

WEBSTER 11-32 WELLHEAD RELEASE

ASSESSMENT AND EXCAVATION REPORT

May 9, 2016

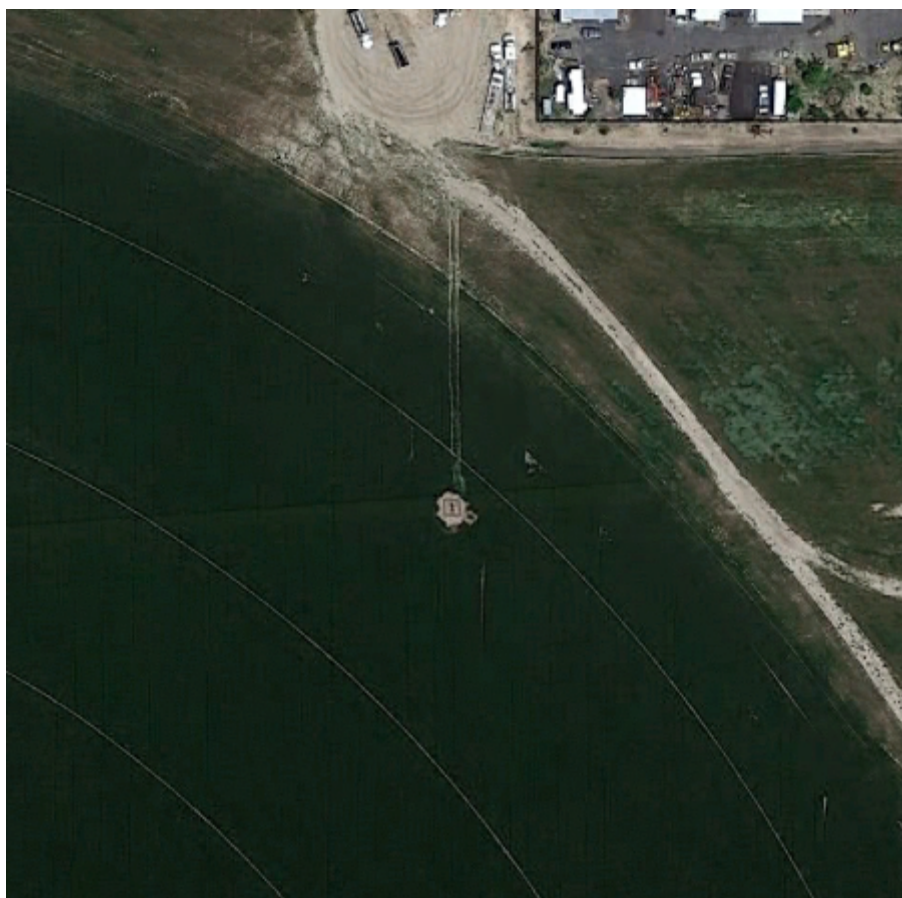


Image: Google 2015

PREPARED ON BEHALF OF

Noble Energy, Inc.
1600 Broadway
Denver, CO 80202



PREPARED BY

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



May 9, 2016

Mr. Jacob Evans
Noble Energy Inc.
1600 Broadway
Denver, CO 80202

Subject: **Assessment and Excavation Report**
 Webster 11-32 Wellhead Release
 API #: 05-123-12679, Spill/Release Point ID: 443116
 NESW S32 T6N R64W, Initial Form 19 #: 400895700
 Weld County, Colorado

Dear Mr. Evans:

Below please find a copy of the above referenced Assessment and Excavation Report (Report) for the Webster 11-32 Wellhead Release site (Site) in Weld County, Colorado. The text below describes environmental remediation and associated confirmation sampling activities conducted between December 9, 2015 and April 5, 2016.

Introduction

The purpose of this document is to describe the assessment of soil and groundwater, and the removal of impacted soil and confirmation sampling activities at the Site. The activities described below were performed in response to a release discovered at the surface casing associated with the Webster 11-32 oil and gas well.

Facility Background

The Site is located approximately 2.5 miles east of Greeley in Weld County, Colorado. Surrounded by agricultural crop land, the Site legal description is the northeast 1/4 of the southwest 1/4 of Section 32, Township 6 north, Range 64 west, of the 6th Principal Meridian. The Site is located on relatively flat terrain that slopes gradually to the southeast. The Site is approximately 525 feet (ft.) south of County Road 62.5 and approximately 450 ft. south of the Webster 11-31 tank battery, and has coordinates of 40.441096°, -104.575804°.

Field Activities

On December 9, 2015, Tasman was retained by Noble Energy (Noble) to assess the soil and groundwater in an area adjacent to the Webster 11-32 wellhead. Four boreholes were advanced around the wellhead and subsequently completed as groundwater monitoring wells. Borehole locations are illustrated on Figure 2, and boring logs are included in Attachment A. During boring operations, soil samples were collected and field screened for volatile organic compounds (VOC) using a photoionization detector (PID) and standard headspace sampling techniques. Four soil

samples were submitted to Summit Scientific (Summit) in Golden, Colorado for laboratory analyses of benzene, toluene, ethylbenzene, and total xylenes (collectively referred to as BTEX), naphthalene, and total petroleum hydrocarbons-gasoline range organics (TPH-GRO) using United States Environmental Protection Agency (USEPA) Method 8260B, and total petroleum hydrocarbons-diesel range organics (TPH-DRO) using USEPA Method 8015. No VOC concentrations above Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 soil standards were detected by laboratory analysis.

On December 11, 2015, groundwater samples were collected from all four monitoring well locations. Groundwater was encountered at depths of approximately 17-18 ft. below ground surface (bgs). These four groundwater samples were submitted to Summit for laboratory analyses of BTEX by USEPA Method 8260B. As summarized in Table 2, VOCs were not detected in any of the groundwater samples above COGCC Table 910-1 groundwater standards.

To further assess subsurface conditions closer to the wellhead, excavation activities were conducted between January 22 and 26, 2016. During excavation activities, soil samples were collected and field screened for volatile organic compounds (VOC) using a photoionization detector (PID) and standard headspace sampling techniques. A total of 13 confirmation soil samples were collected during the excavation activities and submitted to Summit for laboratory analysis of BTEX, naphthalene, TPH-GRO using USEPA Method 8260B, and TPH-DRO. Soil sample locations are illustrated on Figure 4.

Soil removal activities produced an excavation with final dimensions of approximately 26 ft. by 17 ft. by 6.5 ft. bgs, which indicate that approximately 110 cubic yards of soil were removed from the Site. Impacted soil near the wellhead could not be excavated due to health and safety concerns; therefore, the soil near SS05 and SS08 were left in place. The excavation was backfilled with clean soil, and the immediate area was regraded to previous levels. Groundwater was not encountered in the excavation area.

Based on hydrocarbon impacts adjacent to the wellhead, Tasman collected additional soil samples from two additional soil borings (SS15 and SS16) on April 5, 2016. These boring locations are illustrated on Figure 5. Samples SS15 and SS16 were collected at the same locations as SS05 and SS08, respectively; however, SS15 and SS16 were collected at deeper depths to further assess vertical conditions adjacent to the wellhead. In addition to collecting samples next to the wellhead, Tasman also collected soil samples from two locations (SS17 and SS18) to obtain additional data in the northeast extent and sidewall area of the January excavation. Borings SS17 and SS18 were completed to span a potential data gap between borings SS02 and SS09 that were collected in January 2016.

Results

Laboratory analytical data collected in January and April 2016 indicate that petroleum hydrocarbons are present in soil adjacent to the wellhead and in the northeastern portion of the January 2016 excavation area. These data are presented in Table 1 and illustrated in Figures 4 and 5.

Laboratory analytical results indicate BTEX concentrations in the groundwater collected from temporary monitoring wells were below the COGCC Table 910-1 groundwater standards. These data are presented in Table 2 and illustrated in Figure 3.

Conclusions

Based on the analytical data, impacts above COGCC standards are present adjacent to the wellhead and in the northeast portion of the excavation area completed in January 2016. Noble will submit a revised Form 27 Remediation Work Plan to address residual soil impacts that are present above COGCC Table 910-1 standards.

Remarks

The discussion and conclusions contained in this report represent the professional opinions of Tasman Geosciences, Inc. These opinions are based on currently available information and are arrived at in accordance with currently accepted geologic and engineering practices.

Please contact me at (720) 431-1190 if you require additional information.

Sincerely,
Tasman Geosciences, Inc.



Brandon Bruns, PE
Project Manager

Attached:

Table 1 – Soil Analytical Data

Table 2 – Groundwater Analytical Data

Figure 1 – Site Location Map

Figure 2 – Borehole Soil Analytical Results Map (12/09/15)

Figure 3 – Groundwater Analytical Results Map (12/11/15)

Figure 4 – Excavation Extent and Sample Location Map (January 2016)

Figure 5 – Borehole Soil Analytical Results Map (04/05/16)

Attachment A – Boring Logs

Attachment B – Laboratory Analytical Data Reports

TABLES

TABLE 1
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - WEBSTER 11-32 WELLHEAD 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 Standard		0.17	85	100	175	500		23
BH01@18-20'	12/09/15	<0.0020	<0.0050	<0.0050	<0.010	<50	91	<0.010
BH02@4-8'	12/09/15	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH03@18-20'	12/09/15	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
BH04@18-20'	12/09/15	<0.0020	<0.0050	<0.0050	<0.010	<50	65	<0.010
SS02@6	01/22/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS03@6	01/22/16	<0.0020	<0.0050	<0.0050	0.010	<50	820	0.011
SS04@6	01/22/16	<0.0020	<0.0050	0.038	0.14	81	930	0.057
SS05@5	01/22/16	0.017	0.029	0.23	1.1	240	4,300	0.60
SS06@6.5	01/22/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS07@6.5	01/22/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS08@6	01/22/16	<0.0020	<0.0050	0.095	0.51	310	1,600	0.40
SS09@4	01/25/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS10@4	01/25/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS11@4.5	01/25/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS12@5	01/25/16	<0.0020	<0.0050	0.0082	0.026	<50	840	0.033
SS13@5	01/25/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS14@5'	01/26/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS15@5'	04/05/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS15@6.5'	04/05/16	<0.0020	<0.0050	0.016	0.068	280	370	0.19
SS15@8'	04/05/16	0.0048	0.0097	0.12	0.31	630	550	0.56
SS16@5'	04/05/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS16@6.5'	04/05/16	<0.0020	<0.0050	0.028	0.18	720	330	0.20
SS16@8'	04/05/16	<0.0020	<0.0050	0.056	0.36	460	110	0.29
SS17@5'	04/05/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS17@6'	04/05/16	<0.0020	<0.0050	<0.0050	0.58	6,600	540	0.51
SS17@7'	04/05/16	<0.0020	<0.0050	0.20	0.46	620	1,500	0.23
SS18@5'	04/05/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS18@6'	04/05/16	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS18@7'	04/05/16	<0.0020	<0.0050	<0.0050	<0.010	<50	100	0.021

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. - WEBSTER 11-32 WELLHEAD RELEASE

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	12/11/15	<1.0	<1.0	<1.0	<1.0
BH02	12/11/15	<1.0	<1.0	<1.0	<1.0
BH03	12/11/15	<1.0	<1.0	<1.0	<1.0
BH04	12/11/15	<1.0	<1.0	<1.0	<1.0

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 exceed the COGCC Table 910-1 standard

FIGURES

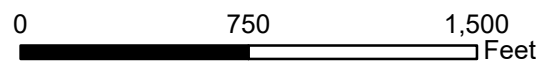
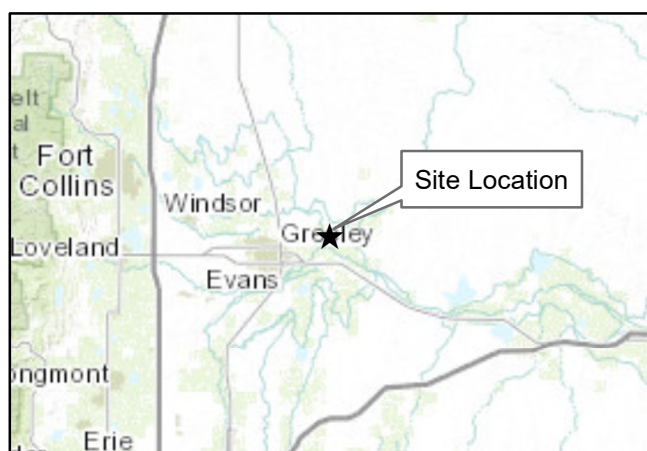
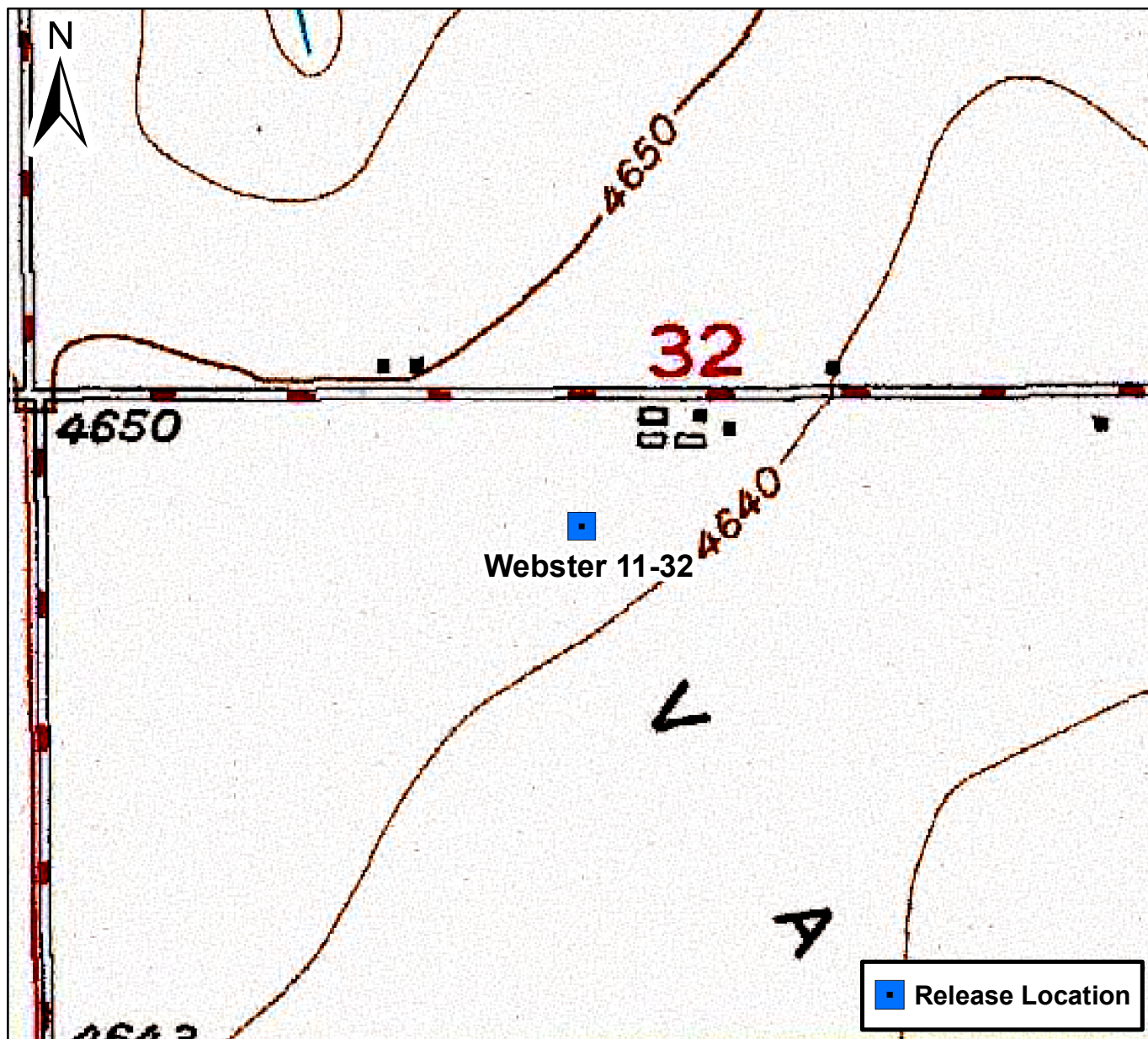



Figure 1

Site Location Map
 Webster 11-32
 NESW S32 T6N R64W
 Weld County, Colorado

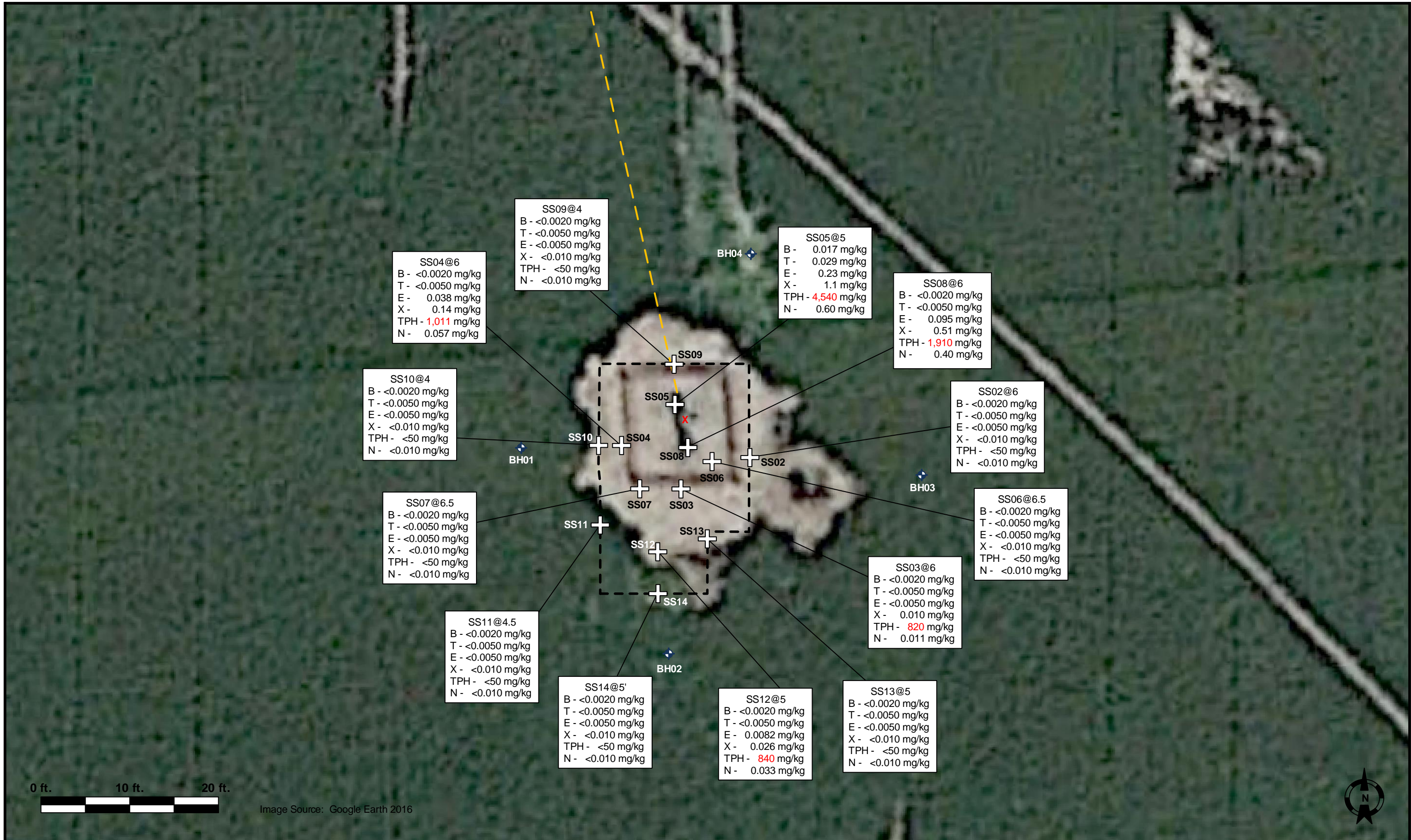




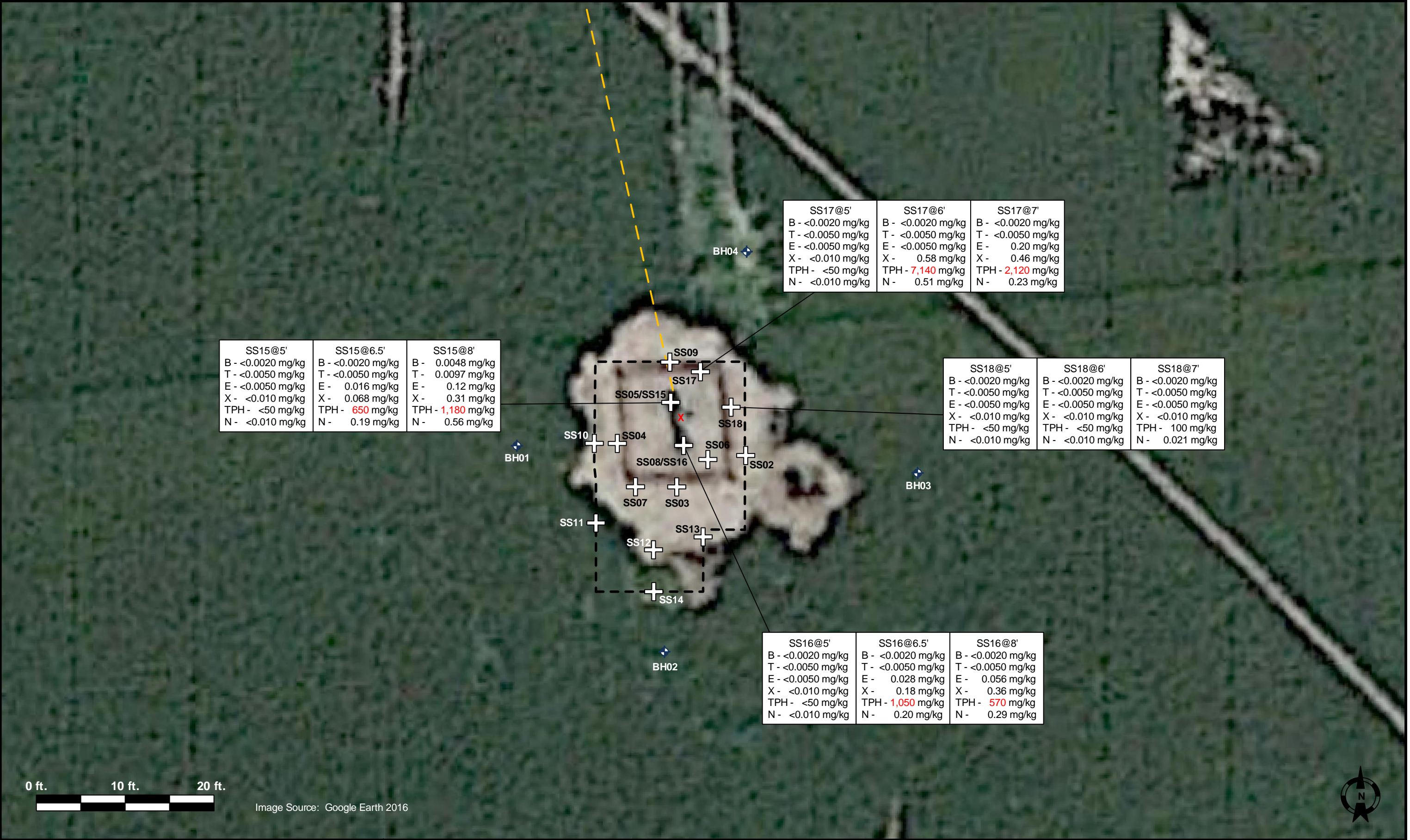
DATE:	03/14/16		Facility Webster 11-32 Weld County, CO	LEGEND: ● Borehole Soil Sample Location X Approximate Area of Release -- Noble Flowline mg/kg Milligrams Per Kilogram	<p>B - Benzene T - Toluene E - Ethylbenzene X - Total Xylenes TPH - Total Petroleum Hydrocarbons N - Naphthalene</p>	Borehole Soil Analytical Results Map (12/09/15) Figure 2
DESIGNED BY:	BAM					
DRAWN BY:	BAM					



DATE:	03/14/16		Facility Webster 11-32 Weld County, CO	LEGEND: Groundwater Monitoring Well Approximate Area of Release Noble Flowline µg/L Micrograms Per Liter	<div>B - Benzene T - Toluene E - Ethylbenzene X - Total Xylenes</div>	Groundwater Analytical Results Map (12/11/15) Figure 3
DESIGNED BY:	BAM					
DRAWN BY:	BAM					



DATE:	03/15/16		Facility Webster 11-32 Weld County, CO	LEGEND: ✚ Excavation Soil Sample Location ⬮ Groundwater Monitoring Well ✖ Approximate Area of Release — Noble Flowline -- Excavation Extent (Approximate) mg/kg Milligrams Per Kilogram	B - Benzene T - Toluene E - Ethylbenzene X - Total Xylenes TPH - Total Petroleum Hydrocarbons N - Naphthalene	Excavation Extent and Sample Location Map Figure 4
DESIGNED BY:	BAM					
DRAWN BY:	RKI					



ATTACHMENT A

BORING LOGS



6899 Pecos Street, Unit C
Denver, Colorado 80221

CLIENT: Noble Energy

LOGGED BY: Brad Marquart

PROJECT MANAGER: Brandon Bruns

DRILLING CONTRACTOR: Elite Drilling

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 2.375

DATE STARTED - COMPLETED: 12/09/15 - 12/09/15

TOTAL WELL DEPTH (FT. BGS): 24

DEPTH TO WATER (FT. BGS): ~19.5

Webster 11-32

BORING / WELL ID: BH01

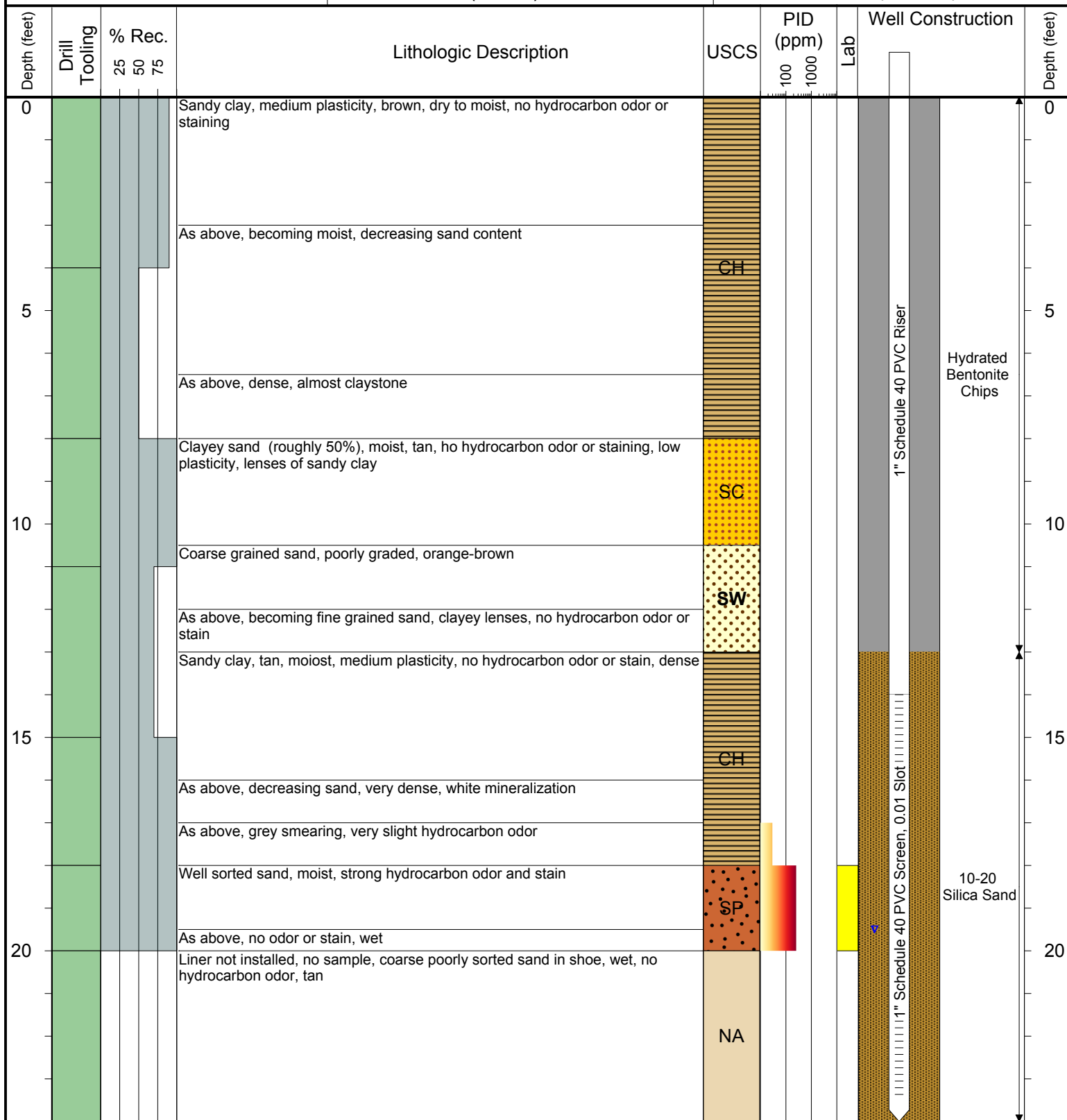
LOCATION: Weld County, Colorado

LATITUDE (DECIMAL DEGREES): 40.441094

LONGITUDE (DECIMAL DEGREES): -104.575861

CASING ELEVATION (FT. AMSL): 4642.6

GROUND ELEVATION (FT. AMSL): 4641.71



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Perforated Injection Tool

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C
Denver, Colorado 80221

CLIENT: Noble Energy

LOGGED BY: Brad Marquart

PROJECT MANAGER: Brandon Bruns

DRILLING CONTRACTOR: Elite Drilling

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 2.375

DATE STARTED - COMPLETED: 12/09/15 - 12/09/15

TOTAL WELL DEPTH (FT. BGS): 24

DEPTH TO WATER (FT. BGS): ~15

Webster 11-32

BORING / WELL ID: BH02

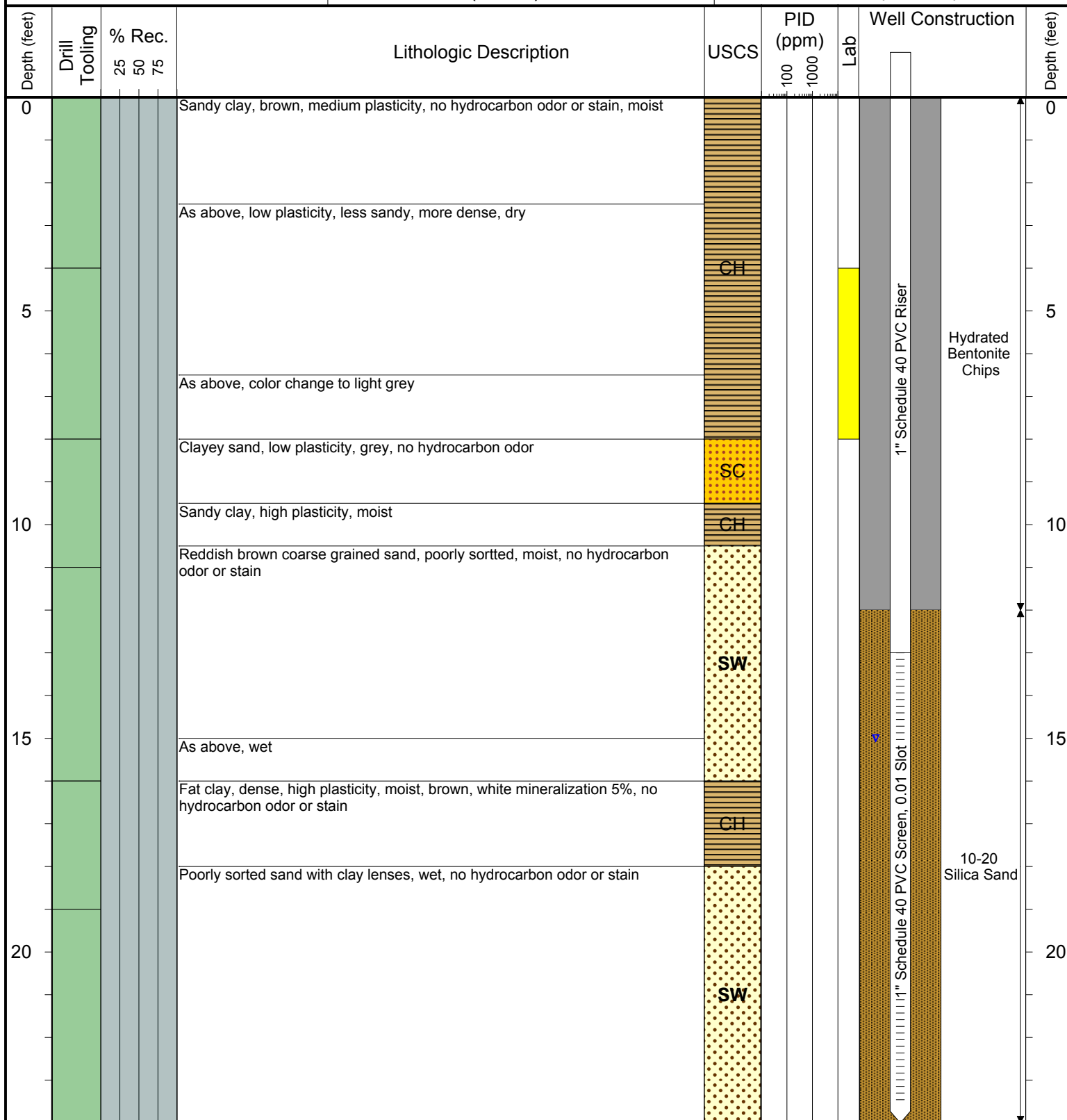
LOCATION: Weld County, Colorado

LATITUDE (DECIMAL DEGREES): 40.44103

LONGITUDE (DECIMAL DEGREES): -104.575802

CASING ELEVATION (FT. AMSL): 4642.47

GROUND ELEVATION (FT. AMSL): 4641.28



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Perforated Injection Tool

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C
Denver, Colorado 80221

CLIENT: Noble Energy

LOGGED BY: Brad Marquart

PROJECT MANAGER: Brandon Bruns

DRILLING CONTRACTOR: Elite Drilling

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 2.375

DATE STARTED - COMPLETED: 12/09/15 - 12/09/15

TOTAL WELL DEPTH (FT. BGS): 23.5

DEPTH TO WATER (FT. BGS): ~20

Webster 11-32

BORING / WELL ID: BH03

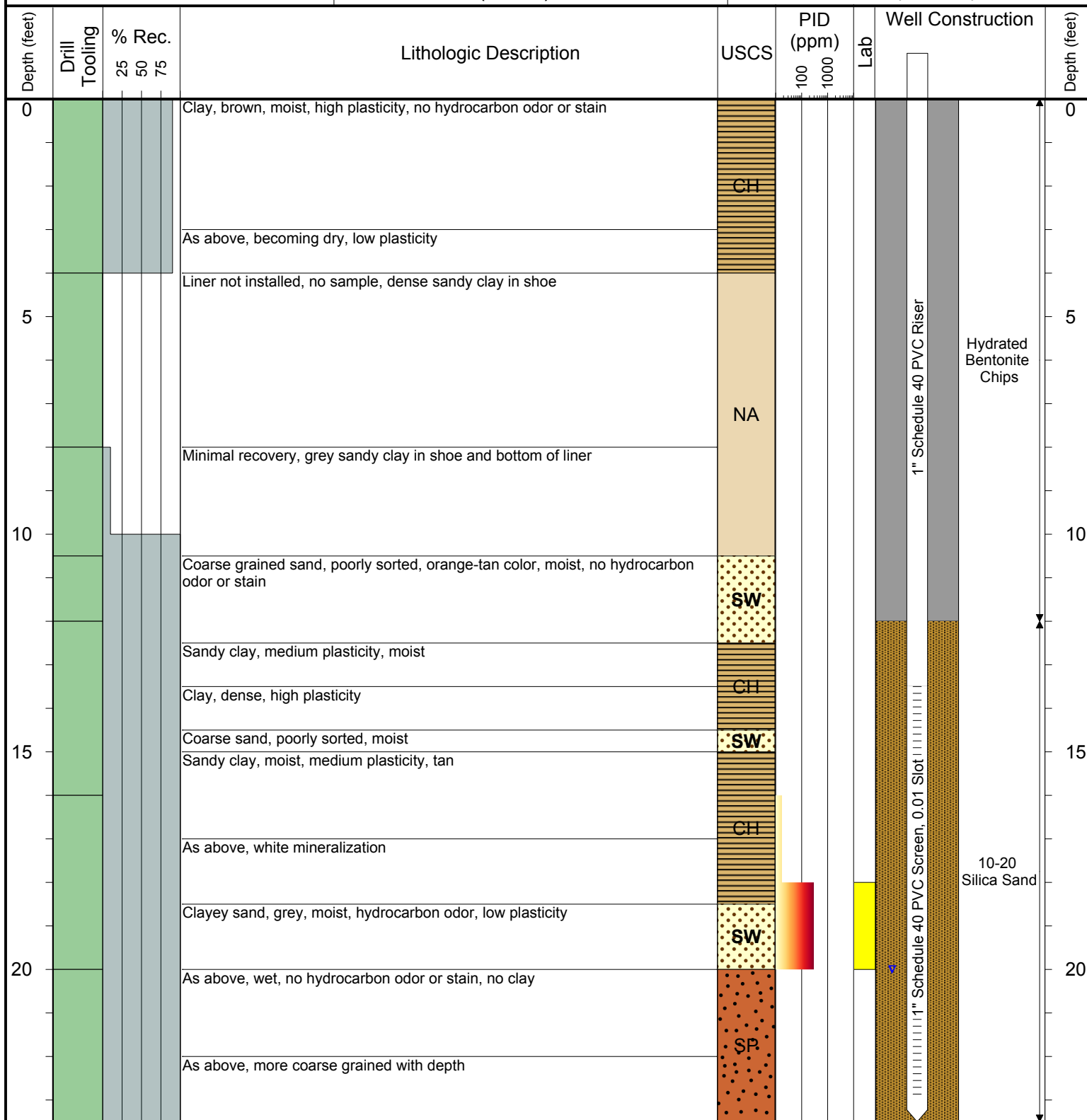
LOCATION: Weld County, Colorado

LATITUDE (DECIMAL DEGREES): 40.441083

LONGITUDE (DECIMAL DEGREES): -104.575699

CASING ELEVATION (FT. AMSL): 4642.85

GROUND ELEVATION (FT. AMSL): 4641.3



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Perforated Injection Tool

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



6899 Pecos Street, Unit C
Denver, Colorado 80221

CLIENT: Noble Energy

LOGGED BY: Brad Marquart

PROJECT MANAGER: Brandon Bruns

DRILLING CONTRACTOR: Elite Drilling

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 2.375

DATE STARTED - COMPLETED: 12/09/15 - 12/09/15

TOTAL WELL DEPTH (FT. BGS): 24

DEPTH TO WATER (FT. BGS): ~20

Webster 11-32

BORING / WELL ID: BH04

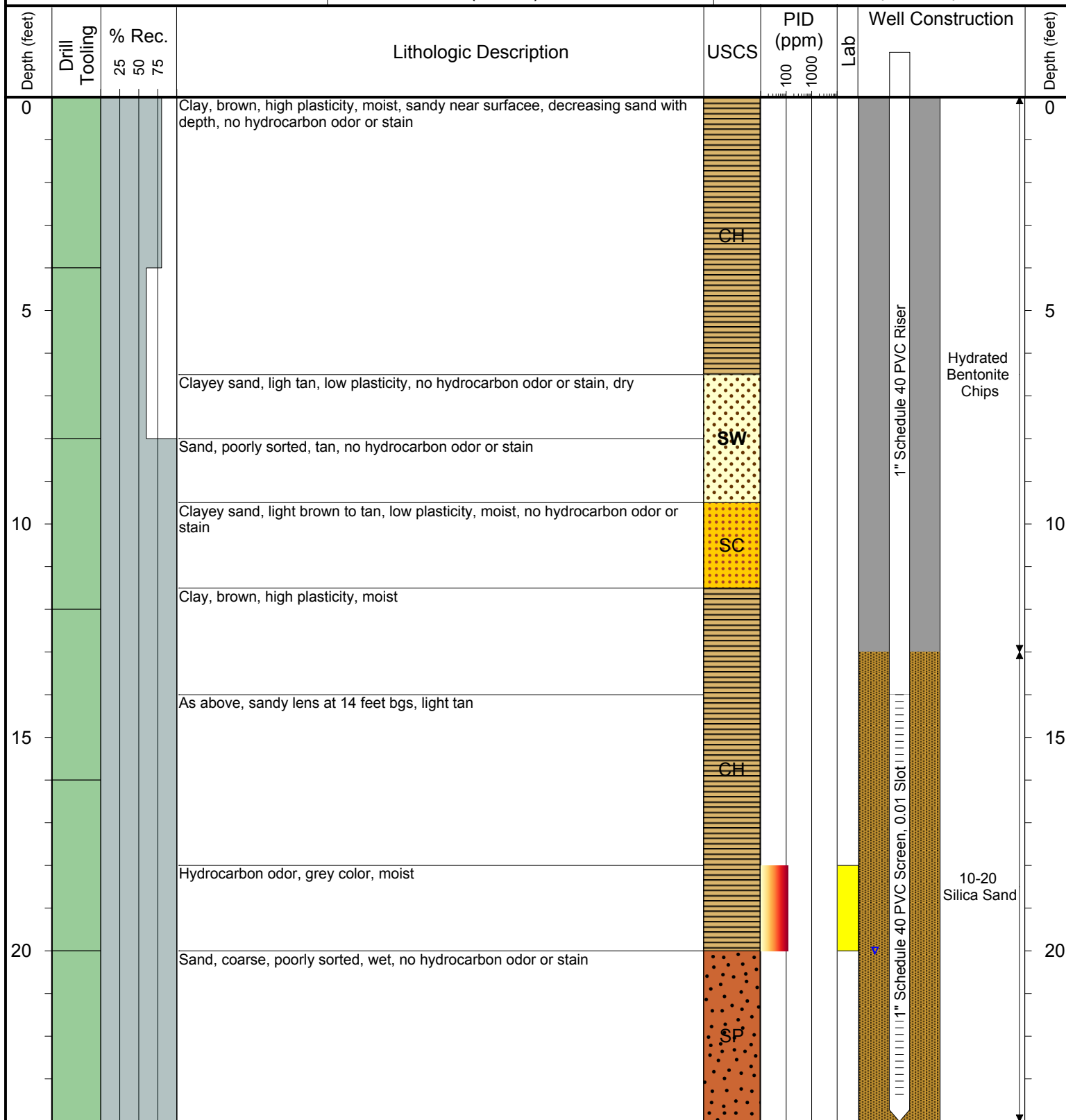
LOCATION: Weld County, Colorado

LATITUDE (DECIMAL DEGREES): 40.441153

LONGITUDE (DECIMAL DEGREES): -104.575768

CASING ELEVATION (FT. AMSL): 4642.62

GROUND ELEVATION (FT. AMSL): 4641.45



Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Perforated Injection Tool

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab

ATTACHMENT B

LABORATORY ANALYTICAL DATA REPORTS

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 10, 2015

Brandon Bruns
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Webster 11-32

Enclosed are the results of analyses for samples received by Summit Scientific on 12/09/15 17:25. 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: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/10/15 06:41

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01@18-20'	1512080-01	Soil	12/09/15 09:34	12/09/15 17:25
BH02@4-8'	1512080-02	Soil	12/09/15 10:30	12/09/15 17:25
BH03@18-20'	1512080-03	Soil	12/09/15 13:45	12/09/15 17:25
BH04@18-20'	1512080-04	Soil	12/09/15 14:45	12/09/15 17:25

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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
12/10/15 06:41

BH01@18-20'
1512080-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/09/15 09:34

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	91	50	mg/kg	1	1512090	12/09/15	12/09/15	8015M	

Date Sampled: 12/09/15 09:34

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.0 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/09/15 09:34

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1512089	12/09/15	12/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 12/09/15 09:34

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		79.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/10/15 06:41

BH02@4-8'
1512080-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/09/15 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1512090	12/09/15	12/10/15	8015M	

Date Sampled: 12/09/15 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.2 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/09/15 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1512089	12/09/15	12/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 12/09/15 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		80.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		89.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.6 %	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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/10/15 06:41

BH03@18-20'
1512080-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/09/15 13:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1512090	12/09/15	12/10/15	8015M	

Date Sampled: 12/09/15 13:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.0 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/09/15 13:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1512089	12/09/15	12/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 12/09/15 13:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.0 %	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
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/10/15 06:41

BH04@18-20'
1512080-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/09/15 14:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	65	50	mg/kg	1	1512090	12/09/15	12/10/15	8015M	

Date Sampled: 12/09/15 14:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.9 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/09/15 14:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1512089	12/09/15	12/09/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 12/09/15 14:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		82.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.1 %	21-167		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
12/10/15 06:41

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1512090 - EPA 3550A

Blank (1512090-BLK1)

Prepared & Analyzed: 12/09/15

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	11.8		"	12.5		94.0	30-150			

LCS (1512090-BS1)

Prepared & Analyzed: 12/09/15

C10-C28 (DRO)	485	50	mg/kg	499		97.3	73-134			
Surrogate: o-Terphenyl	11.8		"	12.5		94.7	30-150			

Matrix Spike (1512090-MS1)

Source: 1512078-01

Prepared & Analyzed: 12/09/15

C10-C28 (DRO)	509	50	mg/kg	459	24.1	106	50-148			
Surrogate: o-Terphenyl	11.7		"	11.5		102	30-150			

Matrix Spike Dup (1512090-MSD1)

Source: 1512078-01

Prepared & Analyzed: 12/09/15

C10-C28 (DRO)	484	50	mg/kg	470	24.1	97.9	50-148	5.10	13	
Surrogate: o-Terphenyl	11.2		"	11.8		95.3	30-150			

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 Street
Denver CO, 80221

Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/10/15 06:41

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 1512089 - EPA 5030 Soil MS

Blank (1512089-BLK1)

Prepared & Analyzed: 12/09/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>		<i>98.6</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0398</i>		<i>"</i>	<i>0.0400</i>		<i>99.6</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>99.9</i>	<i>21-167</i>			

LCS (1512089-BS1)

Prepared & Analyzed: 12/09/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0783	0.0020	"	0.100		78.3	58-130			
Toluene	0.0827	0.0050	"	0.100		82.7	61-134			
Ethylbenzene	0.0988	0.0050	"	0.0992		99.6	74-139			
m,p-Xylene	0.190	0.010	"	0.200		95.4	73-137			
o-Xylene	0.0911	0.0050	"	0.0984		92.6	73-141			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0397</i>		<i>"</i>	<i>0.0400</i>		<i>99.2</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>99.1</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>98.9</i>	<i>21-167</i>			

Matrix Spike (1512089-MS1)

Source: 1512078-01

Prepared & Analyzed: 12/09/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0767	0.0020	"	0.0977	ND	78.5	30-131			
Toluene	0.0816	0.0050	"	0.0977	ND	83.6	30-134			
Ethylbenzene	0.0961	0.0050	"	0.0969	ND	99.2	22-153			
m,p-Xylene	0.185	0.010	"	0.195	ND	94.8	10-159			
o-Xylene	0.0887	0.0050	"	0.0961	ND	92.3	31-151			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0394</i>		<i>"</i>	<i>0.0391</i>		<i>101</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0387</i>		<i>"</i>	<i>0.0391</i>		<i>99.2</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0386</i>		<i>"</i>	<i>0.0391</i>		<i>98.8</i>	<i>21-167</i>			

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 Street
Denver CO, 80221

Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/10/15 06:41

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 1512089 - EPA 5030 Soil MS

Matrix Spike Dup (1512089-MSD1)		Source: 1512078-01			Prepared & Analyzed: 12/09/15					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0755	0.0020	"	0.0982	ND	76.9	30-131	1.57	34	
Toluene	0.0810	0.0050	"	0.0982	ND	82.4	30-134	0.822	30	
Ethylbenzene	0.0953	0.0050	"	0.0974	ND	97.8	22-153	0.855	24	
m,p-Xylene	0.183	0.010	"	0.196	ND	93.4	10-159	0.898	68	
o-Xylene	0.0890	0.0050	"	0.0967	ND	92.1	31-151	0.290	38	
Surrogate: 1,2-Dichloroethane-d4	0.0393		"	0.0393		99.9	23-173			
Surrogate: Toluene-d8	0.0383		"	0.0393		97.3	20-170			
Surrogate: 4-Bromofluorobenzene	0.0379		"	0.0393		96.5	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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/10/15 06:41

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

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 13, 2015

Brandon Bruns
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Webster 11-32

Enclosed are the results of analyses for samples received by Summit Scientific on 12/11/15 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury
President



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/13/15 20:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	1512100-01	Water	12/11/15 12:20	12/11/15 17:00
BH02	1512100-02	Water	12/11/15 12:30	12/11/15 17:00
BH03	1512100-03	Water	12/11/15 12:35	12/11/15 17:00
BH04	1512100-04	Water	12/11/15 12:41	12/11/15 17:00

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.

Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/13/15 20:15

Summit Scientific

512100

741 Corporate Circle Suite I ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-277-9531 Fax

Client: Noble

Page 1 of 1

Address:

Project Manager: Brandon Bruns Invoice: Jacob Evans

City/State/Zip:

E-Mail:

Phone: 970 470 9042 Fax:

Project Name: Webster 11-32

Sampler Name: Rob Irvin

Project Number:

[illegible]

www.s2scientific.com

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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
12/13/15 20:15

BH01
1512100-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/11/15 12:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1512115	12/12/15	12/12/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: 12/11/15 12:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		96.9 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.9 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	45-146		"	"	"	"	

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 Street
Denver CO, 80221

Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
12/13/15 20:15

BH02
1512100-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/11/15 12:30

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	1512115	12/12/15	12/12/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: 12/11/15 12:30

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		99.2 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.2 %	45-146		"	"	"	"	

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 Street
Denver CO, 80221

Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
12/13/15 20:15

BH03
1512100-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/11/15 12:35

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1512115	12/12/15	12/12/15	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	1.0		"	"	"	"	"	"	

Date Sampled: 12/11/15 12:35

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		97.0 %		37-154		"	"	"	"	
Surrogate: Toluene-d8		98.3 %		45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %		45-146		"	"	"	"	

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 Street
Denver CO, 80221

Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
12/13/15 20:15

BH04
1512100-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/11/15 12:41

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1512115	12/12/15	12/12/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: 12/11/15 12:41

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.5 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	45-146		"	"	"	"	

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 Street
Denver CO, 80221

Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/13/15 20:15

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 1512115 - EPA 5030 Water MS

Blank (1512115-BLK1)

Prepared & Analyzed: 12/11/15

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	12.9		"	13.3		96.5	37-154			
Surrogate: Toluene-d8	13.3		"	13.3		99.5	45-149			
Surrogate: 4-Bromofluorobenzene	13.7		"	13.3		103	45-146			

LCS (1512115-BS1)

Prepared & Analyzed: 12/11/15

Benzene	46.3	1.0	ug/l	50.0		92.6	51-132			
Toluene	46.0	1.0	"	50.0		92.1	51-138			
Ethylbenzene	44.3	1.0	"	50.0		88.6	58-146			
m,p-Xylene	87.4	2.0	"	100		87.4	57-144			
o-Xylene	44.6	1.0	"	50.0		89.1	53-146			
Surrogate: 1,2-Dichloroethane-d4	12.6		"	13.3		94.4	37-154			
Surrogate: Toluene-d8	13.3		"	13.3		99.9	45-149			
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3		101	45-146			

Matrix Spike (1512115-MS1)

Source: 1512066-01

Prepared & Analyzed: 12/11/15

Benzene	51.4	1.0	ug/l	50.0	ND	103	34-141			
Toluene	51.4	1.0	"	50.0	ND	103	27-151			
Ethylbenzene	50.6	1.0	"	50.0	ND	101	29-160			
m,p-Xylene	98.2	2.0	"	100	ND	98.2	20-166			
o-Xylene	49.3	1.0	"	50.0	ND	98.5	33-159			
Surrogate: 1,2-Dichloroethane-d4	11.3		"	13.3		85.1	37-154			
Surrogate: Toluene-d8	13.2		"	13.3		99.4	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.2	45-146			

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 Street
Denver CO, 80221

Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
12/13/15 20:15

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 1512115 - EPA 5030 Water MS

Matrix Spike Dup (1512115-MSD1)	Source: 1512066-01			Prepared & Analyzed: 12/11/15						
Benzene	52.5	1.0	ug/l	50.0	ND	105	34-141	2.04	32	
Toluene	52.1	1.0	"	50.0	ND	104	27-151	1.49	25	
Ethylbenzene	52.1	1.0	"	50.0	ND	104	29-160	2.94	50	
m,p-Xylene	101	2.0	"	100	ND	101	20-166	2.90	36	
o-Xylene	51.8	1.0	"	50.0	ND	104	33-159	4.99	26	
Surrogate: 1,2-Dichloroethane-d4	11.7		"	13.3		88.1	37-154			
Surrogate: Toluene-d8	13.3		"	13.3		99.8	45-149			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		95.7	45-146			

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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
12/13/15 20:15

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

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

January 24, 2016

Raul Sanchez
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Webster 11-32

Enclosed are the results of analyses for samples received by Summit Scientific on 01/22/16 17:45. 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, flowing script.

Paul Shrewsbury
President



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Raul Sanchez

Reported:
01/24/16 15:41

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS02@6	1601188-01	Soil	01/22/16 13:22	01/22/16 17:45
SS03@6	1601188-02	Soil	01/22/16 13:24	01/22/16 17:45
SS04@6	1601188-03	Soil	01/22/16 13:26	01/22/16 17:45
SS05@5	1601188-04	Soil	01/22/16 13:28	01/22/16 17:45
SS06@6.5	1601188-05	Soil	01/22/16 13:38	01/22/16 17:45
SS07@6.5	1601188-06	Soil	01/22/16 13:40	01/22/16 17:45
SS08@6	1601188-07	Soil	01/22/16 13:50	01/22/16 17:45

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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Raul Sanchez

Reported:
01/24/16 15:41

SS02@6
1601188-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 01/22/16 13:22

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1601228	01/22/16	01/23/16	8015M	

Date Sampled: 01/22/16 13:22

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		88.1 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 01/22/16 13:22

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1601229	01/22/16	01/22/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 01/22/16 13:22

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.4 %	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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Raul Sanchez

Reported:
01/24/16 15:41

SS03@6
1601188-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 01/22/16 13:24

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	820	50	mg/kg	1	1601228	01/22/16	01/23/16	8015M	

Date Sampled: 01/22/16 13:24

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.4 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 01/22/16 13:24

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.011	0.010	mg/kg	1	1601229	01/22/16	01/22/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.010	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 01/22/16 13:24

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Raul Sanchez

Reported:
01/24/16 15:41

SS04@6
1601188-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/22/16 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	930	50	mg/kg	1	1601228	01/22/16	01/23/16	8015M	

Date Sampled: **01/22/16 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		96.8 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/22/16 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.057	0.010	mg/kg	1	1601229	01/22/16	01/22/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.038	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.14	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	81	50	"	"	"	"	"	"	

Date Sampled: **01/22/16 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		125 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		124 %	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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Raul Sanchez

Reported:
01/24/16 15:41

SS05@5
1601188-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 01/22/16 13:28

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	4300	50	mg/kg	1	1601228	01/22/16	01/23/16	8015M	

Date Sampled: 01/22/16 13:28

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		139 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 01/22/16 13:28

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.60	0.010	mg/kg	1	1601229	01/22/16	01/23/16	EPA 8260B	
Benzene	0.017	0.0020	"	"	"	"	"	"	
Toluene	0.029	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.23	0.0050	"	"	"	"	"	"	
Xylenes (total)	1.1	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	240	50	"	"	"	"	"	"	

Date Sampled: 01/22/16 13:28

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		80.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		194 %	20-170		"	"	"	"	S-02
Surrogate: 4-Bromofluorobenzene		368 %	21-167		"	"	"	"	S-02

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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Raul Sanchez

Reported:
01/24/16 15:41

SS06@6.5
1601188-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 01/22/16 13:38

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1601228	01/22/16	01/23/16	8015M	

Date Sampled: 01/22/16 13:38

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.2 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 01/22/16 13:38

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1601229	01/22/16	01/23/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 01/22/16 13:38

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.3 %	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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Raul Sanchez

Reported:
01/24/16 15:41

SS07@6.5
1601188-06 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 01/22/16 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1601228	01/22/16	01/23/16	8015M	

Date Sampled: 01/22/16 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		88.4 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 01/22/16 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1601229	01/22/16	01/23/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 01/22/16 13:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Raul Sanchez

Reported:
01/24/16 15:41

SS08@6
1601188-07 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 01/22/16 13:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1600	50	mg/kg	1	1601228	01/22/16	01/23/16	8015M	

Date Sampled: 01/22/16 13:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.9 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 01/22/16 13:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.40	0.010	mg/kg	1	1601229	01/22/16	01/22/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.095	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.51	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	310	50	"	"	"	"	"	"	

Date Sampled: 01/22/16 13:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		124 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		249 %	21-167		"	"	"	"	S-02

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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Raul Sanchez

Reported:
01/24/16 15:41

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1601228 - EPA 3550A

Blank (1601228-BLK1)

Prepared: 01/22/16 Analyzed: 01/23/16

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 11.0 " 12.5 87.6 30-150

LCS (1601228-BS1)

Prepared: 01/22/16 Analyzed: 01/23/16

C10-C28 (DRO) 415 50 mg/kg 499 83.1 73-134

Surrogate: o-Terphenyl 11.2 " 12.5 89.7 30-150

Matrix Spike (1601228-MS1)

Source: 1601188-01

Prepared: 01/22/16 Analyzed: 01/23/16

C10-C28 (DRO) 411 50 mg/kg 473 16.5 83.4 50-148

Surrogate: o-Terphenyl 10.6 " 11.9 89.6 30-150

Matrix Spike Dup (1601228-MSD1)

Source: 1601188-01

Prepared: 01/22/16 Analyzed: 01/23/16

C10-C28 (DRO) 430 50 mg/kg 467 16.5 88.5 50-148 4.49 13

Surrogate: o-Terphenyl 10.6 " 11.7 90.3 30-150

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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Raul Sanchez

Reported:
01/24/16 15:41

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 1601229 - EPA 5030 Soil MS

Blank (1601229-BLK1)

Prepared & Analyzed: 01/22/16

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0420		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.7	20-170			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.8	21-167			

LCS (1601229-BS1)

Prepared & Analyzed: 01/22/16

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.113	0.0020	"	0.100		113	58-130			
Toluene	0.122	0.0050	"	0.100		122	61-134			
Ethylbenzene	0.130	0.0050	"	0.0992		131	74-139			
m,p-Xylene	0.245	0.010	"	0.200		123	73-137			
o-Xylene	0.119	0.0050	"	0.0984		121	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0400		99.6	23-173			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.6	21-167			

Matrix Spike (1601229-MS1)

Source: 1601188-01

Prepared & Analyzed: 01/22/16

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.111	0.0020	"	0.0949	ND	117	30-131			
Toluene	0.118	0.0050	"	0.0949	ND	125	30-134			
Ethylbenzene	0.129	0.0050	"	0.0941	ND	137	22-153			
m,p-Xylene	0.244	0.010	"	0.189	ND	129	10-159			
o-Xylene	0.119	0.0050	"	0.0934	ND	128	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0380		107	23-173			
Surrogate: Toluene-d8	0.0383		"	0.0380		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0379		"	0.0380		99.8	21-167			

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Raul Sanchez

Reported:
01/24/16 15:41

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 1601229 - EPA 5030 Soil MS

Matrix Spike Dup (1601229-MSD1)		Source: 1601188-01			Prepared & Analyzed: 01/22/16					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.108	0.0020	"	0.0924	ND	117	30-131	2.47	34	
Toluene	0.114	0.0050	"	0.0924	ND	124	30-134	3.25	30	
Ethylbenzene	0.127	0.0050	"	0.0917	ND	139	22-153	1.44	24	
m,p-Xylene	0.239	0.010	"	0.184	ND	129	10-159	2.23	68	
o-Xylene	0.116	0.0050	"	0.0909	ND	127	31-151	3.00	38	
Surrogate: 1,2-Dichloroethane-d4	0.0386		"	0.0370		104	23-173			
Surrogate: Toluene-d8	0.0365		"	0.0370		98.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0371		"	0.0370		100	21-167			

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Raul Sanchez

Reported:
01/24/16 15:41

Notes and Definitions

S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

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

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.

A handwritten signature in black ink, appearing to be 'MSM'.

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

January 26, 2016

Brandon Bruns
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Webster 11-32

Enclosed are the results of analyses for samples received by Summit Scientific on 01/25/16 16:17. 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: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/26/16 07:07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS09@4	1601206-01	Soil	01/25/16 14:10	01/25/16 16:17
SS10@4	1601206-02	Soil	01/25/16 14:13	01/25/16 16:17
SS11@4.5	1601206-03	Soil	01/25/16 14:15	01/25/16 16:17
SS12@5	1601206-04	Soil	01/25/16 14:20	01/25/16 16:17
SS13@5	1601206-05	Soil	01/25/16 14:23	01/25/16 16:17

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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/26/16 07:07

Summit Scientific

1601206

741 Corporate Circle Suite I • Golden, Colorado 80401
303-277-9310 • 303-277-9531 Fax

Client: NOBLE HARMAN

Page 1 of 1

Address:

Project Manager: BENJAMIN BRUNS ANDRE PAUL SANCHEZ

City/State/Zip: _____

E-Mail:

Phone:

Fax:

Project Name: INSTRP 1-32

Sampler Name: FRANCO BOWS

Project Number:

				Preservative		Matrix		Analyze For:												
Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)									Special Instructions
SS09 C 4	1/25/16	140	1		X			X			SS09 C 4 + 1000									
SS10 C 4	1/25/16	1413	1		X			X			SS10 C 4 + 1000									
SS11 C 4.5	1/25/16	1415	1		X			X			SS11 C 4.5 + 1000									
SS12 C 5	1/25/16	1420	1		X			X			SS12 C 5 + 1000									
SS13 C 5	1/25/16	1423	1		X			X			SS13 C 5 + 1000									
Relinquished by: T. B. Rogers				Date/Time: 1/25/16 AM		Received by: [Signature]		Date/Time: 1/25/16 PM 12:20		Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 Hours <input type="checkbox"/>										Notes: on 100
Relinquished by:				Date/Time:		Received by:		Date/Time:		Sample Integrity: Temperature Upon Receipt: 5.9 Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>										
Relinquished by:				Date/Time:		Received in Lab by:		Date/Time:												

www.s2scientific.com

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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/26/16 07:07

SS09@4
1601206-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 01/25/16 14:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1601250	01/25/16	01/25/16	8015M	

Date Sampled: 01/25/16 14:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.6 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 01/25/16 14:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1601249	01/25/16	01/25/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 01/25/16 14:10

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.8 %	21-167		"	"	"	"	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/26/16 07:07

SS10@4
1601206-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/25/16 14:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1601250	01/25/16	01/25/16	8015M	

Date Sampled: **01/25/16 14:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.5 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/25/16 14:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1601249	01/25/16	01/25/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/25/16 14:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/26/16 07:07

SS11@4.5
1601206-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/25/16 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1601250	01/25/16	01/25/16	8015M	

Date Sampled: **01/25/16 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		97.7 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/25/16 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1601249	01/25/16	01/25/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/25/16 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/26/16 07:07

SS12@5
1601206-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 01/25/16 14:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	840	50	mg/kg	1	1601250	01/25/16	01/25/16	8015M	

Date Sampled: 01/25/16 14:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		107 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 01/25/16 14:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.033	0.010	mg/kg	1	1601249	01/25/16	01/25/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0082	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.026	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 01/25/16 14:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/26/16 07:07

SS13@5
1601206-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/25/16 14:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1601250	01/25/16	01/25/16	8015M	

Date Sampled: **01/25/16 14:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.7 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/25/16 14:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1601249	01/25/16	01/25/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **01/25/16 14:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/26/16 07:07

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1601250 - EPA 3550A

Blank (1601250-BLK1)

Prepared: 01/25/16 Analyzed: 01/26/16

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 11.2 " 12.5 89.6 30-150

LCS (1601250-BS1)

Prepared: 01/25/16 Analyzed: 01/26/16

C10-C28 (DRO) 461 50 mg/kg 499 92.4 73-134

Surrogate: o-Terphenyl 11.4 " 12.5 91.3 30-150

Matrix Spike (1601250-MS1)

Source: 1601204-01

Prepared: 01/25/16 Analyzed: 01/26/16

C10-C28 (DRO) 466 50 mg/kg 471 11.4 96.6 50-148

Surrogate: o-Terphenyl 11.7 " 11.8 99.3 30-150

Matrix Spike Dup (1601250-MSD1)

Source: 1601204-01

Prepared: 01/25/16 Analyzed: 01/26/16

C10-C28 (DRO) 458 50 mg/kg 487 11.4 91.6 50-148 1.82 13

Surrogate: o-Terphenyl 11.3 " 12.2 92.4 30-150

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 Street
Denver CO, 80221

Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/26/16 07:07

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 1601249 - EPA 5030 Soil MS

Blank (1601249-BLK1)

Prepared: 01/25/16 Analyzed: 01/26/16

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0405		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	21-167			

LCS (1601249-BS1)

Prepared: 01/25/16 Analyzed: 01/26/16

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.130	0.0020	"	0.100		130	58-130			
Toluene	0.132	0.0050	"	0.100		132	61-134			
Ethylbenzene	0.137	0.0050	"	0.0992		138	74-139			
m,p-Xylene	0.257	0.010	"	0.200		129	73-137			
o-Xylene	0.124	0.0050	"	0.0984		126	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0402		"	0.0400		100	23-173			
Surrogate: Toluene-d8	0.0410		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.8	21-167			

Matrix Spike (1601249-MS1)

Source: 1601205-01

Prepared: 01/25/16 Analyzed: 01/26/16

Naphthalene	ND	0.010	mg/kg		0.0208		10-158			
Benzene	0.126	0.0020	"	0.0956	ND	132	30-131			
Toluene	0.127	0.0050	"	0.0956	0.0158	117	30-134			
Ethylbenzene	0.134	0.0050	"	0.0948	0.00725	133	22-153			
m,p-Xylene	0.253	0.010	"	0.191	0.0801	90.5	10-159			
o-Xylene	0.121	0.0050	"	0.0941	0.0340	92.9	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0401		"	0.0382		105	23-173			
Surrogate: Toluene-d8	0.0390		"	0.0382		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0385		"	0.0382		101	21-167			

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/26/16 07:07

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 1601249 - EPA 5030 Soil MS

Matrix Spike Dup (1601249-MSD1)		Source: 1601205-01			Prepared: 01/25/16		Analyzed: 01/26/16			
Naphthalene	ND	0.010	mg/kg		0.0208		10-158		42	
Benzene	0.132	0.0020	"	0.0992	ND	133	30-131	4.99	34	
Toluene	0.132	0.0050	"	0.0992	0.0158	117	30-134	3.47	30	
Ethylbenzene	0.140	0.0050	"	0.0984	0.00725	135	22-153	4.94	24	
m,p-Xylene	0.264	0.010	"	0.198	0.0801	93.0	10-159	4.45	68	
o-Xylene	0.128	0.0050	"	0.0976	0.0340	96.3	31-151	5.32	38	
Surrogate: 1,2-Dichloroethane-d4	0.0425		"	0.0397		107	23-173			
Surrogate: Toluene-d8	0.0391		"	0.0397		98.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0397		99.7	21-167			

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/26/16 07:07

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

Summit Scientific

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A handwritten signature in black ink, appearing to be 'MSM'.

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

January 27, 2016

Brandon Bruns
Noble Energy
804 Grand Avenue
Platteville, CO 80651
RE: Webster 11-32

Enclosed are the results of analyses for samples received by Summit Scientific on 01/26/16 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury
President

Noble Energy
804 Grand Avenue
Platteville CO, 80651

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/27/16 06:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS14@5'	1601213-01	Soil	01/26/16 12:30	01/26/16 16:00

Summit Scientific 160/213

741 Corporate Circle Suite I • Golden, Colorado 80401
303-277-9310 • 303-277-9531 Fax

Client: Noble
Address:
City/State/Zip:
Phone: 970 470 0042 Fax:
Sampler Name: Rob Irwin

Project Manager: Brandon Bruns Invoice Paul Sanchez
E-Mail: _____
Project Name: Webster 11-32
Project Number: _____

Page of

				Preservative		Matrix		Analyze For:													
Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)									Special Instructions	
S514051	11/26/16	1230	1			X			X			X	X								
Relinquished by: 	Date/Time:	Received by:		Date/Time:		Turn Around Time (Check)				Notes: on ice											
Refused by:	Date/Time:	Received by:		Date/Time:		Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 Hours <input type="checkbox"/>															
Relinquished by:	Date/Time:	Received in Lab by:		Date/Time:		Sample Integrity: Temperature Upon Receipt: _____ Intact: Yes <input type="checkbox"/> No <input type="checkbox"/>															

www.s2scientific.com

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





Noble Energy
804 Grand Avenue
Platteville CO, 80651

Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/27/16 06:34

SS14@5'
1601213-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 01/26/16 12:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1601255	01/26/16	01/26/16	8015M	

Date Sampled: 01/26/16 12:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		89.8 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 01/26/16 12:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1601256	01/26/16	01/26/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 01/26/16 12:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		121 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	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.



Noble Energy
804 Grand Avenue
Platteville CO, 80651

Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/27/16 06:34

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1601255 - EPA 3550A

Blank (1601255-BLK1)

Prepared: 01/26/16 Analyzed: 01/27/16

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 11.1 " 12.5 88.8 30-150

LCS (1601255-BS1)

Prepared: 01/26/16 Analyzed: 01/27/16

C10-C28 (DRO) 437 50 mg/kg 499 87.5 73-134

Surrogate: o-Terphenyl 11.4 " 12.5 91.0 30-150

Matrix Spike (1601255-MS1)

Source: 1601198-01

Prepared: 01/26/16 Analyzed: 01/27/16

C10-C28 (DRO) 594 50 mg/kg 473 125 50-148

Surrogate: o-Terphenyl 11.1 " 11.9 93.4 30-150

Matrix Spike Dup (1601255-MSD1)

Source: 1601198-01

Prepared: 01/26/16 Analyzed: 01/27/16

C10-C28 (DRO) 654 50 mg/kg 487 134 50-148 9.72 13

Surrogate: o-Terphenyl 11.6 " 12.2 94.6 30-150

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.



Noble Energy
804 Grand Avenue
Platteville CO, 80651

Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/27/16 06:34

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 1601256 - EPA 5030 Soil MS

Blank (1601256-BLK1)

Prepared: 01/26/16 Analyzed: 01/27/16

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0462		"	0.0400		116	23-173			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	21-167			

LCS (1601256-BS1)

Prepared: 01/26/16 Analyzed: 01/27/16

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0887	0.0020	"	0.100		88.7	58-130			
Toluene	0.0885	0.0050	"	0.100		88.5	61-134			
Ethylbenzene	0.108	0.0050	"	0.0992		109	74-139			
m,p-Xylene	0.207	0.010	"	0.200		104	73-137			
o-Xylene	0.0970	0.0050	"	0.0984		98.5	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0452		"	0.0400		113	23-173			
Surrogate: Toluene-d8	0.0401		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		98.1	21-167			

Matrix Spike (1601256-MS1)

Source: 1601198-01

Prepared: 01/26/16 Analyzed: 01/27/16

Naphthalene	0.00401	0.010	mg/kg		ND		10-158			
Benzene	0.0870	0.0020	"	0.0969	ND	89.8	30-131			
Toluene	0.0890	0.0050	"	0.0969	ND	91.9	30-134			
Ethylbenzene	0.102	0.0050	"	0.0961	ND	107	22-153			
m,p-Xylene	0.197	0.010	"	0.193	ND	102	10-159			
o-Xylene	0.0924	0.0050	"	0.0953	ND	96.9	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0474		"	0.0388		122	23-173			
Surrogate: Toluene-d8	0.0391		"	0.0388		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0388		100	21-167			

Summit Scientific

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



Noble Energy
804 Grand Avenue
Platteville CO, 80651

Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/27/16 06:34

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 1601256 - EPA 5030 Soil MS

Matrix Spike Dup (1601256-MSD1)			Source: 1601198-01		Prepared: 01/26/16		Analyzed: 01/27/16			
Naphthalene	ND	0.010	mg/kg		ND		10-158			42
Benzene	0.0913	0.0020	"	0.0988	ND	92.4	30-131	4.82		34
Toluene	0.0954	0.0050	"	0.0988	ND	96.5	30-134	6.86		30
Ethylbenzene	0.110	0.0050	"	0.0980	ND	112	22-153	6.69		24
m,p-Xylene	0.208	0.010	"	0.197	ND	105	10-159	5.43		68
o-Xylene	0.0988	0.0050	"	0.0972	ND	102	31-151	6.72		38
Surrogate: 1,2-Dichloroethane-d4	0.0497		"	0.0395		126	23-173			
Surrogate: Toluene-d8	0.0397		"	0.0395		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0395		100	21-167			

Summit Scientific

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Noble Energy
804 Grand Avenue
Platteville CO, 80651

Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/27/16 06:34

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

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.

A handwritten signature in black ink, appearing to be 'MSM'.

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

April 07, 2016

Brandon Bruns
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Webster 11-32

Enclosed are the results of analyses for samples received by Summit Scientific on 04/05/16 17:45. 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: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/07/16 13:28

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS15@5'	1604027-01	Soil	04/05/16 11:55	04/05/16 17:45
SS15@6.5'	1604027-02	Soil	04/05/16 10:15	04/05/16 17:45
SS15@8'	1604027-03	Soil	04/05/16 11:30	04/05/16 17:45
SS16@5'	1604027-04	Soil	04/05/16 11:50	04/05/16 17:45
SS16@6.5'	1604027-05	Soil	04/05/16 10:25	04/05/16 17:45
SS16@8'	1604027-06	Soil	04/05/16 11:35	04/05/16 17:45
SS17@5'	1604027-07	Soil	04/05/16 11:40	04/05/16 17:45
SS17@6'	1604027-08	Soil	04/05/16 10:35	04/05/16 17:45
SS17@7'	1604027-09	Soil	04/05/16 11:25	04/05/16 17:45
SS18@5'	1604027-10	Soil	04/05/16 11:45	04/05/16 17:45
SS18@6'	1604027-11	Soil	04/05/16 10:05	04/05/16 17:45
SS18@7'	1604027-12	Soil	04/05/16 11:15	04/05/16 17:45

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.

Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/07/16 13:28

Summit Scientific 1604027.1

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

Page 1 of 2

Client: Tashan

Address:

City/State/Zip:

Phone:

Fax:

Sampler Name: M.H.P.

Project Manager: Brandon Bruns

E-Mail: bbruns@fasman-geo.com

Project Name: Webster 11-32

Project Number:

				Preservative		Matrix		Analyze For:				
Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	Special Instructions
SS1505'	4/5/16	11:55	1		X				X		GTEXN (8260)	SS1508 on hold
SS1506.5'		10:15									X	
SS1508'		11:30									X	
SS1605'		11:50									X	
SS1606.5'		10:25									X	
SS1608'		11:35									X	
SS1705'		11:40									X	
SS1706'		10:35									X	
SS1707'		11:25									X	SS1608 on hold
SS1805'		11:45									X	SS1707 on hold
Relinquished by: <i>[Signature]</i>	Date/Time: 4/5/16 1700	Received by: <i>[Signature]</i>	Date/Time: 4/5/16 1700	Turn Around Time (Check)				Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/>		Notes: Please hold these 4 samples pending results		
Relinquished by: <i>[Signature]</i>	Date/Time: 4/5/16 1745	Received by:	Date/Time:	48 Hours <input type="checkbox"/>				Standard <input type="checkbox"/>		SS1508, SS1608, SS1707 on hold		
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	Sample Integrity: 4.4°C				Temperature Upon Receipt: Yes <input type="checkbox"/> No <input type="checkbox"/>		on hold		

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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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/07/16 13:28

Summit Scientific 1604027-2

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

Page 2 of 2

Client: TAsman
Address:
City/State/Zip:
Phone: Fax:
Sampler Name: Matt P

Project Manager: Brandon Bruns
E-Mail: bbruns@fasman-gen.com
Project Name: Webster II-32
Project Number:

				Preservative		Matrix		Analyze For:											
Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)								Special Instructions
SS18@6'	4/5/16	10:05	1			X			X			G BY EX N (8260)							SS18@7' on hold
SS18@7'	4/5/16	11:15	1			X			X			X	X						
Relinquished by: 	Date/Time: 4/5/16 1700	Received by: 	Date/Time: 4/5/16 1700	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 Hours <input type="checkbox"/>				Notes: ON ICE											
Relinquished by: 	Date/Time: 4/5/16 1745	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: 4.4°C Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>															
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:																

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





Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/07/16 13:28

SS15@5'
1604027-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 04/05/16 11:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1604048	04/05/16	04/05/16	8015M	

Date Sampled: 04/05/16 11:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		111 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 04/05/16 11:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1604047	04/05/16	04/05/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 04/05/16 11:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		96.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.5 %	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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
04/07/16 13:28

SS15@6.5'
1604027-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/05/16 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	370	50	mg/kg	1	1604048	04/05/16	04/05/16	8015M	

Date Sampled: **04/05/16 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		116 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/05/16 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.19	0.010	mg/kg	1	1604047	04/05/16	04/05/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.016	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.068	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	280	50	"	10	"	"	04/05/16	"	

Date Sampled: **04/05/16 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	23-173		"	"	04/05/16	"	
<i>Surrogate: Toluene-d8</i>		100 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		159 %	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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
04/07/16 13:28

SS15@8'
1604027-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/05/16 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	550	50	mg/kg	1	1604052	04/06/16	04/06/16	8015M	

Date Sampled: **04/05/16 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		115 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/05/16 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.56	0.010	mg/kg	1	1604053	04/06/16	04/06/16	EPA 8260B	
Benzene	0.0048	0.0020	"	"	"	"	"	"	
Toluene	0.0097	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.12	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.31	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	630	50	"	10	"	"	"	"	

Date Sampled: **04/05/16 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		94.0 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		75.1 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		244 %	21-167		"	"	"	"	S-02

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
04/07/16 13:28

SS16@5'
1604027-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 04/05/16 11:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1604048	04/05/16	04/05/16	8015M	

Date Sampled: 04/05/16 11:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		109 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 04/05/16 11:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1604047	04/05/16	04/05/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 04/05/16 11:50

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
04/07/16 13:28

SS16@6.5'
1604027-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/05/16 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	330	50	mg/kg	1	1604048	04/05/16	04/05/16	8015M	

Date Sampled: **04/05/16 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		112 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/05/16 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.20	0.010	mg/kg	1	1604047	04/05/16	04/05/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.028	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.18	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	720	50	"	10	"	"	04/05/16	"	

Date Sampled: **04/05/16 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.1 %	23-173		"	"	04/05/16	"	
<i>Surrogate: Toluene-d8</i>		102 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		137 %	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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
04/07/16 13:28

SS16@8'
1604027-06 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/05/16 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	110	50	mg/kg	1	1604052	04/06/16	04/06/16	8015M	

Date Sampled: **04/05/16 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		119 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/05/16 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.29	0.010	mg/kg	1	1604053	04/06/16	04/06/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.056	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.36	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	460	50	"	10	"	"	"	"	

Date Sampled: **04/05/16 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		95.6 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.6 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		210 %	21-167		"	"	"	"	S-02

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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
04/07/16 13:28

SS17@5'
1604027-07 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 04/05/16 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1604048	04/05/16	04/05/16	8015M	

Date Sampled: 04/05/16 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		109 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 04/05/16 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1604047	04/05/16	04/05/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 04/05/16 11:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		96.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	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 Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
04/07/16 13:28

SS17@6'
1604027-08 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/05/16 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	540	50	mg/kg	1	1604048	04/05/16	04/05/16	8015M	

Date Sampled: **04/05/16 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		114 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/05/16 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.51	0.010	mg/kg	1	1604047	04/05/16	04/05/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.58	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	6600	50	"	10	"	"	"	"	E

Date Sampled: **04/05/16 10:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		131 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.0 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		218 %	21-167		"	"	"	"	S-02

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/07/16 13:28

SS17@7'
1604027-09 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 04/05/16 11:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1500	50	mg/kg	1	1604052	04/06/16	04/06/16	8015M	

Date Sampled: 04/05/16 11:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		135 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 04/05/16 11:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.23	0.010	mg/kg	1	1604053	04/06/16	04/06/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.20	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.46	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	620	50	"	10	"	"	"	"	

Date Sampled: 04/05/16 11:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		167 %	21-167		"	"	"	"	

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6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/07/16 13:28

SS18@5'
1604027-10 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/05/16 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1604048	04/05/16	04/05/16	8015M	

Date Sampled: **04/05/16 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		109 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/05/16 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1604047	04/05/16	04/05/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **04/05/16 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

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Denver CO, 80221

Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
04/07/16 13:28

SS18@6'
1604027-11 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/05/16 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1604048	04/05/16	04/06/16	8015M	

Date Sampled: **04/05/16 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		114 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/05/16 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1604047	04/05/16	04/05/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **04/05/16 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	21-167		"	"	"	"	

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Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
04/07/16 13:28

SS18@7'
1604027-12 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/05/16 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	100	50	mg/kg	1	1604052	04/06/16	04/06/16	8015M	

Date Sampled: **04/05/16 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		120 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/05/16 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.021	0.010	mg/kg	1	1604053	04/06/16	04/06/16	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **04/05/16 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		105 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		105 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		104 %	21-167		"	"	"	"	

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/07/16 13:28

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1604048 - EPA 3550A

Blank (1604048-BLK1)

Prepared & Analyzed: 04/05/16

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	14.4		"	12.5		115	30-150			

LCS (1604048-BS1)

Prepared & Analyzed: 04/05/16

C10-C28 (DRO)	534	50	mg/kg	499		107	73-134			
Surrogate: o-Terphenyl	14.8		"	12.5		118	30-150			

Matrix Spike (1604048-MS1)

Source: 1604027-01

Prepared & Analyzed: 04/05/16

C10-C28 (DRO)	521	50	mg/kg	486	31.1	101	50-148			
Surrogate: o-Terphenyl	14.0		"	12.2		115	30-150			

Batch 1604052 - EPA 3550A

Blank (1604052-BLK1)

Prepared & Analyzed: 04/06/16

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	14.0		"	12.5		112	30-150			

LCS (1604052-BS1)

Prepared & Analyzed: 04/06/16

C10-C28 (DRO)	491	50	mg/kg	499		98.4	73-134			
Surrogate: o-Terphenyl	13.9		"	12.5		111	30-150			

Matrix Spike (1604052-MS1)

Source: 1604027-12

Prepared & Analyzed: 04/06/16

C10-C28 (DRO)	488	50	mg/kg	489	103	78.8	50-148			
Surrogate: o-Terphenyl	13.6		"	12.3		111	30-150			

Matrix Spike Dup (1604052-MSD1)

Source: 1604027-12

Prepared & Analyzed: 04/06/16

C10-C28 (DRO)	503	50	mg/kg	499	103	80.2	50-148	3.04	13	
Surrogate: o-Terphenyl	13.7		"	12.5		110	30-150			

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Tasman Geosciences
6899 Pecos Street
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Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/07/16 13:28

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 1604047 - EPA 5030 Soil MS

Blank (1604047-BLK1)

Prepared & Analyzed: 04/05/16

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0392</i>		<i>"</i>	<i>0.0400</i>		<i>98.0</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>99.1</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0412</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>21-167</i>			

LCS (1604047-BS1)

Prepared & Analyzed: 04/05/16

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0860	0.0020	"	0.100		86.0	58-130			
Toluene	0.0954	0.0050	"	0.100		95.4	61-134			
Ethylbenzene	0.0932	0.0050	"	0.0992		94.0	74-139			
m,p-Xylene	0.177	0.010	"	0.200		88.9	73-137			
o-Xylene	0.0865	0.0050	"	0.0980		88.2	73-141			
Xylenes (total)	0.264	0.010	"				0-200			
Gasoline Range Hydrocarbons	1.45	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0371</i>		<i>"</i>	<i>0.0400</i>		<i>92.8</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0449</i>		<i>"</i>	<i>0.0400</i>		<i>112</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0426</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>21-167</i>			

Matrix Spike (1604047-MS1)

Source: 1604027-01

Prepared & Analyzed: 04/05/16

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0865	0.0020	"	0.0923	ND	93.8	30-131			
Toluene	0.0961	0.0050	"	0.0923	ND	104	30-134			
Ethylbenzene	0.0994	0.0050	"	0.0915	ND	109	22-153			
m,p-Xylene	0.188	0.010	"	0.184	ND	102	10-159			
o-Xylene	0.0924	0.0050	"	0.0904	ND	102	31-151			
Xylenes (total)	0.280	0.010	"		ND		30-160			
Gasoline Range Hydrocarbons	1.53	0.50	"		0.230		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0346</i>		<i>"</i>	<i>0.0369</i>		<i>93.7</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0397</i>		<i>"</i>	<i>0.0369</i>		<i>108</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0372</i>		<i>"</i>	<i>0.0369</i>		<i>101</i>	<i>21-167</i>			

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/07/16 13:28

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 1604047 - EPA 5030 Soil MS

Matrix Spike Dup (1604047-MSD1)				Source: 1604027-01		Prepared & Analyzed: 04/05/16				
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.0988	0.0020	"	0.0967	ND	102	30-131	13.3	34	
Toluene	0.109	0.0050	"	0.0967	ND	112	30-134	12.4	30	
Ethylbenzene	0.117	0.0050	"	0.0959	ND	122	22-153	16.2	24	
m,p-Xylene	0.218	0.010	"	0.193	ND	113	10-159	14.9	68	
o-Xylene	0.107	0.0050	"	0.0948	ND	113	31-151	14.9	38	
Xylenes (total)	0.325	0.010	"		ND		30-160	14.9	30	
Gasoline Range Hydrocarbons	1.73	0.50	"		0.230		30-160	11.7	30	
Surrogate: 1,2-Dichloroethane-d4	0.0395		"	0.0387		102	23-173			
Surrogate: Toluene-d8	0.0401		"	0.0387		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0387		104	21-167			

Batch 1604053 - EPA 5030 Soil MS

Blank (1604053-BLK1)				Prepared: 04/06/16 Analyzed: 04/07/16						
Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0389		"	0.0400		97.2	23-173			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		99.0	21-167			

LCS (1604053-BS1)				Prepared: 04/06/16 Analyzed: 04/07/16						
Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.207	0.0020	"	0.200		103	58-130			
Toluene	0.229	0.0050	"	0.200		115	61-134			
Ethylbenzene	0.253	0.0050	"	0.198		128	74-139			
m,p-Xylene	0.471	0.010	"	0.399		118	73-137			
o-Xylene	0.245	0.0050	"	0.196		125	73-141			
Xylenes (total)	0.716	0.010	"				0-200			
Gasoline Range Hydrocarbons	4.14	0.50	"				30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0390		"	0.0400		97.5	23-173			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.6	21-167			

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6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
04/07/16 13:28

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 1604053 - EPA 5030 Soil MS

Matrix Spike (1604053-MS1)				Source: 1604027-12		Prepared: 04/06/16		Analyzed: 04/07/16	
Naphthalene	ND	0.010	mg/kg		0.0208		10-158		
Benzene	0.0958	0.0020	"	0.0928	ND	103	30-131		
Toluene	0.108	0.0050	"	0.0928	ND	117	30-134		
Ethylbenzene	0.140	0.0050	"	0.0920	ND	152	22-153		
m,p-Xylene	0.244	0.010	"	0.185	ND	132	10-159		
o-Xylene	0.147	0.0050	"	0.0909	ND	161	31-151		QM-07
Xylenes (total)	0.391	0.010	"		ND		30-160		
Gasoline Range Hydrocarbons	1.32	0.50	"		7.31		30-160		
Surrogate: 1,2-Dichloroethane-d4	0.0384		"	0.0371		104	23-173		
Surrogate: Toluene-d8	0.0363		"	0.0371		97.7	20-170		
Surrogate: 4-Bromofluorobenzene	0.0377		"	0.0371		101	21-167		

Matrix Spike Dup (1604053-MSD1)				Source: 1604027-12		Prepared: 04/06/16		Analyzed: 04/07/16	
Naphthalene	ND	0.010	mg/kg		0.0208		10-158		42
Benzene	0.101	0.0020	"	0.0954	ND	105	30-131	4.86	34
Toluene	0.117	0.0050	"	0.0954	ND	123	30-134	7.60	30
Ethylbenzene	0.156	0.0050	"	0.0947	ND	165	22-153	10.7	24
m,p-Xylene	0.285	0.010	"	0.190	ND	150	10-159	15.4	68
o-Xylene	0.170	0.0050	"	0.0935	ND	182	31-151	15.1	38
Xylenes (total)	0.455	0.010	"		ND		30-160	15.3	30
Gasoline Range Hydrocarbons	1.57	0.50	"		7.31		30-160	17.5	30
Surrogate: 1,2-Dichloroethane-d4	0.0387		"	0.0382		101	23-173		
Surrogate: Toluene-d8	0.0374		"	0.0382		98.0	20-170		
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0382		104	21-167		

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Webster 11-32

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/07/16 13:28

Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
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