

BATES 20-22
FLOWLINE RELEASE
API #: 05-123-24849
Remediation #: 9872
Form 27 Document #: 200440424

FIRST QUARTER 2018
Analytical Tables, Figures,
and Laboratory Reports

January 16, 2018



Image: Google

PREPARED ON BEHALF OF

Noble Energy, Inc.
2115 117th Avenue
Greeley, CO 80631



PREPARED BY

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



TABLE 1
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - BATES 20-22
FLOWLINE RELEASE

Soil Sample ID	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	Naphthalene (mg/kg)
COGCC Soil Standard (mg/kg)		0.17	85	100	175	500		23
BH01@2-4'	03/22/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH02@1-2.5'	03/22/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH03@1-2'	03/22/16	0.11	1.6	0.68	4.5	170	420	0.22
BH04@1-3'	03/22/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	0.015
BH05@0-2'	03/22/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH06@1-2.5'	03/22/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH07@2-3'	03/22/16	0.16	2.3	2.0	14	720	1,200	0.23
BH08@0-1.5'	03/22/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH10@6-7'	03/22/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH11@4-5'	03/22/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH12@1-2'	07/15/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010

Notes:

COGCC = Colorado Oil and Gas Conservation Commission

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

mg/kg = Milligrams per kilogram

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

Soil standards referenced from COGCC Table 910-1

Highlighted results exceed the COGCC Table 910-1 standard

TABLE 2
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - BATES 20-22
FLOWLINE RELEASE



Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
BH01	03/22/16	<1.0	<1.0	<1.0	<1.0
BH01	07/13/16	<1.0	<1.0	<1.0	<1.0
BH01	10/03/16	<1.0	<1.0	<1.0	<1.0
BH01	01/03/17	<1.0	<1.0	<1.0	<1.0
BH01	04/06/17	<1.0	<1.0	<1.0	<2.0
BH01	07/05/17	<1.0	<1.0	<1.0	<2.0
BH01	10/12/17	<1.0	<1.0	<1.0	<2.0
BH01	01/05/18	<1.0	<1.0	<1.0	<2.0
BH02	03/22/16	<1.0	<1.0	<1.0	<1.0
BH02	07/13/16	<1.0	<1.0	<1.0	<1.0
BH02	10/03/16	<1.0	<1.0	<1.0	<1.0
BH02	01/03/17	<1.0	<1.0	<1.0	<1.0
BH02	04/06/17	<1.0	<1.0	<1.0	<2.0
BH02	07/05/17	<1.0	<1.0	<1.0	<2.0
BH02	10/12/17	<1.0	<1.0	<1.0	<2.0
BH02	01/05/18	<1.0	<1.0	<1.0	<2.0
BH03	03/22/16	92	210	66	470
BH03	07/13/16	<1.0	<1.0	<1.0	<1.0
BH03	10/03/16	<1.0	<1.0	<1.0	<1.0
BH03	01/03/17	<1.0	<1.0	<1.0	<1.0
BH03	04/06/17	<1.0	<1.0	<1.0	<2.0
BH03	07/05/17	<1.0	<1.0	<1.0	<2.0
BH03	10/12/17	<1.0	<1.0	<1.0	<2.0
BH03	01/05/18	<1.0	<1.0	<1.0	<2.0
BH04	03/22/16	<1.0	<1.0	<1.0	<1.0
BH04	07/13/16	<1.0	<1.0	<1.0	<1.0
BH04	10/03/16	<1.0	<1.0	<1.0	<1.0
BH04	01/03/17	<1.0	<1.0	<1.0	<1.0
BH04 ¹	04/06/17	<1.0	<1.0	<1.0	<2.0
BH04	07/05/17	<1.0	<1.0	<1.0	<2.0
BH04	10/12/17	<1.0	<1.0	<1.0	<2.0
BH04	01/05/18	<1.0	<1.0	<1.0	<2.0
BH05	03/22/16	<1.0	<1.0	<1.0	<1.0
BH05	07/13/16	<1.0	<1.0	<1.0	<1.0
BH05	10/03/16	<1.0	<1.0	<1.0	<1.0
BH05	01/03/17	<1.0	<1.0	<1.0	<1.0
BH05	04/06/17	<1.0	<1.0	<1.0	<2.0
BH05	07/05/17	<1.0	<1.0	<1.0	<2.0
BH05	10/12/17	<1.0	<1.0	<1.0	<2.0
BH05	01/05/18	<1.0	<1.0	<1.0	<2.0
BH06	03/22/16	<1.0	<1.0	<1.0	<1.0
BH06	07/13/16	<1.0	<1.0	<1.0	<1.0

TABLE 2
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - BATES 20-22
FLOWLINE RELEASE



Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Groundwater Standard (µg/L)		5	560	700	1,400
BH06	10/03/16	<1.0	<1.0	<1.0	<1.0
BH06	01/03/17	<1.0	<1.0	<1.0	<1.0
BH06 ¹	04/06/17	<1.0	<1.0	<1.0	<2.0
BH06	07/05/17	<1.0	<1.0	<1.0	<2.0
BH06	10/12/17	<1.0	<1.0	<1.0	<2.0
BH06	01/05/18	<1.0	<1.0	<1.0	<2.0
BH07	03/22/16	62	170	24	150
BH07	07/13/16	Not Sampled - LNAPL Present			
BH07	10/03/16	<1.0	<1.0	<1.0	<1.0
BH07	01/03/17	<1.0	<1.0	<1.0	<1.0
BH07	04/06/17	<1.0	<1.0	<1.0	<2.0
BH07	07/05/17	10	9.8	14	130
BH07	10/12/17	<1.0	<1.0	<1.0	<2.0
BH07	01/05/18	<1.0	<1.0	<1.0	<2.0
BH08	03/22/16	<1.0	<1.0	<1.0	<1.0
BH08	07/13/16	<1.0	<1.0	<1.0	<1.0
BH08	10/03/16	<1.0	<1.0	<1.0	<1.0
BH08	01/03/17	<1.0	<1.0	<1.0	<1.0
BH08 ¹	04/06/17	<1.0	<1.0	<1.0	<2.0
BH08	07/05/17	<1.0	<1.0	<1.0	<2.0
BH08	10/12/17	<1.0	<1.0	<1.0	<2.0
BH08	01/05/18	<1.0	<1.0	<1.0	<2.0
BH12	07/15/16	<1.0	<1.0	<1.0	<1.0
BH12	10/03/16	<1.0	<1.0	<1.0	<1.0
BH12	01/03/17		Well Dry - Not Sampled		
BH12	04/06/17		Well Dry - Not Sampled		
BH12	07/05/17	<1.0	<1.0	<1.0	<2.0
BH12	10/12/17	<1.0	<1.0	<1.0	<2.0
BH12	01/05/18		Well Dry - Not Sampled		

Notes:

1) Grab sample, insufficient water to purge well.

COGCC = Colorado Oil and Gas Conservation Commission

LNAPL = Light Non-Aqueous Phase Liquid

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 exceed the COGCC Table 910-1 standard

TABLE 3
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - BATES 20-22
FLOWLINE RELEASE



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	03/22/16	4716.21	12.75	8.33	ND	ND	4707.88
BH01	07/13/16	4716.21	12.75	3.69	ND	ND	4712.52
BH01	10/03/16	4716.21	12.75	7.02	ND	ND	4709.19
BH01	01/03/17	4716.21	12.75	8.89	ND	ND	4707.32
BH01	04/06/17	4716.21	12.76	9.10	ND	ND	4707.11
BH01	07/05/17	4716.21	12.74	3.40	ND	ND	4712.81
BH01	10/12/17	4716.21	12.78	7.43	ND	ND	4708.78
BH01	01/05/18	4716.21	12.74	8.18	ND	ND	4708.03
BH02	03/22/16	4715.15	10.95	7.18	ND	ND	4707.97
BH02	07/13/16	4715.15	10.95	2.67	ND	ND	4712.48
BH02	10/03/16	4715.15	10.95	5.71	ND	ND	4709.44
BH02	01/03/17	4715.15	10.95	7.81	ND	ND	4707.34
BH02	04/06/17	4715.15	11.38	7.92	ND	ND	4707.23
BH02	07/05/17	4715.15	11.25	2.23	ND	ND	4712.92
BH02	10/12/17	4715.15	11.31	6.27	ND	ND	4708.88
BH02	01/05/18	4715.15	11.28	7.00	ND	ND	4708.15
BH03	03/22/16	4714.36	12.13	8.03	ND	ND	4706.33
BH03	07/13/16	4714.36	12.13	4.32	ND	ND	4710.04
BH03	10/03/16	4714.36	12.13	7.11	ND	ND	4707.25
BH03	01/03/17	4714.36	12.13	8.74	ND ¹	ND ¹	4705.62
BH03	04/06/17	4714.36	12.14	8.83	ND	ND	4705.53
BH03	07/05/17	4714.36	12.14	4.14	ND	ND	4710.22
BH03	10/12/17	4714.36	12.18	7.16	ND	ND	4707.20
BH03	01/05/18	4715.36	12.13	7.91	ND	ND	4707.45
BH04	03/22/16	4714.35	9.85	7.50	ND	ND	4706.85
BH04	07/13/16	4714.35	9.85	4.56	ND	ND	4709.79
BH04	10/03/16	4714.35	9.85	6.88	ND	ND	4707.47
BH04	01/03/17	4714.35	9.85	8.24	ND	ND	4706.11
BH04	04/06/17	4714.35	9.86	8.37	ND	ND	4705.98
BH04	07/05/17	4714.35	9.71	4.13	ND	ND	4710.22
BH04	10/12/17	4714.35	9.75	6.73	ND	ND	4707.62
BH04	01/05/18	4714.35	9.70	7.50	ND	ND	4706.85
BH05	03/22/16	4714.40	10.17	7.13	ND	ND	4707.27
BH05	07/13/16	4714.40	10.17	4.11	ND	ND	4710.29
BH05	10/03/16	4714.40	10.17	6.48	ND	ND	4707.92
BH05	01/03/17	4714.40	10.17	7.92	ND	ND	4706.48
BH05	04/06/17	4714.40	10.20	8.13	ND	ND	4706.27
BH05	07/05/17	4714.40	10.11	3.74	ND	ND	4710.66
BH05	10/12/17	4714.40	10.22	6.45	ND	ND	4707.95
BH05	01/05/18	4714.40	10.18	7.20	ND	ND	4707.20
BH06	03/22/16	4714.67	17.00	7.24	ND	ND	4707.43
BH06	07/13/16	4714.67	9.83	3.70	ND	ND	4710.97

TABLE 3
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - BATES 20-22
FLOWLINE RELEASE



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)
BH06	10/03/16	4714.67	9.83	6.39	ND	ND	4708.28
BH06	01/03/17	4714.67	9.83	7.93	ND	ND	4706.74
BH06	04/06/17	4714.67	9.84	8.06	ND	ND	4706.61
BH06	07/05/17	4714.67	9.80	3.49	ND	ND	4711.18
BH06	10/12/17	4714.67	9.83	6.44	ND	ND	4708.23
BH06	01/05/18	4714.67	9.79	7.19	ND	ND	4707.48
BH07	03/22/16	4716.10	12.60	8.85	ND	ND	4707.25
BH07	07/13/16	4716.10	12.60	5.45	5.35	0.10	4710.73
BH07	10/03/16	4716.10	12.60	8.02	ND ¹	ND ¹	4708.08
BH07	01/03/17	4716.10	12.60	9.51	ND	ND	4706.59
BH07	04/06/17	4716.10	12.61	9.62	ND	ND	4706.48
BH07	07/05/17	4716.10	12.60	5.03	ND	ND	4711.07
BH07	10/12/17	4716.10	12.63	8.01	ND	ND	4708.09
BH07	01/05/18	4716.10	12.60	8.77	ND	ND	4707.33
BH08	03/22/16	4714.24	9.63	7.80	ND	ND	4706.44
BH08	07/13/16	4714.24	9.63	3.83	ND	ND	4710.41
BH08	10/03/16	4714.24	9.63	6.53	ND	ND	4707.71
BH08	01/03/17	4714.24	9.63	7.94	ND	ND	4706.30
BH08	04/06/17	4714.24	9.60	8.10	ND	ND	4706.14
BH08	07/05/17	4714.24	9.52	3.62	ND	ND	4710.62
BH08	10/12/17	4714.24	9.66	6.42	ND	ND	4707.82
BH08	01/05/18	4714.24	9.63	7.17	ND	ND	4707.07
BH12	07/15/16	4715.58	9.88	4.92	ND	ND	4710.66
BH12	10/03/16	4715.58	8.86	7.76	ND	ND	4707.82
BH12	01/03/17	4715.58	8.80	ND	ND	ND	DRY
BH12	04/06/17	4715.58	8.82	ND	ND	ND	DRY
BH12	07/05/17	4715.58	8.80	4.72	ND	ND	4710.86
BH12	10/12/17	4715.58	8.81	7.63	ND	ND	4707.95
BH12	01/05/18	4715.58	8.82	8.41	ND	ND	4707.17

Notes:

ft. = Feet

ND = Not Detected

LNAPL = Light non-aqueous phase liquid

1. Sheen present on groundwater

* 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

DRY = No measurable water present

AMSL = Above mean sea level

BTOC = Below top of casing

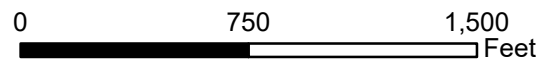
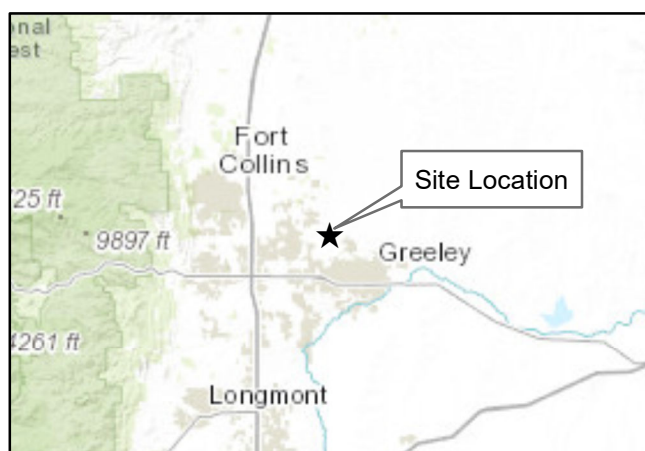
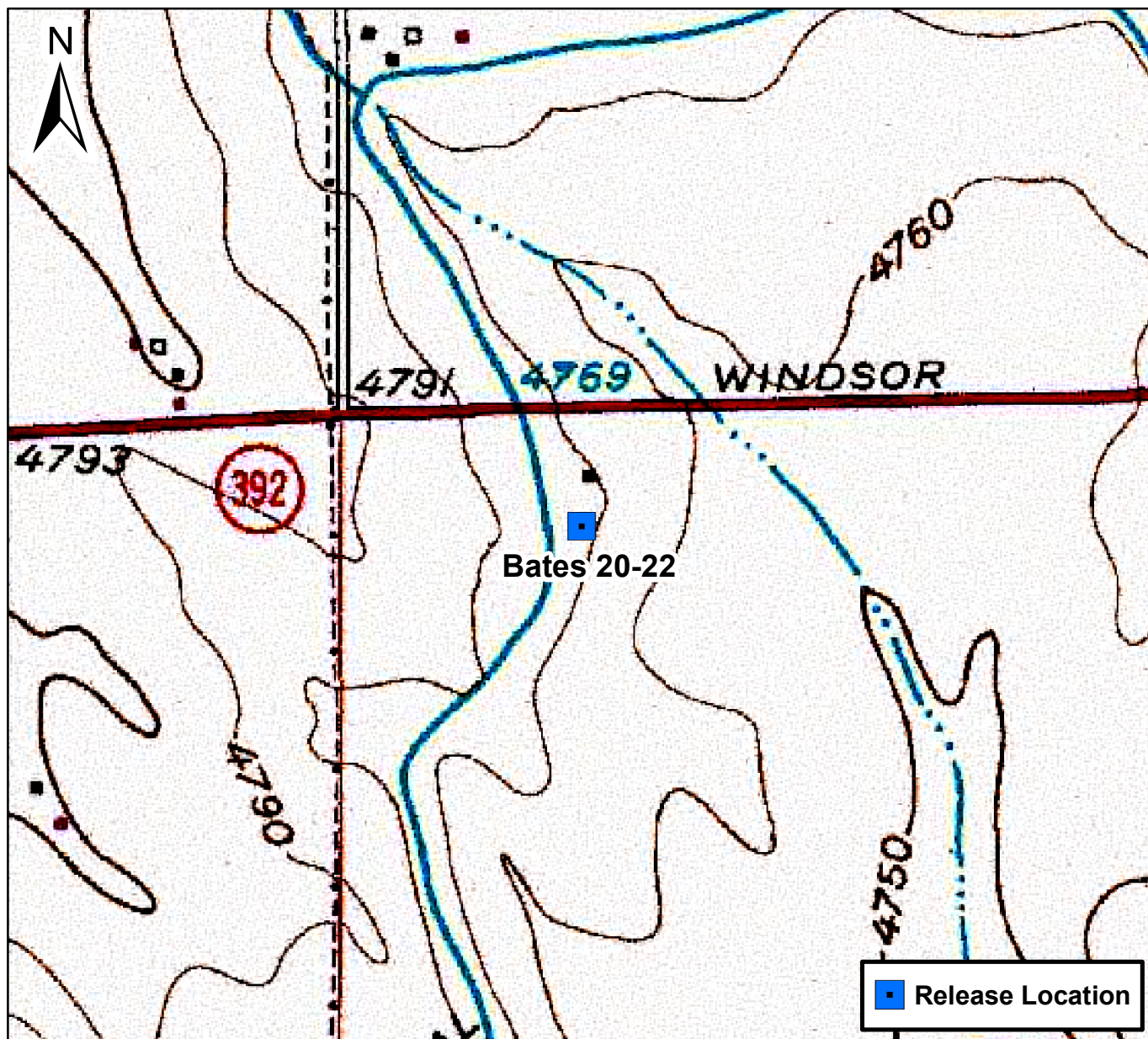


Figure 1

Site Location Map

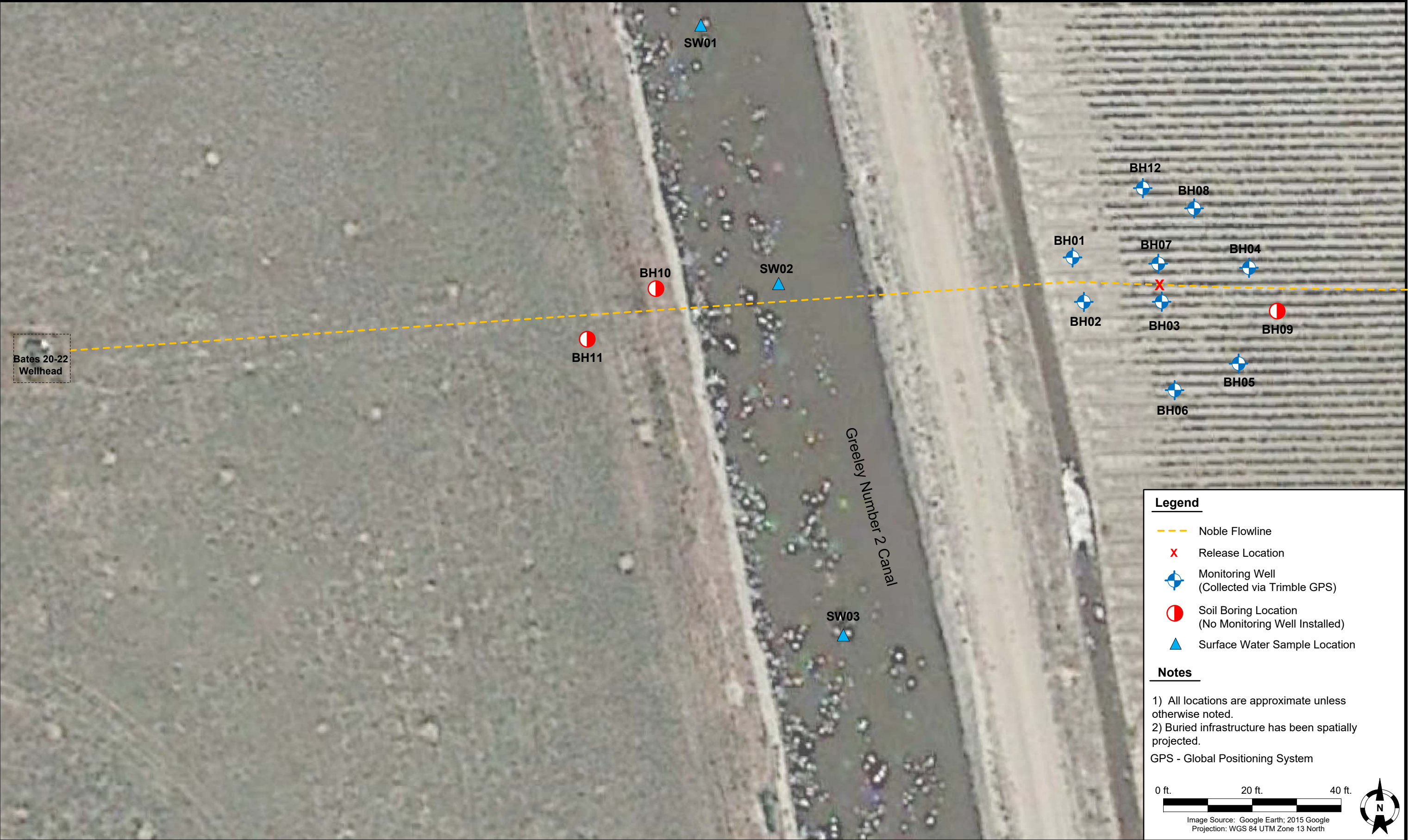
Bates 20-22


Flowline Release

NWNW S20 T6N R66W

Weld County, Colorado





DATE:	01/15/2018	 <div>Tasman Geosciences, Inc. 6899 Pecos Street – Unit C Denver, CO 80221</div>	Noble Energy, Inc. – DJ Basin Bates 20-22 Flowline Release NWNW, Section 20, Township 6 North, Range 66 West Weld County, Colorado	Site Overview Map	FIGURE 2
DESIGNED BY:	DA				
DRAWN BY:	GB				





DATE:	01/15/2018
DESIGNED BY:	DA
DRAWN BY:	GB



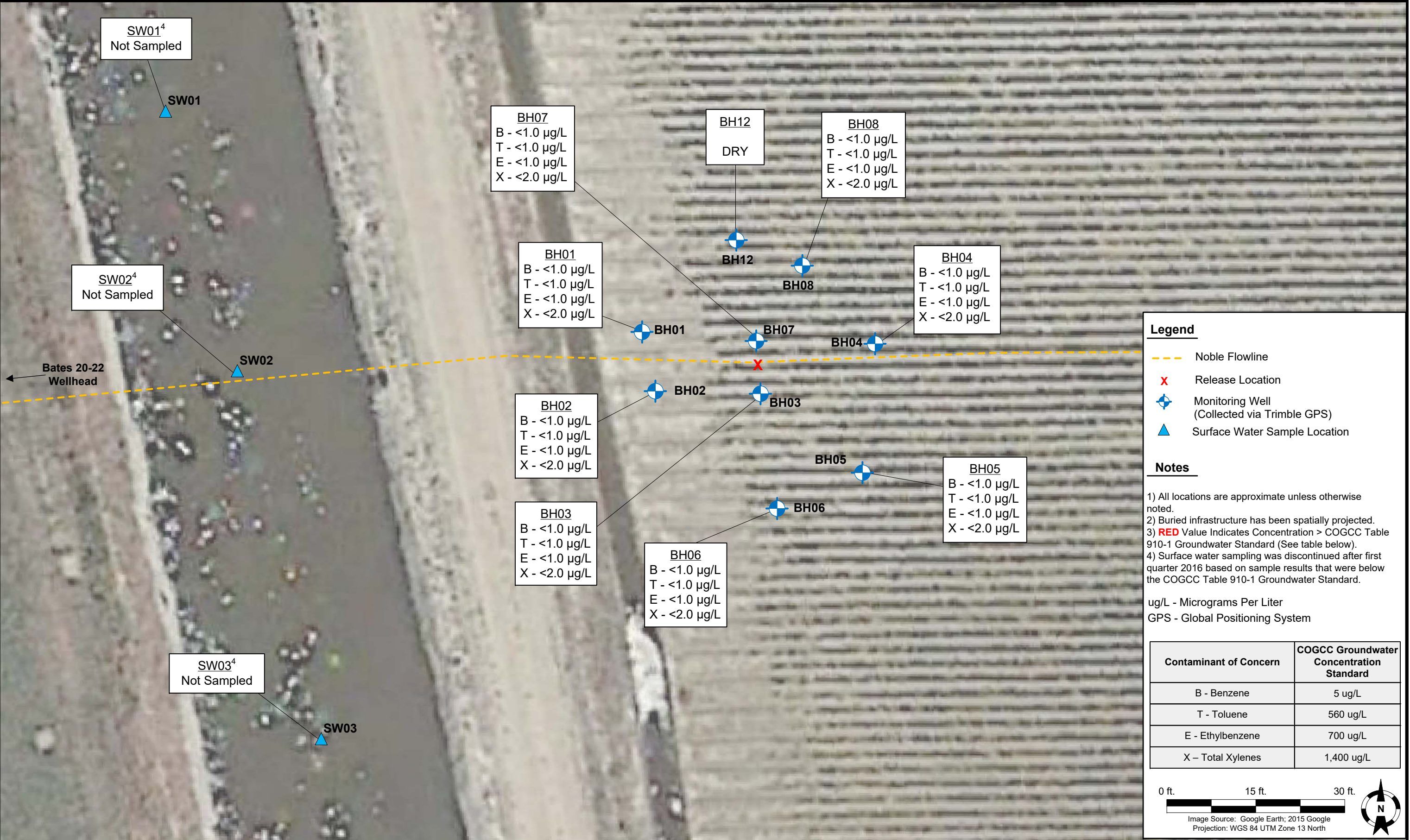
TASMAN
GEOSCIENCES

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

Noble Energy, Inc. – DJ Basin
Bates 20-22 Flowline Release
NWNW, Section 20, Township 6 North, Range 66 West
Weld County, Colorado

Groundwater Potentiometric
Surface Contour Map
(January 05, 2018)

FIGURE
4



DATE:	01/15/2018
DESIGNED BY:	DA
DRAWN BY:	GB



TASMAN
GEOSCIENCES

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

Noble Energy, Inc. – DJ Basin
Bates 20-22 Flowline Release
NWNW, Section 20, Township 6 North, Range 66 West
Weld County, Colorado

Groundwater Analytical
Results Map
(January 05, 2018)

FIGURE
5

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

January 11, 2018

Brandon Bruns
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Bates 20-22

Enclosed are the results of analyses for samples received by Summit Scientific on 01/05/18 16:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury
President



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/11/18 08:53

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	1801052-01	Water	01/05/18 11:30	01/05/18 16:45
BH02	1801052-02	Water	01/05/18 11:25	01/05/18 16:45
BH03	1801052-03	Water	01/05/18 11:20	01/05/18 16:45
BH04	1801052-04	Water	01/05/18 11:40	01/05/18 16:45
BH05	1801052-05	Water	01/05/18 11:10	01/05/18 16:45
BH06	1801052-06	Water	01/05/18 11:04	01/05/18 16:45
BH07	1801052-07	Water	01/05/18 11:15	01/05/18 16:45
BH08	1801052-08	Water	01/05/18 11:35	01/05/18 16:45

Summit Scientific

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

Summit Scientific

1801052



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

Page 1 of 1

Client: Noble/Tasman
Address: -
City/State/Zip: -
Phone: 303-487-1228 Fax: -
Sampler Name: GB

Project Manager: Brandon Bruns, Invoice: Jacob Evans
E-Mail: Bbruns@tasman-geo.com
Project Name: Bates 20-22 BATES
Project Number: -

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:								Special Instructions	
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR						
BH01	1/5/18	1130	3	X				X					X								
BH02		1125	3	X				X					X								
BH03		1120	3	X				X					X								
BH04		1140	3	X				X					X								
BH05		1110	3	X				X					X								
BH06		1104	3	X				X					X								
BH07		1115	3	X				X					X								
BH08	✓	1135	3	X				X					X								

Relinquished by: 	Date/Time: 16:45 1/5/18	Received by: 	Date/Time: 15-18 16:45	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 Hours <input type="checkbox"/>	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: 1.3 Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:		

Sample Receipt Checklist

S2 Work Order: 1801052

Client: Noble/Tasman Client Project ID: Bates 20-22

Shipped Via: P.U.

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

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

Cooler ID					
Temp (°C)	1.3				

Thermometer ID: T006

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.	X			
Were all samples received intact ⁽¹⁾ ?	X			
Was adequate sample volume provided ⁽¹⁾ ?	X			
If custody seals are present, are they intact ⁽¹⁾ ?			X	
Are short holding time analytes or samples with HTs due within 48 hours present?			X	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	X			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	X			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	X			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	X			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		X		
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, etc.	X			HCL
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			X	
If dissolved metals are requested, were samples field filtered?			X	
Additional Comments (if any):				

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

Muri P.
Custodian Printed Name

AD 1-5-18
Signature or Initials of Custodian

17:00
Date/Time



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/11/18 08:53

BH01
1801052-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/05/18 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801079	01/10/18	01/10/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/05/18 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		92.3 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		99.7 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	45-146		"	"	"	"	

Summit Scientific

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Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/11/18 08:53

BH02
1801052-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/05/18 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801079	01/10/18	01/10/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/05/18 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		94.8 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.9 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.6 %	45-146		"	"	"	"	

Summit Scientific

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Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/11/18 08:53

BH03
1801052-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/05/18 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801079	01/10/18	01/10/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/05/18 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		92.4 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		98.3 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %	45-146		"	"	"	"	

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Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/11/18 08:53

BH04
1801052-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/05/18 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801079	01/10/18	01/10/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/05/18 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		89.5 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.1 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.4 %	45-146		"	"	"	"	

Summit Scientific

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Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/11/18 08:53

BH05
1801052-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/05/18 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801079	01/10/18	01/10/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/05/18 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		96.1 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		95.9 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.3 %	45-146		"	"	"	"	

Summit Scientific

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Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/11/18 08:53

BH06
1801052-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/05/18 11:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801079	01/10/18	01/10/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/05/18 11:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		94.0 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.4 %	45-146		"	"	"	"	

Summit Scientific

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Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/11/18 08:53

BH07
1801052-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/05/18 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801079	01/10/18	01/10/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/05/18 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.3 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	45-146		"	"	"	"	

Summit Scientific

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Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/11/18 08:53

BH08
1801052-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/05/18 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1801079	01/10/18	01/10/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **01/05/18 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		93.9 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	45-146		"	"	"	"	

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Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/11/18 08:53

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 1801079 - EPA 5030 Water MS

Blank (1801079-BLK1)

Prepared & Analyzed: 01/10/18

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	11.2		"	13.3		84.4	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.9	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.7	45-146			

LCS (1801079-BS1)

Prepared & Analyzed: 01/10/18

Benzene	36.6	1.0	ug/l	33.3		110	51-132			
Toluene	36.7	1.0	"	33.3		110	51-138			
Ethylbenzene	40.3	1.0	"	33.1		122	58-146			
m,p-Xylene	75.5	2.0	"	66.5		113	57-144			
o-Xylene	38.3	1.0	"	32.7		117	53-146			
Surrogate: 1,2-Dichloroethane-d4	12.5		"	13.3		93.9	37-154			
Surrogate: Toluene-d8	13.5		"	13.3		101	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.9	45-146			

Matrix Spike (1801079-MS1)

Source: 1801051-01

Prepared & Analyzed: 01/10/18

Benzene	375	1.0	ug/l	33.3	1000000000	NR	34-141			E
Toluene	38.0	1.0	"	33.3	2.99	105	27-151			
Ethylbenzene	40.6	1.0	"	33.1	ND	123	29-160			
m,p-Xylene	77.3	2.0	"	66.5	4.50	109	20-166			
o-Xylene	47.9	1.0	"	32.7	12.9	107	33-159			
Surrogate: 1,2-Dichloroethane-d4	12.8		"	13.3		95.9	37-154			
Surrogate: Toluene-d8	13.5		"	13.3		101	45-149			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.6	45-146			

Summit Scientific

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Denver CO, 80221

Project: Bates 20-22
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/11/18 08:53

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 1801079 - EPA 5030 Water MS

Matrix Spike Dup (1801079-MSD1)		Source: 1801051-01			Prepared & Analyzed: 01/10/18					
Benzene	354	1.0	ug/l	33.3	1000000000	NR	34-141	6.00	32	E
Toluene	37.6	1.0	"	33.3	2.99	104	27-151	1.22	25	
Ethylbenzene	40.0	1.0	"	33.1	ND	121	29-160	1.49	50	
m,p-Xylene	75.7	2.0	"	66.5	4.50	107	20-166	2.12	36	
o-Xylene	45.9	1.0	"	32.7	12.9	101	33-159	4.16	26	
Surrogate: 1,2-Dichloroethane-d4	12.8		"	13.3		95.6	37-154			
Surrogate: Toluene-d8	13.4		"	13.3		101	45-149			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.4	45-146			

Summit Scientific

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6899 Pecos Street
Denver CO, 80221

Project: Bates 20-22

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/11/18 08:53

Notes and Definitions

E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference