

SECOND QUARTER 2019 SITE MONITORING DATA
MOSIER 23-12F

COGCC SPILL TRACKING # 448998
COGCC REMEDIATION # 10158

Prepared for:



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Prepared by:



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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. BTOC)	Depth to LNAPL (ft. BTOC)	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
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
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
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
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

**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. BTOC)	Depth to LNAPL (ft. BTOC)	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
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
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
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
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
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
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
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
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

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. BTOC)	Depth to LNAPL (ft. BTOC)	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
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
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
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
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
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
BH27	04/12/19	4730.27	14.40	11.25	ND	ND	4719.02
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
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

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. BTOC)	Depth to LNAPL (ft. BTOC)	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
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
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
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
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

NOTES:

ft. = Feet

AMSL = Above mean sea level

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.

* 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
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
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	Insufficient Water - No sample collected			
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
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

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	10/05/18	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
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
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
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
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
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
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
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

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
BH23	01/03/19	<1.0	<1.0	<1.0	<2.0
BH23	04/12/19	<1.0	<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
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
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
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
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
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
BH30	01/19/18	<1.0	<1.0	<1.0	<2.0
BH30	04/18/18	<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
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
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
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
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

Notes:

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

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

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.

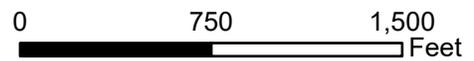
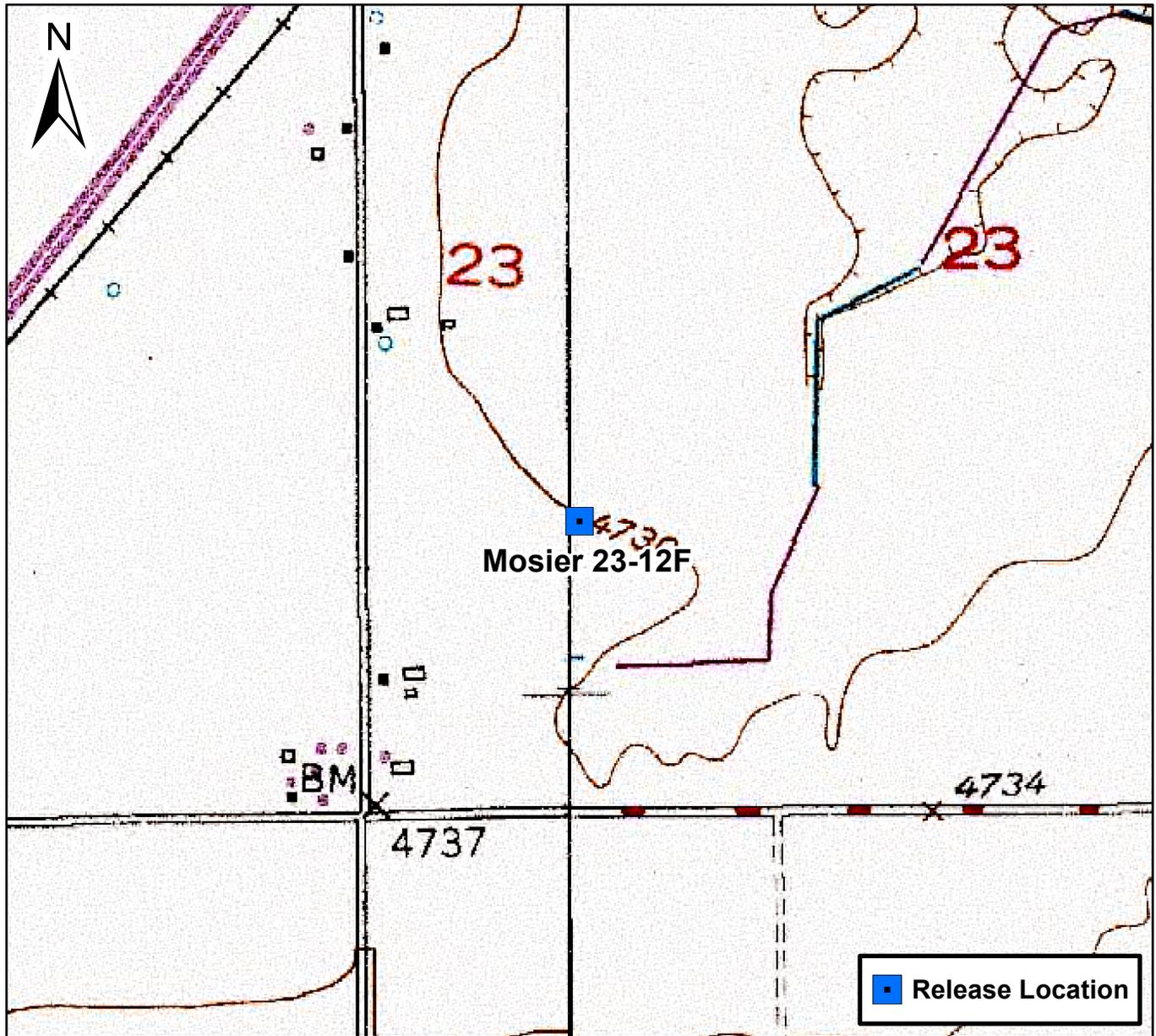


Figure 1

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





DATE:	08/21/2018
DESIGNED BY:	DA
DRAWN BY:	TL



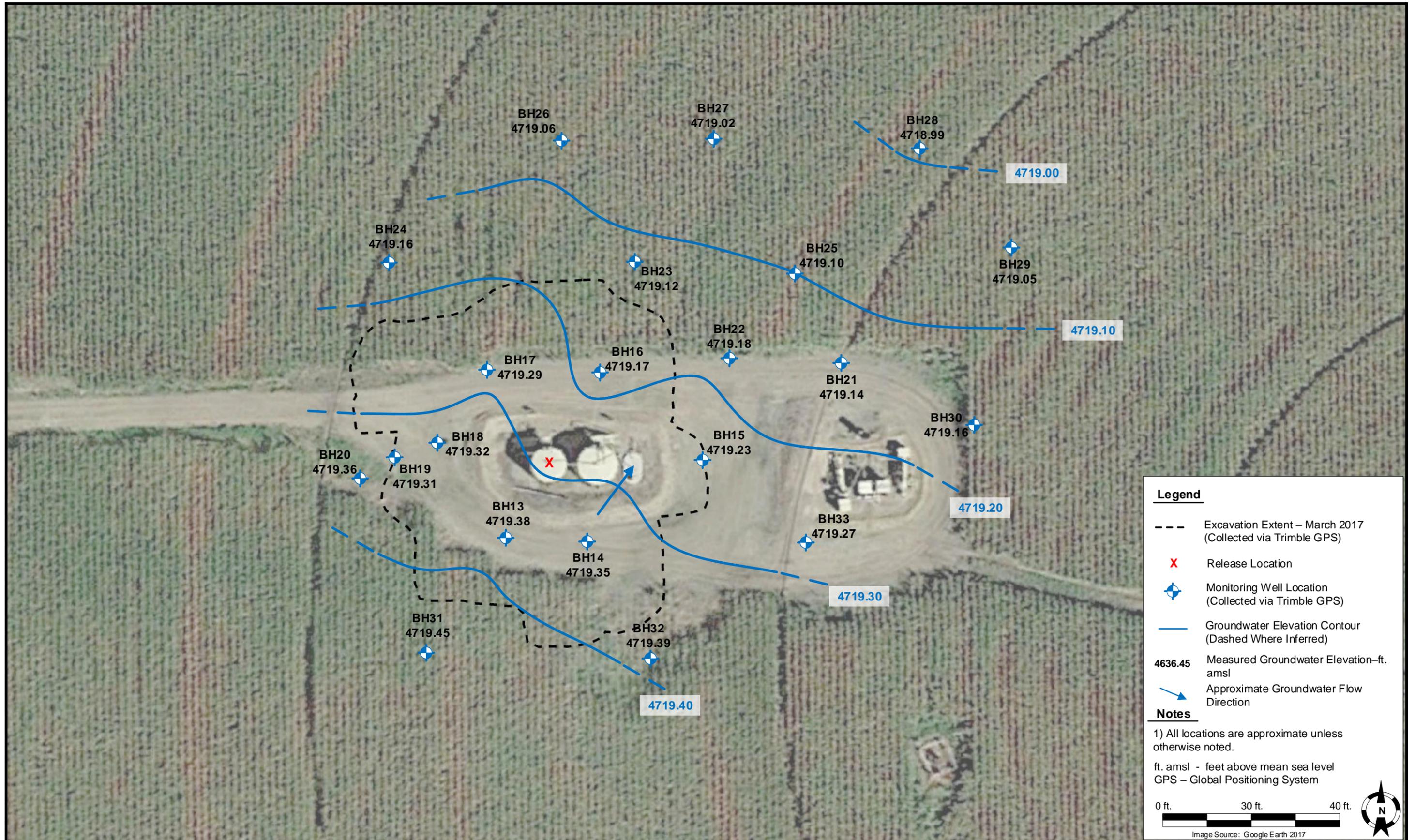
TASMAN
GEOSCIENCES

Tasman Geosciences, Inc.
6899 Pecos Street - Unit C
Denver, CO 80221

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

Site Overview Map

FIGURE
2



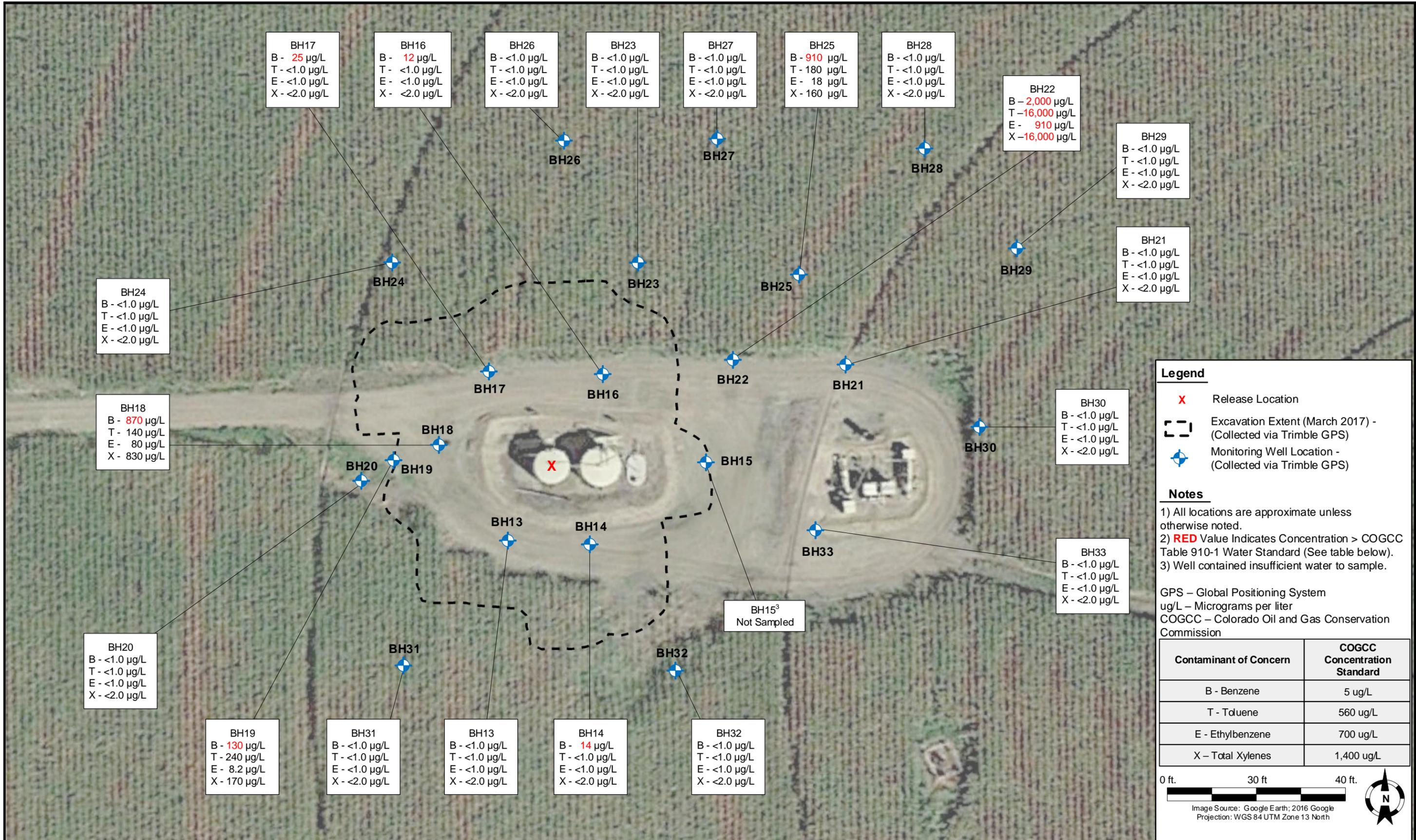
DATE:	05/15/2019
DESIGNED BY:	DA
DRAWN BY:	TL

TASMAN GEOSCIENCES
Tasman Geosciences, Inc.
6899 Pecos Street – Unit C
Denver, CO 80221

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

Groundwater Potentiometric
Surface Contour Map
(04/12/19)

FIGURE
3



DATE: 01/14/2019

DESIGNED BY: B. Bruns

DRAWN BY: J. Whritenour



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

Groundwater Analytical
 Results Figure
 (04/12/19)

FIGURE
 4

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

April 18, 2019

Brandon Bruns

Tasman Geosciences

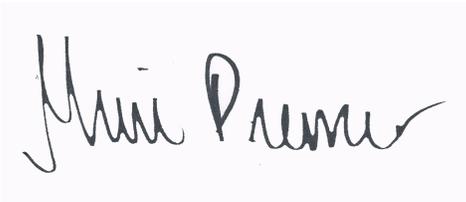
6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Mosier 23-12F

Enclosed are the results of analyses for samples received by Summit Scientific on 04/12/19 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink on a light blue background. The signature reads "Muri Premer" in a cursive script.

Muri Premer For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/18/19 11:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH13	1904186-01	Water	04/12/19 13:03	04/12/19 18:00
BH14	1904186-02	Water	04/12/19 12:54	04/12/19 18:00
BH16	1904186-03	Water	04/12/19 13:15	04/12/19 18:00
BH17	1904186-04	Water	04/12/19 13:25	04/12/19 18:00
BH18	1904186-05	Water	04/12/19 13:35	04/12/19 18:00
BH19	1904186-06	Water	04/12/19 13:29	04/12/19 18:00
BH20	1904186-07	Water	04/12/19 12:55	04/12/19 18:00
BH21	1904186-08	Water	04/12/19 12:41	04/12/19 18:00
BH22	1904186-09	Water	04/12/19 13:10	04/12/19 18:00
BH23	1904186-10	Water	04/12/19 12:45	04/12/19 18:00
BH24	1904186-11	Water	04/12/19 12:40	04/12/19 18:00
BH25	1904186-12	Water	04/12/19 13:00	04/12/19 18:00
BH26	1904186-13	Water	04/12/19 12:30	04/12/19 18:00
BH27	1904186-14	Water	04/12/19 12:15	04/12/19 18:00
BH28	1904186-15	Water	04/12/19 12:10	04/12/19 18:00
BH29	1904186-16	Water	04/12/19 12:00	04/12/19 18:00
BH30	1904186-17	Water	04/12/19 11:45	04/12/19 18:00
BH31	1904186-18	Water	04/12/19 12:25	04/12/19 18:00
BH32	1904186-19	Water	04/12/19 12:32	04/12/19 18:00
BH33	1904186-20	Water	04/12/19 12:23	04/12/19 18:00

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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.

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1904/186.1

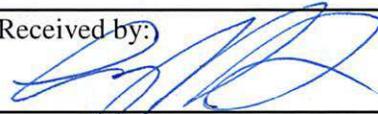
S₂

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

Page 1 of 2

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: 970.210.6571 Project Name: MOSIER 23-12F
Sampler Name: T. Lichtenberg 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	\$260 BTEX	\$260B GBTEXN	\$015 DRO	pH, EC, SAR	
1	BH13	4/12/19	1303	2			X		X				X				
2	BH14		1254	3	X												
3	BH10		1315														
4	BH17		1325														
5	BH18		1335														
6	BH19		1329														
7	BH20		1255														
8	BH21		1241														
9	BH22		1310														
10	BH23		1245														

Relinquished by:  Date/Time: 4/12/19 0100	Received by: Tasman's Lock Box Date/Time: 4/12/19 0100	Turn Around Time (Check) Same Day _____ 72 hours 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____ Sample Integrity: Temperature Upon Receipt: <u>4.8</u> Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes:
Relinquished by: Tasman's Lock Box Date/Time: 4.12.19 1800	Received by:  Date/Time: 4.12.19 1800		
Relinquished by: _____ Date/Time: _____	Received by: _____ Date/Time: _____		

Summit Scientific

S₂

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

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: 970.210.6571	Project Name: <u>MOSIER 23-12F</u>
Sampler Name: T. Lichtenberg	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	BH24	4/12/19	1240	3	X				X				X				
2	BH25		1300														
3	BH26		1230														
4	BH27		1215														
5	BH28		1210														
6	BH29		1200														
7	BH30		1145														
8	BH31		1225														
9	BH32		1232														
10	BH33		1223														

Relinquished by: Date/Time: 4/12/19 0100	Received by: Tasman's Lock Box Date/Time: 4/12/19 0100	Turn Around Time (Check) Same Day _____ 72 hours 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____	Notes:
Relinquished by: Tasman's Lock Box Date/Time: 4.12.19 1800	Received by: Date/Time: 4.12.19 1800	Sample Integrity: Temperature Upon Receipt: <u>4.8</u> Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	
Relinquished by: _____ Date/Time: _____	Received by: _____ Date/Time: _____		

Sample Receipt Checklist

S2 Work Order 1904186

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

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

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

Temp (°C)	<u>4.8</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.	<input checked="" type="checkbox"/>			
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input checked="" type="checkbox"/>			<u>Hcl</u>
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

CP
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

4.12.19 1835
Date/Time



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/18/19 11:57

BH13
1904186-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/19 13:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	1904220	04/15/19	04/16/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **04/12/19 13:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		99.6 %		23-173	"	"	"	"	
Surrogate: Toluene-d8		97.2 %		20-170	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		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
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/18/19 11:57

BH14
1904186-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/19 12:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	14	1.0		ug/l	1	1904220	04/15/19	04/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **04/12/19 12:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		98.7 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		97.7 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		21-167		"	"	"	"	

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Brun

Reported:
04/18/19 11:57

BH16
1904186-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/19 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	12	1.0	ug/l	1	1904220	04/15/19	04/16/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **04/12/19 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		94.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.3 %	21-167		"	"	"	"	

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/18/19 11:57

BH17
1904186-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/19 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	25	1.0		ug/l	1	1904220	04/15/19	04/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **04/12/19 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		96.1 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		97.9 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		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
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Brun

Reported:
04/18/19 11:57

BH18
1904186-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/19 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	870	100		ug/l	100	1904220	04/15/19	04/16/19	EPA 8260B	
Toluene	140	1.0		"	1	"	"	"	"	
Ethylbenzene	80	1.0		"	"	"	"	"	"	
Xylenes (total)	830	200		"	100	"	"	"	"	

Date Sampled: **04/12/19 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: 1,2-Dichloroethane-d4</i>		106 %		23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.3 %		20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		105 %		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
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Brun

Reported:
04/18/19 11:57

BH19
1904186-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/19 13:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	130	1.0	ug/l	1	1904220	04/15/19	04/16/19	EPA 8260B	
Toluene	240	1.0	"	"	"	"	"	"	
Ethylbenzene	8.2	1.0	"	"	"	"	"	"	
Xylenes (total)	170	2.0	"	"	"	"	"	"	

Date Sampled: **04/12/19 13:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		123 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.1 %	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
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/18/19 11:57

BH20
1904186-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/19 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1904220	04/15/19	04/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **04/12/19 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		101 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		97.1 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		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
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/18/19 11:57

BH21
1904186-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/19 12:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1904220	04/15/19	04/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **04/12/19 12:41**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		102 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		98.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Brun

Reported:
04/18/19 11:57

BH22
1904186-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/19 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	2000	100	ug/l	100	1904220	04/15/19	04/16/19	EPA 8260B	
Toluene	16000	100	"	"	"	"	"	"	
Ethylbenzene	910	100	"	"	"	"	"	"	
Xylenes (total)	16000	200	"	"	"	"	"	"	

Date Sampled: **04/12/19 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	21-167		"	"	"	"	

Summit Scientific



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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Brun

Reported:
04/18/19 11:57

BH23
1904186-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/19 12:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1904220	04/15/19	04/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **04/12/19 12:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		122 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		91.7 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.8 %		21-167		"	"	"	"	

Summit Scientific



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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Brun

Reported:
04/18/19 11:57

BH24
1904186-11 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/19 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1904220	04/15/19	04/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **04/12/19 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		119 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		93.5 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.3 %		21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/18/19 11:57

BH25
1904186-12 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/19 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	910	100	ug/l	100	1904220	04/15/19	04/16/19	EPA 8260B	
Toluene	180	1.0	"	1	"	"	"	"	
Ethylbenzene	18	1.0	"	"	"	"	"	"	
Xylenes (total)	160	2.0	"	"	"	"	"	"	

Date Sampled: **04/12/19 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		140 %		23-173	"	"	"	"	
Surrogate: Toluene-d8		92.0 %		20-170	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.4 %		21-167	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/18/19 11:57

BH26
1904186-13 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/19 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1904220	04/15/19	04/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **04/12/19 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		98.2 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		96.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Brun

Reported:
04/18/19 11:57

BH27
1904186-14 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/19 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1904220	04/15/19	04/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **04/12/19 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		98.6 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		95.9 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		21-167		"	"	"	"	

Summit Scientific



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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/18/19 11:57

BH28
1904186-15 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/19 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1904220	04/15/19	04/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **04/12/19 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		102 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		97.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.3 %		21-167		"	"	"	"	

Summit Scientific



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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/18/19 11:57

BH29
1904186-16 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/19 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1904220	04/15/19	04/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **04/12/19 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		99.7 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		98.3 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.5 %		21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Brun

Reported:
04/18/19 11:57

BH30
1904186-17 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/19 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1904220	04/15/19	04/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **04/12/19 11:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		103 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		96.4 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %		21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/18/19 11:57

BH31
1904186-18 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/19 12:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1904220	04/15/19	04/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **04/12/19 12:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		102 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		97.5 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.5 %		21-167		"	"	"	"	

Summit Scientific



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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Brun

Reported:
04/18/19 11:57

BH32
1904186-19 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/19 12:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1904220	04/15/19	04/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **04/12/19 12:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		100 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		96.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

Summit Scientific



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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Brun

Reported:
04/18/19 11:57

BH33
1904186-20 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/12/19 12:23**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	1904220	04/15/19	04/16/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **04/12/19 12:23**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.7 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/18/19 11:57

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1904220 - EPA 5030 Water MS

Blank (1904220-BLK1)

Prepared: 04/15/19 Analyzed: 04/16/19

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	12.9		"	13.3		96.8	23-173			
Surrogate: Toluene-d8	13.2		"	13.3		98.7	20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		101	21-167			

LCS (1904220-BS1)

Prepared: 04/15/19 Analyzed: 04/16/19

Benzene	28.6	1.0	ug/l	33.3		86.0	70-130			
Toluene	31.2	1.0	"	33.3		93.8	70-130			
Ethylbenzene	34.6	1.0	"	33.3		104	70-130			
m,p-Xylene	65.2	2.0	"	66.7		97.8	70-130			
o-Xylene	32.1	1.0	"	33.3		96.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.0		"	13.3		97.5	23-173			
Surrogate: Toluene-d8	13.4		"	13.3		100	20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		101	21-167			

Matrix Spike (1904220-MS1)

Source: 1904186-01

Prepared: 04/15/19 Analyzed: 04/16/19

Benzene	30.3	1.0	ug/l	33.3	ND	90.8	70-130			
Toluene	31.8	1.0	"	33.3	ND	95.3	70-130			
Ethylbenzene	35.2	1.0	"	33.3	ND	106	70-130			
m,p-Xylene	66.9	2.0	"	66.7	ND	100	70-130			
o-Xylene	32.4	1.0	"	33.3	ND	97.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	15.6		"	13.3		117	23-173			
Surrogate: Toluene-d8	13.1		"	13.3		98.4	20-170			
Surrogate: 4-Bromofluorobenzene	13.8		"	13.3		104	21-167			

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Brun

Reported:
04/18/19 11:57

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

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

Batch 1904220 - EPA 5030 Water MS

Matrix Spike Dup (1904220-MSD1)

Source: 1904186-01

Prepared: 04/15/19 Analyzed: 04/16/19

Benzene	30.2	1.0	ug/l	33.3	ND	90.6	70-130	0.198	30	
Toluene	31.8	1.0	"	33.3	ND	95.4	70-130	0.0629	30	
Ethylbenzene	34.8	1.0	"	33.3	ND	104	70-130	1.17	30	
m,p-Xylene	65.9	2.0	"	66.7	ND	98.9	70-130	1.51	30	
o-Xylene	32.3	1.0	"	33.3	ND	96.8	70-130	0.556	30	
Surrogate: 1,2-Dichloroethane-d4	14.6		"	13.3		109	23-173			
Surrogate: Toluene-d8	13.2		"	13.3		98.7	20-170			
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3		101	21-167			

Summit Scientific

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Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Mosier 23-12F

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/18/19 11:57

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