

FIRST QUARTER 2019 SITE MONITORING DATA

BEEBE DRAW RG 26-9, 23

COGCC SPILL TRACKING # 455231
COGCC REMEDIATION # 11925

Prepared for:



2115 117th Avenue
Greeley, CO 80631

Prepared by:



6899 North Pecos Street, Unit C
Denver, CO 80221

TABLE 1
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - BEEBE DRAW RG 26-9, 23

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	11/06/18	4774.24	NM	12.33	ND	ND	4761.91
BH01	01/10/19	4774.24	27.75	12.57	ND	ND	4761.67
BH02	11/06/18	4772.28	NM	11.83	ND	ND	4760.45
BH02	01/10/19	4772.28	32.65	11.88	ND	ND	4760.40
BH03	11/06/18	4770.72	NM	11.76	ND	ND	4758.96
BH03	01/10/19	4770.72	31.41	11.44	ND	ND	4759.28
BH04	11/06/18	4773.76	NM	14.11	ND	ND	4759.65
BH04	01/10/19	4773.76	29.58	14.19	ND	ND	4759.57
BH05	11/06/18	4770.06	NM	11.55	ND	ND	4758.51
BH05	01/10/19	4770.06	27.91	11.17	ND	ND	4758.89
BH06	11/06/18	4772.62	NM	14.42	ND	ND	4758.20
BH06	01/10/19	4772.62	33.62	14.33	ND	ND	4758.29
BH07	11/06/18	4768.79	NM	10.60	ND	ND	4758.19
BH07	01/10/19	4768.79	27.85	10.89	ND	ND	4757.90
BH08	11/06/18	4769.60	NM	9.68	ND	ND	4759.92
BH08	01/10/19	4769.60	21.63	9.95	ND	ND	4759.65
BH09	11/06/18	4771.81	NM	9.95	ND	ND	4761.86
BH09	01/10/19	4771.81	22.97	10.52	ND	ND	4761.29
BH10	11/06/18	4775.10	27.30	12.42	ND	ND	4762.68
BH10	01/10/19	4775.10	27.15	12.89	ND	ND	4762.21
BH11	11/06/18	4775.53	27.21	14.04	ND	ND	4761.49
BH11	01/10/19	4775.53	26.94	14.27	ND	ND	4761.26
BH12	11/06/18	4775.39	27.50	13.06	ND	ND	4762.33
BH12	01/10/19	4775.39	27.10	13.34	ND	ND	4762.05
BH13	11/06/18	4775.22	25.60	14.72	ND	ND	4760.50
BH13	01/10/19	4775.22	24.87	15.02	ND	ND	4760.20
BH14	11/06/18	4774.89	26.00	15.80	ND	ND	4759.09
BH14	01/10/19	4774.89	25.66	15.89	ND	ND	4759.00
BH15	01/10/19	4773.89	25.00	11.49	ND	ND	4762.40
BH16	01/10/19	4776.93	27.97	13.94	ND	ND	4762.99
BH17	01/10/19	4778.81	28.27	15.24	ND	ND	4763.57
BH18	01/10/19	4777.44	30.00	15.72	ND	ND	4761.72

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

* 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)

TABLE 2
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - BEEBE DRAW RG 26-9,23

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	10/22/18	210	1.5	240	3,300
BH01	01/10/19	140	<1.0	380	3,500
BH02	10/22/18	<1.0	<1.0	1.1	7.9
BH02	01/10/19	<1.0	<1.0	<1.0	<2.0
BH03	10/22/18	<1.0	<1.0	<1.0	<2.0
BH03	01/10/19	<1.0	<1.0	<1.0	<2.0
BH04	10/22/18	48	<1.0	150	590
BH04	01/10/19	16	<1.0	21	130
BH05	10/22/18	<1.0	<1.0	<1.0	2.9
BH05	01/10/19	<1.0	<1.0	<1.0	<2.0
BH06	10/22/18	<1.0	<1.0	6.1	19.0
BH06	01/10/19	<1.0	<1.0	<1.0	<2.0
BH07	10/22/18	<1.0	<1.0	<1.0	<2.0
BH07	01/10/19	<1.0	<1.0	<1.0	<2.0
BH08	10/22/18	<1.0	<1.0	<1.0	<2.0
BH08	01/10/19	<1.0	<1.0	<1.0	<2.0
BH09	10/22/18	<1.0	<1.0	16	130
BH09	01/10/19	<1.0	<1.0	<1.0	<2.0
BH10	11/06/18	8.6	<1.0	120	990
BH10	01/10/19	1.3	<1.0	1.8	16
BH11	11/06/18	9.4	<1.0	23	110
BH11	01/10/19	9.7	<1.0	18	77
BH12	11/06/18	4.2	<1.0	51	250
BH12	01/10/19	1.6	<1.0	<1.0	<2.0
BH13	11/06/18	<1.0	<1.0	<1.0	<2.0
BH13	01/10/19	<1.0	<1.0	<1.0	<2.0
BH14	11/06/18	<1.0	<1.0	42	220
BH14	01/10/19	<1.0	<1.0	<1.0	21
BH15	01/10/19	<1.0	<1.0	<1.0	<2.0
BH16	01/10/19	2.2	<1.0	22	150
BH17	01/10/19	<1.0	<1.0	<1.0	<2.0
BH18	01/10/19	58	<1.0	25	350

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

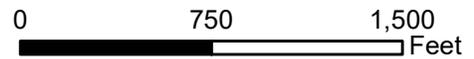
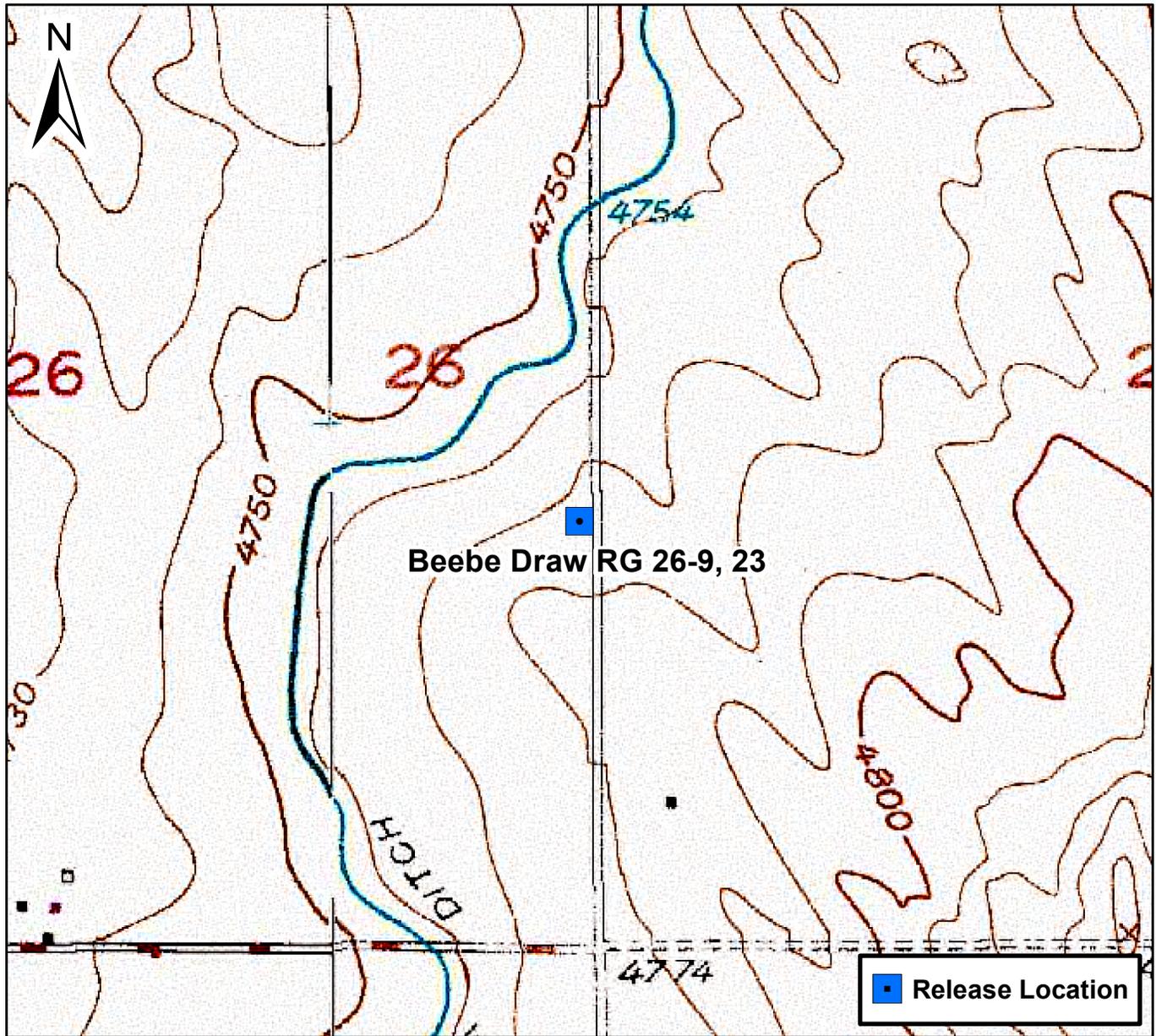


Figure 1

Site Location Map
 Beebe Draw RG 26-9, 23
 NESE Sec. 26-T4N-R65W
 Weld County, Colorado





DATE: 01/25/2019

DESIGNED BY: JW

DRAWN BY: TL



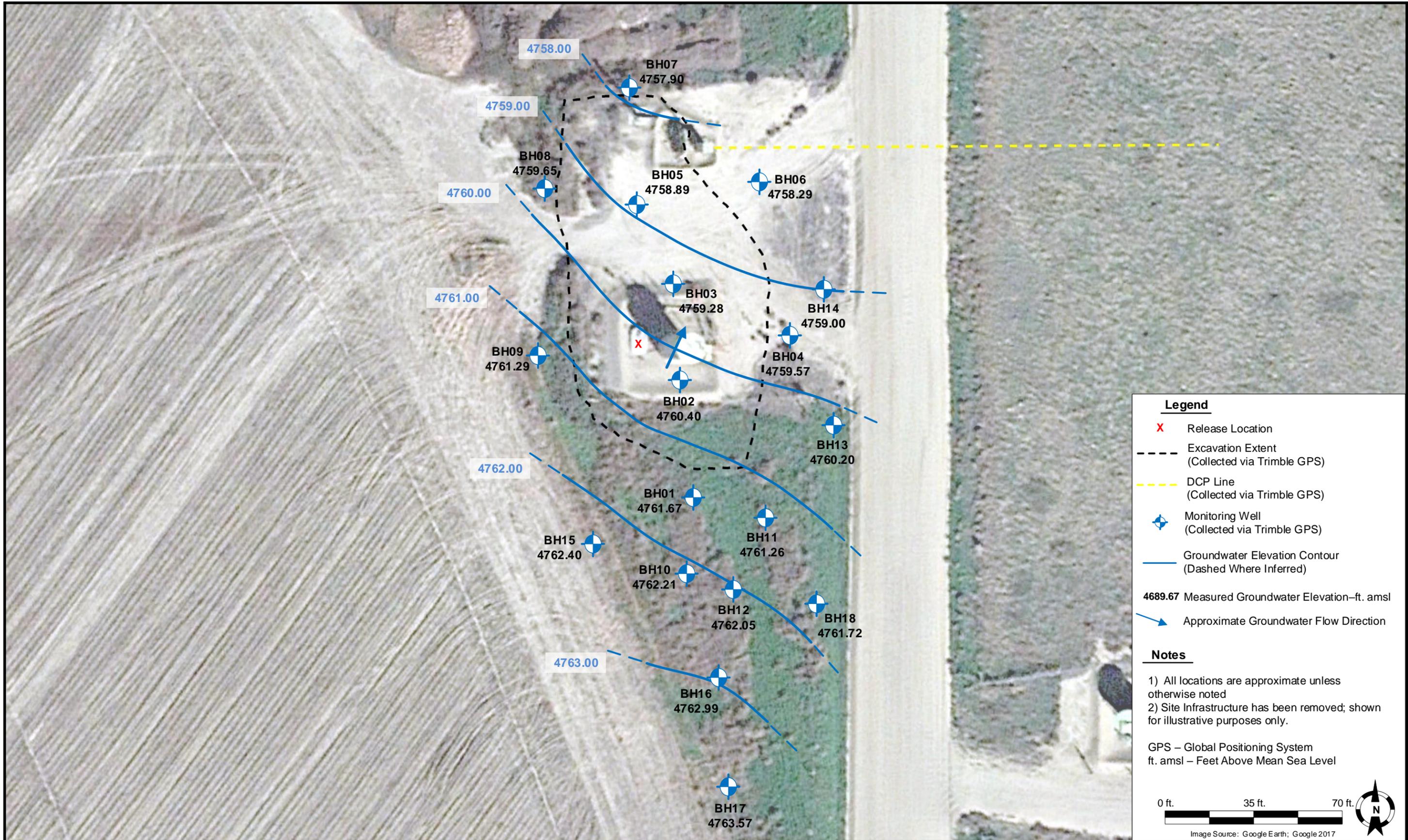
TASMAN
GEOSCIENCES

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

Noble Energy, Inc. – DJ Basin
Beebe Draw RG 26-9, 23
NESE, Section 26, Township 4 North, Range 65 West
Weld County, Colorado

Site Overview

Figure
2



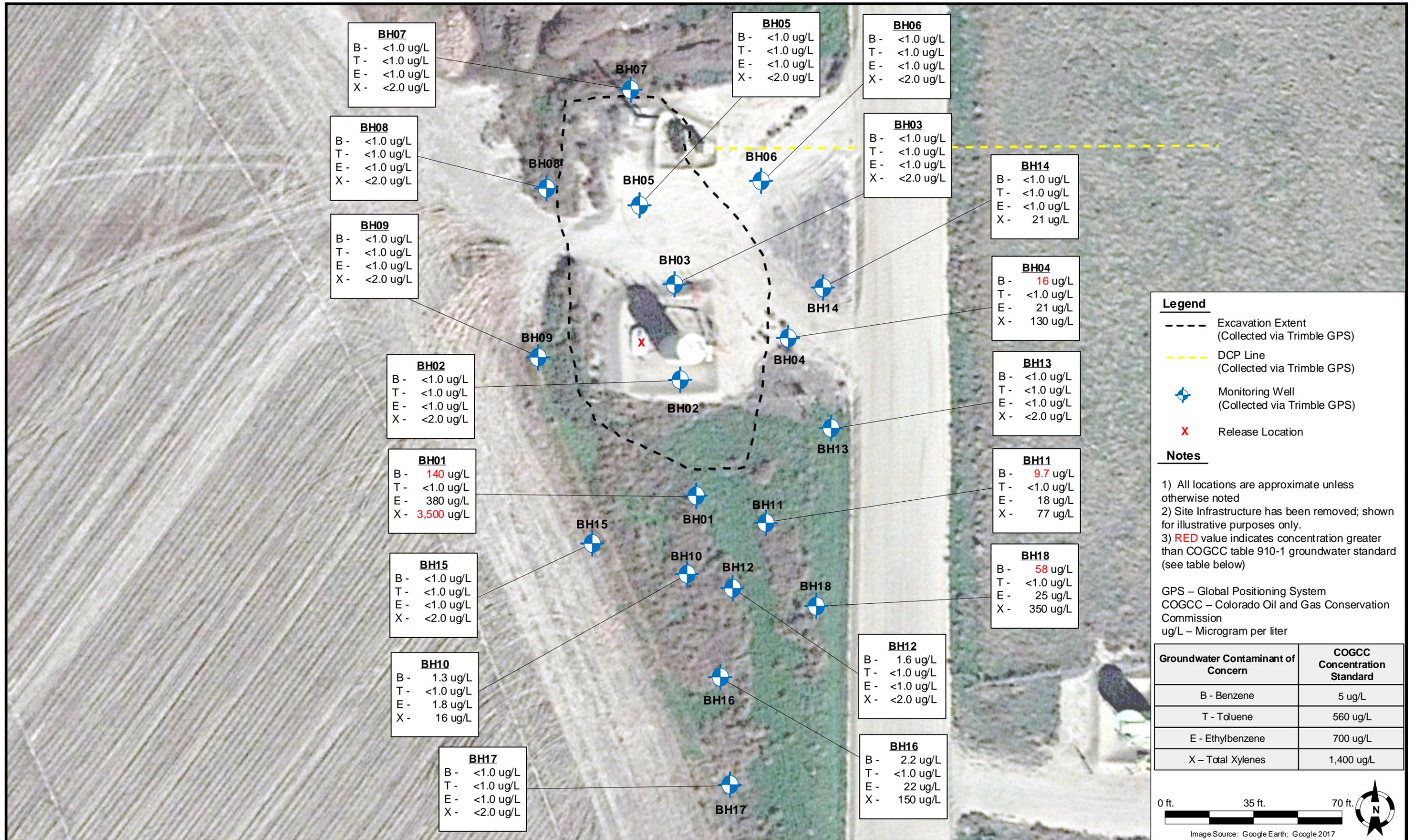
DATE:	01/28/19
DESIGNED BY:	JW
DRAWN BY:	TL

TASMAN
GEOSCIENCES

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

Noble Energy, Inc. – DJ Basin
Beebe Draw RG 26-9, 23
 NESE, Section 26, Township 4 North, Range 65 West
 Weld County, Colorado

Groundwater Potentiometric
 Surface Contour Map
 (January 10, 2018)



DATE: 01/25/2019

DESIGNED BY: JW

DRAWN BY: TL



Noble Energy, Inc. – DJ Basin
Beebe Draw RG 26-9, 23
 NESE, Section 26, Township 4 North, Range 65 West
 Weld County, Colorado

Groundwater Analytical
 Results Map
 (January 10, 2019)

Figure
 4

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 17, 2019

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Beebe Draw RG 26-9,23

Enclosed are the results of analyses for samples received by Summit Scientific on 01/10/19 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



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

Project: Noble - Beebe Draw RG 26-9,23

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/17/19 06:52

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	1901139-01	Water	01/10/19 13:44	01/10/19 18:00
BH02	1901139-02	Water	01/10/19 13:11	01/10/19 18:00
BH03	1901139-03	Water	01/10/19 14:01	01/10/19 18:00
BH04	1901139-04	Water	01/10/19 13:30	01/10/19 18:00
BH05	1901139-05	Water	01/10/19 12:00	01/10/19 18:00
BH06	1901139-06	Water	01/10/19 12:12	01/10/19 18:00
BH07	1901139-07	Water	01/10/19 12:28	01/10/19 18:00
BH08	1901139-08	Water	01/10/19 12:35	01/10/19 18:00
BH09	1901139-09	Water	01/10/19 12:43	01/10/19 18:00
BH10	1901139-10	Water	01/10/19 13:45	01/10/19 18:00
BH11	1901139-11	Water	01/10/19 13:29	01/10/19 18:00
BH12	1901139-12	Water	01/10/19 12:59	01/10/19 18:00
BH13	1901139-13	Water	01/10/19 12:03	01/10/19 18:00
BH14	1901139-14	Water	01/10/19 12:18	01/10/19 18:00
BH15	1901139-15	Water	01/10/19 14:00	01/10/19 18:00
BH16	1901139-16	Water	01/10/19 13:56	01/10/19 18:00
BH17	1901139-17	Water	01/10/19 13:51	01/10/19 18:00
BH18	1901139-18	Water	01/10/19 13:55	01/10/19 18:00

Summit Scientific

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

Summit Scientific

S₂

1901139.1

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: 303-487-1228	Project Name: Beebe Draw RG 26-9, 23
Sampler Name: Brian Gabel, Alison Dahl	Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR		
1	BH01	1/10/19	1344	3	X				X				X					
2	BH02		1311															
3	BH03		1401															
4	BH04		1330															
5	BH05		1200				X											
6	BH06		1212		X													
7	BH07		1228															
8	BH08		1235															
9	BH09		1243															
10	BH10		1345															

Relinquished by: <i>Brian Gabel</i>	Date/Time: 1/10/19 1510	Received by: Tasman's Lock Box	Date/Time: 1/10/19 1510	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"/> Sample Integrity: Temperature Upon Receipt: 2.4 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 1-10-19 1800	Received by: <i>[Signature]</i>	Date/Time: 1-10-19 1800		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Summit Scientific

S₂

1901139.2

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

Page 2 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: 303-487-1228	Project Name: Beebe Draw RG 26-9, 23
Sampler Name: Brian Gabel, Alison Dahl	Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR	
1	BH11	1/10/19	1329	3	X				X				X				
2	BH12		1259														
3	BH13		1203														
4	BH14		1218														
5	BH15		1400														
6	BH16		1356														
7	BH17		1351														
8	BH18		1355														
9																	
10																	

Relinquished by: <i>[Signature]</i> Date/Time: 1/10/19 1510	Received by: Tasman's Lock Box Date/Time: 1/10/19 1510	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: 1.10.19 1800	Received by: <i>[Signature]</i> Date/Time: 1.10.19 1806	Sample Integrity:	
Relinquished by:	Received by:	Temperature Upon Receipt: _____ Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Sample Receipt Checklist

S2 Work Order 1901139

Client: Noble/Tasman Client Project ID: Beebe Draw RG 26-9, 23

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>2.4</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			
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.

CP
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

1.10.19 1830
Date/Time



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

Project: Noble - Beebe Draw RG 26-9,23

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/17/19 06:52

BH01
1901139-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/19 13:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	140	1.0	ug/l	1	1901141	01/14/19	01/15/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	380	100	"	100	"	"	"	"	
Xylenes (total)	3500	200	"	"	"	"	"	"	

Date Sampled: **01/10/19 13:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.4 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Beebe Draw RG 26-9,23

Project Number: [none]
 Project Manager: Brandon Brun

Reported:
 01/17/19 06:52

BH02
1901139-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/19 13:11**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1901141	01/14/19	01/15/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **01/10/19 13:11**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		112 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.6 %		21-167		"	"	"	"	

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

Project: Noble - Beebe Draw RG 26-9,23

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/17/19 06:52

BH03
1901139-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/19 14:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1901141	01/14/19	01/15/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **01/10/19 14:01**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		105 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.0 %		21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Beebe Draw RG 26-9,23

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/17/19 06:52

BH04
1901139-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/19 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	16	1.0		ug/l	1	1901141	01/14/19	01/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	21	1.0		"	"	"	"	"	"	
Xylenes (total)	130	2.0		"	"	"	"	"	"	

Date Sampled: **01/10/19 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		118 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		97.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %		21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Beebe Draw RG 26-9,23

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/17/19 06:52

BH05
1901139-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/19 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1901141	01/14/19	01/15/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **01/10/19 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		115 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.6 %		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 - Beebe Draw RG 26-9,23

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/17/19 06:52

BH06
1901139-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/19 12:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1901141	01/14/19	01/15/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **01/10/19 12:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		120 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.3 %		21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Beebe Draw RG 26-9,23

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/17/19 06:52

BH07
1901139-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/19 12:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1901141	01/14/19	01/15/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **01/10/19 12:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		113 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %		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 - Beebe Draw RG 26-9,23

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/17/19 06:52

BH08
1901139-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/19 12:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1901141	01/14/19	01/15/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **01/10/19 12:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		112 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.0 %		21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Beebe Draw RG 26-9,23

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/17/19 06:52

BH09
1901139-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/19 12:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1901141	01/14/19	01/15/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **01/10/19 12:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		113 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.8 %		21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Beebe Draw RG 26-9,23

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/17/19 06:52

BH10
1901139-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/19 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	1.3	1.0		ug/l	1	1901141	01/14/19	01/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	1.8	1.0		"	"	"	"	"	"	
Xylenes (total)	16	2.0		"	"	"	"	"	"	

Date Sampled: **01/10/19 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		109 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		82.5 %		21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Beebe Draw RG 26-9,23

Project Number: [none]
 Project Manager: Brandon Brun

Reported:
 01/17/19 06:52

BH11
1901139-11 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/19 13:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	9.7	1.0		ug/l	1	1901141	01/14/19	01/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	18	1.0		"	"	"	"	"	"	
Xylenes (total)	77	2.0		"	"	"	"	"	"	

Date Sampled: **01/10/19 13:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		114 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		99.6 %		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 - Beebe Draw RG 26-9,23

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/17/19 06:52

BH12
1901139-12 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/19 12:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	1.6	1.0		ug/l	1	1901141	01/14/19	01/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **01/10/19 12:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: 1,2-Dichloroethane-d4</i>		121 %		23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		101 %		20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		96.8 %		21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Beebe Draw RG 26-9,23

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/17/19 06:52

BH13
1901139-13 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/19 12:03**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1901141	01/14/19	01/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **01/10/19 12:03**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		114 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.7 %		21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Beebe Draw RG 26-9,23

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/17/19 06:52

BH14
1901139-14 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/19 12:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1901141	01/14/19	01/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	21	2.0		"	"	"	"	"	"	

Date Sampled: **01/10/19 12:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		118 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.8 %		21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Beebe Draw RG 26-9,23

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/17/19 06:52

BH15
1901139-15 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/19 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1901141	01/14/19	01/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **01/10/19 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		112 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		98.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.1 %		21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Beebe Draw RG 26-9,23

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/17/19 06:52

BH16
1901139-16 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/19 13:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	2.2	1.0		ug/l	1	1901141	01/14/19	01/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	22	1.0		"	"	"	"	"	"	
Xylenes (total)	150	2.0		"	"	"	"	"	"	

Date Sampled: **01/10/19 13:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		129 %		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 - Beebe Draw RG 26-9,23

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/17/19 06:52

BH17
1901139-17 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/19 13:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1901141	01/14/19	01/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **01/10/19 13:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		108 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.9 %		21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Beebe Draw RG 26-9,23

Project Number: [none]
Project Manager: Brandon Brun

Reported:
01/17/19 06:52

BH18
1901139-18 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/19 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	58	1.0		ug/l	1	1901141	01/14/19	01/16/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	25	1.0		"	"	"	"	"	"	
Xylenes (total)	350	2.0		"	"	"	"	"	"	

Date Sampled: **01/10/19 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		114 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		96.5 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %		21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - Beebe Draw RG 26-9,23

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/17/19 06:52

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1901141 - EPA 5030 Water MS

Blank (1901141-BLK1)

Prepared: 01/14/19 Analyzed: 01/15/19

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.7		"	13.2		112	23-173			
Surrogate: Toluene-d8	13.7		"	13.3		103	20-170			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.7	21-167			

LCS (1901141-BS1)

Prepared: 01/14/19 Analyzed: 01/15/19

Benzene	39.0	1.0	ug/l	33.3		117	70-130			
Toluene	32.2	1.0	"	33.3		96.8	70-130			
Ethylbenzene	33.7	1.0	"	33.3		101	70-130			
m,p-Xylene	85.1	2.0	"	66.7		128	70-130			
o-Xylene	40.3	1.0	"	33.3		121	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.2		"	13.2		107	23-173			
Surrogate: Toluene-d8	14.2		"	13.3		107	20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		101	21-167			

Matrix Spike (1901141-MS1)

Source: 1901139-03

Prepared: 01/14/19 Analyzed: 01/15/19

Benzene	39.6	1.0	ug/l	33.3	ND	119	70-130			
Toluene	42.8	1.0	"	33.3	ND	128	70-130			
Ethylbenzene	43.4	1.0	"	33.3	ND	130	70-130			
m,p-Xylene	84.7	2.0	"	66.7	ND	127	70-130			
o-Xylene	40.6	1.0	"	33.3	ND	122	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.6		"	13.2		111	23-173			
Surrogate: Toluene-d8	14.1		"	13.3		106	20-170			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.3	21-167			

Summit Scientific

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

Project: Noble - Beebe Draw RG 26-9,23

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/17/19 06:52

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 1901141 - EPA 5030 Water MS

Matrix Spike Dup (1901141-MSD1)	Source: 1901139-03			Prepared: 01/14/19 Analyzed: 01/15/19						
Benzene	41.6	1.0	ug/l	33.3	ND	125	70-130	4.80	30	
Toluene	34.6	1.0	"	33.3	ND	104	70-130	21.2	30	
Ethylbenzene	35.4	1.0	"	33.3	ND	106	70-130	20.4	30	
m,p-Xylene	79.1	2.0	"	66.7	ND	119	70-130	6.81	30	
o-Xylene	43.0	1.0	"	33.3	ND	129	70-130	5.64	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>14.3</i>		<i>"</i>	<i>13.2</i>		<i>109</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>14.0</i>		<i>"</i>	<i>13.3</i>		<i>105</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>12.6</i>		<i>"</i>	<i>13.3</i>		<i>94.7</i>	<i>21-167</i>			

Summit Scientific

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

Project: Noble - Beebe Draw RG 26-9,23

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/17/19 06:52

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