THIRD QUARTER 2018

KNAUS 28-8
API #: 05-123-17596

COGCC SPILL TRACKING # 445476
COGCC REMEDIATION # 9767

Prepared for:

noble energy

2115 117th Avenue
Greeley, CO 80631

Prepared by:

TASMAN GEOSCIENCES

6899 North Pecos Street, Unit C
Denver, CO 80221

TABLE 1
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - KNAUS 28-8

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	04/15/16	<1.0	<1.0	<1.0	<1.0
BH01	06/21/16	<1.0	<1.0	<1.0	<1.0
BH01	09/02/16	**380**	1.4	<1.0	340
BH01	12/20/16	**32**	<1.0	<1.0	1.3
BH01	06/23/17	<1.0	<1.0	<1.0	<2.0
BH01	09/22/17	<1.0	<1.0	<1.0	<2.0
BH01	12/07/17	<1.0	<1.0	<1.0	<2.0
BH01	03/21/18	<1.0	<1.0	<1.0	<2.0
BH01	06/15/18	<1.0	<1.0	<1.0	<2.0
BH01	09/26/18	<1.0	<1.0	<1.0	<2.0
BH02	04/15/16	**5,300**	**3,900**	130	1,200
BH02	06/21/16	**7,300**	**1,500**	97	**2,300**
BH02[1]	09/12/16	**9,700**	**3,800**	<1.0	**3,400**
BH02	12/20/16	**7,700**	14	<1.0	1,000
BH02	02/07/17	Monitoring Well Destroyed During Excavation			
BH02R	06/23/17	<1.0	<1.0	<1.0	<2.0
BH02R	09/22/17	<1.0	<1.0	<1.0	<2.0
BH02R	12/07/17	<1.0	<1.0	<1.0	<2.0
BH02R	03/21/18	**130**	<1.0	<1.0	9.6
BH02R	06/15/18	**130**	<1.0	6.1	6.1
BH02R	09/26/18	**380**	1.2	10	9.4
BH03	04/15/16	**Not Sampled - LNAPL Present**			
BH03	06/21/16	**Not Sampled - LNAPL Present**			
BH03	09/02/16	**Not Sampled - LNAPL Present**			
BH03	12/20/16	**Not Sampled - LNAPL Present**			
BH03	06/23/17	**Not Sampled - LNAPL Present**			
BH03[1]	09/22/17	**500**	46	33	**2,300**
BH03	12/07/17	**Not Sampled - LNAPL Present**			
BH03	03/21/18	**45**	<1.0	1.9	810
BH03	06/15/18	**Not Sampled - LNAPL Present**			
BH03	09/26/18	**Not Sampled - LNAPL Present**			
BH04	04/15/16	**1,700**	**2,600**	130	1,200
BH04	06/21/16	**Not Sampled - LNAPL Present**			
BH04[1]	09/02/16	**14,000**	**12,000**	240	**5,600**
BH04	12/20/16	**Not Sampled - LNAPL Present**			
BH04	02/07/17	Monitoring Well Destroyed During Excavation			
BH04R	06/23/17	<1.0	<1.0	<1.0	12
BH04R	09/22/17	**1400**	<1.0	<1.0	13
BH04R	12/07/17	**190**	<1.0	9.2	4.0
BH04R	03/21/18	**2,000**	<1.0	8.7	3.1
BH04R	06/15/18	**970**	<1.0	39	4.0
BH04R	09/26/18	**1,200**	<1.0	44	13

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Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Standard		**5**	**560**	**700**	**1,400**
BH05	04/15/16	**Not Sampled - LNAPL Present**			
BH05	06/21/16	**Not Sampled - LNAPL Present**			
BH05	09/02/16	**Not Sampled - LNAPL Present**			
BH05	12/20/16	**Not Sampled - LNAPL Present**			
BH05	02/07/17	Monitoring Well Destroyed During Excavation			
BH05R	06/23/17	**2,800**	**860**	<1.0	1,000
BH05R[1]	09/22/17	**9,800**	**3,300**	140	**12,000**
BH05R	12/07/17	**Not Sampled - LNAPL Present**			
BH05R	03/21/18	**1,700**	1.4	45	900
BH05R	06/15/18	**Not Sampled - LNAPL Present**			
BH05R	09/26/18	**Not Sampled - LNAPL Present**			
BH06	04/15/16	<1.0	8.0	<1.0	<1.0
BH06	06/21/16	<1.0	<1.0	<1.0	<1.0
BH06	09/02/16	<1.0	1.4	<1.0	<1.0
BH06	12/20/16	3.1	<1.0	<1.0	6.7
BH06	02/07/17	Monitoring Well Destroyed During Excavation			
BH06R	06/23/17	1.9	<1.0	<1.0	<2.0
BH06R	09/22/17	<1.0	<1.0	<1.0	6.5
BH06R	12/07/17	<1.0	<1.0	<1.0	<2.0
BH06R	03/21/18	<1.0	<1.0	<1.0	<2.0
BH06R	06/15/18	<1.0	<1.0	<1.0	<2.0
BH06R	09/26/18	<1.0	<1.0	<1.0	<2.0
BH07	04/15/16	<1.0	<1.0	<1.0	<1.0
BH07	06/21/16	<1.0	<1.0	<1.0	<1.0
BH07	09/02/16	**1,600**	6.6	<1.0	200
BH07	12/20/16	**9,000**	24	<1.0	630
BH07	06/23/17	**9,100**	1.5	<1.0	260
BH07	09/22/17	**240**	<1.0	<1.0	<2.0
BH07	12/07/17	**3,900**	<1.0	11	<2.0
BH07	03/21/18	**690**	<1.0	19	3.9
BH07	06/15/18	Not Sampled - Insufficient Water Volume			
BH07	09/26/18	<1.0	<1.0	<1.0	<2.0
BH08	06/21/16	<1.0	<1.0	<1.0	<1.0
BH08	09/02/16	<1.0	1.4	<1.0	<1.0
BH08	12/20/16	<1.0	<1.0	<1.0	<1.0
BH08	06/23/17	<1.0	<1.0	<1.0	<2.0
BH08	09/22/17	<1.0	<1.0	<1.0	<2.0
BH08	12/07/17	<1.0	<1.0	<1.0	<2.0
BH08	03/21/18	<1.0	<1.0	<1.0	<2.0
BH08	06/15/18	<1.0	<1.0	<1.0	<2.0
BH08	09/26/18	<1.0	<1.0	<1.0	<2.0

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NOBLE ENERGY, INC. - KNAUS 28-8

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Standard		**5**	**560**	**700**	**1,400**
BH09	06/23/17	<1.0	<1.0	<1.0	<2.0
BH09	09/22/17	<1.0	<1.0	<1.0	<2.0
BH09	12/07/17	<1.0	<1.0	<1.0	<2.0
BH09	03/21/18	<1.0	<1.0	<1.0	<2.0
BH09	06/15/18	1.8	<1.0	<1.0	<2.0
BH09	09/26/18	2.6	<1.0	<1.0	<2.0
BH10	06/23/17	<1.0	<1.0	<1.0	<2.0
BH10	09/22/17	<1.0	<1.0	<1.0	<2.0
BH10	12/07/17	<1.0	<1.0	<1.0	<2.0
BH10	03/21/18	<1.0	<1.0	<1.0	<2.0
BH10	06/15/18	<1.0	<1.0	<1.0	<2.0
BH10	09/26/18	<1.0	<1.0	<1.0	<2.0
BH11	06/11/18	**340**	<1.0	5.8	<2.0
BH11	09/26/18	<1.0	<1.0	<1.0	<2.0
BH12	06/11/18	<1.0	<1.0	<1.0	<2.0
BH12	09/26/18	<1.0	<1.0	<1.0	<2.0
BH13	06/11/18	<1.0	<1.0	<1.0	<2.0
BH13	09/26/18	<1.0	<1.0	<1.0	<2.0
BH14	06/11/18	<1.0	<1.0	<1.0	<2.0
BH14	09/26/18	<1.0	<1.0	<1.0	<2.0
BH15	06/11/18	1.2	<1.0	3.9	<2.0
BH15	09/26/18	<1.0	<1.0	<1.0	<2.0
BH16	06/11/18	1.0	<1.0	9.2	27
BH16	09/26/18	<1.0	<1.0	5.6	15
BH17	06/11/18	<1.0	<1.0	<1.0	<2.0
BH17	09/26/18	<1.0	<1.0	<1.0	<2.0
BH18	06/11/18	<1.0	<1.0	<1.0	<2.0
BH18	09/26/18	<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
[1] Sheen present on groundwater sample.

TABLE 2
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - KNAUS 28-8

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	04/15/16	4660.12	16.81	14.29	ND	ND	4645.83
BH01	06/21/16	4660.12	16.24	13.63	ND	ND	4646.49
BH01	07/08/16	4658.07 [1]	NM	10.71	ND	ND	4647.36
BH01	09/02/16	4658.07	14.18	9.24	ND	ND	4648.83
BH01	12/20/16	4660.19 [4]	16.30	14.03	ND	ND	4646.16
BH01	06/23/17	4660.13	16.33	14.35	ND	ND	4645.78
BH01	09/22/17	4660.13	16.31	11.82	ND	ND	4648.31
BH01	12/07/17	4660.13	16.59	13.60	ND	ND	4646.53
BH01	03/21/18	4660.13	16.56	14.80	ND	ND	4645.33
BH01	06/15/18	4716.22	16.89	15.26	ND	ND	4700.96
BH01	09/26/18	4716.22	16.84	14.29	ND	ND	4701.93
BH02	04/15/16	4660.56	17.71	17.13	ND	ND	4643.43
BH02	06/21/16	4660.56	17.71	13.99	ND	ND	4646.57
BH02	07/08/16	4660.56	NM	13.04	ND	ND	4647.52
BH02	09/02/16	Well Casing Damaged - Elevation Control Lost					
BH02 [3]	09/12/16	NS	14.69	8.98	ND	ND	NS
BH02	12/20/16	NS	17.58	14.20	ND	ND	NS
BH02	02/07/17	Well Destroyed During Excavation					
BH02R	06/23/17	4661.34	22.39	15.45	ND	ND	4645.89
BH02R	09/22/17	4661.34	22.40	12.96	ND	ND	4648.38
BH02R	12/07/17	4661.34	22.40	14.74	ND	ND	4646.60
BH02R	03/21/18	4661.34	22.39	15.95	ND	ND	4645.39
BH02R	06/15/18	4717.42	22.45	16.40	ND	ND	4701.02
BH02R	09/26/18	4717.42	22.41	15.43	ND	ND	4701.99
BH03	04/15/16	4660.75	17.41	14.66	Trace	<0.01	4646.09
BH03	06/21/16	4660.75	17.41	16.42	13.54	2.88	4646.49
BH03	07/08/16	4660.75	NM	13.32	13.24	0.08	4647.49
BH03	09/02/16	4660.75	16.99	11.95	11.76	0.19	4648.94
BH03	12/20/16	4660.75	16.93	14.77	14.43	0.34	4646.24
BH03	06/23/17	4660.83	NM	15.07	14.84	0.23	4645.93
BH03	09/22/17	4660.83	17.12	12.39	12.36	0.03	4648.46
BH03	12/07/17	4660.83	NM	14.21	14.15	0.06	4646.67
BH03	03/21/18	4660.83	17.36	15.37	ND	ND	4645.46
BH03	06/15/18	4716.91	17.50	15.91	15.86	0.05	4701.04
BH03 [(1)]	09/26/18	4716.91	17.38	14.85	14.84	0.01	4702.07
BH04	04/15/16	4659.97	17.24	14.47	ND	ND	4645.50
BH04	06/21/16	4659.97	17.24	14.76	13.12	1.64	4646.44
BH04	07/08/16	4659.97	NM	12.75	12.60	0.15	4647.33
BH04	09/02/16	4659.97	17.26	11.12	ND	ND	4648.85
BH04	12/20/16	4659.97	17.24	14.00	13.77	0.23	4646.14
BH04	02/07/17	Well Destroyed During Excavation					
BH04R	06/23/17	4661.01	21.83	15.21	ND	ND	4645.80
BH04R	09/22/17	4661.01	21.81	12.78	ND	ND	4648.23
BH04R	12/07/17	4661.01	21.89	14.49	ND	ND	4646.52
BH04R	03/21/18	4661.01	21.88	15.71	ND	ND	4645.30
BH04R	06/15/18	4717.09	21.94	16.17	ND	ND	4700.92
BH04R	09/26/18	4717.09	21.88	15.20	ND	ND	4701.89

TABLE 2
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - KNAUS 28-8

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)
BH05	04/15/16	4661.14	17.11	15.06	Trace	<0.01	4646.08
BH05	06/21/16	4661.14	16.81	14.60	14.56	0.04	4646.57
BH05	07/08/16	4661.14	NM	13.74	13.72	0.02	4647.42
BH05	09/02/16	4661.14	16.88	12.29	12.28	0.01	4648.86
BH05	12/20/16	4661.14	17.22	15.29	14.83	0.46	4646.20
BH05	02/07/17	Well Destroyed During Excavation					
BH05R	06/23/17	4660.88	21.49	15.05	ND	ND	4645.83
BH05R	09/22/17	4660.88	21.49	12.52	ND	ND	4648.36
BH05R	12/07/17	4660.88	21.49	14.29	14.28	0.01	4646.60
BH05R	03/21/18	4660.88	21.50	15.46	ND	ND	4645.42
BH05R	06/15/18	4716.96	21.51	15.94	NM	NM	NM[6]
BH05R [(1)]	09/26/18	4716.96	21.48	14.96	14.95	0.01	4702.01
BH06	04/15/16	4660.85	16.65	14.77	ND	ND	4646.08
BH06	06/21/16	4660.85	16.62	14.24	ND	ND	4646.61
BH06	07/08/16	4660.85	NM	13.39	ND	ND	4647.46
BH06	09/02/16	4660.85	16.78	11.92	ND	ND	4648.93
BH06	12/20/16	4660.85	16.81	14.61	ND	ND	4646.24
BH06	02/07/17	Well Destroyed During Excavation					
BH06R	06/23/17	4660.56	19.43	14.62	ND	ND	4645.94
BH06R	09/22/17	4660.56	19.40	12.16	ND	ND	4648.40
BH06R	12/07/17	4660.56	19.58	13.91	ND	ND	4646.65
BH06R	03/21/18	4660.56	19.60	15.12	ND	ND	4645.44
BH06R	06/15/18	4716.64	19.68	15.59	ND	ND	4701.05
BH06R	09/26/18	4716.64	19.63	14.61	ND	ND	4702.03
BH07	04/15/16	4660.84	17.20	14.90	ND	ND	4645.94
BH07	06/21/16	4660.84	16.91	14.38	ND	ND	4646.46
BH07	07/08/16	4660.84	NM	13.56	ND	ND	4647.28
BH07	09/02/16	4660.84	16.90	12.13	ND	ND	4648.71
BH07	12/20/16	4660.84	16.88	14.77	ND	ND	4646.07
BH07	06/23/17	4660.82	16.95	15.05	ND	ND	4645.77
BH07	09/22/17	4660.82	16.93	12.61	ND	ND	4648.21
BH07	12/07/17	4660.82	16.59	14.33	ND	ND	4646.49
BH07	03/21/18	4660.82	16.88	15.56	ND	ND	4645.26
BH07	06/15/18	4716.90	16.40	16.02	ND	ND	4700.88
BH07	09/26/18	4716.90	16.42	15.03	ND	ND	4701.87
BH08	06/21/16	4661.26	22.25	14.62	ND	ND	4646.64
BH08	07/08/16	4661.26	NM	13.71	ND	ND	4647.55
BH08	09/02/16	4658.51 [2]	19.50	9.28	ND	ND	4649.23
BH08	12/20/16	4661.45 [5]	22.44	14.98	ND	ND	4646.47
BH08	06/23/17	4661.26	22.43	15.32	ND	ND	4645.94
BH08	09/22/17	4661.26	22.42	12.76	ND	ND	4648.50
BH08	12/07/17	4661.26	22.54	14.54	ND	ND	4646.72
BH08	03/21/18	4661.26	22.48	15.75	ND	ND	4645.51
BH08	06/15/18	4717.34	22.56	16.22	ND	ND	4701.12
BH08	09/26/18	4717.34	22.52	15.23	ND	ND	4702.11
BH09	06/23/17	4660.51	21.60	14.76	ND	ND	4645.75
BH09	09/22/17	4660.51	21.61	12.32	ND	ND	4648.19
BH09	12/07/17	4660.51	21.59	14.05	ND	ND	4646.46
BH09	03/21/18	4660.51	21.60	15.26	ND	ND	4645.25
BH09	06/15/18	4716.59	21.70	15.72	ND	ND	4700.87
BH09	09/26/18	4716.59	21.67	14.76	ND	ND	4701.83

TABLE 2
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - KNAUS 28-8

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)
BH10	06/23/17	4660.28	19.65	14.43	ND	ND	4645.85
BH10	09/22/17	4660.28	19.62	11.99	ND	ND	4648.29
BH10	12/07/17	4660.28	19.75	13.75	ND	ND	4646.53
BH10	03/21/18	4660.28	19.71	14.96	ND	ND	4645.32
BH10	06/15/18	4716.35	19.91	15.43	ND	ND	4700.92
BH10	09/26/18	4716.35	19.88	14.47	ND	ND	4701.88
BH11	06/11/18	4716.91	20.82	15.87	ND	ND	4701.04
BH11	06/15/18	4716.91	21.30	15.93	ND	ND	4700.98
BH11	09/26/18	4716.91	21.21	14.97	ND	ND	4701.94
BH12	06/11/18	4716.66	18.95	15.66	ND	ND	4701.00
BH12	06/15/18	4716.66	19.01	15.73	ND	ND	4700.93
BH12	09/26/18	4716.66	19.20	14.76	ND	ND	4701.90
BH13	06/11/18	4716.99	18.71	15.90	ND	ND	4701.09
BH13	06/15/18	4716.99	18.92	15.97	ND	ND	4701.02
BH13	09/26/18	4716.99	18.71	14.99	ND	ND	4702.00
BH14	06/11/18	4716.41	18.66	15.49	ND	ND	4700.92
BH14	06/15/18	4716.41	18.68	15.55	ND	ND	4700.86
BH14	09/26/18	4716.41	18.66	14.59	ND	ND	4701.82
BH15	06/11/18	4716.33	18.46	15.38	ND	ND	4700.95
BH15	06/15/18	4716.33	18.50	15.44	ND	ND	4700.89
BH15	09/26/18	4716.33	18.68	14.47	ND	ND	4701.86
BH16	06/11/18	4717.24	18.93	16.12	ND	ND	4701.12
BH16	06/15/18	4717.24	19.00	16.15	ND	ND	4701.09
BH16	09/26/18	4717.24	18.93	15.16	ND	ND	4702.08
BH17	06/11/18	4716.75	21.84	15.45	ND	ND	4701.30
BH17	06/15/18	4716.75	21.75	15.62	ND	ND	4701.13
BH17	09/26/18	4716.75	21.65	14.62	ND	ND	4702.13
BH18	06/11/18	4716.80	21.85	15.76	ND	ND	4701.04
BH18	06/15/18	4716.80	22.23	15.80	ND	ND	4701.00
BH18	09/26/18	4716.80	22.13	14.81	ND	ND	4701.99

Notes:

ft. = Feet

AMSL = Above mean sea level

BTOC = Below top of casing

LNAPL = Light non-aqueous phase liquid

ND = No LNAPL detected

NM = Not Measured

NS = Not Surveyed

(1) = LNAPL present and removed with bailer. Interface Probe did not detect it. LNAPL thickness estimated at 0.01ft

* 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 approximately 0.75

[1] Approximately 2.05 ft of casing broken off of BH01 prior to gauging on 7/8/16. Top of casing elevation is estimated, not surveyed.

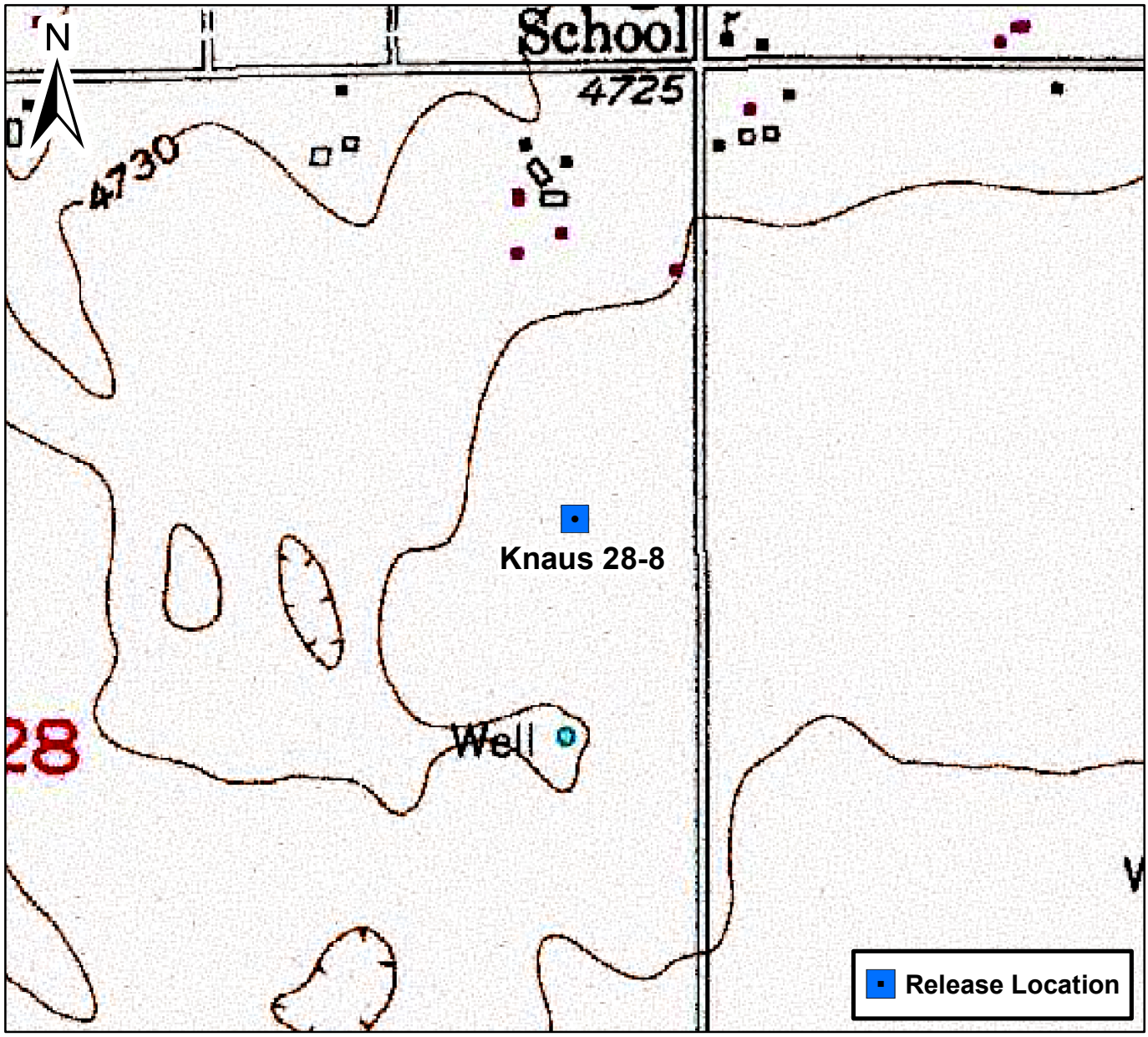
[2] Approximately 2.75 ft of casing broken off of BH08 prior to gauging on 9/2/16. Top of casing elevation is estimated, not surveyed.

[3] Damaged casing cut off just below ground surface, repaired with new stick up casing after sampling.

[4] BH01 damaged, well repaired with approximately 2.12 ft of casing. Top of casing elevation is estimated, not surveyed.

[5] BH08 damaged, well repaired with approximately 2.94 ft of casing. Top of casing elevation is estimated, not surveyed.

[6] IP malfunction while gauging LNAPL, groundwater elevation lost



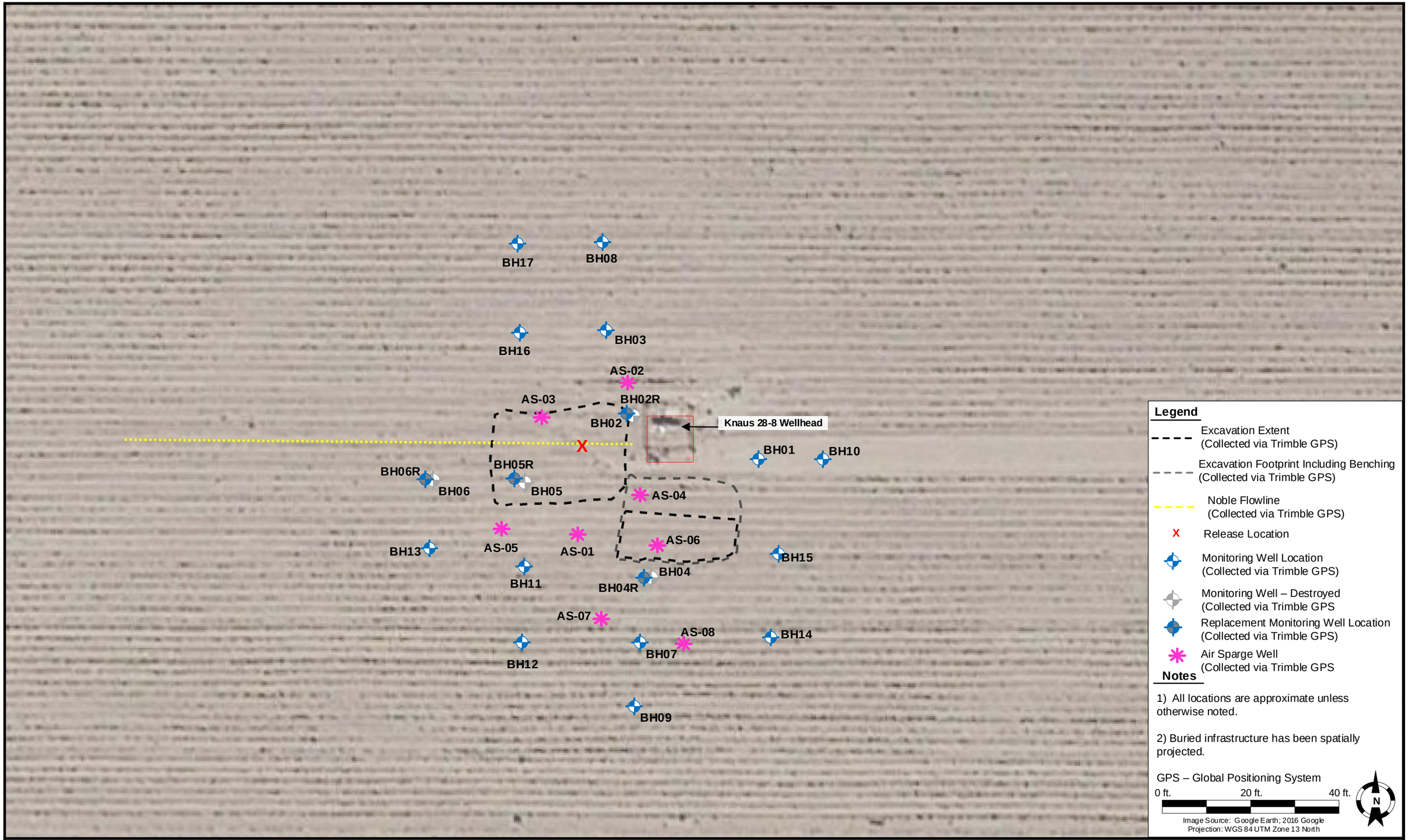
0 750 1,500 Feet

Figure 1

Site Location Map
Knaus 28-8
SENE S28 T6N R66W Weld
County, Colorado

TASMAN GEOSCIENCES

Drawn By: DBA
Date: 7/6/2016



DATE:	10/08/2018
DESIGNED BY:	JW
DRAWN BY:	TL

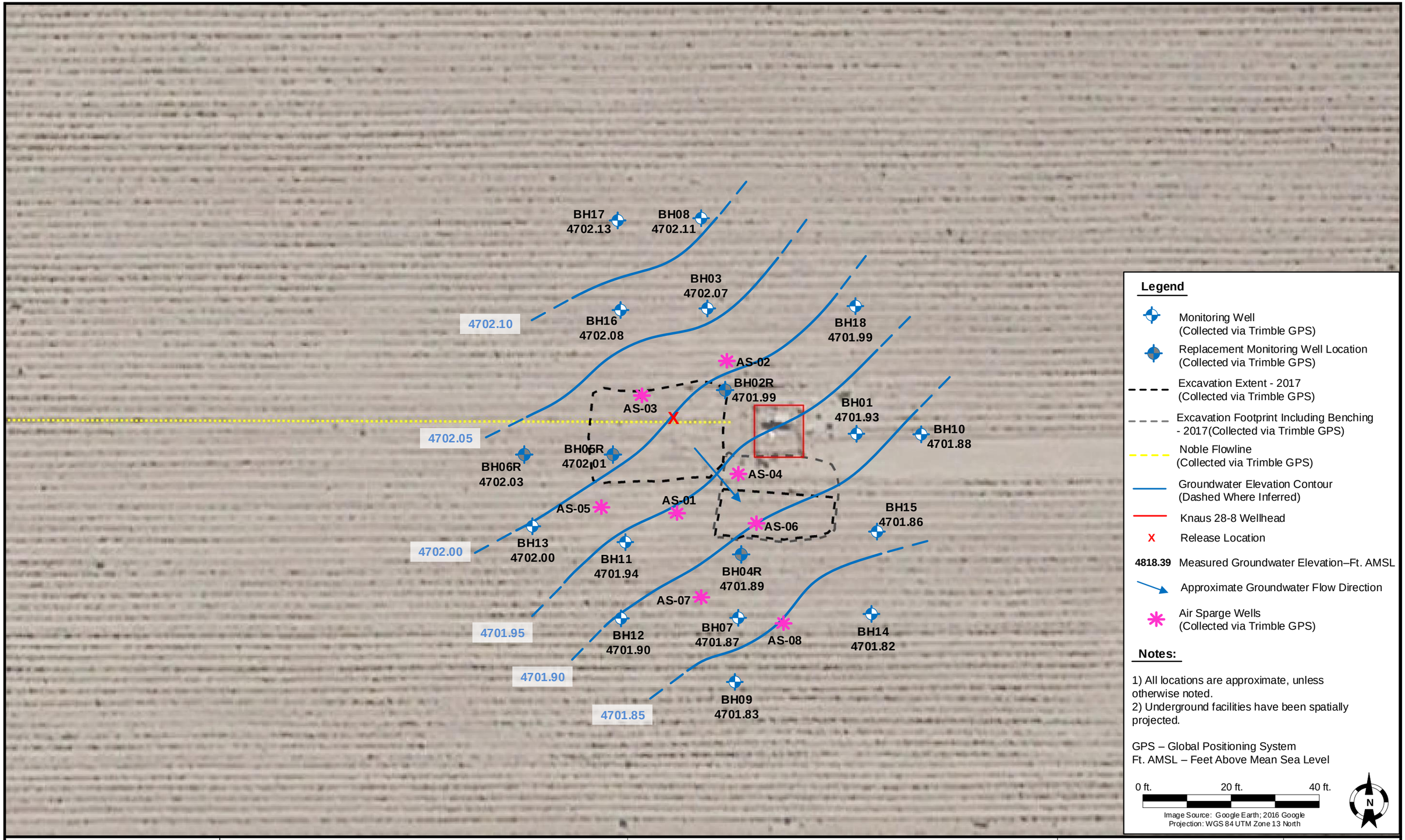
TASMAN GEOSCIENCES

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

Noble Energy, Inc. – DJ Basin
Knaus 28-8
SENW, Section 28, Township 6 North, Range 66 West
Weld County, Colorado

Site Overview Map

FIGURE
2



DATE:	10/08/2018
DESIGNED BY:	DA
DRAWN BY:	TL

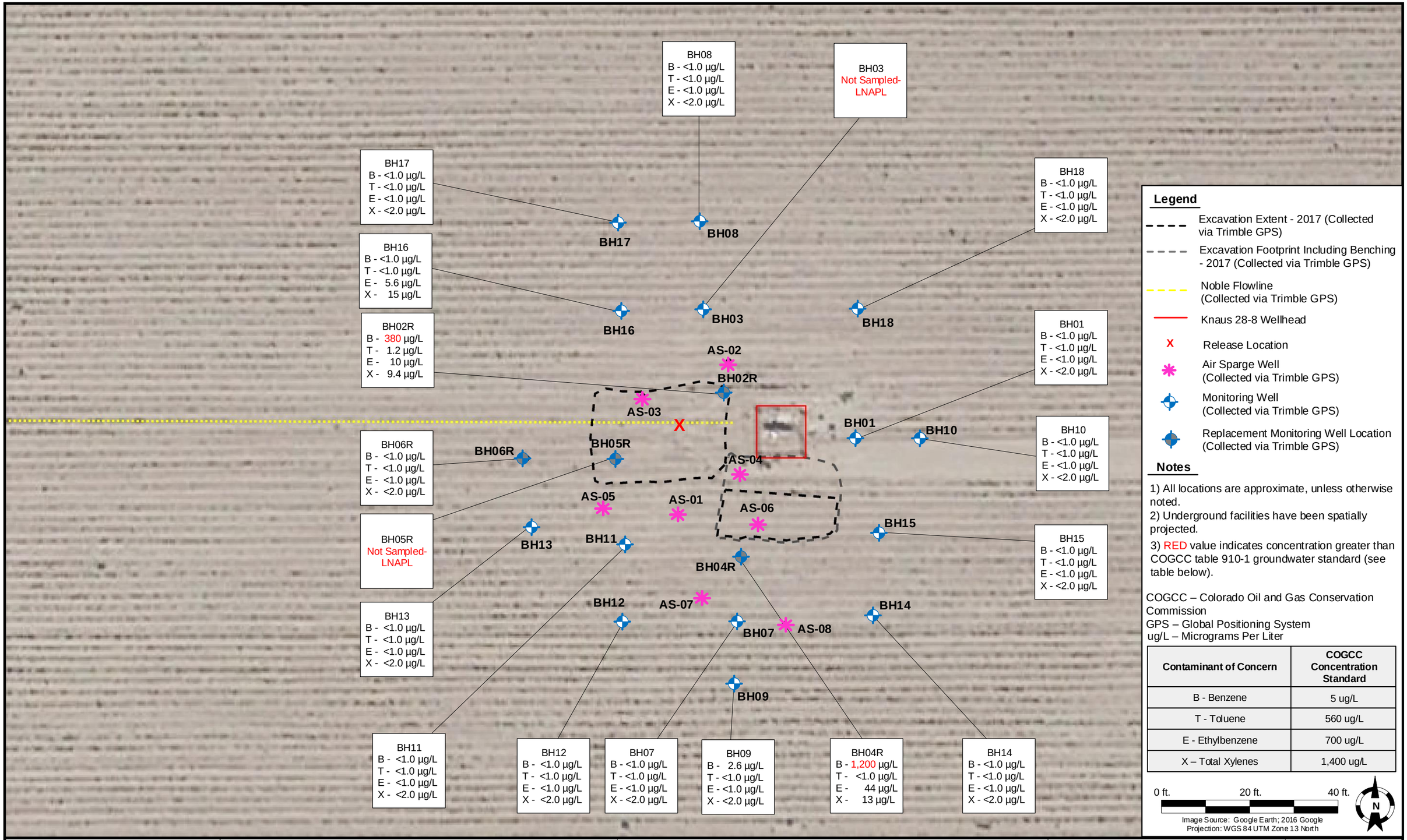
TASMAN GEOSCIENCES

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

Noble Energy, Inc. – DJ Basin
Knaus 28-8
SENW, Section 28, Township 6 North, Range 66 West
Weld County, Colorado

Groundwater Potentiometric Surface Contour Map (September 26, 2018)

FIGURE 3



DATE:	10/08/2018
DESIGNED BY:	DA
DRAWN BY:	TL

TASMAN GEOSCIENCES

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

Noble Energy, Inc. – DJ Basin
Knaus 28-8
SENW, Section 28, Township 6 North, Range 66 West
Weld County, Colorado

Groundwater Analytical Results Map
(September 26, 2018)

FIGURE
4

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 02, 2018

Brandon Bruns

Tasman Geosciences

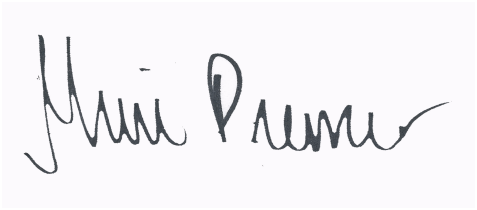
6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Knaus 28-8

Enclosed are the results of analyses for samples received by Summit Scientific on 09/26/18 18:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Muri Premer For Ben Shrewsbury

Laboratory Manager

S2

Tasman Geosciences	Project: Noble - Knaus 28-8	
6899 Pecos St, Unit C	Project Number: [none]	**Reported:**
Denver CO, 80221	Project Manager: Brandon Bruns	10/02/18 17:28

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	1809374-01	Water	09/26/18 13:41	09/26/18 18:15
BH02R	1809374-02	Water	09/26/18 14:21	09/26/18 18:15
BH04R	1809374-03	Water	09/26/18 14:36	09/26/18 18:15
BH06R	1809374-04	Water	09/26/18 14:10	09/26/18 18:15
BH07	1809374-05	Water	09/26/18 13:45	09/26/18 18:15
BH08	1809374-06	Water	09/26/18 13:13	09/26/18 18:15
BH09	1809374-07	Water	09/26/18 13:30	09/26/18 18:15
BH10	1809374-08	Water	09/26/18 13:24	09/26/18 18:15
BH11	1809374-09	Water	09/26/18 14:30	09/26/18 18:15
BH12	1809374-10	Water	09/26/18 13:58	09/26/18 18:15
BH13	1809374-11	Water	09/26/18 14:06	09/26/18 18:15
BH14	1809374-12	Water	09/26/18 13:53	09/26/18 18:15
BH15	1809374-13	Water	09/26/18 12:53	09/26/18 18:15
BH16	1809374-14	Water	09/26/18 13:17	09/26/18 18:15
BH17	1809374-15	Water	09/26/18 12:59	09/26/18 18:15
BH18	1809374-16	Water	09/26/18 13:07	09/26/18 18:15

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.

180937411

Summit Scientific

741 Corporate Circle Suite I ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933 Fax

Client: Noble / Tasman
Address:
City/State/Zip:
Phone: 815-979-8348 Fax:
Sampler Name: Alison Dahl, Brian Gabel

Project Manager: Brandon Bruns Invoice: Jacob Evans
E-Mail: Bbruns@tasman-geo.com
Project Name: Knaus 28-8
Project Number: N/A

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative: HCl	Preservative: HNO_3	Preservative: None	Preservative: Other (Specify)	Matrix: Groundwater	Matrix: Soil	Matrix: Air - Canister Serial #	Matrix: Other (Specify)	Analyze For: BTEX	Special Instructions
BH01	9-26-2018	1341	3	X				X				X	
BH02R		1421		X									
BH04R		1436		X									
BH06R		1410		X									
BH07		1345				X							
BH08		1313		X									
BH09		1330		X									
BH10		1324		X									
BH11		1430				X							
BH12		1358		X									

Relinquished by: Alison Dahl Date/Time: 1815 9/26/2018
Received by: Date/Time: 9.26.18 1815

Relinquished by: Date/Time:
Received by: Date/Time:

Relinquished by: Date/Time:
Received in Lab by: Date/Time:

Turn Around Time (Check)
Same Day ☐ 72 Hours ☐
24 Hours ☐ Standard ☒
48 Hours ☐

Sample Integrity:
Temperature Upon Receipt: 4.6
Intact: Yes ☑ No ☐

Notes:

1809374.2

Summit Scientific

741 Corporate Circle Suite I ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933 Fax

Client: Noble / Tasman
Address:
City/State/Zip:
Phone: 815-979-8348 Fax:
Sampler Name: Alison Dahl / Brian Gabel

Project Manager: Brandon Bruns Invoice: Jacob Evans
E-Mail: BBruns@Tasman-geo.com
Project Name: Knaus 28-8
Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative: HCl	Preservative: HNO_3	Preservative: None	Preservative: Other (Specify)	Matrix: Groundwater	Matrix: Soil	Matrix: Air - Canister Serial #	Matrix: Other (Specify)	Analyze For: BTEX	Special Instructions
BH13	9-26-2018	1406	3	X				X				X	
BH14		1353											
BH15		1253											
BH16		1317											
BH17		1259											
BH18		1307											

Relinquished by:	Date/Time:	Received by:	Date/Time:
[signature]	9/26/2018 1815	[signature]	9.26.18 1815
Relinquished by:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:

Turn Around Time (Check)
Same Day ☐ 72 Hours ☐
24 Hours ☐ Standard ☒
48 Hours ☐

Sample Integrity:
Temperature Upon Receipt: 4.6
Intact: Yes ☑ No ☐

Notes:

Sample Receipt Checklist

S2 Work Order 1809374

Client: Noble / Tasman Client Project ID: Knaus 28-8

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)	4.6

Thermometer ID: 61857155-K

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

[1] **If NO, then contact the client before proceeding with analysis and note in case narrative.**

LR
Custodian Printed Name or Initials

Signature of Custodian

9.26.18 1815
Date/Time

S2

Tasman Geosciences	Project: Noble - Knaus 28-8	
6899 Pecos St, Unit C	Project Number: [none]	**Reported:**
Denver CO, 80221	Project Manager: Brandon Bruns	10/02/18 17:28

BH01

1809374-01 (Water)

Summit Scientific

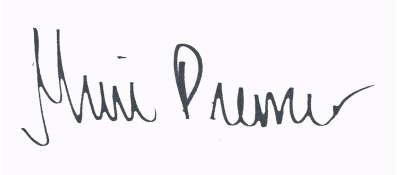
Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/18 13:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1809336	09/27/18	09/29/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **09/26/18 13:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*108 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*95.2 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*88.9 %*	*21-167*		"	"	"	"	



S2

Tasman Geosciences	Project: Noble - Knaus 28-8	
6899 Pecos St, Unit C	Project Number: [none]	**Reported:**
Denver CO, 80221	Project Manager: Brandon Bruns	10/02/18 17:28

BH02R

1809374-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/18 14:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	**380**	10	ug/l	10	1809336	09/27/18	09/29/18	EPA 8260B	
Toluene	**1.2**	1.0	"	1	"	"	"	"	
Ethylbenzene	**10**	1.0	"	"	"	"	"	"	
Xylenes (total)	**9.4**	2.0	"	"	"	"	"	"	

Date Sampled: **09/26/18 14:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*94.9 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.0 %*	*21-167*		"	"	"	"	

S2

Tasman Geosciences	Project: Noble - Knaus 28-8	
6899 Pecos St, Unit C	Project Number: [none]	**Reported:**
Denver CO, 80221	Project Manager: Brandon Bruns	10/02/18 17:28

BH04R

1809374-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/18 14:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	**1200**	10	ug/l	10	1809336	09/27/18	09/29/18	EPA 8260B	
Toluene	ND	1.0	"	1	"	"	"	"	
Ethylbenzene	**44**	1.0	"	"	"	"	"	"	
Xylenes (total)	**13**	2.0	"	"	"	"	"	"	

Date Sampled: **09/26/18 14:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*96.9 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*95.3 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*90.5 %*	*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.

S2

Tasman Geosciences	Project: Noble - Knaus 28-8	
6899 Pecos St, Unit C	Project Number: [none]	**Reported:**
Denver CO, 80221	Project Manager: Brandon Bruns	10/02/18 17:28

BH06R

1809374-04 (Water)

Summit Scientific

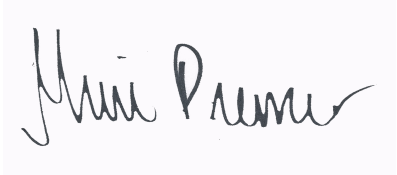
Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/18 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1809336	09/27/18	09/29/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **09/26/18 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*106 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*96.3 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*88.9 %*	*21-167*		"	"	"	"	



S2

Tasman Geosciences	Project: Noble - Knaus 28-8	
6899 Pecos St, Unit C	Project Number: [none]	**Reported:**
Denver CO, 80221	Project Manager: Brandon Bruns	10/02/18 17:28

BH07

1809374-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/18 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1809336	09/27/18	09/29/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **09/26/18 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*105 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*95.9 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*90.0 %*	*21-167*		"	"	"	"	

S2

Tasman Geosciences	Project: Noble - Knaus 28-8	
6899 Pecos St, Unit C	Project Number: [none]	**Reported:**
Denver CO, 80221	Project Manager: Brandon Bruns	10/02/18 17:28

BH08

1809374-06 (Water)

Summit Scientific

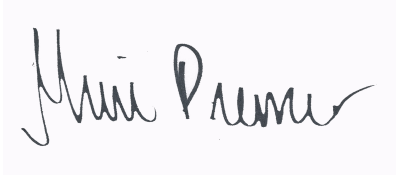
Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/18 13:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1809336	09/27/18	09/29/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **09/26/18 13:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*105 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*95.2 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.9 %*	*21-167*		"	"	"	"	



S2

Tasman Geosciences	Project: Noble - Knaus 28-8	
6899 Pecos St, Unit C	Project Number: [none]	**Reported:**
Denver CO, 80221	Project Manager: Brandon Bruns	10/02/18 17:28

BH09

1809374-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/18 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	**2.6**	1.0	ug/l	1	1809336	09/27/18	09/29/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **09/26/18 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*107 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*95.3 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.6 %*	*21-167*		"	"	"	"	

S2

Tasman Geosciences	Project: Noble - Knaus 28-8	
6899 Pecos St, Unit C	Project Number: [none]	**Reported:**
Denver CO, 80221	Project Manager: Brandon Bruns	10/02/18 17:28

BH10

1809374-08 (Water)

Summit Scientific

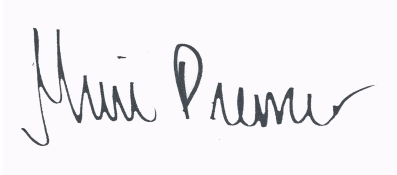
Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/18 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1809336	09/27/18	09/29/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **09/26/18 13:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*106 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*94.6 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*87.8 %*	*21-167*		"	"	"	"	



S2

Tasman Geosciences	Project: Noble - Knaus 28-8	
6899 Pecos St, Unit C	Project Number: [none]	**Reported:**
Denver CO, 80221	Project Manager: Brandon Bruns	10/02/18 17:28

BH11

1809374-09 (Water)

Summit Scientific

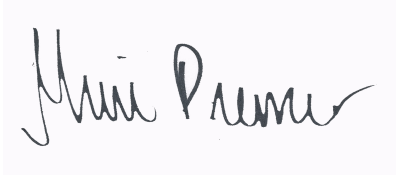
Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/18 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1809336	09/27/18	09/29/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **09/26/18 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*104 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*96.8 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*90.9 %*	*21-167*		"	"	"	"	



S2

Tasman Geosciences	Project: Noble - Knaus 28-8	
6899 Pecos St, Unit C	Project Number: [none]	**Reported:**
Denver CO, 80221	Project Manager: Brandon Bruns	10/02/18 17:28

BH12

1809374-10 (Water)

Summit Scientific

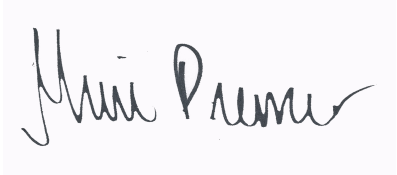
Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/18 13:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1809336	09/27/18	09/29/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **09/26/18 13:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*108 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*96.2 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*90.6 %*	*21-167*		"	"	"	"	



S2

Tasman Geosciences	Project: Noble - Knaus 28-8	
6899 Pecos St, Unit C	Project Number: [none]	**Reported:**
Denver CO, 80221	Project Manager: Brandon Bruns	10/02/18 17:28

BH13

1809374-11 (Water)

Summit Scientific

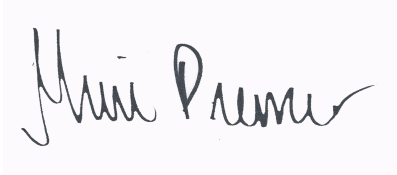
Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/18 14:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1809336	09/27/18	09/29/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **09/26/18 14:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*107 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*95.2 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*87.4 %*	*21-167*		"	"	"	"	



S2

Tasman Geosciences	Project: Noble - Knaus 28-8	
6899 Pecos St, Unit C	Project Number: [none]	**Reported:**
Denver CO, 80221	Project Manager: Brandon Bruns	10/02/18 17:28

BH14

1809374-12 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/18 13:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1809336	09/27/18	09/29/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **09/26/18 13:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*106 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*95.2 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.4 %*	*21-167*		"	"	"	"	

S2

Tasman Geosciences	Project: Noble - Knaus 28-8	
6899 Pecos St, Unit C	Project Number: [none]	**Reported:**
Denver CO, 80221	Project Manager: Brandon Bruns	10/02/18 17:28

BH15

1809374-13 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/18 12:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1809336	09/27/18	09/29/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **09/26/18 12:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*99.3 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*96.1 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.0 %*	*21-167*		"	"	"	"	

S2

Tasman Geosciences	Project: Noble - Knaus 28-8	
6899 Pecos St, Unit C	Project Number: [none]	**Reported:**
Denver CO, 80221	Project Manager: Brandon Bruns	10/02/18 17:28

BH16

1809374-14 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/18 13:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1809336	09/27/18	09/29/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	**5.6**	1.0	"	"	"	"	"	"	
Xylenes (total)	**15**	2.0	"	"	"	"	"	"	

Date Sampled: **09/26/18 13:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*113 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*99.5 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.9 %*	*21-167*		"	"	"	"	

S2

Tasman Geosciences	Project: Noble - Knaus 28-8	
6899 Pecos St, Unit C	Project Number: [none]	**Reported:**
Denver CO, 80221	Project Manager: Brandon Bruns	10/02/18 17:28

BH17

1809374-15 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/18 12:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1809336	09/27/18	09/29/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **09/26/18 12:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*102 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*95.4 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.4 %*	*21-167*		"	"	"	"	

S2

Tasman Geosciences	Project: Noble - Knaus 28-8	
6899 Pecos St, Unit C	Project Number: [none]	**Reported:**
Denver CO, 80221	Project Manager: Brandon Bruns	10/02/18 17:28

BH18

1809374-16 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/18 13:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1809336	09/27/18	09/29/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **09/26/18 13:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*103 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*95.9 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*88.1 %*	*21-167*		"	"	"	"	

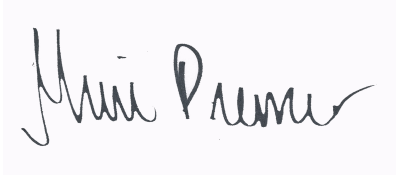
S2

Tasman Geosciences	Project: Noble - Knaus 28-8	
6899 Pecos St, Unit C	Project Number: [none]	**Reported:**
Denver CO, 80221	Project Manager: Brandon Bruns	10/02/18 17:28

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1809336 - EPA 5030 Water MS										
Blank (1809336-BLK1)				Prepared: 09/27/18 Analyzed: 09/29/18						
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	*13.5*		*"*	*13.2*		*102*	*23-173*			
Surrogate: Toluene-d8	*12.8*		*"*	*13.3*		*96.2*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*12.0*		*"*	*13.3*		*89.6*	*21-167*			
LCS (1809336-BS1)				Prepared: 09/27/18 Analyzed: 09/29/18						
Benzene	30.2	1.0	ug/l	33.3		90.6	70-130			
Toluene	33.4	1.0	"	33.3		100	70-130			
Ethylbenzene	34.9	1.0	"	33.3		105	70-130			
m,p-Xylene	71.4	2.0	"	66.7		107	70-130			
o-Xylene	35.2	1.0	"	33.3		106	70-130			
Surrogate: 1,2-Dichloroethane-d4	*13.6*		*"*	*13.2*		*103*	*23-173*			
Surrogate: Toluene-d8	*12.8*		*"*	*13.3*		*96.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*12.5*		*"*	*13.3*		*93.8*	*21-167*			
Matrix Spike (1809336-MS1)		**Source: 1809374-01**		Prepared: 09/27/18 Analyzed: 09/29/18						
Benzene	31.8	1.0	ug/l	33.3	ND	95.4	70-130			
Toluene	34.9	1.0	"	33.3	ND	105	70-130			
Ethylbenzene	36.4	1.0	"	33.3	ND	109	70-130			
m,p-Xylene	73.9	2.0	"	66.7	ND	111	70-130			
o-Xylene	36.5	1.0	"	33.3	ND	110	70-130			
Surrogate: 1,2-Dichloroethane-d4	*14.4*		*"*	*13.2*		*109*	*23-173*			
Surrogate: Toluene-d8	*12.8*		*"*	*13.3*		*95.9*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*12.4*		*"*	*13.3*		*93.4*	*21-167*			



S2

Tasman Geosciences	Project: Noble - Knaus 28-8	
6899 Pecos St, Unit C	Project Number: [none]	**Reported:**
Denver CO, 80221	Project Manager: Brandon Bruns	10/02/18 17:28

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1809336 - EPA 5030 Water MS										
Matrix Spike Dup (1809336-MSD1)	**Source: 1809374-01**			Prepared: 09/27/18 Analyzed: 09/29/18						
Benzene	30.4	1.0	ug/l	33.3	ND	91.1	70-130	4.57	30	
Toluene	32.9	1.0	"	33.3	ND	98.8	70-130	5.69	30	
Ethylbenzene	35.1	1.0	"	33.3	ND	105	70-130	3.61	30	
m,p-Xylene	71.5	2.0	"	66.7	ND	107	70-130	3.27	30	
o-Xylene	35.3	1.0	"	33.3	ND	106	70-130	3.42	30	
Surrogate: 1,2-Dichloroethane-d4	*14.1*		*"*	*13.2*		*107*	*23-173*			
Surrogate: Toluene-d8	*12.7*		*"*	*13.3*		*95.3*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*12.7*		*"*	*13.3*		*95.0*	*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	Project: Noble - Knaus 28-8	
6899 Pecos St, Unit C	Project Number: [none]	**Reported:**
Denver CO, 80221	Project Manager: Brandon Bruns	10/02/18 17:28

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