

# **SITE ASSESSMENT REPORT**

## **UPRC 33-4F, 5F, HUNT FEDERAL K 33-19**

COGCC SPILL TRACKING # 464229  
COGCC REMEDIATION # 13785

Prepared for:



2115 117th Avenue  
Greeley, CO 80631

Prepared by:



6855 West 119th Avenue  
Broomfield, Colorado, 80020

July 31, 2019

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

Subject:       **Site Assessment Report**  
                  ***UPRC 33-4F, 5F, Hunt Federal K 33-19***  
                  Spill/Release Point ID #: 464229  
                  Remediation Project #: 13785  
                  SWNW S33 T4N R66W  
                  Weld County, Colorado

Dear Mr. Evans:

Below please find a copy of the above referenced Site Assessment Report (Report) for the UPRC 33-4F, 5F, Hunt Federal K 33-19 site (Site) in Weld County, Colorado. The text below describes the excavation, environmental assessment, and associated soil and groundwater sampling activities conducted by Tasman Geosciences, Inc. (Tasman), on behalf of Noble Energy, Inc. (Noble), between April 18, 2019 and July 22, 2019.

## **Introduction**

The purpose of this document is to describe the results of site assessment and sampling activities at the Site. The activities described below were performed in response to the discovery of a historical impacts beneath the UPRC 33-4F, 5F, Hunt Federal K 33-19 separator on April 18, 2019 and beneath the produced water vessel on July 2, 2019.

## **Facility Background**

The Site is located approximately 0.4 miles south of the town of Gilcrest in Weld County, Colorado, as shown on Figure 1. The Site is surrounded by non-crop land, and the legal description is the southwest ¼ of the northwest ¼ of Section 33, Township 4 North, Range 66 West, of the 6<sup>th</sup> Principal Meridian. The Site is located on relatively flat terrain and is approximately 140 feet northwest of Highway 85, with coordinates of 40.269523°, -104.791329°.

## **Separator Excavation Field Activities**

On April 18, 2019, Tasman was retained by Noble Energy to investigate hydrocarbon stained soil that was discovered at the former UPRC 33-4F, 5F, Hunt Federal K 33-19 separator location during plug and abandonment activities. To delineate potential vadose zone soil impacts, eight soil samples (SS01@'1–SS08@'1') were collected in each of the cardinal directions around the suspected release area at approximately one foot below ground surface (ft. bgs). Groundwater was observed infiltrating into the excavation around the separator at approximately 2 ft. bgs, where groundwater sample GW01 was collected. Soil samples were field screened for volatile organic compounds (VOC) using a

photoionizing detector (PID) and standard headspace sampling techniques. Six of the eight soil samples collected (SS03@1'-SS08@1') were submitted to Summit Scientific Laboratory in Golden, Colorado (Summit) for laboratory analyses of benzene, toluene, ethylbenzene, and total xylenes (BTEX), naphthalene, and total petroleum hydrocarbons-gasoline range organics (TPH-GRO) using United States Environmental Protection Agency (USEPA) Method 8260B, as well as total petroleum hydrocarbons-diesel range organics (TPH-DRO) using USEPA Method 8015. The groundwater sample was submitted to Summit for laboratory analysis of BTEX by USEPA Method 8260B. Soil analytical data is summarized in Table 1, groundwater analytical data is summarized in Table 2, and the final excavation extent and sample locations are illustrated on Figure 3. Laboratory analytical reports are included in Attachment A.

On April 26, 2019, dissolved phase impacts in groundwater in exceedance of applicable COGCC Table 910-1 groundwater standards were confirmed beneath the former UPRC 33-4F, 5F, Hunt Federal K 33-19 separator location. A Form 19 was submitted to the Colorado Oil and Gas Conservation Commission (COGCC) on April 29, 2019. The COGCC subsequently issued Spill/Release Point ID Number 464229. for this event. A remediation plan (Form 27) was submitted on July 2, 2019 and the project was assigned Remediation Number 13785.

On July 2, 2019, Tasman returned to the site where an additional excavation was completed around the former separator location. One soil sample (FS01@2') was collected from the base of the excavation at approximately two ft. bgs and submitted to Summit for BTEX, naphthalene, TPH-GRO and TPH-DRO analysis. Groundwater was observed infiltrating into the excavation at approximately 2.5 ft. bgs. Soil analytical data is summarized on Table 1 and the excavation extent and sample location is illustrated on Figure 3.

## **Produced Water Vault Removal Field Activities**

On July 2, 2019, an excavation was completed to remove the UPRC 33-4F, 5F, Hunt Federal K 33-19 produced water vault. During produced water vault excavation activities, soil samples were collected from eight locations (SS09@3'-SS12@3', SS09@4'-SS12@4') along the sidewalls of the excavation at approximately 3 ft. and 4 ft. bgs. Groundwater was observed infiltrating into the excavation at approximately five ft. bgs. One groundwater sample (GW02) was collected at the base of the excavation and submitted to Summit for BTEX analysis. Soil samples collected were submitted to Summit for BTEX, naphthalene, TPH-GRO and TPH-DRO. Soil sample SS09@3' was also analyzed for Sodium Adsorption Ratio (SAR) by USEPA Method 6020 / United States Department of Agriculture (USDA) Method 60 6(2,3A) and Specific Conductance (EC) and pH via American Public Health Association (APHA)/American Society for Testing and Materials (ASTM)/USEPA methods. Groundwater sample GW02 was submitted for BTEX analysis. Soil analytical data is summarized in Table 1 and groundwater analytical data is summarized in Table 2. Laboratory analytical reports are included as Attachment A.

## **Site Assessment Field Activities**

On July 16, 2019, Tasman returned to the site to further assess groundwater impacts associated with the historical releases at the former UPRC 33-4F, 5F, Hunt Federal K 33-19 produced water vessel and separator. Eight boreholes were installed using direct push drilling techniques and converted into

temporary monitoring wells (BH01-BH08). Soil boring locations are illustrated on Figure 4, and boring logs are included in Attachment B. During soil boring activities, soil samples were collected, and field screened for VOCs using a PID and standard head space sampling techniques. Soil samples from the depth intervals exhibiting the highest PID reading, and above the groundwater table were retained for laboratory analysis. A total of seven borehole soil samples (BH02@0-2' – BH08@0-2') were submitted to Summit for analysis of BTEX, naphthalene, TPH-GRO, and TPH-DRO. Soil analytical results are summarized in Table 1 and sample locations are illustrated on Figure 4. Complete laboratory analytical reports are included in Attachment A.

Following the installation and development of the eight monitoring wells, Tasman collected groundwater samples on July 22, 2019. Groundwater was encountered at depths of approximately 0.94 ft. to 1.90 ft. bgs. Groundwater samples collected from the eight monitoring wells were submitted to Summit for laboratory analysis of BTEX. Groundwater analytical results are summarized in Table 3 and illustrated on Figure 5. The complete laboratory analytical report is included in Attachment A. Groundwater potentiometric surface contours are illustrated on Figure 6 and groundwater elevation data is summarized in Table 2.

## **Results**

Laboratory analytical results for the soil samples collected during site assessment activities indicate that vadose zone soil impacts are still present at the site surrounding the SS11@3' sample location. All other soil samples collected were below applicable COGCC Table 910-1 soil standards.

Groundwater analytical results for samples GW01 and GW02 indicated the benzene and total xylene concentrations are in exceedance of the COGCC Table 910-1 groundwater standards. Laboratory analytical results for all eight of the samples collected from the groundwater monitoring wells were below COGCC Table 910-1 standards.

## **Conclusions**

Based on field and laboratory data collected during site assessment activities, vadose zone hydrocarbon impacts remain at the site in the area of SS11@3'. Dissolved phase groundwater impacts also remain at the site. Tasman will continue quarterly monitoring until four consecutive quarters of groundwater results below applicable COGCC Table 910-1 standards are achieved.

## **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 Elevation Data

Table 3 – Groundwater Analytical Data

Figure 1 – Site Location Map

Figure 2 – Site Overview Map

Figure 3 – Soil and Groundwater Analytical Results Map (7/02/2019)

Figure 4 – Soil Boring Analytical Map (7/16/2019)

Figure 5 – Groundwater Analytical Results Map (7/22/2019)

Figure 6 – Groundwater Potentiometric Surface Contour Map (7/22/2019)

Attachment A – Laboratory Analytical Data Reports

Attachment B – Boring Logs

## **TABLES**

**TABLE 1**  
**SOIL ANALYTICAL DATA**  
**NOBLE ENERGY, INC. - UPRC 33-4F, 5F, HUNT FEDERAL K 33-19**

Soil Sample ID	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)
<b>COGCC Standard</b>		<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>23</b>	<b>500</b>	
SS03@1'	04/18/19	<0.0020	<0.0050	<0.0050	<0.010	0.014	<50	<50
SS04@1' <sup>1</sup>	04/18/19	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS05@1'	04/18/19	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS06@1' <sup>1</sup>	04/18/19	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	72
SS07@1'	04/18/19	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS08@1'	04/18/19	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
SS09@3'	07/02/19	<0.0020	<0.0050	0.14	0.77	0.10	100	160
SS09@4'	07/02/19	0.012	<0.0050	0.22	1.1	0.092	230	53
SS10@3'	07/02/19	<0.0020	<0.0050	<0.0050	0.013	<0.010	<50	<50
SS10@4'	07/02/19	<0.0020	<0.0050	<0.0050	0.011	<0.010	<50	<50
SS11@3' <sup>1</sup>	07/02/19	<0.0020	<0.0050	0.28	2.6	0.19	<b>660</b>	<b>110</b>
SS11@4'	07/02/19	<0.0020	<0.0050	0.044	0.17	0.045	50	<50
SS12@3'	07/02/19	<0.0020	<0.0050	<0.0050	0.027	<0.010	<50	<50
SS12@4'	07/02/19	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
FS01@2' <sup>1</sup>	07/02/19	0.060	<0.0050	0.0094	1.2	0.026	290	51
BH02@0-2'	07/16/19	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
BH03@0-2'	07/16/19	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
BH04@0-2'	07/16/19	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
BH05@0-2' <sup>1</sup>	07/16/19	0.0060	0.016	<0.0050	11	0.012	50	63
BH06@0-2'	07/16/19	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
BH07@0-2'	07/16/19	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50
BH08@0-2'	07/16/19	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	<50

Soil Sample ID	Date	SAR	pH	EC (mmhos/cm)
<b>COGCC Standard</b>		<b>&lt;12</b>	<b>6-9</b>	<b>&lt;4mmhos/cm</b>
SS09@3'	07/02/19	1.22	8.83	0.476

Notes:

COGCC = Colorado Oil and Gas Conservation Commission

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

mg/kg = Milligrams per kilogram

SAR = Sodium Adsorption Ratio

EC = Specific Conductivity

mmhos/cm = Millimhos per centimeter

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

1. The laboratory assigned an S-02 flag to this sample, meaning the surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

2. Soil samples were not collected from the BH01 location because BH01 is located in excavation backfill.

Soil standards referenced from COGCC Table 910-1

**Highlighted results are equal to or exceed the COGCC Table 910-1 standard**

**TABLE 2**  
**GROUNDWATER ELEVATION DATA**  
**NOBLE ENERGY, INC. - UPRC 33-4F, 5F, HUNT FEDERAL K 33-19**

Monitoring Well ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft.BTOC)	Depth to Water (ft.BGS)	Depth to LNAPL (ft. BGS)	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
BH01	07/22/19	4761.40	13.77	1.56	ND	ND	4757.34
BH02	07/22/19	4762.85	14.50	1.90	ND	ND	4757.59
BH03	07/22/19	4761.87	14.02	1.54	ND	ND	4757.23
BH04	07/22/19	4758.25	10.70	1.57	ND	ND	4756.97
BH05	07/22/19	4761.67	13.55	1.60	ND	ND	4757.39
BH06	07/22/19	4761.54	12.65	1.79	ND	ND	4757.61
BH07	07/22/19	4762.40	13.94	1.69	ND	ND	4757.40
BH08	07/22/19	4757.80	11.12	0.94	ND	ND	4757.20

**Notes:**

ft. = Feet

AMSL = Above mean sea level

BTOC = Below top of casing

LNAPL = Light non-aqueous phase liquid

ND = No LNAPL detected

\* Groundwater elevation was corrected for product thickness (when present) using the following calculation:

Groundwater elevation = (TOC Elevation - Measured Depth to Water)+(LNAPL Thickness in Well x LNAPL Relative Density)

LNAPL relative density was estimated to be approximately 0.75



**TABLE 3**  
**GROUNDWATER ANALYTICAL DATA**  
**NOBLE ENERGY, INC. - UPRC 33-4F, 5F, HUNT FEDERAL K 33-19**

Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
<b>COGCC Standard</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>
GW01	04/18/19	<b>410</b>	340	68	<b>1,500</b>
GW02	07/02/19	<b>17</b>	<1.0	35	200
BH01	07/22/19	<1.0	<1.0	<1.0	<2.0
BH02	07/22/19	<1.0	<1.0	<1.0	<2.0
BH03	07/22/19	<1.0	<1.0	<1.0	<2.0
BH04	07/22/19	<1.0	<1.0	<1.0	<2.0
BH05	07/22/19	<1.0	<1.0	<1.0	<2.0
BH06	07/22/19	<1.0	<1.0	<1.0	<2.0
BH07	07/22/19	<1.0	<1.0	<1.0	<2.0
BH08	07/22/19	<1.0	<1.0	<1.0	<2.0

**Notes:**

COGCC = Colorado Oil and Gas Conservation Commission

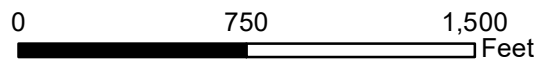
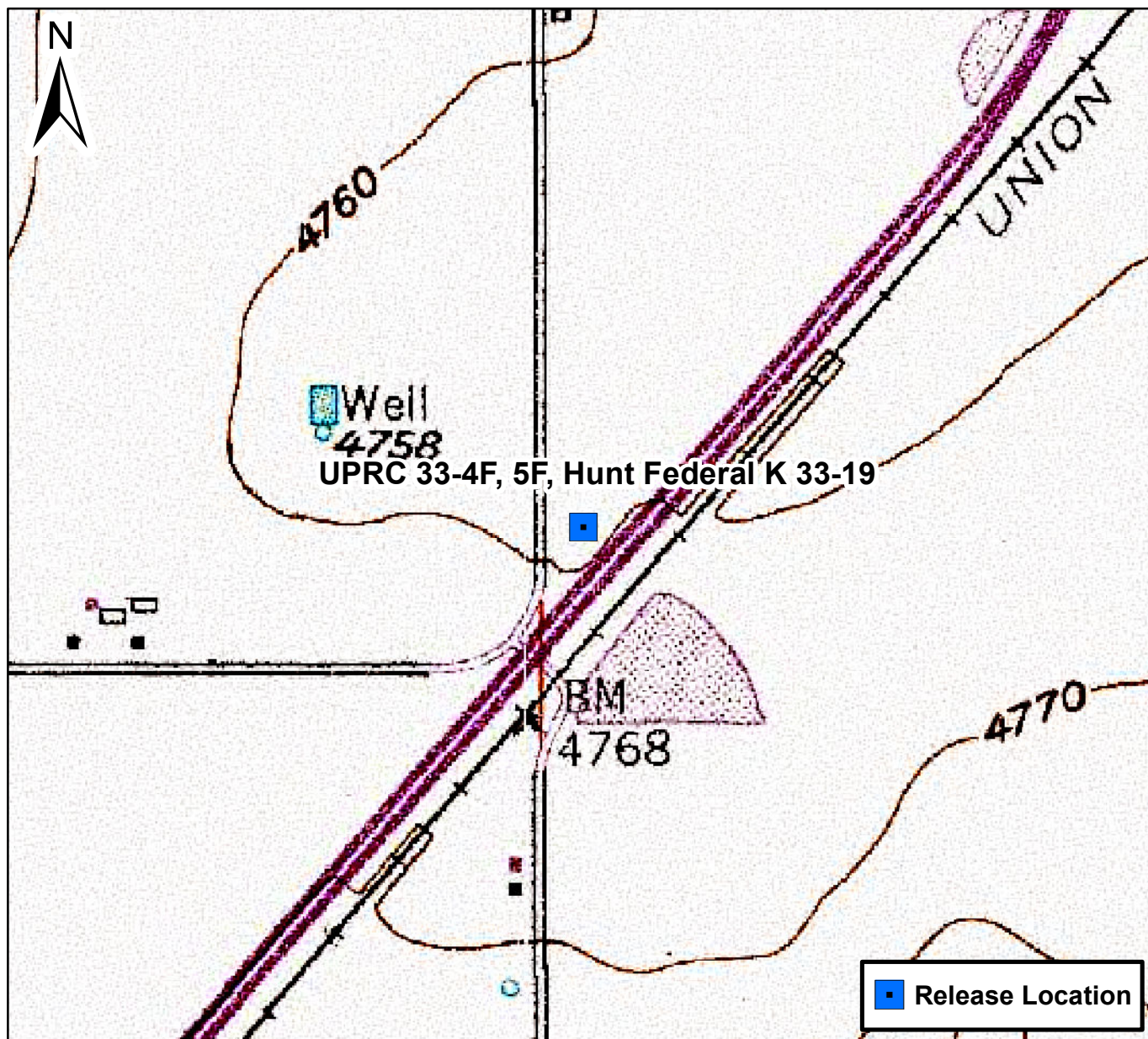
µg/L = Micrograms per liter

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

Groundwater standards referenced from COGCC Table 910-1

**Highlighted results are equal to or exceed the COGCC Table 910-1 standard**

## **FIGURES**



## Figure 1

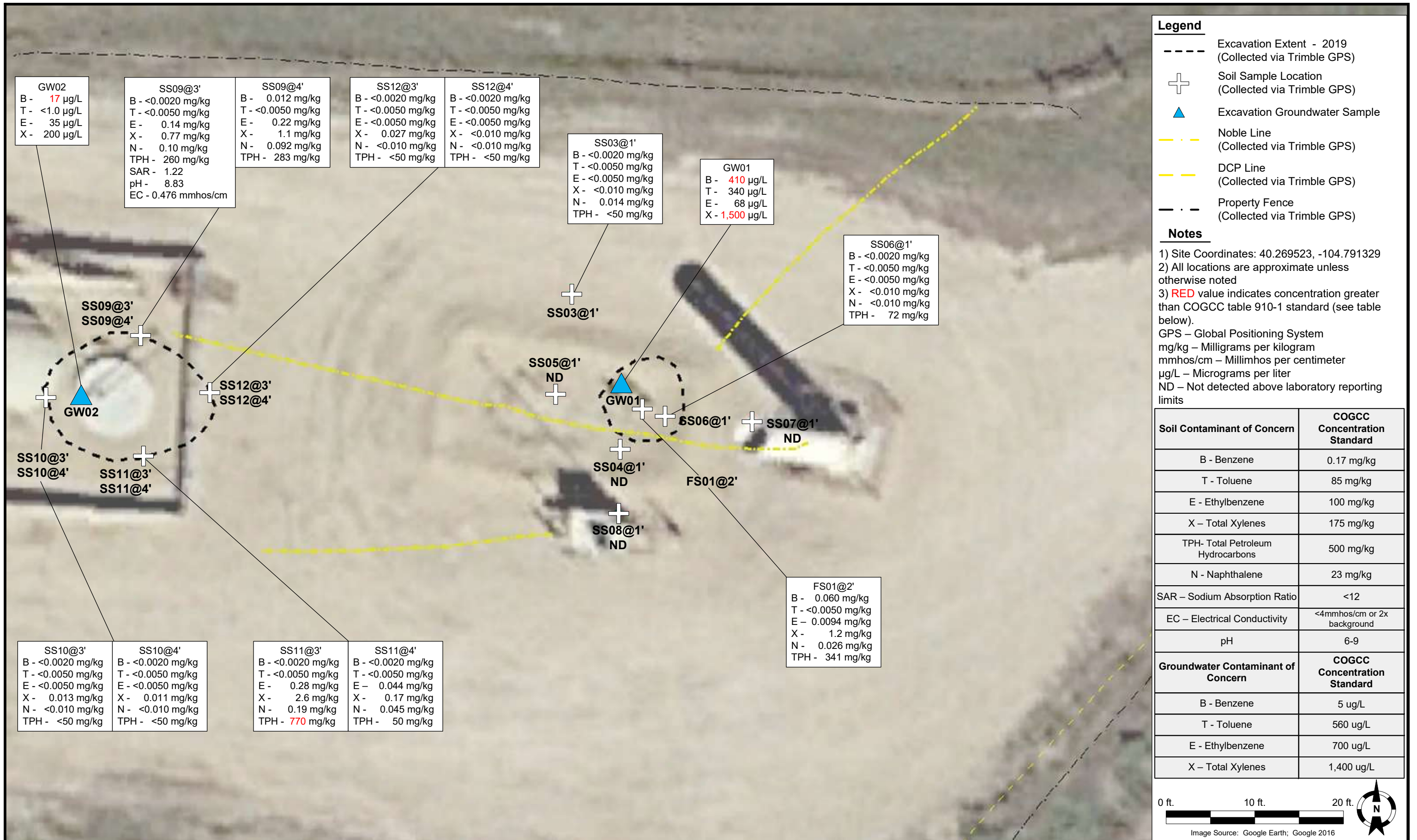
Site Location Map  
 UPRC 33-4F, 5F, Hunt Federal K 33-19  
 SWNW S33 T4N R66W  
 Weld County, Colorado



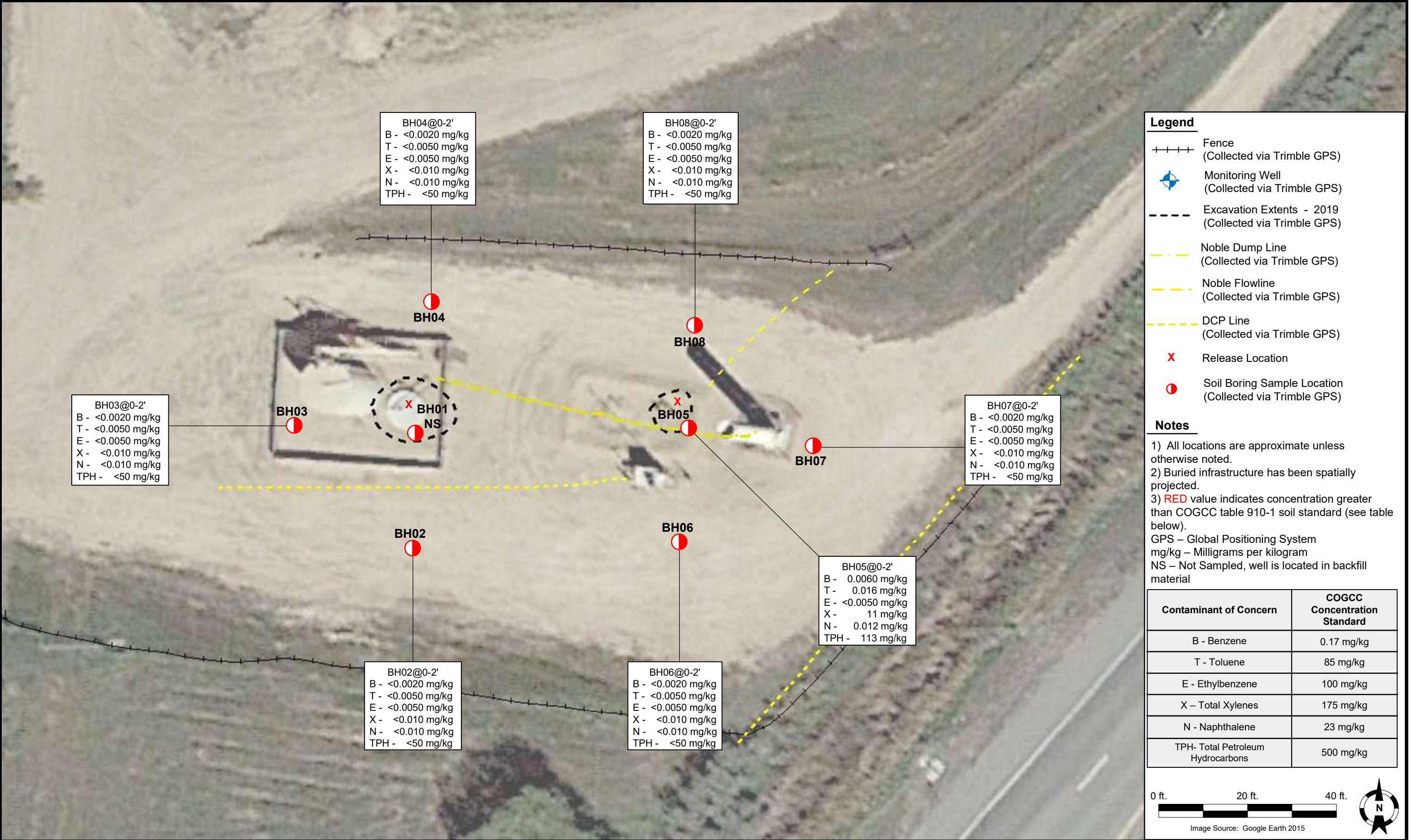




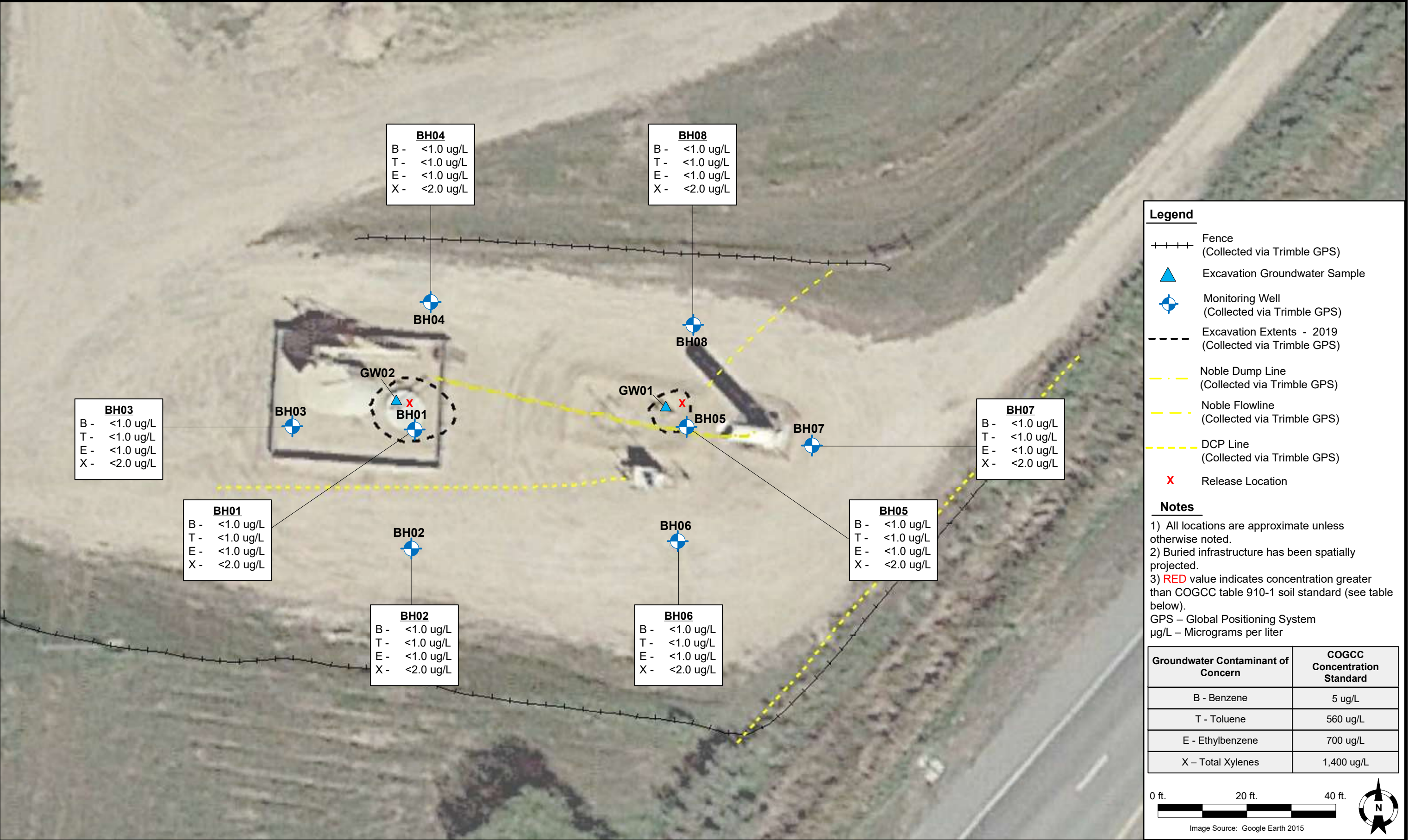












DATE:	7/16/2019
DESIGNED BY:	JW
DRAWN BY:	MG



**TASMAN**  
GEOSCIENCES

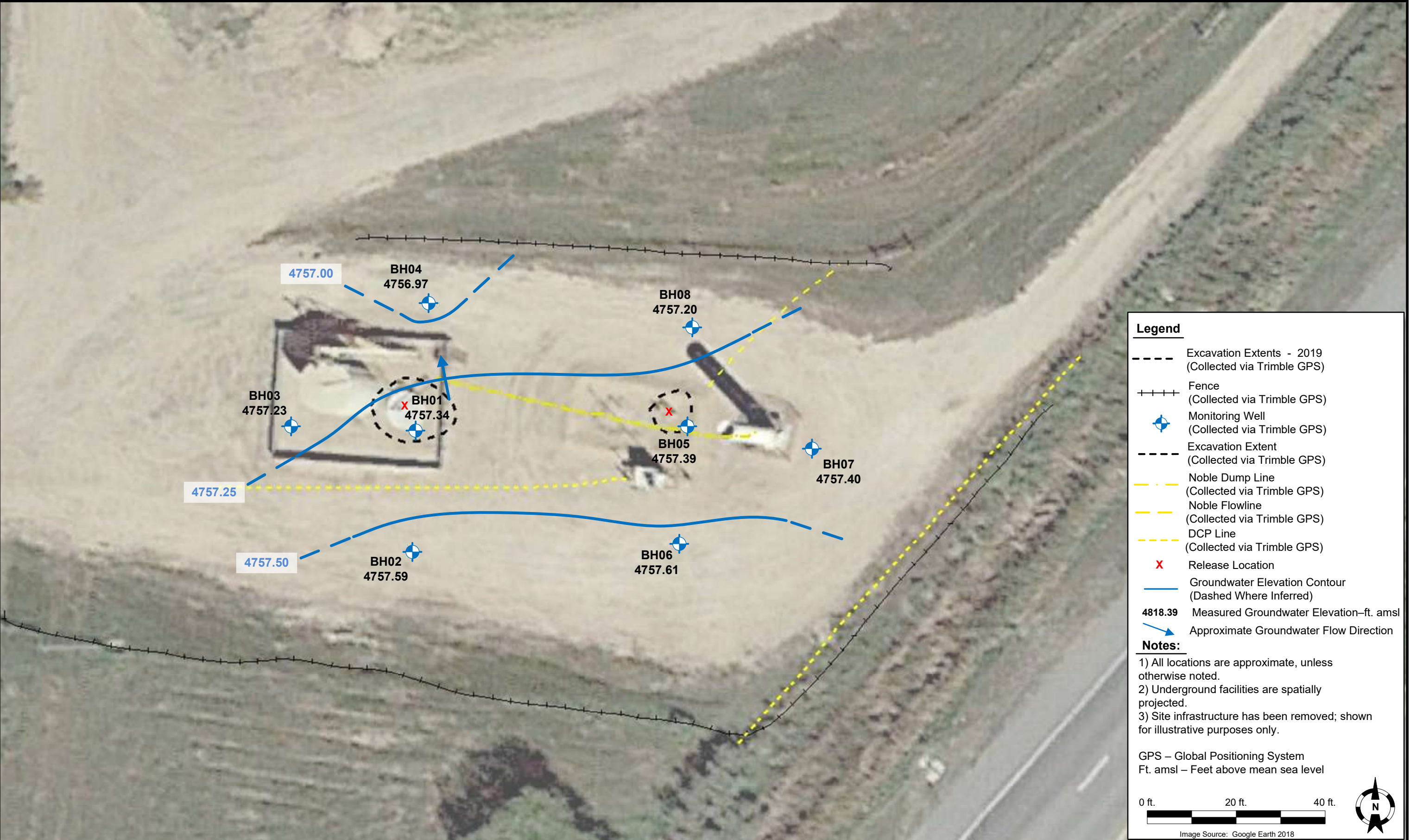
Tasman Geosciences, Inc.  
6899 Pecos Street – Unit C  
Denver, CO 80221

**Noble Energy, Inc. – DJ Basin**  
**UPRC 33-4F, 5F, Hunt Federal K 33-19**  
SWNW, Section 33, Township 4 North, Range 66 West  
Weld County, Colorado

Groundwater Analytical  
Results Map  
(7/22/2019)

FIGURE  
5







# **ATTACHMENT A**

## **LABORATORY ANALYTICAL DATA REPORTS**

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

April 26, 2019

Brandon Bruns

Tasman Geosciences

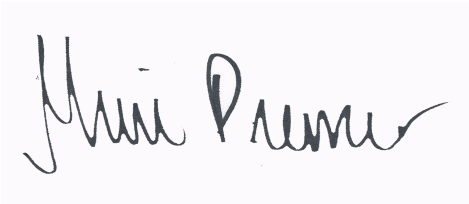
6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - UPRC 33-45, 5F, Hunt Federal K33-19

Enclosed are the results of analyses for samples received by Summit Scientific on 04/18/19 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink on a light purple rectangular background. The signature is written in a cursive style and appears to read "Muri Premier".

Muri Premier For Ben Shrewsbury

Laboratory Manager



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

Project: Noble - UPRC 33-45, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/26/19 10:54

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS03@1'	1904272-01	Soil	04/18/19 13:47	04/18/19 17:30
SS04@1'	1904272-02	Soil	04/18/19 13:48	04/18/19 17:30
SS05@1'	1904272-03	Soil	04/18/19 14:00	04/18/19 17:30
SS06@1'	1904272-04	Soil	04/18/19 14:10	04/18/19 17:30
SS07@1'	1904272-05	Soil	04/18/19 14:15	04/18/19 17:30
SS08@1'	1904272-06	Soil	04/18/19 14:20	04/18/19 17:30
GW01	1904272-07	Water	04/18/19 14:25	04/18/19 17:30

Summit Scientific

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

# Summit Scientific

S<sub>2</sub>

1904272

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

Page 1 of 1

Client:	Noble / Tasman	Project Manager:	Brandon Bruns, Invoice:
Address:	6899 Pecos Street	E-Mail:	Bbruns@tasman-geo.com
City/State/Zip:	Denver / CO/ 80221		
Phone:	979-255-4235	Project Name:	UPLC 33-45 SF, Hunt Federal K 33-19
Sampler Name:	Max Garza	Project Number:	N/A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions	
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR				
1	SS03@1'	4/18/19	1347	1			X			X					X	X				
2	SS04@1'		1348	1																
3	SS05@1'		1400	1																
4	SS06@1'		1410	1																
5	SS07@1'		1415	1																
6	SS08@1'		1420	1																
7	GW01		1425	3					X					X						
8																				
9																				
10																				

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
	1600 4/18/19	Tasman's Lock Box	1600 4/18/19	Same Day	72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard	
Tasman's Lock Box	4-18-19 1730		4-18-19 1730	48 hours		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:		
				Temperature Upon Receipt: 2.4		
				Samples Intact: Yes No		

# Sample Receipt Checklist

S2 Work Order 1904272

Client: Noble / Tazman Client Project ID: UPRC 33-45 OF Hunt Federal  
K33-19

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other P-U Airbill #: \_\_\_\_\_

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

Temp (°C)	<u>8.4</u>
-----------	------------

Thermometer ID: 61857155-K

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

Additional Comments (if any):

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

CP  
 Custodian Printed Name or Initials

[Signature]  
 Signature of Custodian

4.18.19 1835  
 Date/Time



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

Project: Noble - UPRC 33-45, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/26/19 10:54

**SS03@1'**  
**1904272-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/18/19 13:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1904338	04/22/19	04/24/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.014</b>	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **04/18/19 13:47**

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		108 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/18/19 13:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1904340	04/22/19	04/25/19	EPA 8015M	

Date Sampled: **04/18/19 13:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		99.7 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Noble - UPRC 33-45, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/26/19 10:54

**SS04@1'**  
**1904272-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/18/19 13:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1904338	04/22/19	04/24/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **04/18/19 13:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		118 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		202 %	21-167		"	"	"	"	S-02

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/18/19 13:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1904340	04/22/19	04/25/19	EPA 8015M	

Date Sampled: **04/18/19 13:48**

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

Summit Scientific

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

Project: Noble - UPRC 33-45, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/26/19 10:54

**SS05@1'**  
**1904272-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/18/19 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1904338	04/22/19	04/24/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **04/18/19 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/18/19 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1904340	04/22/19	04/25/19	EPA 8015M	

Date Sampled: **04/18/19 14:00**

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

Summit Scientific

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

Project: Noble - UPRC 33-45, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/26/19 10:54

**SS06@1'**  
**1904272-04 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/18/19 14:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1904338	04/22/19	04/24/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **04/18/19 14:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		89.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		263 %	21-167		"	"	"	"	S-02

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/18/19 14:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<b>C10-C28 (DRO)</b>	<b>72</b>	50	mg/kg	1	1904340	04/22/19	04/25/19	EPA 8015M	

Date Sampled: **04/18/19 14:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Noble - UPRC 33-45, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/26/19 10:54

**SS07@1'**  
**1904272-05 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/18/19 14:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1904338	04/22/19	04/24/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **04/18/19 14:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/18/19 14:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1904340	04/22/19	04/25/19	EPA 8015M	

Date Sampled: **04/18/19 14:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Noble - UPRC 33-45, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/26/19 10:54

**SS08@1'**  
**1904272-06 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/18/19 14:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1904338	04/22/19	04/24/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **04/18/19 14:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.3 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **04/18/19 14:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1904340	04/22/19	04/25/19	EPA 8015M	

Date Sampled: **04/18/19 14:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		101 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Noble - UPRC 33-45, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/26/19 10:54

**GW01**  
**1904272-07 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/18/19 14:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Benzene</b>	<b>410</b>	100		ug/l	100	1904324	04/19/19	04/23/19	EPA 8260B	
<b>Toluene</b>	<b>340</b>	100		"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>68</b>	1.0		"	1	"	"	"	"	
<b>Xylenes (total)</b>	<b>1500</b>	200		"	100	"	"	"	"	

Date Sampled: **04/18/19 14:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		119 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		97.4 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		113 %		21-167		"	"	"	"	

Summit Scientific

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

Project: Noble - UPRC 33-45, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
04/26/19 10:54

## 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 1904324 - EPA 5030 Water MS

##### Blank (1904324-BLK1)

Prepared: 04/19/19 Analyzed: 04/22/19

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.3		"	13.3		107	23-173			
Surrogate: Toluene-d8	13.1		"	13.3		98.4	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.7	21-167			

##### LCS (1904324-BS1)

Prepared: 04/19/19 Analyzed: 04/22/19

Benzene	37.2	1.0	ug/l	33.3		112	70-130			
Toluene	36.0	1.0	"	33.3		108	70-130			
Ethylbenzene	35.2	1.0	"	33.3		105	70-130			
m,p-Xylene	66.5	2.0	"	66.7		99.8	70-130			
o-Xylene	33.3	1.0	"	33.3		99.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.1		"	13.3		98.4	23-173			
Surrogate: Toluene-d8	13.8		"	13.3		104	20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.2	21-167			

##### Matrix Spike (1904324-MS1)

Source: 1904269-02

Prepared: 04/19/19 Analyzed: 04/22/19

Benzene	40.4	1.0	ug/l	33.3	ND	121	70-130			
Toluene	39.5	1.0	"	33.3	ND	119	70-130			
Ethylbenzene	40.4	1.0	"	33.3	ND	121	70-130			
m,p-Xylene	77.2	2.0	"	66.7	ND	116	70-130			
o-Xylene	38.5	1.0	"	33.3	ND	116	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.0		"	13.3		105	23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.8	20-170			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.3	21-167			

Summit Scientific

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

Project: Noble - UPRC 33-45, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
04/26/19 10:54

## 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 1904324 - EPA 5030 Water MS

##### Matrix Spike Dup (1904324-MSD1)

Source: 1904269-02

Prepared: 04/19/19 Analyzed: 04/22/19

Benzene	42.7	1.0	ug/l	33.3	ND	128	70-130	5.56	30	
Toluene	41.0	1.0	"	33.3	ND	123	70-130	3.55	30	
Ethylbenzene	43.5	1.0	"	33.3	ND	130	70-130	7.42	30	
m,p-Xylene	84.2	2.0	"	66.7	ND	126	70-130	8.74	30	
o-Xylene	42.0	1.0	"	33.3	ND	126	70-130	8.67	30	
Surrogate: 1,2-Dichloroethane-d4	14.4		"	13.3		108	23-173			
Surrogate: Toluene-d8	13.0		"	13.3		97.8	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.7	21-167			

#### Batch 1904338 - EPA 5030 Soil MS

##### Blank (1904338-BLK1)

Prepared: 04/22/19 Analyzed: 04/23/19

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0419		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400		102	21-167			

##### LCS (1904338-BS1)

Prepared: 04/22/19 Analyzed: 04/23/19

Benzene	0.0971	0.0020	mg/kg	0.100		97.1	70-130			
Toluene	0.0982	0.0050	"	0.100		98.2	70-130			
Ethylbenzene	0.102	0.0050	"	0.100		102	70-130			
m,p-Xylene	0.198	0.010	"	0.200		99.2	70-130			
o-Xylene	0.100	0.0050	"	0.100		100	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0418		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0411		"	0.0400		103	21-167			

Summit Scientific

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

Project: Noble - UPRC 33-45, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
04/26/19 10:54

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

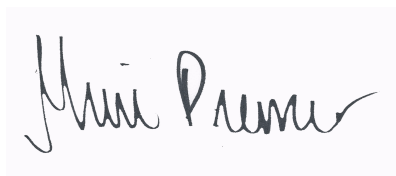
Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**Batch 1904338 - EPA 5030 Soil MS**

Matrix Spike (1904338-MS1)		Source: 1904248-01			Prepared: 04/22/19 Analyzed: 04/23/19					
Benzene	0.0951	0.0020	mg/kg	0.100	ND	95.1	70-130			
Toluene	0.0973	0.0050	"	0.100	ND	97.3	70-130			
Ethylbenzene	0.0949	0.0050	"	0.100	ND	94.9	70-130			
m,p-Xylene	0.183	0.010	"	0.200	ND	91.5	70-130			
o-Xylene	0.0935	0.0050	"	0.100	ND	93.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		102	23-173			
Surrogate: Toluene-d8	0.0412		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400		102	21-167			
Matrix Spike Dup (1904338-MSD1)		Source: 1904248-01			Prepared: 04/22/19 Analyzed: 04/23/19					
Benzene	0.0850	0.0020	mg/kg	0.100	ND	85.0	70-130	11.2	30	
Toluene	0.0888	0.0050	"	0.100	ND	88.8	70-130	9.06	30	
Ethylbenzene	0.0855	0.0050	"	0.100	ND	85.5	70-130	10.4	30	
m,p-Xylene	0.165	0.010	"	0.200	ND	82.6	70-130	10.3	30	
o-Xylene	0.0850	0.0050	"	0.100	ND	85.0	70-130	9.51	30	
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	21-167			

Summit Scientific

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

Project: Noble - UPRC 33-45, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/26/19 10:54

**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 1904340 - EPA 3550A**

**Blank (1904340-BLK1)**

Prepared: 04/22/19 Analyzed: 04/23/19

C10-C28 (DRO) ND 50 mg/kg

**LCS (1904340-BS1)**

Prepared: 04/22/19 Analyzed: 04/23/19

C10-C28 (DRO) 500 50 mg/kg 500 100 70-130

**Matrix Spike (1904340-MS1)**

**Source: 1904248-01**

Prepared: 04/22/19 Analyzed: 04/23/19

C10-C28 (DRO) 468 50 mg/kg 500 34.2 86.8 70-130

**Matrix Spike Dup (1904340-MSD1)**

**Source: 1904248-01**

Prepared: 04/22/19 Analyzed: 04/23/19

C10-C28 (DRO) 446 50 mg/kg 500 34.2 82.3 70-130 4.87 20

Summit Scientific

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

Project: Noble - UPRC 33-45, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
04/26/19 10:54

### 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

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 03, 2019

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - UPRC 33-4F,5F

Work Order # 1907028

Enclosed are the results of analyses for samples received by Summit Scientific on 07/02/19 17:42. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Shrewsbury', written in a cursive style.

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



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

Project: Noble - UPRC 33-4F,5F

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/03/19 07:48

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS09@3'	1907028-01	Soil	07/02/19 14:00	07/02/19 17:42
SS09@4'	1907028-02	Soil	07/02/19 14:05	07/02/19 17:42
SS10@3'	1907028-03	Soil	07/02/19 14:10	07/02/19 17:42
SS10@4'	1907028-04	Soil	07/02/19 14:15	07/02/19 17:42
SS11@3'	1907028-05	Soil	07/02/19 14:20	07/02/19 17:42
SS11@4'	1907028-06	Soil	07/02/19 14:25	07/02/19 17:42
SS12@3'	1907028-07	Soil	07/02/19 14:30	07/02/19 17:42
SS12@4'	1907028-08	Soil	07/02/19 14:35	07/02/19 17:42
FS01@2'	1907028-09	Soil	07/02/19 14:40	07/02/19 17:42
GW02	1907028-10	Water	07/02/19 13:40	07/02/19 17:42

Summit Scientific

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

# Summit Scientific

1907028

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

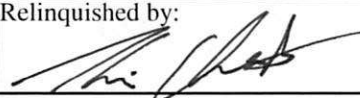

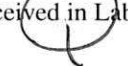
Page 1 of 1

Client: Noble/Tasman  
Address: 6899 Pecos St  
City/State/Zip: Denver / CO / 80233  
Phone: 303-487-1228 Fax: -  
Sampler Name: Kevin Christz

Project Manager: Brandon Bruns, Invoice: Jacob Evans  
E-Mail: Bbruns@tasman-geo.com  
Project Name: UPRC 33-4F,5F  
Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:								Special Instructions			
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR								
SS0A@3'	7/2/19	14:00	1			X			X					X	X	X							
SS0A@4'	7/2/19	14:05	1			X			X					X	X	X							
SS10@3'	7/2/19	14:10	1			X			X					X	X	X							
SS10@4'	7/2/19	14:15	1			X			X					X	X	X							
SS11@3'	7/2/19	14:20	1			X			X					X	X	X							
SS11@4'	7/2/19	14:25	1			X			X					X	X	X							
SS12@3'	7/2/19	14:30	1			X			X					X	X	X							
SS12@4'	7/2/19	14:35	1			X			X					X	X	X							
FS01@2'	7/2/19	14:40	1			X			X					X	X	X							
6W02	7/2/19	13:40	3	X				X						X									

Relinquished by: 	Date/Time: 7/2/19 16:20	Received by: Tasman's Lock Box	Date/Time: 7/2/19 16:20	<b>Turn Around Time (Check)</b> 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"/>  <b>Sample Integrity:</b> Temperature Upon Receipt: 5.7 Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 7/2/19 1730	Received by: 	Date/Time: 07/02/19 1730		
Relinquished by:	Date/Time:	Received in Lab by: 	Date/Time:		

# Sample Receipt Checklist

S2 Work Order 1907028

Client: Noble/Tasman Client Project ID: UPRC 33-4F, 5F

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

Matrix (check all that apply): \_\_\_\_\_ Air ☒ Soil/Solid ☒ Water \_\_\_\_\_ Other: \_\_\_\_\_  
(Describe)

Temp (°C)	<u>5.7</u>
-----------	------------

Thermometer ID: 61857155-K

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

Additional Comments (if any):

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

VE  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

07/02/19  
Date/Time 1800



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

Project: Noble - UPRC 33-4F,5F

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/03/19 07:48

**SS09@3'**  
**1907028-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/02/19 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1907051	07/02/19	07/02/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	<b>0.14</b>	0.0050	"	"	"	"	"	"	
Xylenes (total)	<b>0.77</b>	0.010	"	"	"	"	"	"	
Naphthalene	<b>0.10</b>	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	<b>100</b>	50	"	10	"	"	"	"	

Date Sampled: **07/02/19 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		130 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		140 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/02/19 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>160</b>	50	mg/kg	1	1907052	07/02/19	07/02/19	EPA 8015M	

Date Sampled: **07/02/19 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		101 %	30-150		"	"	"	"	

**Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis**

Date Sampled: **07/02/19 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>1920</b>	11.2	mg/kg dry	1	1907050	07/02/19	07/02/19	EPA 6020B	
<b>Magnesium</b>	<b>648</b>	5.62	"	"	"	"	"	"	

Summit Scientific

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

Project: Noble - UPRC 33-4F,5F

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/03/19 07:48

**SS09@3'**  
**1907028-01 (Soil)**

**Summit Scientific**

**Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis**

Sodium	242	5.62	mg/kg dry	1	1907050	07/02/19	07/02/19	EPA 6020B
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**Calculated Analysis**

Date Sampled: **07/02/19 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.22	0.100	units	1	1907053	07/03/19	07/03/19	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/02/19 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.9		%	1	1907049	07/02/19	07/03/19	Calculation	
pH	8.83		pH Units	"	1907048	"	07/02/19	EPA 9045D	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **07/02/19 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.476	0.0100	mmhos/cm	1	1907047	07/02/19	07/02/19	EPA 120.1	

Summit Scientific

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

Project: Noble - UPRC 33-4F,5F

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/03/19 07:48

**SS09@4'**  
**1907028-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/02/19 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.012</b>	0.0020	mg/kg	1	1907051	07/02/19	07/02/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.22</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>1.1</b>	0.010	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.092</b>	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>230</b>	50	"	10	"	"	"	"	

Date Sampled: **07/02/19 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		132 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		165 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/02/19 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>53</b>	50	mg/kg	1	1907052	07/02/19	07/02/19	EPA 8015M	

Date Sampled: **07/02/19 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		99.9 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Noble - UPRC 33-4F,5F

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/03/19 07:48

**SS10@3'**  
**1907028-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/02/19 14:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1907051	07/02/19	07/02/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.013</b>	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **07/02/19 14:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		98.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.0 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/02/19 14:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1907052	07/02/19	07/02/19	EPA 8015M	

Date Sampled: **07/02/19 14:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		101 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Noble - UPRC 33-4F,5F

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/03/19 07:48

**SS10@4'**  
**1907028-04 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/02/19 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1907051	07/02/19	07/02/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.011</b>	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **07/02/19 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.2 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/02/19 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1907052	07/02/19	07/02/19	EPA 8015M	

Date Sampled: **07/02/19 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		97.5 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Noble - UPRC 33-4F,5F

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/03/19 07:48

**SS11@3'**  
**1907028-05 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/02/19 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1907051	07/02/19	07/03/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	<b>0.28</b>	0.0050	"	"	"	"	"	"	
Xylenes (total)	<b>2.6</b>	0.010	"	"	"	"	"	"	
Naphthalene	<b>0.19</b>	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	<b>660</b>	50	"	10	"	"	"	"	

Date Sampled: **07/02/19 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		140 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		235 %	21-167		"	"	"	"	S-02

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/02/19 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	<b>110</b>	50	mg/kg	1	1907052	07/02/19	07/03/19	EPA 8015M	

Date Sampled: **07/02/19 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Noble - UPRC 33-4F,5F

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/03/19 07:48

**SS11@4'**  
**1907028-06 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/02/19 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1907051	07/02/19	07/03/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	<b>0.044</b>	0.0050	"	"	"	"	"	"	
Xylenes (total)	<b>0.17</b>	0.010	"	"	"	"	"	"	
Naphthalene	<b>0.045</b>	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	<b>50</b>	50	"	"	"	"	"	"	

Date Sampled: **07/02/19 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/02/19 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1907052	07/02/19	07/03/19	EPA 8015M	

Date Sampled: **07/02/19 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.3 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Noble - UPRC 33-4F,5F

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/03/19 07:48

**SS12@3'**  
**1907028-07 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/02/19 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1907051	07/02/19	07/03/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.027</b>	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **07/02/19 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		98.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		145 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/02/19 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1907052	07/02/19	07/03/19	EPA 8015M	

Date Sampled: **07/02/19 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		98.4 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Noble - UPRC 33-4F,5F

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/03/19 07:48

**SS12@4'**  
**1907028-08 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/02/19 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1907051	07/02/19	07/03/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **07/02/19 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		99.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		150 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/02/19 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1907052	07/02/19	07/03/19	EPA 8015M	

Date Sampled: **07/02/19 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		104 %	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 St, Unit C  
Denver CO, 80221

Project: Noble - UPRC 33-4F,5F

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/03/19 07:48

**FS01@2'**  
**1907028-09 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/02/19 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.060</b>	0.0020	mg/kg	1	1907051	07/02/19	07/03/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.0094</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>1.2</b>	0.010	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.026</b>	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>290</b>	50	"	10	"	"	"	"	

Date Sampled: **07/02/19 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		182 %	21-167		"	"	"	"	S-02

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/02/19 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>51</b>	50	mg/kg	1	1907052	07/02/19	07/03/19	EPA 8015M	

Date Sampled: **07/02/19 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.5 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Noble - UPRC 33-4F,5F

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/03/19 07:48

**GW02**  
**1907028-10 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/02/19 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Benzene</b>	<b>17</b>	1.0		ug/l	1	1907046	07/02/19	07/02/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>35</b>	1.0		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>200</b>	2.0		"	"	"	"	"	"	

Date Sampled: **07/02/19 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		119 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %		21-167		"	"	"	"	

Summit Scientific

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





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

Project: Noble - UPRC 33-4F,5F

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
07/03/19 07:48

## 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 1907046 - EPA 5030 Water MS

##### Blank (1907046-BLK1)

Prepared: 07/02/19 Analyzed: 07/03/19

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.3		"	13.3		99.8	23-173			
Surrogate: Toluene-d8	12.7		"	13.3		95.5	20-170			
Surrogate: 4-Bromofluorobenzene	12.2		"	13.3		91.4	21-167			

##### LCS (1907046-BS1)

Prepared: 07/02/19 Analyzed: 07/03/19

Benzene	41.0	1.0	ug/l	50.0		82.0	51-132			
Toluene	41.2	1.0	"	50.0		82.4	51-138			
Ethylbenzene	43.6	1.0	"	50.0		87.2	58-146			
m,p-Xylene	84.0	2.0	"	100		84.0	57-144			
o-Xylene	42.4	1.0	"	50.0		84.9	53-146			
Surrogate: 1,2-Dichloroethane-d4	14.6		"	13.3		110	23-173			
Surrogate: Toluene-d8	12.7		"	13.3		95.5	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.3	21-167			

##### Matrix Spike (1907046-MS1)

Source: 1907024-01

Prepared: 07/02/19 Analyzed: 07/03/19

Benzene	124	1.0	ug/l	50.0	33.3	182	34-141			QM-07
Toluene	107	1.0	"	50.0	155	NR	27-151			QM-07
Ethylbenzene	43.2	1.0	"	50.0	13.2	59.9	29-160			
m,p-Xylene	112	2.0	"	100	105	7.45	20-166			QM-07
o-Xylene	52.6	1.0	"	50.0	44.7	15.9	33-159			QM-07
Surrogate: 1,2-Dichloroethane-d4	14.4		"	13.3		108	23-173			
Surrogate: Toluene-d8	13.0		"	13.3		97.9	20-170			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.8	21-167			

Summit Scientific

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

Project: Noble - UPRC 33-4F,5F

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
07/03/19 07:48

**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 1907046 - EPA 5030 Water MS**

**Matrix Spike Dup (1907046-MSD1)**

Source: 1907024-01

Prepared: 07/02/19 Analyzed: 07/03/19

Benzene	117	1.0	ug/l	50.0	33.3	168	34-141	5.84	30	QM-07
Toluene	102	1.0	"	50.0	155	NR	27-151	4.72	30	QM-07
Ethylbenzene	41.6	1.0	"	50.0	13.2	56.9	29-160	3.61	30	
m,p-Xylene	106	2.0	"	100	105	1.15	20-166	5.76	30	QM-07
o-Xylene	50.0	1.0	"	50.0	44.7	10.6	33-159	5.17	30	QM-07
Surrogate: 1,2-Dichloroethane-d4	15.1		"	13.3		113	23-173			
Surrogate: Toluene-d8	13.5		"	13.3		101	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.4	21-167			

**Batch 1907051 - EPA 5030 Soil MS**

**Blank (1907051-BLK1)**

Prepared: 07/02/19 Analyzed: 07/03/19

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0371		"	0.0400		92.8	23-173			
Surrogate: Toluene-d8	0.0382		"	0.0400		95.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400		96.0	21-167			

**LCS (1907051-BS1)**

Prepared: 07/02/19 Analyzed: 07/03/19

Benzene	0.0803	0.0020	mg/kg	0.100		80.3	70-130			
Toluene	0.0890	0.0050	"	0.100		89.0	70-130			
Ethylbenzene	0.0947	0.0050	"	0.100		94.7	70-130			
m,p-Xylene	0.193	0.010	"	0.200		96.7	70-130			
o-Xylene	0.0907	0.0050	"	0.100		90.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0400		99.5	23-173			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.7	21-167			

Summit Scientific

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



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

Project: Noble - UPRC 33-4F,5F

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/03/19 07:48

**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 1907051 - EPA 5030 Soil MS**

Matrix Spike (1907051-MS1)		Source: 1907025-07			Prepared: 07/02/19 Analyzed: 07/03/19					
Benzene	0.133	0.0020	mg/kg	0.100	0.0448	88.5	70-130			
Toluene	0.381	0.0050	"	0.100	0.259	122	70-130			
Ethylbenzene	0.111	0.0050	"	0.100	0.0142	96.3	70-130			
m,p-Xylene	0.308	0.010	"	0.200	0.113	97.6	70-130			
o-Xylene	0.130	0.0050	"	0.100	0.0328	97.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0417		"	0.0400		104	23-173			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		99.1	21-167			
Matrix Spike Dup (1907051-MSD1)		Source: 1907025-07			Prepared: 07/02/19 Analyzed: 07/03/19					
Benzene	0.132	0.0020	mg/kg	0.100	0.0448	86.9	70-130	1.24	30	
Toluene	0.389	0.0050	"	0.100	0.259	130	70-130	2.10	30	
Ethylbenzene	0.115	0.0050	"	0.100	0.0142	101	70-130	4.09	30	
m,p-Xylene	0.338	0.010	"	0.200	0.113	112	70-130	9.11	30	
o-Xylene	0.142	0.0050	"	0.100	0.0328	109	70-130	8.44	30	
Surrogate: 1,2-Dichloroethane-d4	0.0412		"	0.0400		103	23-173			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	21-167			

Summit Scientific

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



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

Project: Noble - UPRC 33-4F,5F

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/03/19 07:48

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1907052 - EPA 3550A**

**Blank (1907052-BLK1)**

Prepared: 07/02/19 Analyzed: 07/03/19

C10-C28 (DRO) ND 50 mg/kg

**LCS (1907052-BS1)**

Prepared: 07/02/19 Analyzed: 07/03/19

C10-C28 (DRO) 463 50 mg/kg 500 92.5 70-130

**Matrix Spike (1907052-MS1)**

**Source: 1907025-07**

Prepared: 07/02/19 Analyzed: 07/03/19

C10-C28 (DRO) 480 50 mg/kg 500 28.9 90.3 70-130

**Matrix Spike Dup (1907052-MSD1)**

**Source: 1907025-07**

Prepared: 07/02/19 Analyzed: 07/03/19

C10-C28 (DRO) 500 50 mg/kg 500 28.9 94.2 70-130 4.07 20

Summit Scientific

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



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

Project: Noble - UPRC 33-4F,5F

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/03/19 07:48

## Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis - Quality Control

### Summit Scientific

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

#### Batch 1907050 - General Preparation

##### Blank (1907050-BLK1)

Prepared & Analyzed: 07/02/19

Calcium	ND	10.0	mg/kg wet
Magnesium	ND	5.00	"
Sodium	ND	5.00	"

##### LCS (1907050-BS1)

Prepared & Analyzed: 07/02/19

Calcium	546	10.0	mg/kg wet	500	109	70-130
Magnesium	602	5.00	"	500	120	70-130
Sodium	568	5.00	"	500	114	70-130

##### Duplicate (1907050-DUP1)

Source: 1907027-01

Prepared & Analyzed: 07/02/19

Calcium	2280	12.0	mg/kg dry	2320	1.90	20
Magnesium	566	6.01	"	564	0.403	20
Sodium	123	6.01	"	109	11.8	20

##### Matrix Spike (1907050-MS1)

Source: 1907027-01

Prepared & Analyzed: 07/02/19

Calcium	2770	12.0	mg/kg dry	601	2320	73.7	70-130
Magnesium	1190	6.01	"	601	564	105	70-130
Sodium	714	6.01	"	601	109	101	70-130

##### Matrix Spike Dup (1907050-MSD1)

Source: 1907027-01

Prepared & Analyzed: 07/02/19

Calcium	2780	12.0	mg/kg dry	601	2320	75.5	70-130	0.404	25
Magnesium	1180	6.01	"	601	564	102	70-130	1.29	25
Sodium	724	6.01	"	601	109	102	70-130	1.33	25

Summit Scientific

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

Project: Noble - UPRC 33-4F,5F

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/03/19 07:48

**Physical Parameters by APHA/ASTM/EPA Methods - Quality Control**  
**Summit Scientific**

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

**Batch 1907048 - General Preparation**

**LCS (1907048-BS1)**

Prepared & Analyzed: 07/02/19

pH	9.42	pH Units	9.23	102	95-105
----	------	----------	------	-----	--------

**Duplicate (1907048-DUP1)**

Source: 1907027-01

Prepared & Analyzed: 07/02/19

pH	8.16	pH Units	8.04	1.48	20
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**Batch 1907049 - General Preparation**

**Duplicate (1907049-DUP1)**

Source: 1907027-01

Prepared: 07/02/19 Analyzed: 07/03/19

% Solids	83.7	%	83.2	0.599	20
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Summit Scientific

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

Project: Noble - UPRC 33-4F,5F

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/03/19 07:48

**Specific Conductance by EPA Method 120.1 - Quality Control**  
**Summit Scientific**

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

**Batch 1907047 - General Preparation**

**Blank (1907047-BLK1)**

Prepared & Analyzed: 07/02/19

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (1907047-BS1)**

Prepared & Analyzed: 07/02/19

Specific Conductance (EC) 0.722 0.0100 mmhos/cm 0.750 96.3 90-110

**Duplicate (1907047-DUP1)**

**Source: 1907027-01**

Prepared & Analyzed: 07/02/19

Specific Conductance (EC) 0.618 0.0100 mmhos/cm 0.610 1.22 20

Summit Scientific

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



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

Project: Noble - UPRC 33-4F,5F

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/03/19 07:48

### 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.

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

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 23, 2019

Brandon Bruns

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Work Order # 1907181

Enclosed are the results of analyses for samples received by Summit Scientific on 07/16/19 15:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink on a light blue background. The signature is written in a cursive style and reads "Muri Premier".

Muri Premier For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/23/19 12:29

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH02@0-2'	1907181-01	Soil	07/16/19 09:35	07/16/19 15:30
BH03@0-2'	1907181-02	Soil	07/16/19 09:15	07/16/19 15:30
BH04@0-2'	1907181-03	Soil	07/16/19 10:05	07/16/19 15:30
BH05@0-2'	1907181-04	Soil	07/16/19 11:55	07/16/19 15:30
BH06@0-2'	1907181-05	Soil	07/16/19 11:37	07/16/19 15:30
BH07@0-2'	1907181-06	Soil	07/16/19 11:11	07/16/19 15:30
BH08@0-2'	1907181-07	Soil	07/16/19 10:45	07/16/19 15:30

Summit Scientific

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

# Summit Scientific

1907181

S<sub>2</sub>

4653 Table Mountain Drive ♦ Golden, Colorado 80403

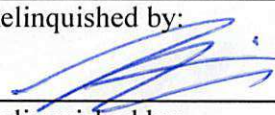
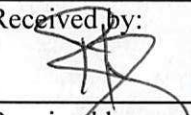
303-277-9310

Page 1 of 1

Client: Noble/Tasman  
 Address: 6899 Pecos St, Unit C  
 City/State/Zip: Denver CO 80221  
 Phone: 720 616 8383  
 Sampler Name: Jacob Whitehouse

Project Manager: Brandon Bruns, Invoice, Jacob Evans  
 E-Mail: bbruns@tasmangeo.com  
 Project Name: UPRC33-4F, SF, Hunt Federal K33-19  
 Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions	
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	8260	CBTEX-N	6015	DEO						
1	BH0200-2'	7/16/19	0935	1			X			X				X	X							
2	BH0300-2'		0915	1										X	X							
3	BH0400-2'		1005	1										X	X							
4	BH0500-2'		1155	1										X	X							
5	BH0600-2'		1137	1										X	X							
6	BH0700-2'		1111	1										X	X							
7	BH0800-2'		1045	1										X	X							
8																						
9																						
10																						

Relinquished by: 	Date/Time: <u>7/16/19 1530</u>	Received by: 	Date/Time: <u>07/16/19 1530</u>	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/> Sample Integrity: Temperature Upon Receipt: <u>4.7</u> Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

1907181

## Sample Receipt Checklist

S2 Work Order \_\_\_\_\_

Client: Noble/Tasman Client Project ID: UPRC 33-4F, 5F, Hunt FederalShipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: \_\_\_\_\_
☒ ☐ ☐ ☐ ☐
Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

Temp (°C)	4.7
-----------	-----

Thermometer ID: 61857155-K

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

Custodian Printed Name or Initials RESignature of Custodian [Signature]Date/Time 07/16/191535



Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/23/19 12:29

**BH02@0-2'**  
**1907181-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/16/19 09:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1907242	07/17/19	07/18/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **07/16/19 09:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		88.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/16/19 09:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1907243	07/17/19	07/17/19	EPA 8015M	

Date Sampled: **07/16/19 09:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		99.8 %	30-150		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
07/23/19 12:29

**BH03@0-2'**  
**1907181-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/16/19 09:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1907242	07/17/19	07/18/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **07/16/19 09:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		88.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/16/19 09:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1907243	07/17/19	07/17/19	EPA 8015M	

Date Sampled: **07/16/19 09:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		101 %	30-150		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
07/23/19 12:29

**BH04@0-2'**  
**1907181-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/16/19 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1907242	07/17/19	07/18/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **07/16/19 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		92.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/16/19 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1907243	07/17/19	07/17/19	EPA 8015M	

Date Sampled: **07/16/19 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/23/19 12:29

**BH05@0-2'**  
**1907181-04 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/16/19 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.0060</b>	0.0020	mg/kg	1	1907242	07/17/19	07/18/19	EPA 8260B	
<b>Toluene</b>	<b>0.016</b>	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>11</b>	1.0	"	100	"	"	07/18/19	"	
<b>Naphthalene</b>	<b>0.012</b>	0.010	"	1	"	"	07/18/19	"	
<b>Gasoline Range Hydrocarbons</b>	<b>50</b>	50	"	"	"	"	"	"	

Date Sampled: **07/16/19 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		151 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		182 %	21-167		"	"	"	"	S-02

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/16/19 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>63</b>	50	mg/kg	1	1907243	07/17/19	07/17/19	EPA 8015M	

Date Sampled: **07/16/19 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
07/23/19 12:29

**BH06@0-2'**  
**1907181-05 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/16/19 11:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1907242	07/17/19	07/18/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **07/16/19 11:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		90.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.3 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/16/19 11:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1907243	07/17/19	07/17/19	EPA 8015M	

Date Sampled: **07/16/19 11:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
07/23/19 12:29

**BH07@0-2'**  
**1907181-06 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/16/19 11:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1907242	07/17/19	07/18/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **07/16/19 11:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/16/19 11:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1907243	07/17/19	07/17/19	EPA 8015M	

Date Sampled: **07/16/19 11:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

Reported:  
07/23/19 12:29

**BH08@0-2'**  
**1907181-07 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/16/19 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1907242	07/17/19	07/18/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **07/16/19 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		92.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/16/19 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1907243	07/17/19	07/17/19	EPA 8015M	

Date Sampled: **07/16/19 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/23/19 12:29

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

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

#### Batch 1907242 - EPA 5030 Soil MS

##### Blank (1907242-BLK1)

Prepared & Analyzed: 07/17/19

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0400		"	0.0400		100	23-173			
Surrogate: Toluene-d8	0.0419		"	0.0400		105	20-170			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	21-167			

##### LCS (1907242-BS1)

Prepared & Analyzed: 07/17/19

Benzene	0.0878	0.0020	mg/kg	0.100		87.8	70-130			
Toluene	0.0936	0.0050	"	0.100		93.6	70-130			
Ethylbenzene	0.103	0.0050	"	0.100		103	70-130			
m,p-Xylene	0.207	0.010	"	0.200		104	70-130			
o-Xylene	0.0908	0.0050	"	0.100		90.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0395		"	0.0400		98.7	23-173			
Surrogate: Toluene-d8	0.0424		"	0.0400		106	20-170			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	21-167			

##### Matrix Spike (1907242-MS1)

Source: 1907160-01

Prepared & Analyzed: 07/17/19

Benzene	0.0845	0.0020	mg/kg	0.100	ND	84.5	70-130			
Toluene	0.0877	0.0050	"	0.100	ND	87.7	70-130			
Ethylbenzene	0.0929	0.0050	"	0.100	ND	92.9	70-130			
m,p-Xylene	0.195	0.010	"	0.200	ND	97.6	70-130			
o-Xylene	0.0935	0.0050	"	0.100	ND	93.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0463		"	0.0400		116	23-173			
Surrogate: Toluene-d8	0.0417		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0411		"	0.0400		103	21-167			

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/23/19 12:29

**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 1907242 - EPA 5030 Soil MS**

**Matrix Spike Dup (1907242-MSD1)**

**Source: 1907160-01**

Prepared & Analyzed: 07/17/19

Benzene	0.0840	0.0020	mg/kg	0.100	ND	84.0	70-130	0.677	30	
Toluene	0.0900	0.0050	"	0.100	ND	90.0	70-130	2.67	30	
Ethylbenzene	0.0932	0.0050	"	0.100	ND	93.2	70-130	0.226	30	
m,p-Xylene	0.201	0.010	"	0.200	ND	100	70-130	2.86	30	
o-Xylene	0.0986	0.0050	"	0.100	ND	98.6	70-130	5.31	30	
Surrogate: 1,2-Dichloroethane-d4	0.0383		"	0.0400		95.7	23-173			
Surrogate: Toluene-d8	0.0414		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	21-167			

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/23/19 12:29

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1907243 - EPA 3550A**

**Blank (1907243-BLK1)**

Prepared & Analyzed: 07/17/19

C10-C28 (DRO) ND 50 mg/kg

**LCS (1907243-BS1)**

Prepared & Analyzed: 07/17/19

C10-C28 (DRO) 482 50 mg/kg 500 96.4 70-130

**Matrix Spike (1907243-MS1)**

**Source: 1907167-02**

Prepared & Analyzed: 07/17/19

C10-C28 (DRO) 450 50 mg/kg 500 31.4 83.8 70-130

**Matrix Spike Dup (1907243-MSD1)**

**Source: 1907167-02**

Prepared & Analyzed: 07/17/19

C10-C28 (DRO) 463 50 mg/kg 500 31.4 86.3 70-130 2.75 20

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/23/19 12:29

### 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

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 29, 2019

Brandon Bruns

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Work Order # 1907259

Enclosed are the results of analyses for samples received by Summit Scientific on 07/22/19 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink on a light blue background. The signature is cursive and reads "Muri Premier".

Muri Premier For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/29/19 17:06

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	1907259-01	Water	07/22/19 13:07	07/22/19 17:30
BH02	1907259-02	Water	07/22/19 13:36	07/22/19 17:30
BH03	1907259-03	Water	07/22/19 13:43	07/22/19 17:30
BH04	1907259-04	Water	07/22/19 13:45	07/22/19 17:30
BH05	1907259-05	Water	07/22/19 13:35	07/22/19 17:30
BH06	1907259-06	Water	07/22/19 13:30	07/22/19 17:30
BH07	1907259-07	Water	07/22/19 13:20	07/22/19 17:30
BH08	1907259-08	Water	07/22/19 13:08	07/22/19 17:30

Summit Scientific

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1907259

# Summit Scientific



S<sub>2</sub>

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

Page 1 of 1

Client: Noble / Tasman Project Manager: Brandon Bruns, Invoice: Jacob Evans  
Address: 6899 Pecos Street E-Mail: Bbruns@tasman-geo.com  
City/State/Zip: Denver / CO/ 80221  
Phone: 303-487-1228 Project Name: WPRC 33-4F, Hunt Federal K33-19  
Sampler Name: GB + MG Project Number: -

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	\$260 BTEX	\$260B GBTEXN	\$015 DRO	pH, EC, SAR			
1	BH01	7/22/19	1307	3			X		X					X					
2	BH02		1336																
3	BH03		1343																
4	BH04		1345																
5	BH05		1335																
6	BH06		1330																
7	BH07		1320																
8	BH08		1308																
9																			
10																			

Relinquished by: 	Date/Time: 1550 7/27/19	Received by: Tasman's Lock Box	Date/Time: 1550 7/22/19	Turn Around Time (Check) Same Day — 72 hours 24 hours — Standard <input checked="" type="checkbox"/> 48 hours —	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 7-22-19 17:30	Received by: 	Date/Time: 7-22-19 17:30	Sample Integrity: Temperature Upon Receipt: 2.2 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	
Relinquished by:	Date/Time:	Received by:	Date/Time:		

# Sample Receipt Checklist

S2 Work Order 1907259

Client: Noble/Tasman

Client Project ID: UPRC 33-4, Hunt Federal K33-19

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

☐ ☒ ☐ ☐ ☐

Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☒ Water ☐ Other: \_\_\_\_\_  
(Describe)

Temp (°C)	2.2
-----------	-----

Thermometer ID: 61857155-K

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

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

MP

Custodian Printed Name or Initials

*Muri Premer*

Signature of Custodian

7/22/19

Date/Time



Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/29/19 17:06

**BH01**  
**1907259-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/22/19 13:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1907342	07/24/19	07/27/19	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **07/22/19 13:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		128 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		98.9 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %		21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/29/19 17:06

**BH02**  
**1907259-02 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/22/19 13:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1907342	07/24/19	07/27/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/22/19 13:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		123 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.8 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/29/19 17:06

**BH03**  
**1907259-03 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/22/19 13:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1907342	07/24/19	07/27/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/22/19 13:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		136 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.7 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/29/19 17:06

**BH04**  
**1907259-04 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/22/19 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1907342	07/24/19	07/27/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/22/19 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		143 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.0 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/29/19 17:06

**BH05**  
**1907259-05 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/22/19 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1907342	07/24/19	07/27/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/22/19 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		137 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.8 %	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  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/29/19 17:06

**BH06**  
**1907259-06 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/22/19 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1907342	07/24/19	07/27/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/22/19 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		150 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.3 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/29/19 17:06

**BH07**  
**1907259-07 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/22/19 13:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1907342	07/24/19	07/27/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/22/19 13:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		131 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.8 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/29/19 17:06

**BH08**  
**1907259-08 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **07/22/19 13:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1907342	07/24/19	07/27/19	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/22/19 13:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		138 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.7 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/29/19 17:06

## 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 1907342 - EPA 5030 Water MS

##### Blank (1907342-BLK1)

Prepared: 07/24/19 Analyzed: 07/27/19

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	16.5		"	13.3		124	23-173			
Surrogate: Toluene-d8	13.1		"	13.3		98.5	20-170			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		95.9	21-167			

##### LCS (1907342-BS1)

Prepared: 07/24/19 Analyzed: 07/27/19

Benzene	37.2	1.0	ug/l	33.3		112	51-132			
Toluene	38.8	1.0	"	33.3		116	51-138			
Ethylbenzene	44.8	1.0	"	33.3		134	58-146			
m,p-Xylene	83.3	2.0	"	66.7		125	57-144			
o-Xylene	40.7	1.0	"	33.3		122	53-146			
Surrogate: 1,2-Dichloroethane-d4	17.5		"	13.3		131	23-173			
Surrogate: Toluene-d8	13.0		"	13.3		97.5	20-170			
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3		94.3	21-167			

##### Matrix Spike (1907342-MS1)

Source: 1907259-01

Prepared: 07/24/19 Analyzed: 07/27/19

Benzene	42.8	1.0	ug/l	33.3	ND	128	34-141			
Toluene	42.2	1.0	"	33.3	ND	127	27-151			
Ethylbenzene	49.1	1.0	"	33.3	ND	147	29-160			
m,p-Xylene	91.9	2.0	"	66.7	ND	138	20-166			
o-Xylene	46.4	1.0	"	33.3	ND	139	33-159			
Surrogate: 1,2-Dichloroethane-d4	19.1		"	13.3		144	23-173			
Surrogate: Toluene-d8	13.0		"	13.3		97.8	20-170			
Surrogate: 4-Bromofluorobenzene	14.0		"	13.3		105	21-167			

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/29/19 17:06

**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 1907342 - EPA 5030 Water MS**

**Matrix Spike Dup (1907342-MSD1)**

**Source: 1907259-01**

Prepared: 07/24/19 Analyzed: 07/27/19

Benzene	40.1	1.0	ug/l	33.3	ND	120	34-141	6.56	30	
Toluene	40.4	1.0	"	33.3	ND	121	27-151	4.33	30	
Ethylbenzene	49.0	1.0	"	33.3	ND	147	29-160	0.285	30	
m,p-Xylene	90.2	2.0	"	66.7	ND	135	20-166	1.88	30	
o-Xylene	45.9	1.0	"	33.3	ND	138	33-159	1.02	30	
Surrogate: 1,2-Dichloroethane-d4	18.6		"	13.3		140	23-173			
Surrogate: Toluene-d8	12.7		"	13.3		95.6	20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		100	21-167			

Summit Scientific

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - UPRC 33-4F, 5F, Hunt Federal K33-19

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
07/29/19 17:06

### 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

**ATTACHMENT B**  
**BORING LOGS**



6899 Pecos Street, Unit C  
Denver, Colorado 80221

CLIENT: Noble Energy

LOGGED BY: Jake Whritenour

PROJECT MANAGER: Brandon Bruns

DRILLING CONTRACTOR: Tasman Geosciences

DRILLING EQUIPMENT: Power Probe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 7/16/2019-7/16/2019

TOTAL WELL DEPTH (FT. BGS): 12

DEPTH TO WATER (FT. BGS): 2

UPRC 33-4F, 5F, Hunt Federal K 33-19

BORING / WELL ID: BH01

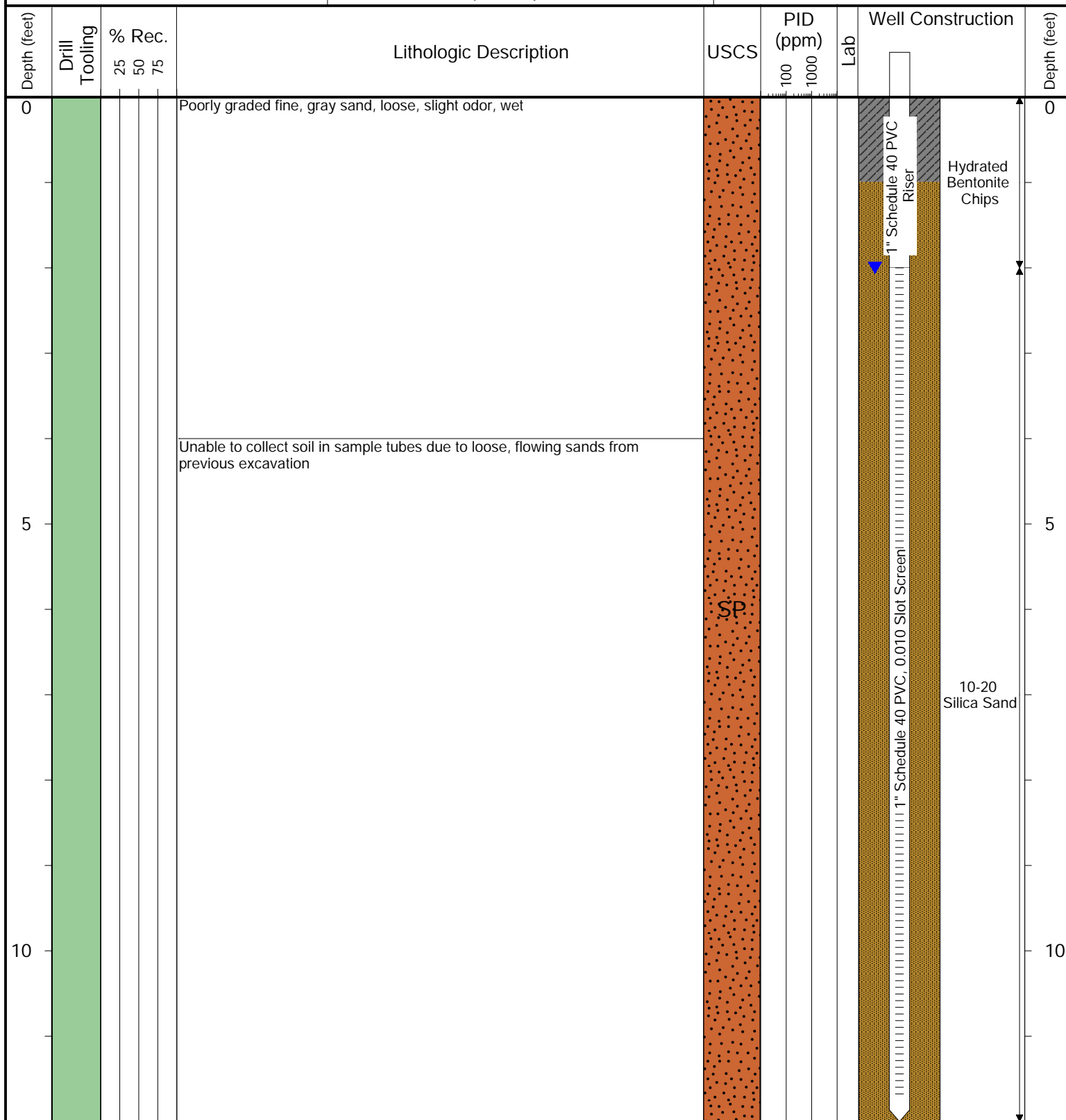
LOCATION: Weld County, Colorado

LATITUDE (WGS 84): 40.269517454423

LONGITUDE (WGS 84): -104.79148368769

CASING ELEVATION (FT. AMSL): 4761.4

GROUND ELEVATION (FT. AMSL): 4758.9



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

Hand Auger

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: Jake Whritenour

PROJECT MANAGER: Brandon Bruns

DRILLING CONTRACTOR: Tasman Geosciences

DRILLING EQUIPMENT: Power Probe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 7/16/2019-7/16/2019

TOTAL WELL DEPTH (FT. BGS): 12

DEPTH TO WATER (FT. BGS): 2

UPRC 33-4F, 5F, Hunt Federal K 33-19

BORING / WELL ID: BH02

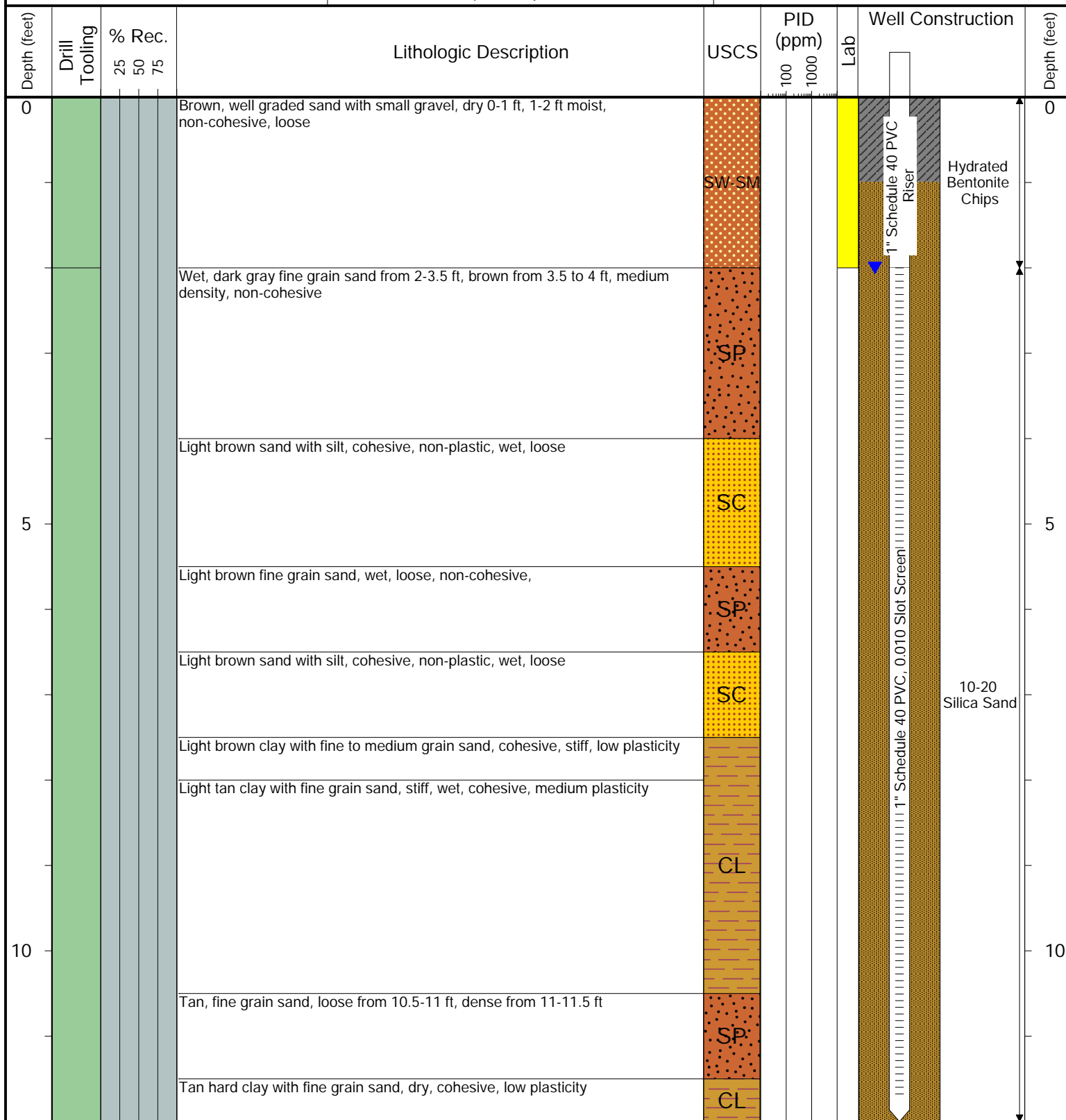
LOCATION: Weld County, Colorado

LATITUDE (WGS 84): 40.269444225725

LONGITUDE (WGS 84): -104.79148635256

CASING ELEVATION (FT. AMSL): 4762.85

GROUND ELEVATION (FT. AMSL): 4759.49



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

Hand Auger

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: Jake Whritenour

PROJECT MANAGER: Brandon Bruns

DRILLING CONTRACTOR: Tasman Geosciences

DRILLING EQUIPMENT: Power Probe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 7/16/2019-7/16/2019

TOTAL WELL DEPTH (FT. BGS): 12

DEPTH TO WATER (FT. BGS): 2

UPRC 33-4F, 5F, Hunt Federal K 33-19

BORING / WELL ID: BH03

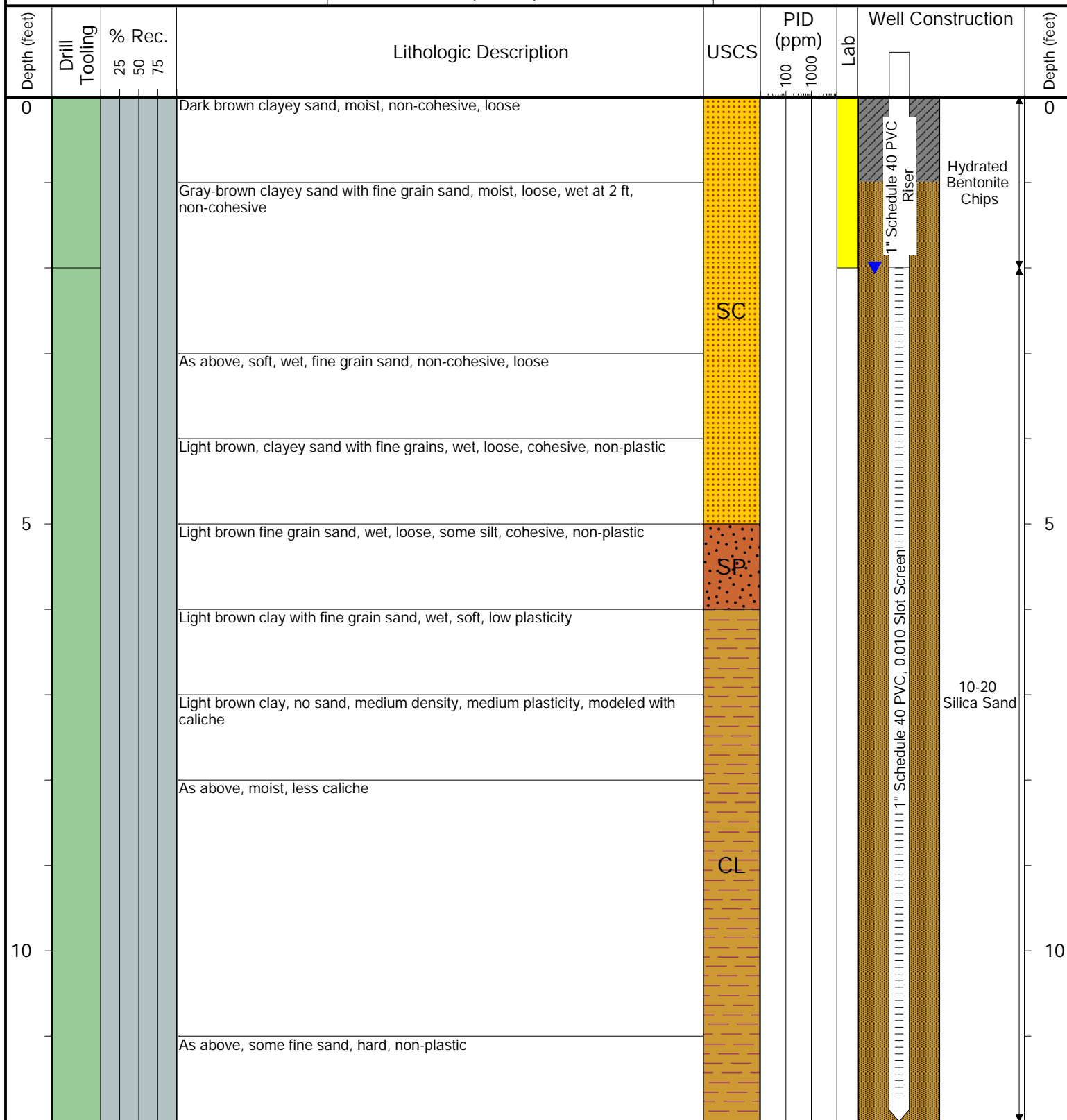
LOCATION: Weld County, Colorado

LATITUDE (WGS 84): 40.26951946092

LONGITUDE (WGS 84): -104.79158202337

CASING ELEVATION (FT. AMSL): 4761.87

GROUND ELEVATION (FT. AMSL): 4758.77



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

Hand Auger

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: Jake Whritenour

PROJECT MANAGER: Brandon Bruns

DRILLING CONTRACTOR: Tasman Geosciences

DRILLING EQUIPMENT: Power Probe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 7/16/2019-7/16/2019

TOTAL WELL DEPTH (FT. BGS): 12

DEPTH TO WATER (FT. BGS): 2.5

UPRC 33-4F, 5F, Hunt Federal K 33-19

BORING / WELL ID: BH04

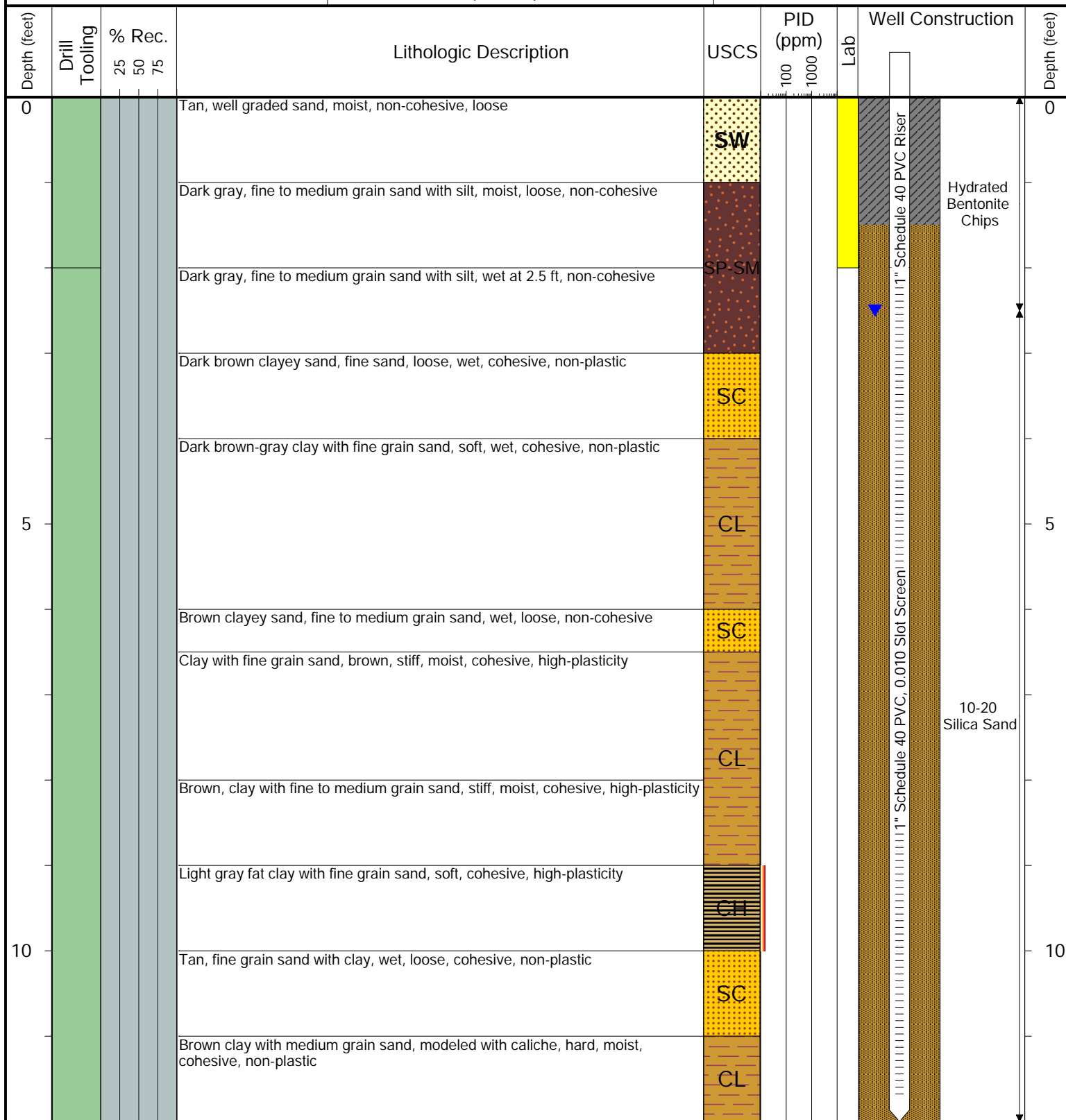
LOCATION: Weld County, Colorado

LATITUDE (WGS 84): 40.269596512735

LONGITUDE (WGS 84): -104.79147110559

CASING ELEVATION (FT. AMSL): 4758.25

GROUND ELEVATION (FT. AMSL): 4758.54



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

Hand Auger

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: Jake Whritenour

PROJECT MANAGER: Brandon Bruns

DRILLING CONTRACTOR: Tasman Geosciences

DRILLING EQUIPMENT: Power Probe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 7/16/2019-7/16/2019

TOTAL WELL DEPTH (FT. BGS): 12

DEPTH TO WATER (FT. BGS): 2

UPRC 33-4F, 5F, Hunt Federal K 33-19

BORING / WELL ID: BH05

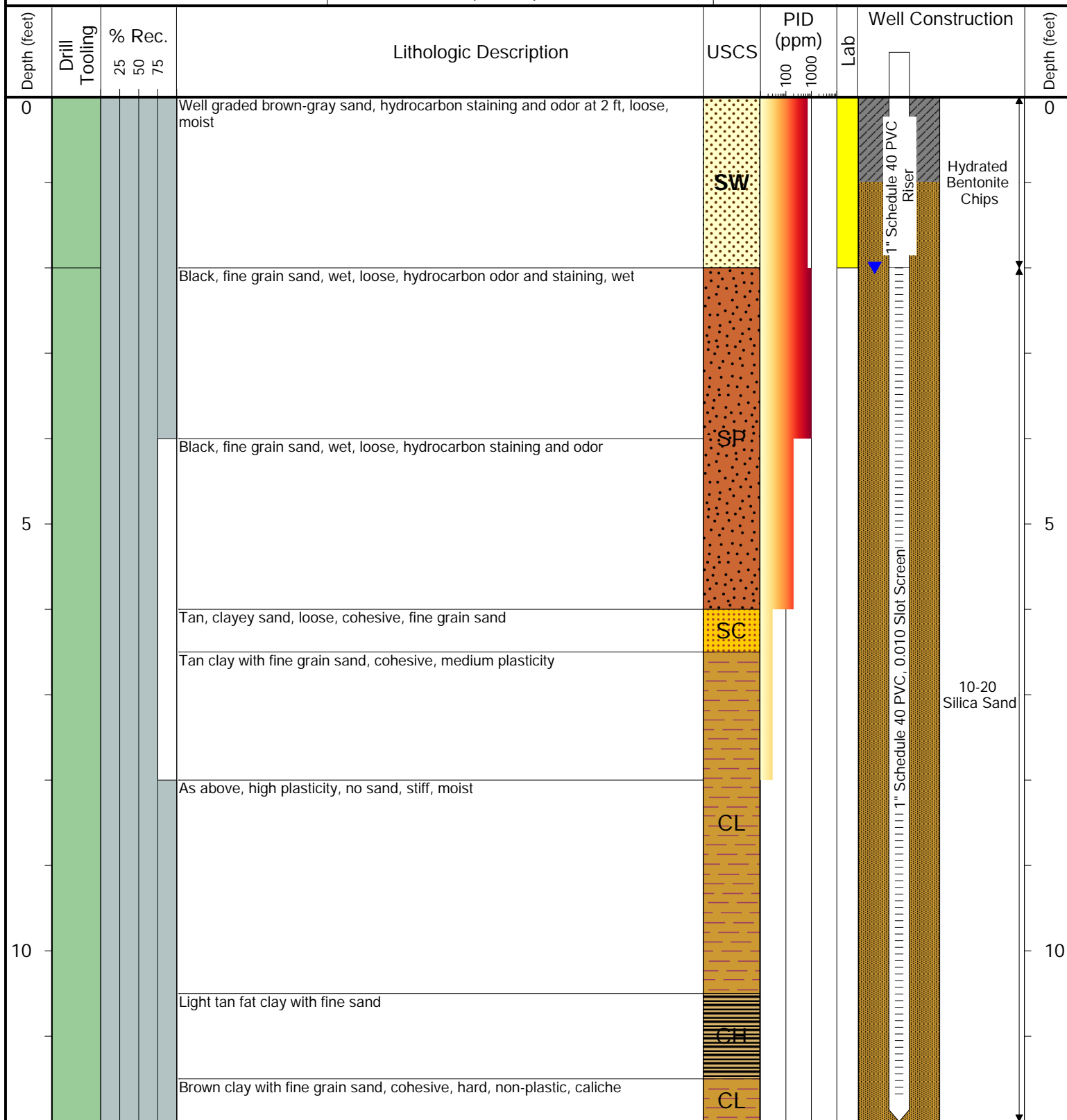
LOCATION: Weld County, Colorado

LATITUDE (WGS 84): 40.26951882975

LONGITUDE (WGS 84): -104.7912638019

CASING ELEVATION (FT. AMSL): 4761.67

GROUND ELEVATION (FT. AMSL): 4758.99



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

Hand Auger

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: Jake Whritenour

PROJECT MANAGER: Brandon Bruns

DRILLING CONTRACTOR: Tasman Geosciences

DRILLING EQUIPMENT: Power Probe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 7/16/2019-7/16/2019

TOTAL WELL DEPTH (FT. BGS): 12

DEPTH TO WATER (FT. BGS): 2

UPRC 33-4F, 5F, Hunt Federal K 33-19

BORING / WELL ID: BH06

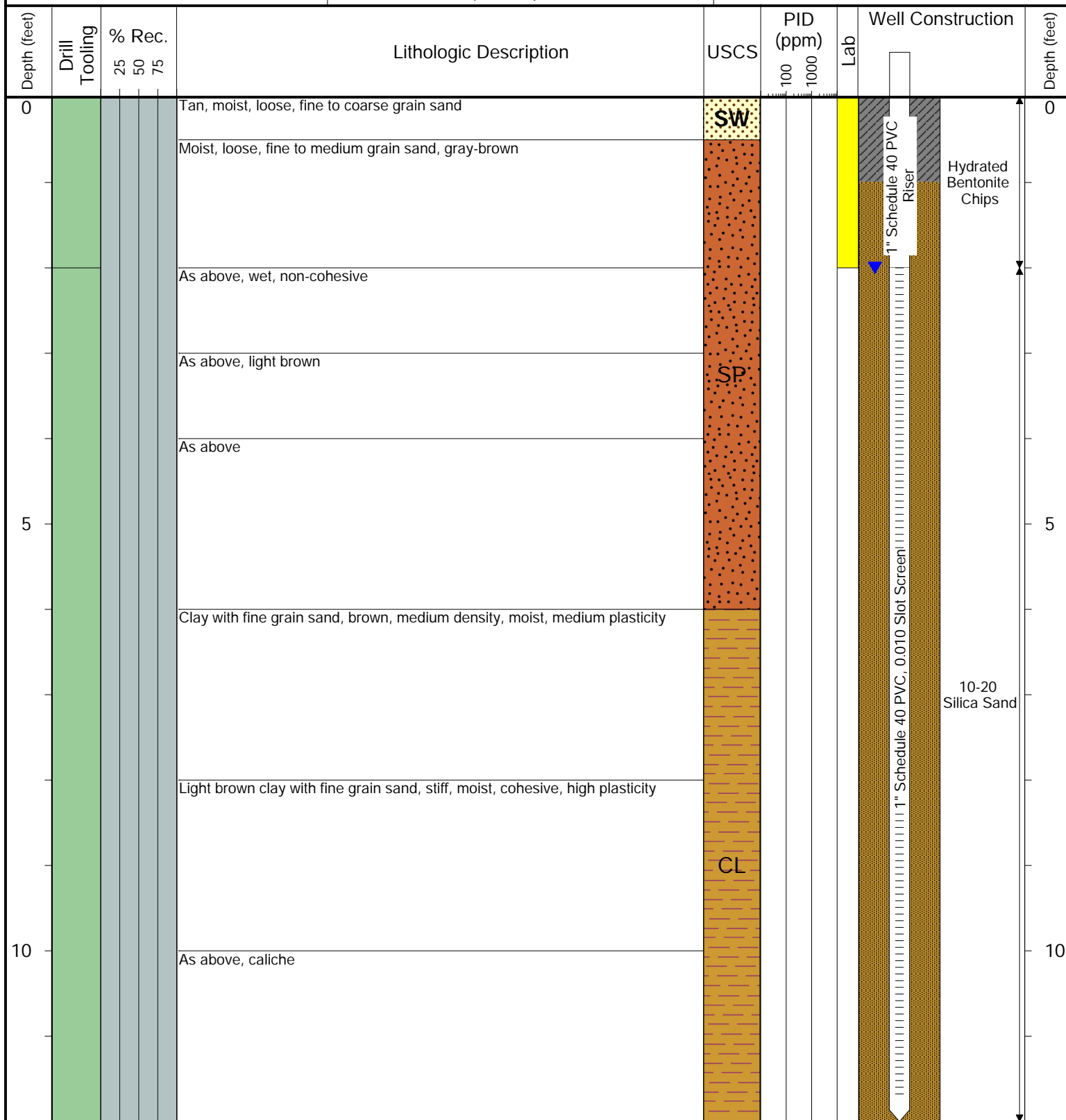
LOCATION: Weld County, Colorado

LATITUDE (WGS 84): 40.269447645114

LONGITUDE (WGS 84): -104.79127167057

CASING ELEVATION (FT. AMSL): 4761.54

GROUND ELEVATION (FT. AMSL): 4759.4



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

Hand Auger

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: Jake Whritenour

PROJECT MANAGER: Brandon Bruns

DRILLING CONTRACTOR: Tasman Geosciences

DRILLING EQUIPMENT: Power Probe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 7/16/2019-7/16/2019

TOTAL WELL DEPTH (FT. BGS): 12

DEPTH TO WATER (FT. BGS): 2

UPRC 33-4F, 5F, Hunt Federal K 33-19

BORING / WELL ID: BH07

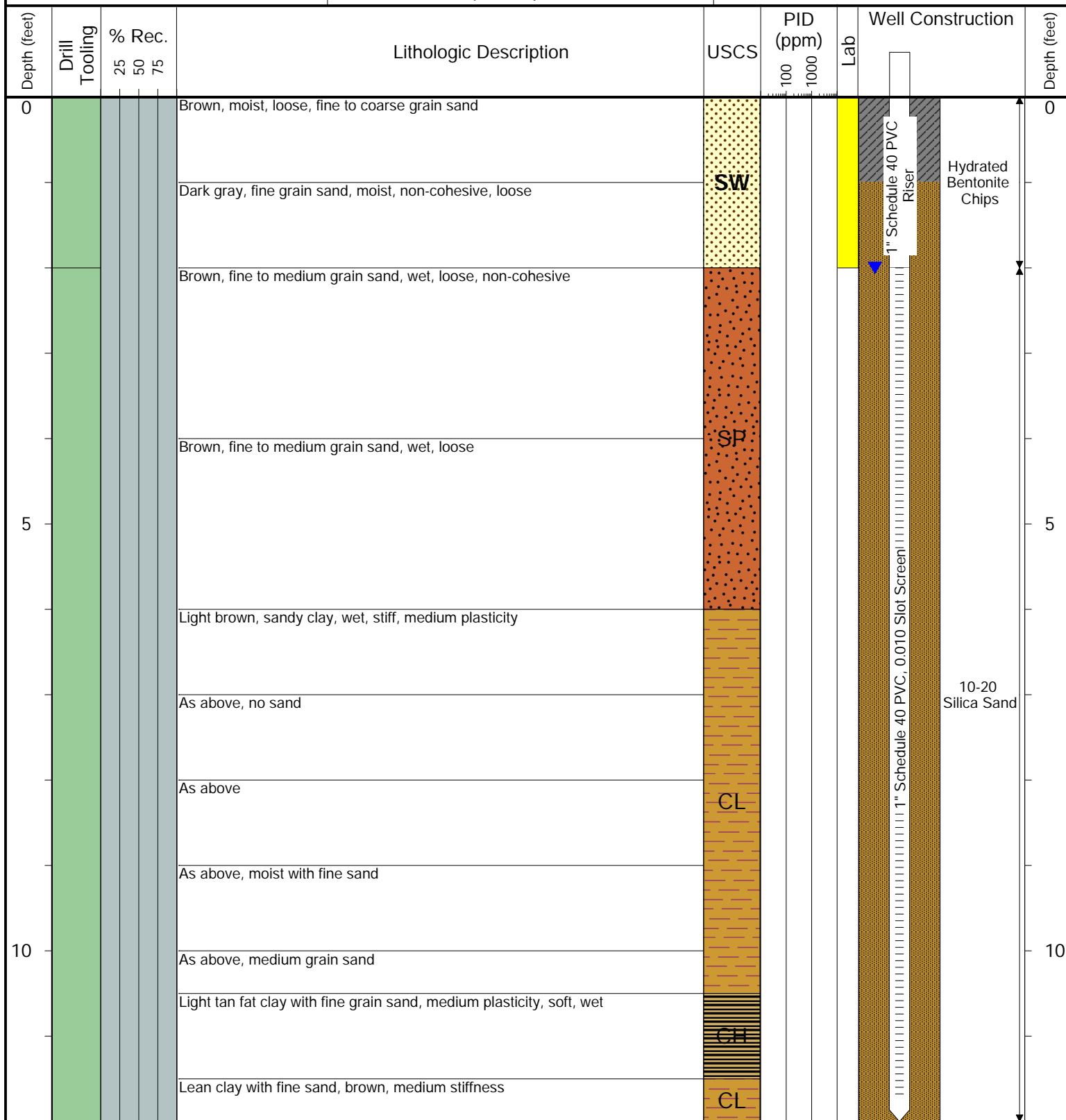
LOCATION: Weld County, Colorado

LATITUDE (WGS 84): 40.269506676534

LONGITUDE (WGS 84): -104.79116283072

CASING ELEVATION (FT. AMSL): 4762.4

GROUND ELEVATION (FT. AMSL): 4759.09



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

Hand Auger

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: Jake Whritenour

PROJECT MANAGER: Brandon Bruns

DRILLING CONTRACTOR: Tasman Geosciences

DRILLING EQUIPMENT: Power Probe

DRILL BIT SIZE (INCHES): 2.375"

DATE STARTED - COMPLETED: 7/16/2019-7/16/2019

TOTAL WELL DEPTH (FT. BGS): 12

DEPTH TO WATER (FT. BGS): 2

UPRC 33-4F, 5F, Hunt Federal K 33-19

BORING / WELL ID: BH08

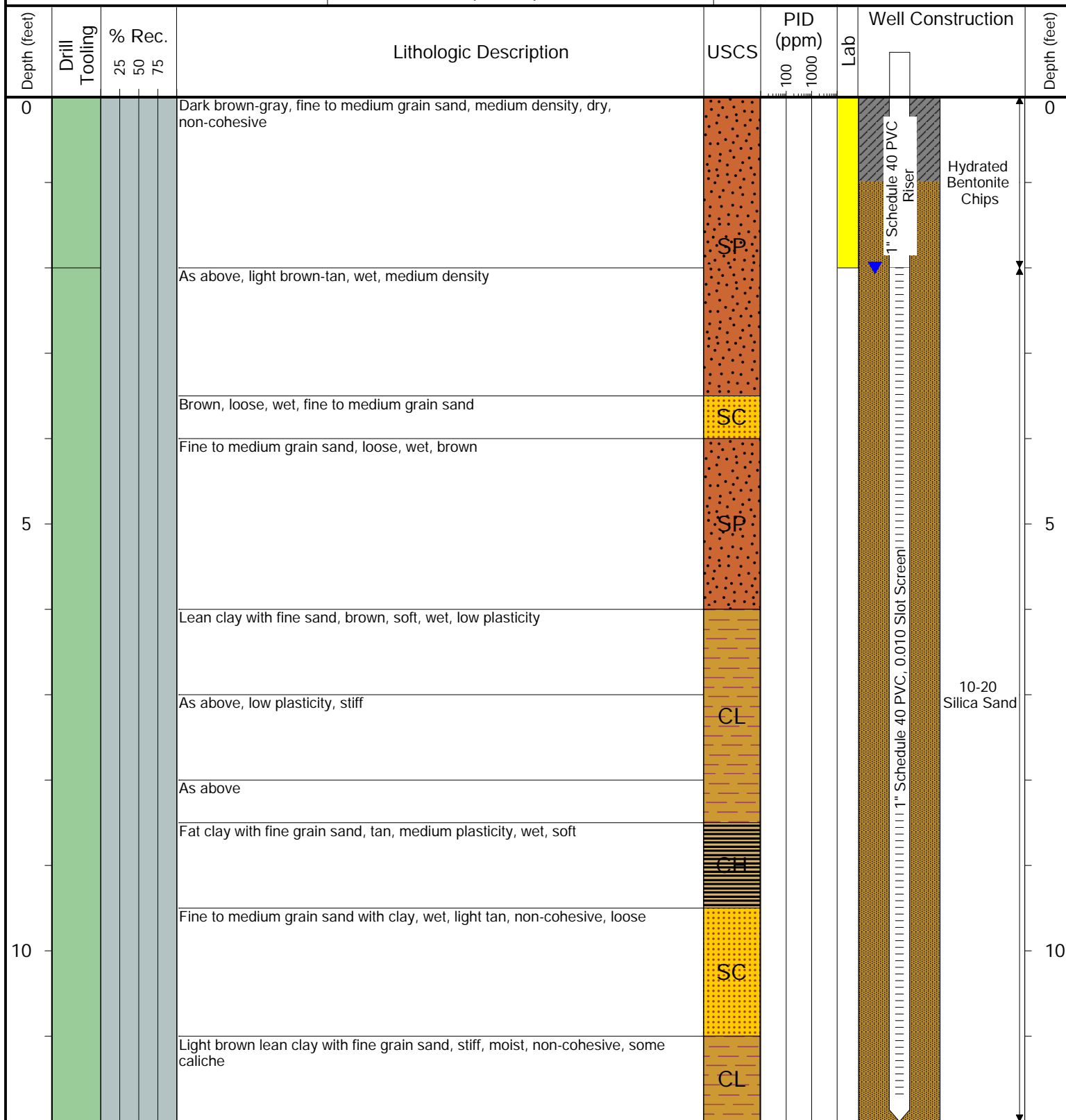
LOCATION: Weld County, Colorado

LATITUDE (WGS 84): 40.269581720375

LONGITUDE (WGS 84): -104.79125816567

CASING ELEVATION (FT. AMSL): 4757.8

GROUND ELEVATION (FT. AMSL): 4758.14



Drilling / Sample Method:

Macro-Core

Hollow Stem Auger

Solid Stem Auger

Hand Auger

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab