1.0	<2.0
BH31	07/09/19	<1.0	<1.0	<1.0	<2.0
BH32	07/09/18	<1.0	<1.0	<1.0	<2.0
BH32	10/05/18	<1.0	<1.0	<1.0	<2.0
BH32	01/03/19	<1.0	<1.0	<1.0	<2.0
BH32	04/12/19	<1.0	<1.0	<1.0	<2.0
BH32	07/09/19	<1.0	<1.0	<1.0	<2.0
BH33	07/09/18	<1.0	<1.0	<1.0	<2.0
BH33	10/05/18	<1.0	<1.0	<1.0	<2.0
BH33	01/03/19	<1.0	<1.0	<1.0	<2.0
BH33	04/12/19	<1.0	<1.0	<1.0	<2.0
BH33	07/09/19	<1.0	<1.0	<1.0	<2.0

Notes:

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

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

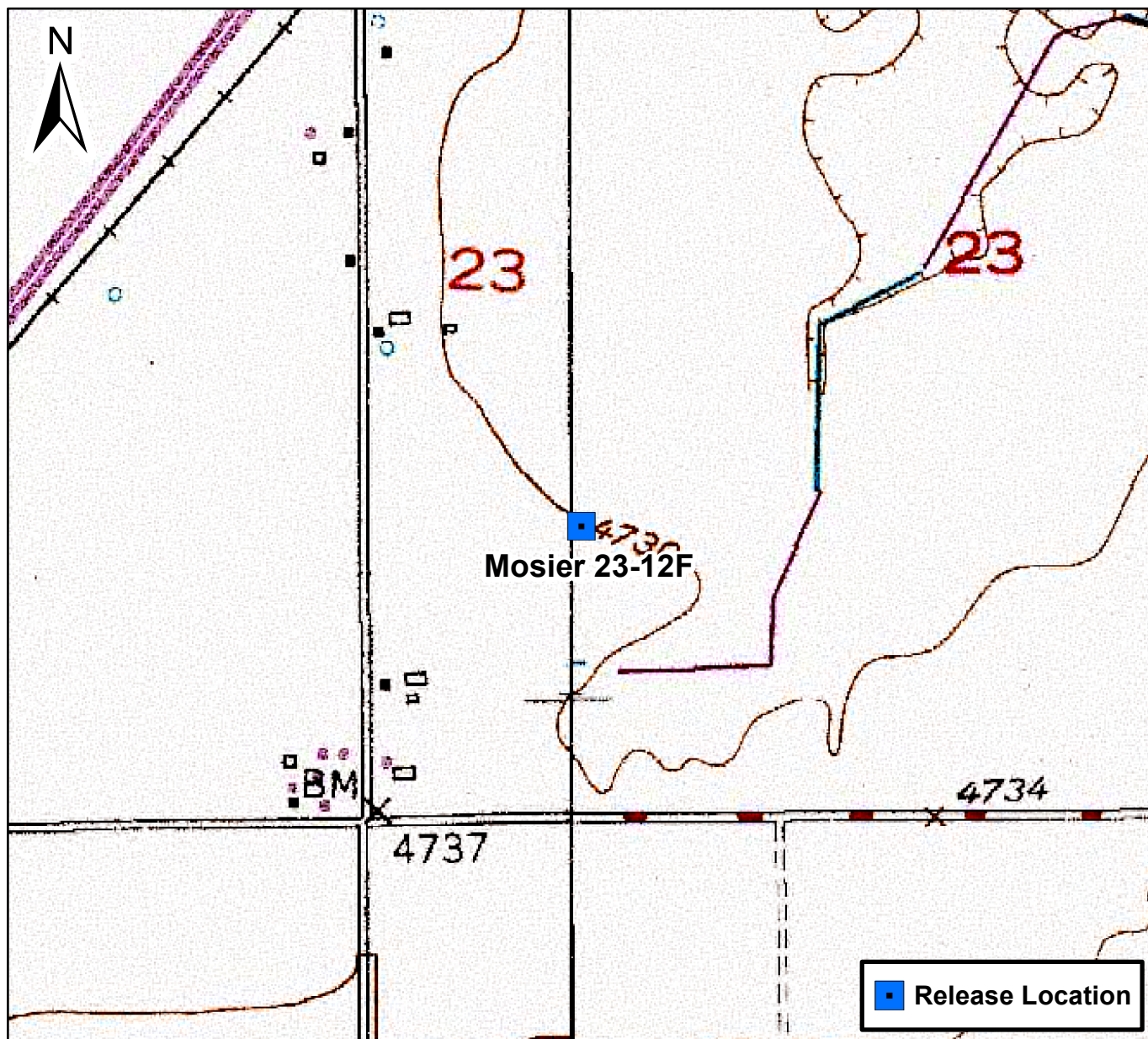
TABLE 2
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - MOSIER 23-12F

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Standard		5	560	700	1,400

Groundwater standards referenced from COGCC Table 910-1

Highlighted results are equal to or exceed the COGCC Table 910-1 standard

Soil borings BH03, BH05, BH06, BH08, BH10-BH12 were not converted to monitoring wells.




0 750 1,500 Feet

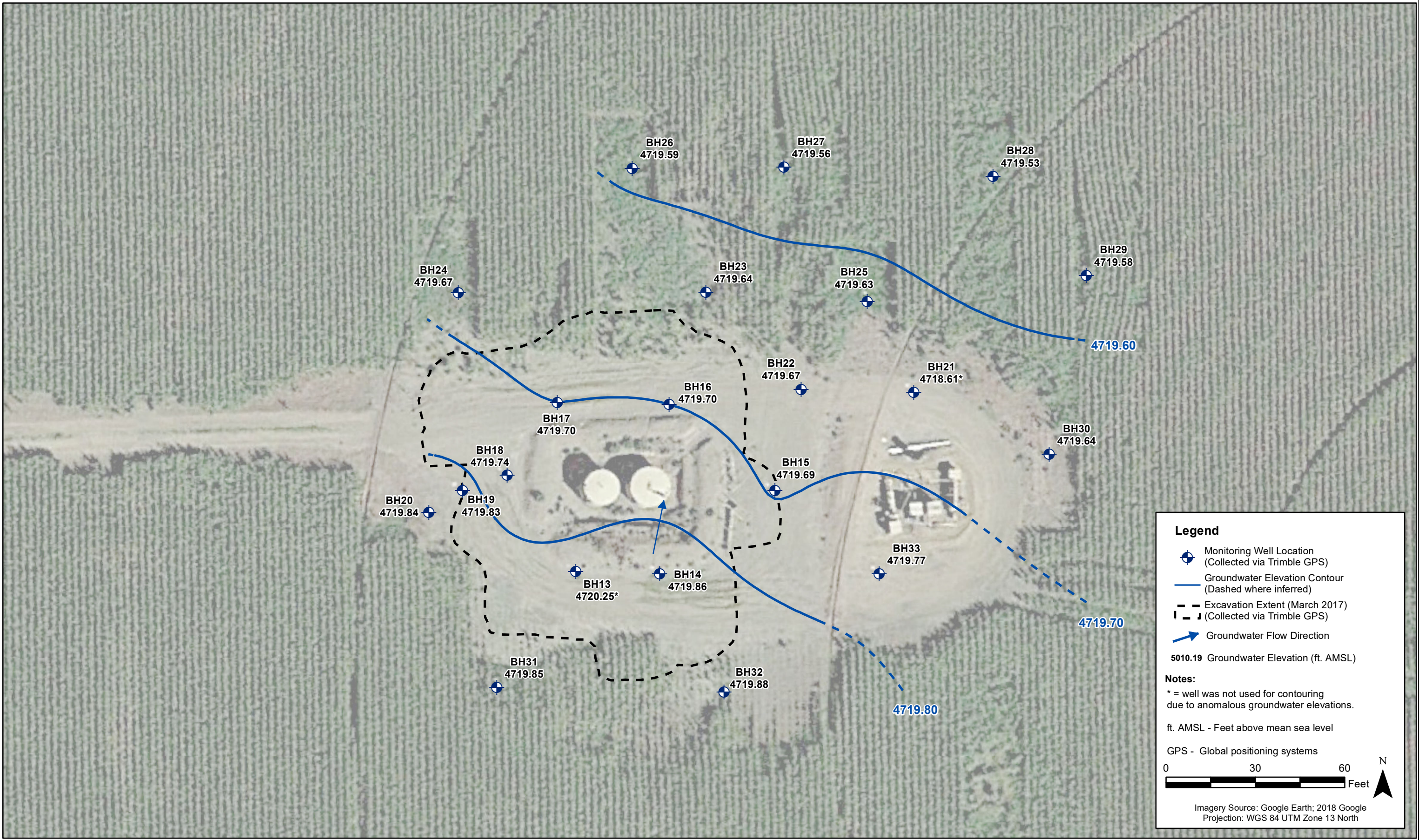
Figure 1

Site Location Map
Mosier 23-12F
NWSW S23 T4N R66W
Weld County, Colorado





DATE: 08/21/2018	 <div>Tasman Geosciences, Inc. 6899 Pecos Street – Unit C Denver, CO 80221</div>	<div>Noble Energy, Inc. – DJ Basin Mosier 23-12F NWSW, Section 23, Township 4 North, Range 66 West Weld County, Colorado</div>	Site Overview Map	FIGURE 2
DESIGNED BY: DA				
DRAWN BY: TL				



DATE:	September 2019
DESIGNED BY:	J. Whritenour
DRAWN BY:	L. Martin



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

Noble Energy, Inc. - DJ Basin
Mosier 23-12F Tank Battery
NWSW, Section 23, Township 4 North, Range 66 West
Weld County, Colorado

Groundwater Elevation
Contour Map (07/09/2019)

Figure
3

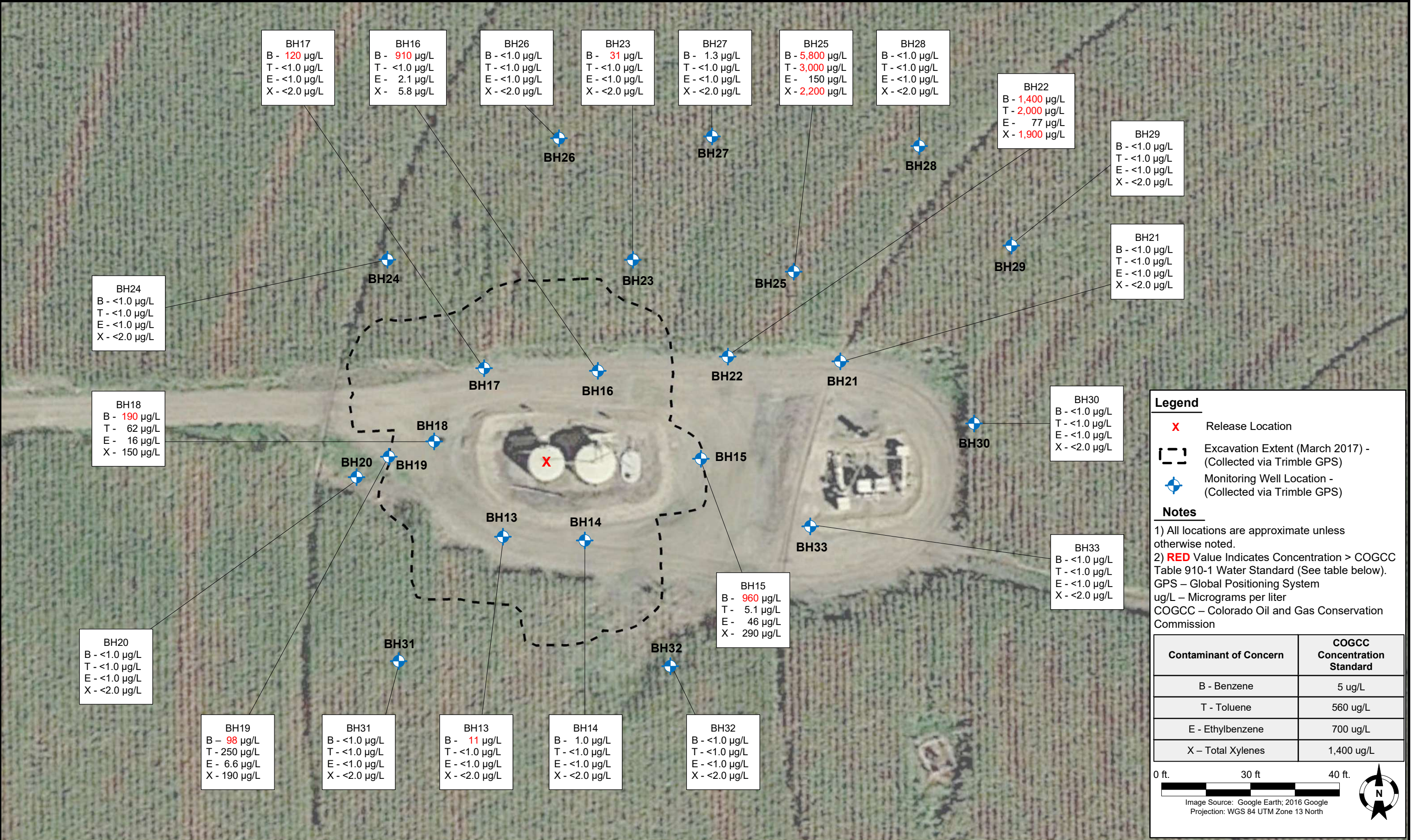
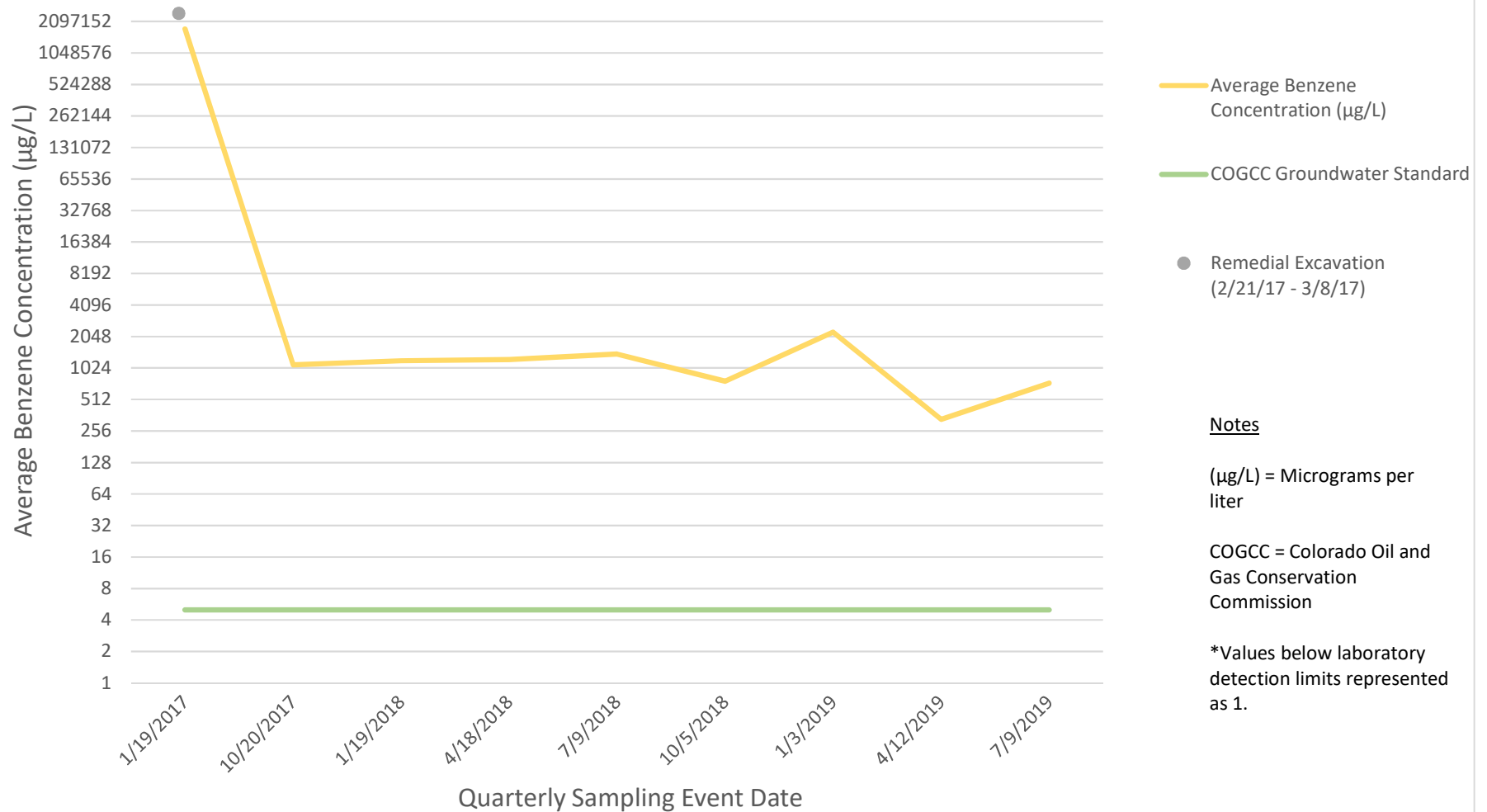


Figure 5
Mosier 23-12 F
Average Benzene Concentration VS Quarterly Sampling Event Date



Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 19, 2019

Brandon Bruns

Tasman Geosciences

6855 W. 119th Ave.


Broomfield, CO 80020

RE: Noble - Mosier 23-12F

Work Order # 1907091

Enclosed are the results of analyses for samples received by Summit Scientific on 07/09/19 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Muri Premier For Ben Shrewsbury

Laboratory Manager



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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH13	1907091-01	Water	07/09/19 11:42	07/09/19 17:30
BH14	1907091-02	Water	07/09/19 12:14	07/09/19 17:30
BH15	1907091-03	Water	07/09/19 12:19	07/09/19 17:30
BH16	1907091-04	Water	07/09/19 12:43	07/09/19 17:30
BH17	1907091-05	Water	07/09/19 12:34	07/09/19 17:30
BH18	1907091-06	Water	07/09/19 12:32	07/09/19 17:30
BH19	1907091-07	Water	07/09/19 12:22	07/09/19 17:30
BH20	1907091-08	Water	07/09/19 11:53	07/09/19 17:30
BH21	1907091-09	Water	07/09/19 12:09	07/09/19 17:30
BH22	1907091-10	Water	07/09/19 12:46	07/09/19 17:30
BH23	1907091-11	Water	07/09/19 12:03	07/09/19 17:30
BH24	1907091-12	Water	07/09/19 12:08	07/09/19 17:30
BH25	1907091-13	Water	07/09/19 12:27	07/09/19 17:30
BH26	1907091-14	Water	07/09/19 12:01	07/09/19 17:30
BH27	1907091-15	Water	07/09/19 11:53	07/09/19 17:30
BH28	1907091-16	Water	07/09/19 11:46	07/09/19 17:30
BH29	1907091-17	Water	07/09/19 11:23	07/09/19 17:30
BH30	1907091-18	Water	07/09/19 11:15	07/09/19 17:30
BH31	1907091-19	Water	07/09/19 11:51	07/09/19 17:30
BH32	1907091-20	Water	07/09/19 11:41	07/09/19 17:30
BH33	1907091-21	Water	07/09/19 11:41	07/09/19 17:30

Summit Scientific

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

Summit Scientific

S₂

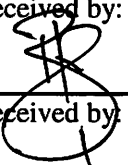
1907091.1

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

Page 1 of 3

Client:	Noble / Tasman	Project Manager:	Brandon Bruns, Invoice: Jacob Evans
Address:	6899 Pecos Street	E-Mail:	Bbruns@tasman-geo.com
City/State/Zip:	Denver / CO/ 80221		
Phone:	303-487-1228	Project Name:	Mosier 23-12F
Sampler Name:	Alison Dahl	Project Number:	—

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR				
1	BH 13	7/9/19	1142	3	X				X					X						
2	BH 14		1214	3																
3	BH 15		1219	2																
4	BH 16		1243	3																
5	BH 17		1234																	
6	BH 18		1232																	
7	BH 19		1222																	
8	BH 20		1153																	
9	BH 21		1209																	
10	BH 22		1246																	

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
Tanner Cook	7/9/2019 1304	Tasman's Lock Box	7/9/2019 1304	Same Day	72 hours	
				24 hours	Standard	
				48 hours		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:		
Tasman's Lock Box	07/09/19 1730	 07/09/19	1730	Temperature Upon Receipt:	3.4	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact:	Yes	No

Summit Scientific

S₂

1907091.2

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

Page 2 of 3

Client:	Noble / Tasman	Project Manager:	Brandon Bruns, Invoice: Jacob Evans
Address:	6899 Pecos Street	E-Mail:	Bbruns@tasman-geo.com
City/State/Zip:	Denver / CO/ 80221		
Phone:	303-487-1228	Project Name:	Mosier 23-12F
Sampler Name:	Alison Dahl	Project Number:	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR			
1	BH 23	7/9/19	1203	3	X				X					X					
2	BH 24		1208																
3	BH 25		1227																
4	BH 26		1201																
5	BH 27		1153																
6	BH 28		1146																
7	BH 29		1123																
8	BH 30		1158																
9	BH 31		1151																
10	BH 32		1141																

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
Tanner Cook	7/9/19 1304	Tasman's Lock Box	7/9/2019 1304	Same Day	72 hours	
				24 hours	Standard	
				48 hours		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:		
Tasman's Lock Box	07/09/19 1730	[Signature]	07/09/19 1730	Temperature Upon Receipt:	3.4	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact:	Yes	No

Summit Scientific

S₂

1907091.3

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

Page **3** of **3**

Client:	Noble / Tasman	Project Manager:	Brandon Bruns, Invoice: Jacob Evans
Address:	6899 Pecos Street	E-Mail:	Bbruns@tasman-geo.com
City/State/Zip:	Denver / CO/ 80221		
Phone:	303-487-1228	Project Name:	Mosier 23-12F
Sampler Name:	Alison Dahl	Project Number:	—

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR	
1	BH33	7/9/19	1141	3	X				X				X				
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
Tasman Lock	7/9/19	Tasman's Lock Box		Same Day	72 hours	
	1304			24 hours	Standard X	
				48 hours		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:		
Tasman's Lock Box	07/09/19	[Signature]	1730	3.4		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt:		
		[Signature]		Samples Intact: Yes No		

Sample Receipt Checklist

S2 Work Order 1907091

Client: Noble/Tasman Client Project ID: Mosier 23-12F

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

Matrix (check all that apply): _____ Air _____ Soil/Solid X Water _____ Other: _____
(Describe)

Temp (°C)	<u>3.4</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<u>X</u>			
Were all samples received intact ⁽¹⁾ ?	<u>X</u>			
Was adequate sample volume provided ⁽¹⁾ ?	<u>X</u>			
If custody seals are present, are they intact ⁽¹⁾ ?			<u>X</u>	
Are samples with holding times due within 48 hours sample due within 48 hours present?		<u>X</u>		
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<u>X</u>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<u>X</u>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<u>X</u>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<u>X</u>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		<u>X</u>		
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<u>X</u>			<u>HCl</u>
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			<u>X</u>	
If dissolved metals are requested, were samples field filtered?			<u>X</u>	

Additional Comments (if any):

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

TC
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

07/09/19
Date/Time 1802



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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH13
1907091-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 11:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	11	1.0		ug/l	1	1907124	07/10/19	07/18/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **07/09/19 11:42**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		123 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		95.3 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.2 %		21-167		"	"	"	"	

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH14
1907091-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 12:14**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	1.0	1.0	ug/l	1	1907124	07/10/19	07/12/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/09/19 12:14**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		88.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		91.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.8 %	21-167		"	"	"	"	

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 - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH15
1907091-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 12:19**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	960	100	ug/l	100	1907124	07/10/19	07/13/19	EPA 8260B	
Toluene	5.1	1.0	"	1	"	"	"	"	
Ethylbenzene	46	1.0	"	"	"	"	"	"	
Xylenes (total)	290	2.0	"	"	"	"	"	"	

Date Sampled: **07/09/19 12:19**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		108 %		23-173	"	"	"	"	
Surrogate: Toluene-d8		140 %		20-170	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.7 %		21-167	"	"	"	"	

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH16
1907091-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 12:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	910	10	ug/l	10	1907124	07/10/19	07/13/19	EPA 8260B	
Toluene	ND	1.0	"	1	"	"	"	"	
Ethylbenzene	2.1	1.0	"	"	"	"	"	"	
Xylenes (total)	5.8	2.0	"	"	"	"	"	"	

Date Sampled: **07/09/19 12:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		103 %		23-173	"	"	"	"	
Surrogate: Toluene-d8		98.7 %		20-170	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		21-167	"	"	"	"	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH17
1907091-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 12:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	120	1.0		ug/l	1	1907124	07/10/19	07/12/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **07/09/19 12:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		100 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		95.0 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.5 %		21-167		"	"	"	"	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH18
1907091-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 12:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	190	1.0		ug/l	1	1907124	07/10/19	07/12/19	EPA 8260B	
Toluene	62	1.0		"	"	"	"	"	"	
Ethylbenzene	16	1.0		"	"	"	"	"	"	
Xylenes (total)	150	2.0		"	"	"	"	"	"	

Date Sampled: **07/09/19 12:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		98.4 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		116 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.2 %		21-167		"	"	"	"	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH19
1907091-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 12:22**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	98	10		ug/l	10	1907124	07/10/19	07/12/19	EPA 8260B	
Toluene	250	10		"	"	"	"	"	"	
Ethylbenzene	6.6	1.0		"	1	"	"	"	"	
Xylenes (total)	190	20		"	10	"	"	"	"	

Date Sampled: **07/09/19 12:22**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		102 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		123 %		21-167		"	"	"	"	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Mosier 23-12F

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH20
1907091-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 11:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1907124	07/10/19	07/12/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/09/19 11:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.1 %	21-167		"	"	"	"	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Mosier 23-12F

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH21
1907091-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 12:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1907124	07/10/19	07/12/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/09/19 12:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.4 %	21-167		"	"	"	"	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH22
1907091-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 12:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	1400	100	ug/l	100	1907124	07/10/19	07/12/19	EPA 8260B	
Toluene	2000	100	"	"	"	"	"	"	
Ethylbenzene	77	1.0	"	1	"	"	"	"	
Xylenes (total)	1900	200	"	100	"	"	"	"	

Date Sampled: **07/09/19 12:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		126 %	21-167		"	"	"	"	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Mosier 23-12F

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH23
1907091-11 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 12:03**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	31	1.0	ug/l	1	1907124	07/10/19	07/13/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/09/19 12:03**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		118 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.8 %	21-167		"	"	"	"	

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH24
1907091-12 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 12:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1907124	07/10/19	07/13/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/09/19 12:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		126 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		116 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.2 %	21-167		"	"	"	"	

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH25
1907091-13 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 12:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	5800	100		ug/l	100	1907124	07/10/19	07/12/19	EPA 8260B	
Toluene	3000	100		"	"	"	"	"	"	
Ethylbenzene	150	100		"	"	"	"	"	"	
Xylenes (total)	2200	200		"	"	"	"	"	"	

Date Sampled: **07/09/19 12:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		105 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		125 %		21-167		"	"	"	"	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH26
1907091-14 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 12:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1907124	07/10/19	07/13/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/09/19 12:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		118 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.2 %	21-167		"	"	"	"	

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Mosier 23-12F

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH27
1907091-15 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 11:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	1.3	1.0		ug/l	1	1907124	07/10/19	07/13/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **07/09/19 11:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		123 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		94.5 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.0 %		21-167		"	"	"	"	

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Mosier 23-12F

Project Number: [none]

Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH28
1907091-16 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 11:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1907124	07/10/19	07/13/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/09/19 11:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.6 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH29
1907091-17 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 11:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1907124	07/10/19	07/13/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/09/19 11:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		89.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.1 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH30
1907091-18 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1907124	07/10/19	07/13/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/09/19 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.7 %	21-167		"	"	"	"	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH31
1907091-19 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 11:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1907124	07/10/19	07/13/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/09/19 11:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		81.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.3 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH32
1907091-20 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 11:41**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1907124	07/10/19	07/13/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/09/19 11:41**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		99.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.7 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

BH33
1907091-21 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/09/19 11:41**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1907125	07/10/19	07/11/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/09/19 11:41**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.0 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

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 1907125 - EPA 5030 Water MS

Blank (1907125-BLK1)

Prepared: 07/10/19 Analyzed: 07/11/19

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.4		"	13.3		108	23-173			
Surrogate: Toluene-d8	12.3		"	13.3		92.3	20-170			
Surrogate: 4-Bromofluorobenzene	12.3		"	13.3		92.1	21-167			

LCS (1907125-BS1)

Prepared: 07/10/19 Analyzed: 07/11/19

Benzene	33.0	1.0	ug/l	33.3		99.0	51-132			
Toluene	38.0	1.0	"	33.3		114	51-138			
Ethylbenzene	39.0	1.0	"	33.3		117	58-146			
m,p-Xylene	74.8	2.0	"	66.7		112	57-144			
o-Xylene	38.1	1.0	"	33.3		114	53-146			
Surrogate: 1,2-Dichloroethane-d4	13.0		"	13.3		97.8	23-173			
Surrogate: Toluene-d8	13.1		"	13.3		98.5	20-170			
Surrogate: 4-Bromofluorobenzene	12.4		"	13.3		93.1	21-167			

Matrix Spike (1907125-MS1)

Source: 1907089-01

Prepared: 07/10/19 Analyzed: 07/11/19

Benzene	36.1	1.0	ug/l	33.3	ND	108	34-141			
Toluene	35.4	1.0	"	33.3	ND	106	27-151			
Ethylbenzene	38.0	1.0	"	33.3	ND	114	29-160			
m,p-Xylene	72.7	2.0	"	66.7	ND	109	20-166			
o-Xylene	37.0	1.0	"	33.3	ND	111	33-159			
Surrogate: 1,2-Dichloroethane-d4	14.5		"	13.3		109	23-173			
Surrogate: Toluene-d8	12.8		"	13.3		96.2	20-170			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.1	21-167			

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

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 1907125 - EPA 5030 Water MS

Matrix Spike Dup (1907125-MSD1)		Source: 1907089-01			Prepared: 07/10/19 Analyzed: 07/11/19					
Benzene	43.6	1.0	ug/l	33.3	ND	131	34-141	18.8	30	
Toluene	40.2	1.0	"	33.3	ND	121	27-151	12.7	30	
Ethylbenzene	45.3	1.0	"	33.3	ND	136	29-160	17.6	30	
m,p-Xylene	86.4	2.0	"	66.7	ND	130	20-166	17.2	30	
o-Xylene	44.4	1.0	"	33.3	ND	133	33-159	18.4	30	
Surrogate: 1,2-Dichloroethane-d4	14.9		"	13.3		112	23-173			
Surrogate: Toluene-d8	12.1		"	13.3		90.6	20-170			
Surrogate: 4-Bromofluorobenzene	12.5		"	13.3		93.5	21-167			

Summit Scientific

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

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/19/19 15:43

Notes and Definitions

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