FREMONT ENVIRONMENTAL INC.

December 17, 2018

Mr. Jacob Evans
Noble Energy Inc.
2115 117th Ave,
Greeley, CO 80634

Subject: **Site Investigation Report**
UPRC Federal 27-3F, 6F
API # 05-123-15368
NENW Sec 27, T4N, R66W
Weld County, Colorado
Fremont Project No. C018-169
Facility #327960, Remediation #12102

Dear Mr. Evans:

Enclosed please find a copy of the above referenced Site Investigation Report for the UPRC Federal 27-3F, 6F site in Weld County, Colorado. The enclosed report describes site investigation and sampling efforts to assess soil and water quality at the site.

Please contact me at (303) 956-8714 if you require any additional information.

Fremont appreciates the opportunity to provide this service.

Sincerely,
FREMONT ENVIRONMENTAL INC.

Paul V. Henehan, P.E.
Senior Consultant

Enclosure

1759 REDWING LANE, BROOMFIELD, CO 80020
(303) 956-8714 (DIRECT)

SITE INVESTIGATION REPORT

NOBLE ENERGY INC.

UPRC FEDERAL 27-3F, 6F

WELD COUNTY, COLORADO

FREMONT PROJECT NO. C018-169

FACILITY #327960, REMEDIATION #12102

Prepared by:

Fremont Environmental Inc.
1759 Redwing Lane
Broomfield, CO 80020
(303) 956-8714

December 17, 2018

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SITE INVESTIGATION REPORT

NOBLE ENERGY INC.

UPRC FEDERAL 27-3F, 6F

WELD COUNTY, COLORADO

FREMONT PROJECT NO. C018-169

FACILITY #327960, REMEDIATION #12102

1.0 INTRODUCTION

The purpose of this document is to present soil and ground water quality data collected during a site investigation at the UPRC Federal 27-3F, 6F site in Weld County, Colorado. Impacted groundwater was identified at the former water vault during facility abandonment. Five monitoring wells were installed at this site in November 2018 to delineate the magnitude and extent of subsurface impacts.

2.0 BACKGROUND INFORMATION

2.1 Site Location

The UPRC Federal 27-3F, 6F site is located approximately 0.5 miles east of Gilcrest, Colorado in Weld County as shown on Figure 1. The site is located in a rural and agricultural area approximately 0.25 miles southeast of the intersection of County Road 42 and Highway 85. The location is further described as the NE ¼ of the NW ¼ of Section 27, Township 4N, Range 66W.

2.2 Site History

The site consists of the former water vault for the UPRC Federal 27-3F natural gas well. The UPRC Federal 27-3F well was drilled in 1992 to a depth of approximately 7,358 feet. Soil impacts were identified at the water vault during abandonment of the facility.

An excavation to remediate the source impacts was overseen by Fremont Environmental Inc. (Fremont) in October 2018. Approximately 60 cubic yards of impacted soil were excavated and removed from the former water vault and aboveground storage tank area. A ground water sample was collected from the excavation and analyzed for petroleum constituents. The laboratory analysis of the water sample indicated that it had a dissolved phase concentration of benzene of 47 ug/L which is greater than the Colorado Oil and Gas Conservation Commission's (COGCC's) Table 910-1 limit of 5 ug/L. As a result, a site investigation to determine the extent of ground water impacts was required.

3.0 SITE INVESTIGATION ACTIVITIES

3.1 Soil Borings/Monitoring Wells

A site investigation was conducted at the former location on November 21, 2018. Five soil borings were advanced utilizing a Geoprobe rig; these borings were completed as flush-mounted, 1-inch diameter monitoring wells. The borings and monitoring wells were used to determine the extent of soil and ground water impacts at the site and are shown on Figure 2.

Generally, the subsurface consists of roadbase which is then underlain by silty sand and sandy silt to a depth of approximately 12 feet. At that depth, coarse sand and gravel is present to approximately 16 feet where a sandy clay unit was encountered. The maximum depth of the borings was 16 feet. Ground water is present across the site at a depth of approximately eight feet. Geologic cross sections are presented on Figure 4.

The Geoprobe-installed, 1-inch diameter monitoring wells were constructed with ten feet sections of well screen that were placed at a total depth of approximately 14 feet and completed at the ground surface with flush-mounted vaults. Soil samples from each of

the Geoprobe borings were evaluated in the field using a photoionization detector (PID). Logs of the monitoring wells are presented in Appendix A.

Soil samples were collected from each of the Geoprobe borings and sent to Summit Scientific, Inc. in Golden, Colorado for the analyses of benzene, toluene, ethylbenzene and xylenes (BTEX), naphthalene, total petroleum hydrocarbons-gasoline range organics (TPH-GRO), and TPH-diesel range organics (TPH-DRO).

Soil impacts were not observed in any of the five Geoprobe borings above the COGCC's Table 910-1 limits for petroleum constituents. The soil chemistry is presented on Figure 5 and summarized on Table 1. The laboratory's report is provided in Appendix C.

3.2 Ground Water Monitoring

Ground water levels were measured in the five monitoring wells on November 21, 2018 in accordance with the Sampling Plan included in Appendix B. The data are summarized in Table 2.

Water table contours inferred from the November 2018 data are illustrated on Figure 6. Based on these data, ground water is inferred to flow north. The water table gradient was calculated at approximately 0.0033 feet per foot (ft/ft) for the November 2018 data.

3.3 Ground Water Sampling and Analysis

Ground water samples were collected from the five monitoring wells on November 21, 2018. All ground water samples were submitted to Summit Scientific, Inc. for analyses of BTEX by EPA Method 8260B.

The ground water concentrations for four of the five monitoring wells were below their respective COGCC Table 910-1 values. However, the benzene concentration in MW-3 was 210 ug/L which exceeds the COGCC Table 910-1 standard of 5 ug/L for benzene. The ground water chemistry data is shown on Figure 7. The ground water analytical data are summarized in Table 2 and a copy of the laboratory's report is presented in Appendix C.

4.0 DISCUSSION

A site investigation was conducted at the UPRC Federal 27-3F, 6F location during November 2018 as a result of an historical release from the facility's former water vault. Five monitoring wells were installed at the site to delineate the magnitude and extent of soil and ground water impacts. Soil impacts above the COGCC Table 910-1 limits were not observed in any of the monitoring wells.

The data collected from the monitoring wells indicates that the ground water flow direction is generally to the north. Further, the BTEX concentrations in groundwater samples from four of the five monitoring wells were less than the COGCC Table 910-1 limits, however, the benzene concentration in MW-3 was 210 ug/L. These data are illustrated on Figure 7.

Noble is currently evaluating remedial alternatives at this site to address subsurface impacts. Going forward, Noble will sample the ground water on a quarterly basis to evaluate the BTEX concentrations relative to COGCC's Table 910-1 requirements. After four consecutive quarters of COGCC-compliant BTEX concentrations, Noble will request closure of this site.

5.0 REMARKS

The discussion and conclusions contained in this report represent our professional opinions. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

This report was prepared by **FREMONT ENVIRONMENTAL INC.**

12/17/18

_____ Date_____

Paul V. Henehan, P.E.

Senior Consultant

Reviewed by:

12/17/18

_____ Date_____

Michael R. Gerstner

Senior Geologist

TABLES

TABLE 1
SUMMARY OF SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
UPRC FEDERAL 27-3F, 6F, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C018-169

SAMPLE LOCATION	DATE SAMPLED	DEPTH ft	BENZENE mg/kg	TOLUENE mg/kg	ETHYL BENZENE mg/kg	TOTAL XYLENES mg/kg	NAPHTH-ALENE mg/kg	TPH-GRO mg/kg	TPH-DRO mg/kg
MW-1, 8 Ft	11/21/18	8	<0.002	<0.005	<0.005	<0.010	<0.010	<50	<50
MW-2, 6 Ft	11/21/18	6	<0.002	<0.005	<0.005	<0.010	<0.010	<50	<50
MW-3, 6 Ft	11/21/18	6	<0.002	<0.005	<0.005	<0.010	<0.010	<50	<50
MW-4, 6 Ft	11/21/18	6	<0.002	<0.005	<0.005	<0.010	<0.010	<50	<50
MW-5, 6 Ft	11/21/18	6	<0.002	<0.005	<0.005	<0.010	<0.010	<50	<50
COGCC Table 910-1 Concentrations			**0.17**	**85**	**100**	**175**	**23**	**500***	**500***

The TPH-GRO and TPH-DRO concentrations are added together; if the sum of the two is >500 mg/kg, this exceeds the COGCC Table 910-1 limit

TABLE 2

SUMMARY OF GROUND WATER ELEVATION DATA AND CHEMISTRY DATA

NOBLE ENERGY INC.

UPRC FEDERAL 27-3F, 6F, WELD COUNTY, COLORADO

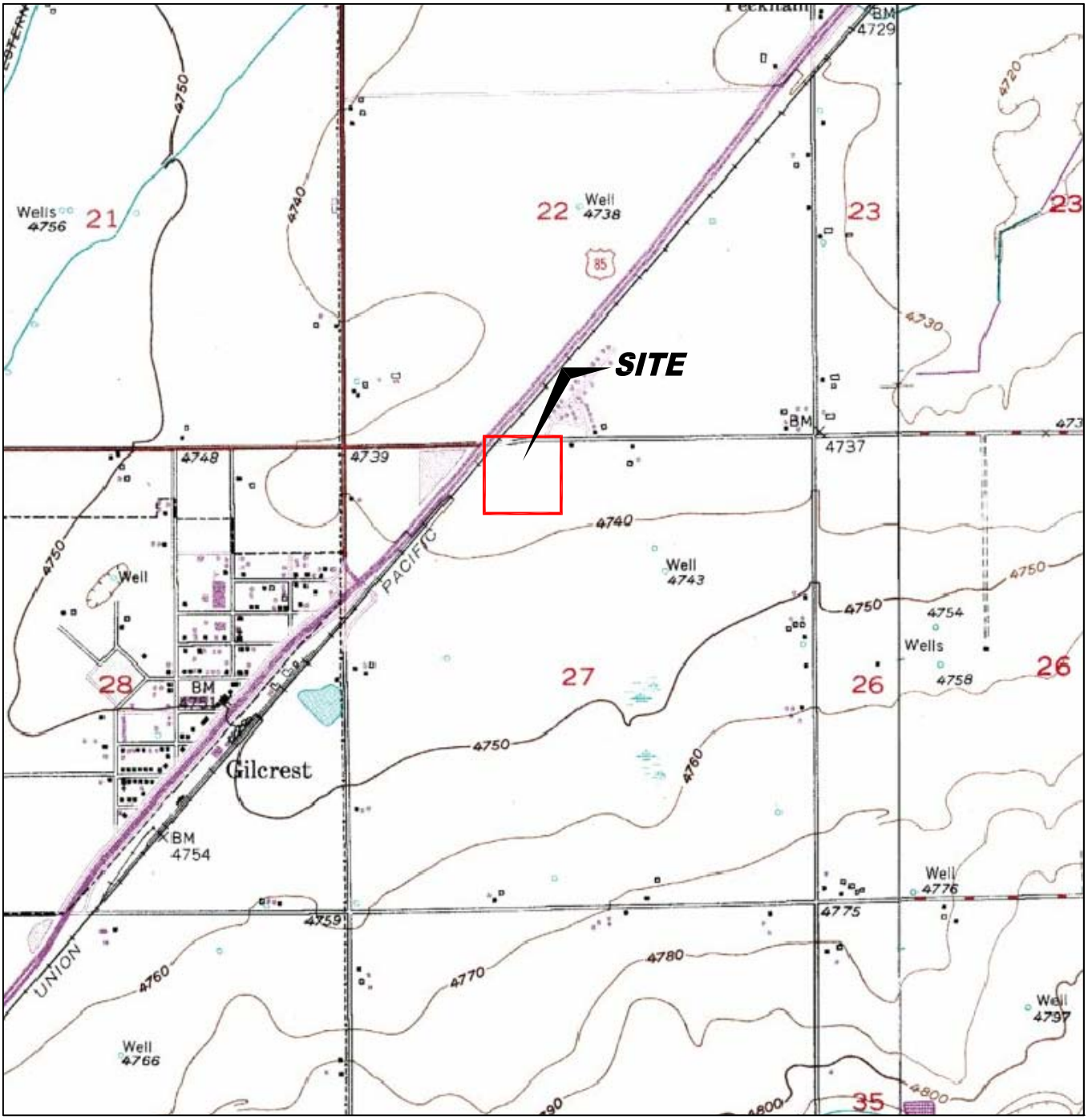
FREMONT PROJECT NO. C018-169

SAMPLE LOCATION	DATE	BENZENE (µg/L)	TOLUENE (µg/L)	ETHYL BENZENE (µg/L)	TOTAL XYLENES (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)
MW-1	11/21/18	<1.0	<1.0	<1.0	<1.0	99.68	8.00	91.68	NP
MW-2	11/21/18	<1.0	<1.0	<1.0	<1.0	100.00	8.24	91.76	NP
MW-3	11/21/18	**210**	**1100**	100	**1500**	99.77	8.10	91.67	NP
MW-4	11/21/18	<1.0	<1.0	<1.0	<1.0	99.68	8.03	91.65	NP
MW-5	11/21/18	<1.0	<1.0	<1.0	<1.0	99.75	8.18	91.57	NP
Table 910-1 Limits		5	560	700	1,400				

Bold face values exceed the COGCC limits

NP - No Free Product

FIGURES



N

Scale (miles)
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
0 1000 2000 3000 4000 5000
Scale (feet)

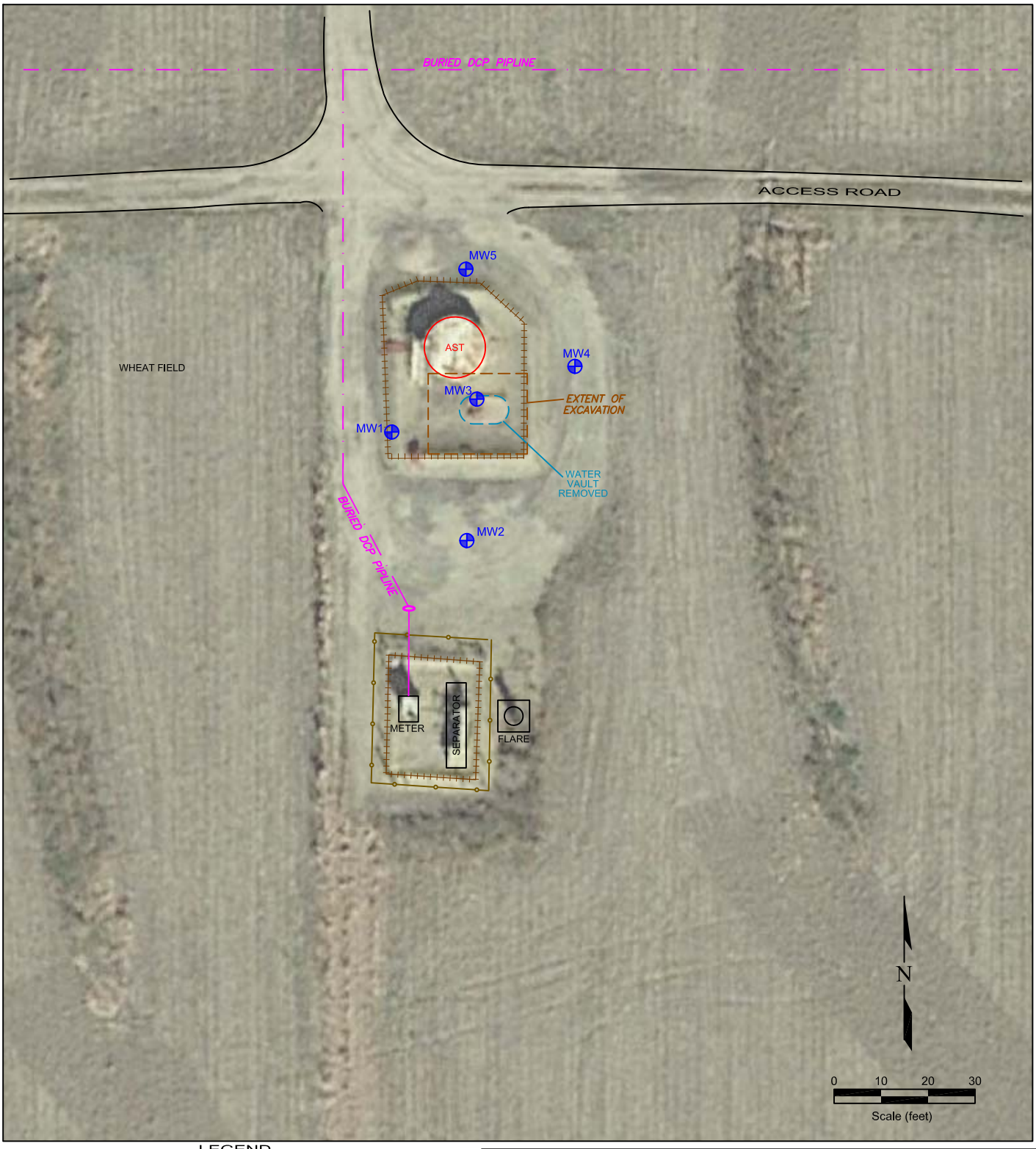
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

NOBLE UPRC FEDERAL 27-3F, 6F
NENW Section 27, T4N R66W
Weld County, Colorado

Project No.	Prepared by	Drawn by
CO18-169		**TDA**
Date	Reviewed by	Filename
12/3/18	**PH**	**18169T**

FREMONT ENVIRONMENTAL



LEGEND

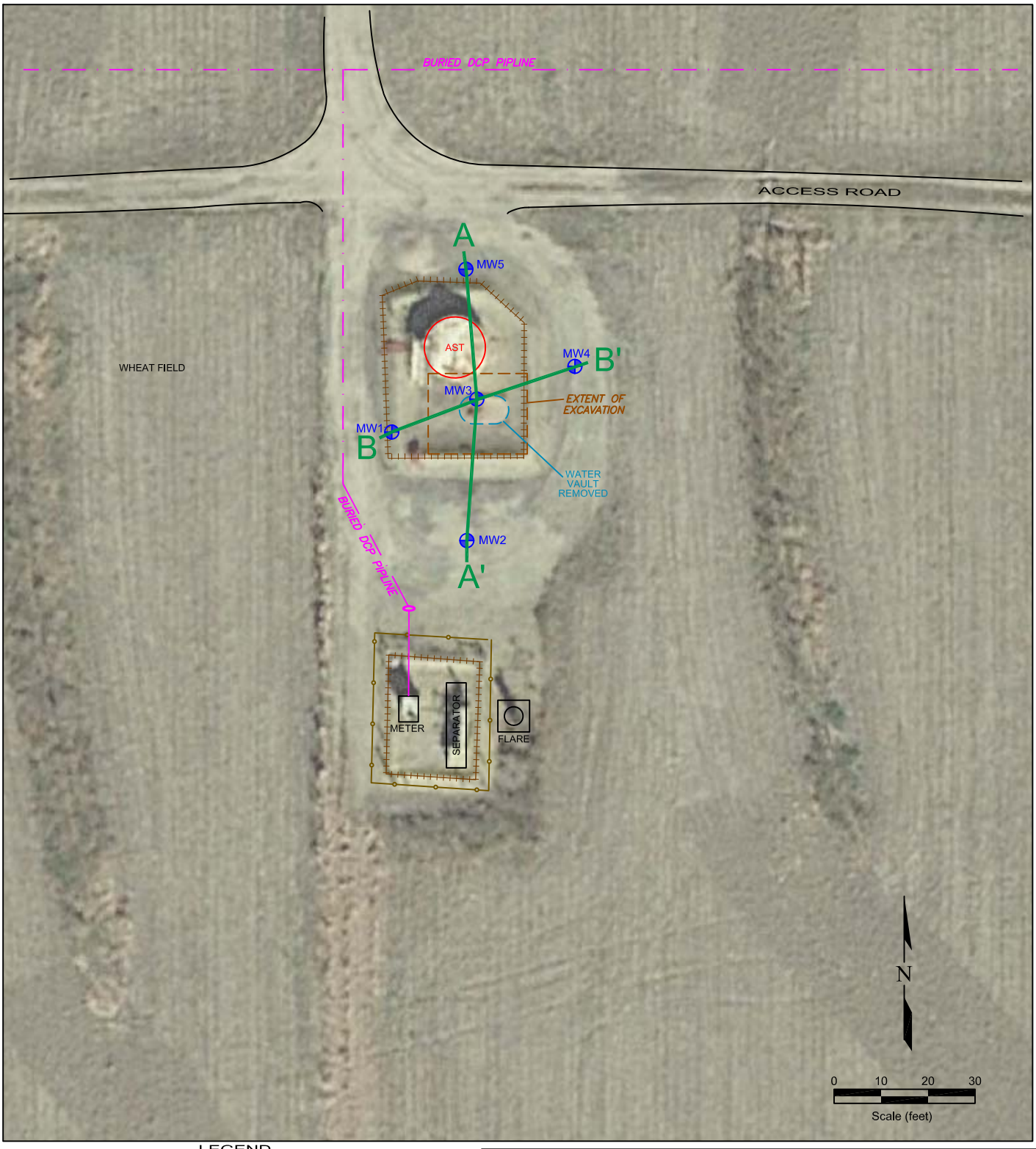
- MONITORING WELL
- CONTAINMENT WALL
- LIMITS OF EXCAVATION
- CONTAINMENT BERM
- FENCE LINE
- DCP PIPELINE
- FORMER — ABOVE GROUND STORAGE TANK
- FORMER FACILITY

Figure 2
SITE MAP

NOBLE UPRC FEDERAL 27-3F, 6F
NENW Section 27, T4N R66W
Weld County, Colorado

Project No.	Prepared by	Drawn by
CO18-169		**TDA**
Date	Reviewed by	Filename
12/3/18	**PH**	**18169Q**

FREMONT ENVIRONMENTAL



LEGEND

- MONITORING WELL
- CONTAINMENT WALL
- LIMITS OF EXCAVATION
- CONTAINMENT BERM
- FENCE LINE
- DCP PIPELINE
- CUTTING LINE FOR CROSS SECTION
- ABOVE GROUND STORAGE TANK
- FORMER FACILITY

Figure 3

CROSS SECTIONS A - A' and B - B'

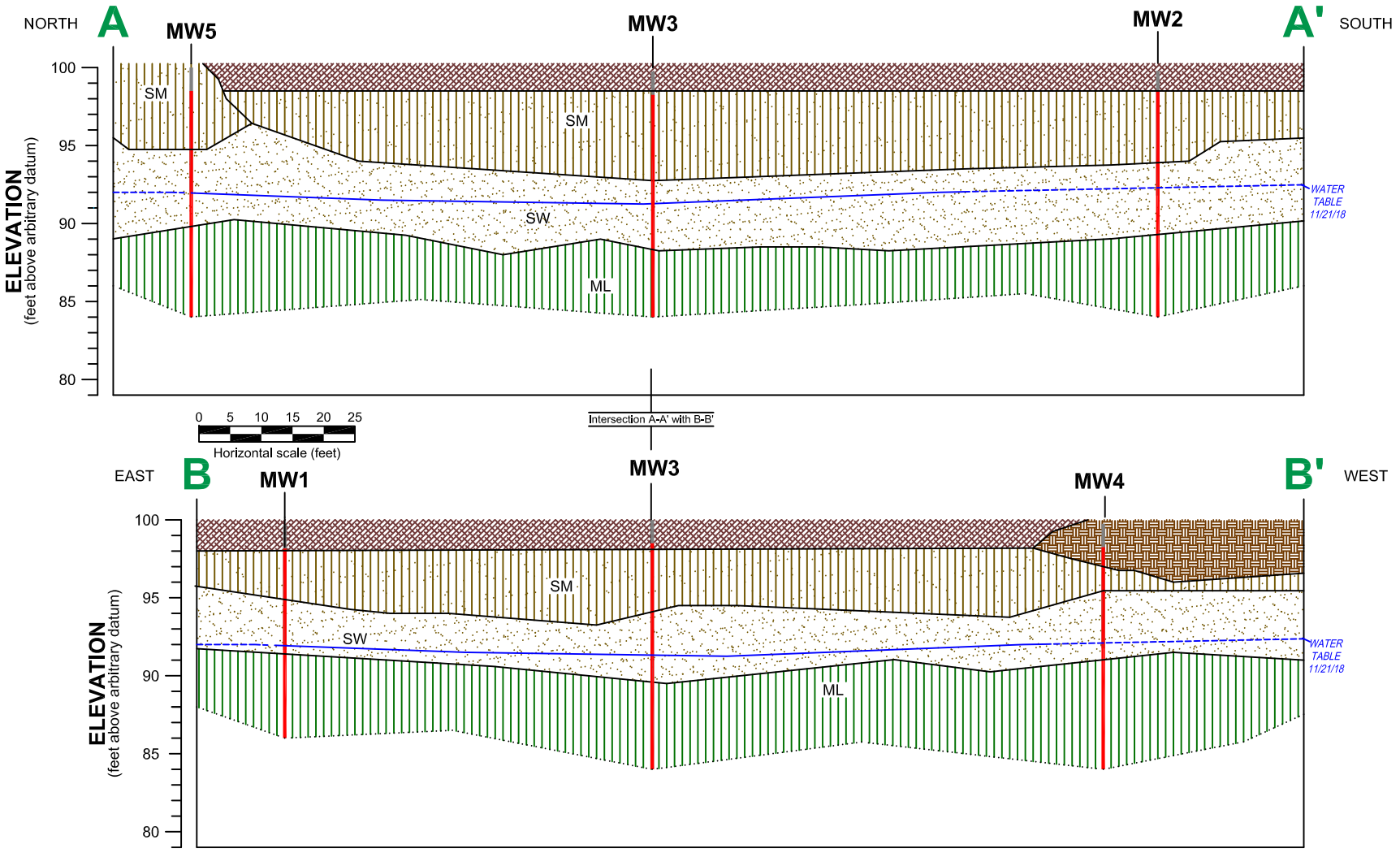
NOBLE UPRC FEDERAL 27-3F, 6F

NENW Section 27, T4N R66W

Weld County, Colorado

Project No.	Prepared by	Drawn by
CO18-169		**TDA**
Date	Reviewed by	Filename
12/3/18	**PH**	**18169Q**

FREMONT ENVIRONMENTAL



LEGEND

CL	Clay, low plasticity	SW	Sand, well-graded		Roadbase
CL-ML	Clay, silty, low plasticity	SC	Sand, clayey		Topsoil
ML	Silt, low plasticity	SM	Sand, silty		Cased interval / Screened interval

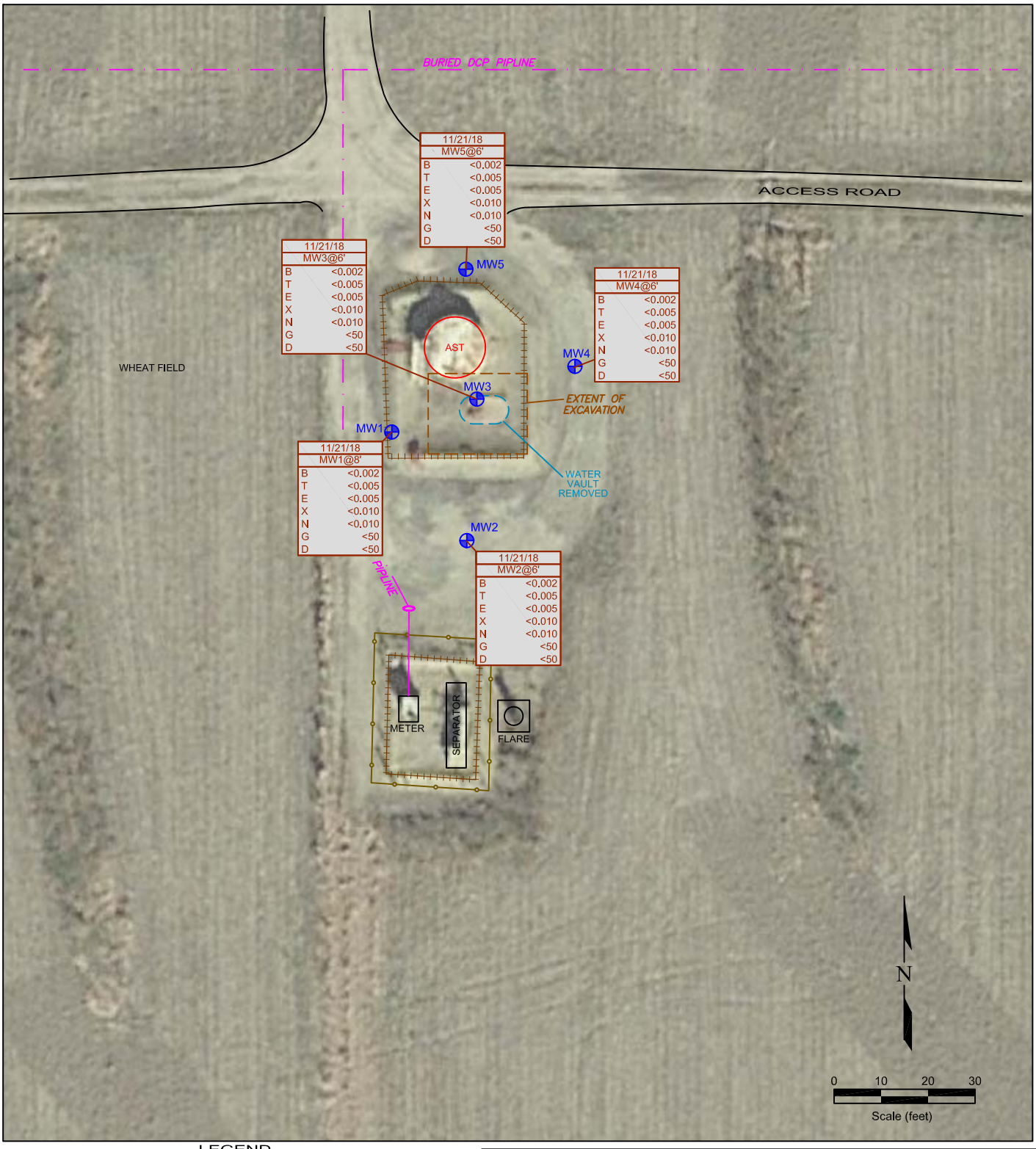
Figure 4

CROSS-SECTIONS A-A' & B-B' MAP

Noble UPRC Federal 27-3F, 6F
NENW Section 27, T4N R66W
Weld County, Colorado

Project No. **C018-169**	Prepared by	Drawn by **TDA**
Date **12/3/18**	Reviewed by **PH**	Filename **18169X**

FREMONT ENVIRONMENTAL



LEGEND

- MONITORING WELL
- CONTAINMENT WALL
- LIMITS OF EXCAVATION
- CONTAINMENT BERM
- FENCE LINE
- DCP PIPELINE
- ABOVE GROUND STORAGE TANK
- FORMER FACILITY

11/21/18	MW1@8'
B	<0.002
T	<0.005
E	<0.005
X	<0.010
N	<0.010
G	<50
D	<50

DATE SAMPLED
DEPTH
BENZENE (mg/kg)
TOLUENE (mg/kg)
ETHYLBENZENE (mg/kg)
TOTAL XYLENES (mg/kg)
NAPHTHALENE (mg/kg)
TPH-GRO (mg/kg)
TPH-DRO (mg/kg)

Figure 5
SOIL CHEMISTRY MAP

NOBLE UPRC FEDERAL 27-3F, 6F
NENW Section 27, T4N R66W
Weld County, Colorado

Project No.	Prepared by	Drawn by
CO18-169		**TDA**
Date	Reviewed by	Filename
12/3/18	**PH**	**18169Q**

FREMONT ENVIRONMENTAL

LEGEND

- MONITORING WELL
- CONTAINMENT WALL
- LIMITS OF EXCAVATION
- CONTAINMENT BERM
- FENCE LINE
- DCP PIPELINE
- ABOVE GROUND STORAGE TANK
- FORMER FACILITY
- (4358.54) GROUND WATER ELEVATION 6/2/08 (feet above mean sea level)
- WATER TABLE CONTOUR (feet above mean sea level)
- INFERRED GROUND WATER FLOW DIRECTION
- NM NOT MEASURED

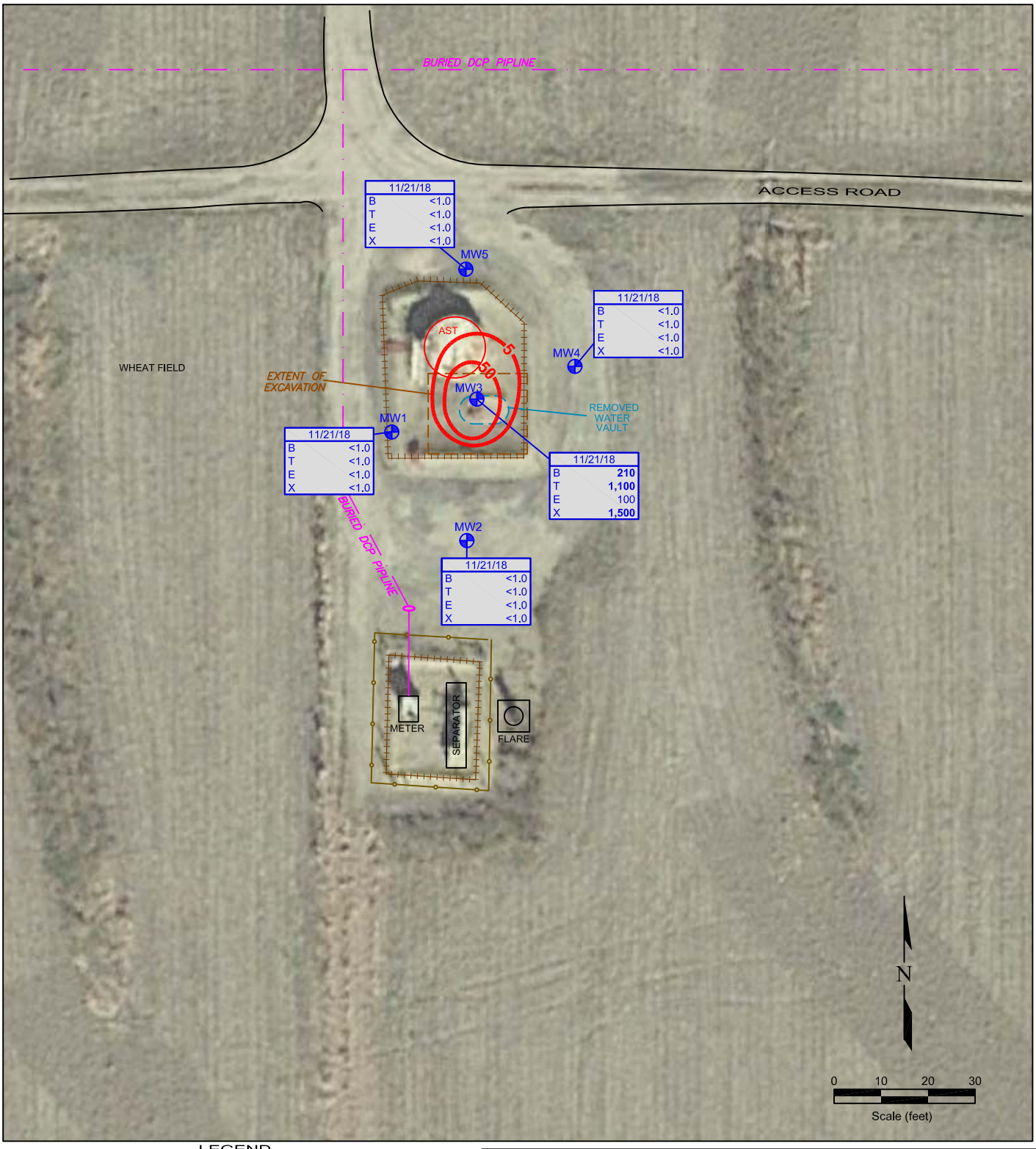
Figure 6

INFERRED GROUNDWATER CONTOUR MAP

NOBLE UPRC FEDERAL 27-3F, 6F
NENW Section 27, T4N R66W
Weld County, Colorado

Project No.	Prepared by	Drawn by
CO18-169		**TDA**
Date	Reviewed by	Filename
12/3/18	**PH**	**18169Q**

FREMONT ENVIRONMENTAL



LEGEND

- MONITORING WELL
- CONTAINMENT WALL
- LIMITS OF EXCAVATION
- CONTAINMENT BERM
- FENCE LINE
- DCP PIPELINE
- ABOVE GROUND STORAGE TANK
- FORMER FACILITY
- BENZENE ISOCONCENTRATION (ug/L) Inferred in part from historical data

11/21/18	DATE SAMPLED
B <1.0	BENZENE (ug/L)
T <1.0	TOLUENE (ug/L)
E <1.0	ETHYLBENZENE (ug/L)
X <1.0	TOTAL XYLENES (ug/L)

Figure 7

GROUND WATER CHEMISTRY MAP AND BENZENE ISOCONCENTRATION

NOBLE UPRC FEDERAL 27-3F, 6F

NENW Section 27, T4N R66W

Weld County, Colorado

Project No.	Prepared by	Drawn by
CO18-169		**TDA**
Date	Reviewed by	Filename
12/17/18	**PH**	**18169Q**

FREMONT ENVIRONMENTAL

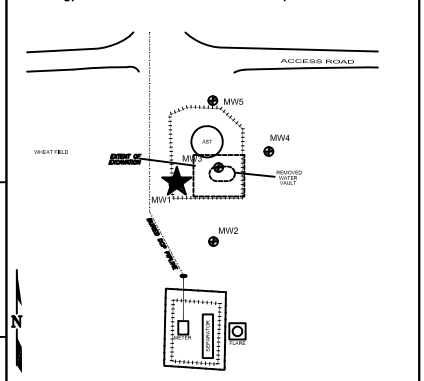
APPENDIX A

BORING LOGS

FREMONT ENVIRONMENTAL

BORING/WELL CONSTRUCTION LOG

Boring/Well Location Sketch Map



Boring/Well No.	Total Depth	Location
MW-1	14'	Noble Energy UPRC Federal 27-3F, 6F NENW Sec 27, T4N, R66W Weld County, Colorado

Project No./Name	Approved By
C018-169 Noble UPRC Federal 27-3F, 6F	

Drilling Contractor/Driller	Geologist/Office
DrillPro	-

Drilling Equipment/Method	Size/Type of Bit	Sampling Method	Start/Finish Date
Hurricane	2.5" direct push	direct push	11/21/18

Well Installed?	Casing Mtrl./Dia.	Screen: Type	Mtrl.	Length	Dia.	Slot Size
Yes [X] No [ ]	PVC/1"	Slotted	PVC	10'	1"	0.010"

Elevation of: (ft. above datum)	Ground Surface	Top of Well Casing	Top of Screen	Bottom of Screen	Ground Water Surface/Date Measured
	100.00	99.68	.	.	8.00 gray with light odor

DEPTH (feet)	WELL CONSTRUCTION	LITHOLOGY: GRAPHIC LOG	LITHOLOGY: VISUAL DESCRIPTION	Penetration Rate (blows/6")	Recovery (%)	Sample Interval (feet)	PID Values (ppm)
0	Bentonite; 1" Blank		Roadbase, silty fine sand, no stain, no odor				
5	#10-20 Silica Sand; 1" Screen		Silty sand to 6' then sandy silt and firmer, no stain, no odor				0
10			Sandy silt to 10.5' then fine to medium sand, wet at 9', gray with light odor at 11.5'				0
15			Coarse sand and gravel, wet, dark gray at 12'-13' with moderate weathered odor				485 746
20			TD 14'				60

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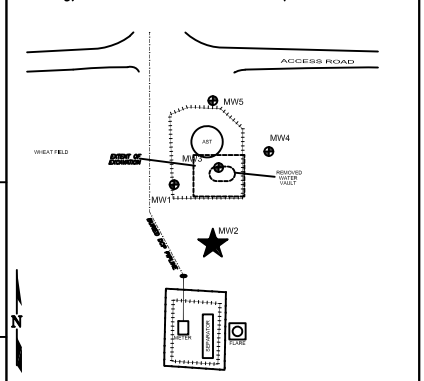
BORING/WELL CONSTRUCTION LOG

Boring/Well Location Sketch Map



Boring/Well No.	Total Depth	Location
MW-2	16'	Noble Energy UPRC Federal 27-3F, 6F NENW Sec 27, T4N, R66W Weld County, Colorado

Project No./Name	Drilling Contractor/Driller	Geologist/Office	Approved By
C018-169 Noble UPRC Federal 27-3F, 6F	DrillPro	-	

Drilling Equipment/Method	Size/Type of Bit	Sampling Method	Start/Finish Date
Hurricane	2.5" direct push	direct push	11/21/18

Well Installed?	Casing Mtrl./Dia.	Screen: Type	Mtrl.	Length	Dia.	Slot Size
Yes [X] No [ ]	PVC/1"	Slotted	PVC	10'	1"	0.010"

Elevation of: (ft. above datum)	Ground Surface	Top of Well Casing	Top of Screen	Bottom of Screen	Ground Water Surface/Date Measured
	100.00	100.00	.	.	8.24

DEPTH (feet)	WELL CONSTRUCTION	LITHOLOGY: GRAPHIC LOG	LITHOLOGY: VISUAL DESCRIPTION	Penetration Rate (blows/6")	Recovery (%)	Sample Interval (feet)	PID Values (ppm)
	Bentonite; 1" Blank		Roadbase, silty fine sand, moist, no stain, no odor				
			Silty sand to 6' then sandy silt, no stain, no odor, wet at 7'				0
5	#10-20 Silica Sand; 1" Screen						0
							0
			Silty sand, wet , no stain, no odor				
10							
			Coarse sand and gravel, wet, dark gray at 12'-13' with moderate weathered odor				0
							0
							0
15			TD 16'				
20							

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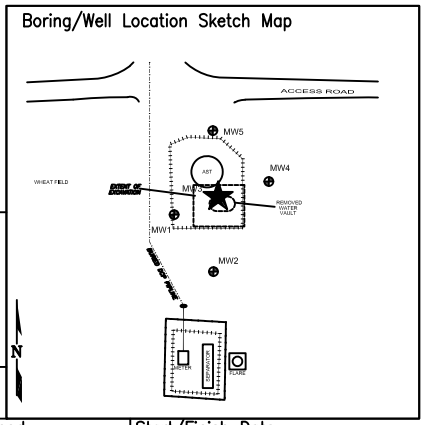
BORING/WELL CONSTRUCTION LOG

Boring/Well Location Sketch Map



Boring/Well No.	Total Depth	Location
MW-3	16'	Noble Energy UPRC Federal 27-3F, 6F NENW Sec 27, T4N, R66W Weld County, Colorado

Project No./Name	Approved By
C018-169 Noble UPRC Federal 27-3F, 6F	

Drilling Contractor/Driller	Geologist/Office
DrillPro	-

Drilling Equipment/Method	Size/Type of Bit	Sampling Method	Start/Finish Date
Hurricane	2.5" direct push	direct push	11/21/18

Well Installed?	Casing Mtrl./Dia.	Screen: Type	Mtrl.	Length	Dia.	Slot Size
Yes [X] No [ ]	PVC/1"	Slotted	PVC	10'	1"	0.010"

Elevation of: (ft. above datum)	Ground Surface	Top of Well Casing	Top of Screen	Bottom of Screen	Ground Water Surface/Date Measured
	100.00	99.77	.	.	8.10 gray moderate odor

DEPTH (feet)	WELL CONSTRUCTION	LITHOLOGY: GRAPHIC LOG	LITHOLOGY: VISUAL DESCRIPTION	Penetration Rate (blows/6")	Recovery (%)	Sample Interval (feet)	PID Values (ppm)
0	Bentonite; 1" Blank		Roadbase, fill, (sandy silt with small gravel), dry no stain, no odor				0
5	#10-20 Silica Sand; 1" Screen		Fill, wet at 7.5', no stain , no odor				0 6
10			Fill to 9', then sandy silt to 11', then coarse sand and gravel, dark gray at 11' with light odor				802
15			Coarse sand and gravel, dark gray to 15' then light brown, wet throughout				644
16			TD 16'				
20							

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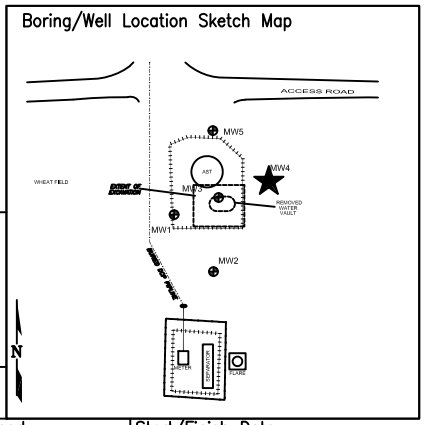
BORING/WELL CONSTRUCTION LOG

Boring/Well Location Sketch Map



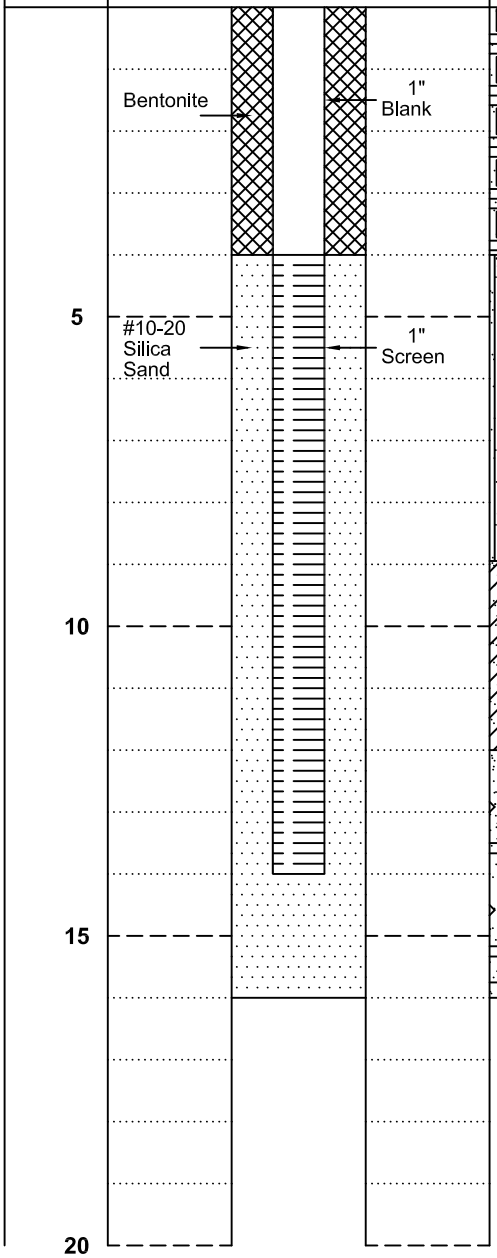
Boring/Well No.	Total Depth	Location
MW-4	16'	Noble Energy UPRC Federal 27-3F, 6F NENW Sec 27, T4N, R66W Weld County, Colorado

Project No./Name	Drilling Contractor/Driller	Geologist/Office	Approved By
C018-169 Noble UPRC Federal 27-3F, 6F	DrillPro	-	

Drilling Equipment/Method	Size/Type of Bit	Sampling Method	Start/Finish Date
Hurricane	2.5" direct push	direct push	11/21/18

Well Installed?	Casing Mtrl./Dia.	Screen: Type	Mtrl.	Length	Dia.	Slot Size
Yes [X] No [ ]	PVC/1"	Slotted	PVC	10'	1"	0.010"

Elevation of: (ft. above datum)	Ground Surface	Top of Well Casing	Top of Screen	Bottom of Screen	Ground Water Surface/Date Measured
	100.00	99.68	.	.	8.03

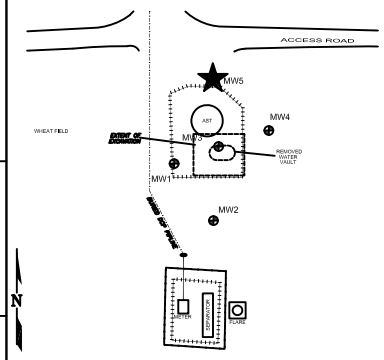


DEPTH (feet)	LITHOLOGY: GRAPHIC LOG	LITHOLOGY: VISUAL DESCRIPTION	Penetration Rate (blows/6")	Recovery (%)	Sample Interval (feet)	PID Values (ppm)
		Topsoil, silty sand, dry , no stain, no odor				
		Silty sand to 6' then firmer sandy silt, wet at 7', no stain, no odor				0 1 2
		Sandy silt to 11' then coarse sand and gravel, no stain, no odor				
		Coarse sand and gravel, wet, firm silty clay at 15.9', no stain, no odor				1
		TD 16'				0

FREMONT ENVIRONMENTAL

BORING/WELL CONSTRUCTION LOG

Boring/Well Location Sketch Map



Boring/Well No.: MW-5	Total Depth: 16'	Location: Noble Energy, UPRC Federal 27-3F, 6F, NENW Sec 27, T4N, R66W, Weld County, Colorado	
Project No./Name: C018-169 Noble UPRC Federal 27-3F, 6F			
Drilling Contractor/Driller: DrillPro			
Geologist/Office: -		Approved By	
Drilling Equipment/Method: Hurricane		Size/Type of Bit: 2.5" direct push	Sampling Method: direct push
Start/Finish Date: 11/21/18			

Well Installed? Yes [X] No [ ]	Casing Mtrl./Dia.: PVC/1"	Screen: Type Slotted	Mtrl. PVC	Length 10'	Dia. 1"	Slot Size 0.010"

Elevation of: (ft. above datum)	Ground Surface	Top of Well Casing	Top of Screen	Bottom of Screen	Ground Water Surface/Date Measured
	100.00	99.75	.	.	8.18

DEPTH (feet)	WELL CONSTRUCTION	LITHOLOGY: GRAPHIC LOG	LITHOLOGY: VISUAL DESCRIPTION	Penetration Rate (blows/6")	Recovery (%)	Sample Interval (feet)	PID Values (ppm)
	Bentonite; 1" Blank		Silty sand, dry,no stain, no odor				
			Silty sand to 6' then sandy silt, wet at 7', no stain, no odor				0
5	#10-20 Silica Sand; 1" Screen						0
			Sandy silt to 11' then coarse sand and gravel, no stain, no odor				0
10							
			Coarse sand and gravel, light gray, 15' -15.5' with light odor, wet, no clay at bottom				2
15			TD 16'				45
20							

APPENDIX B

SAMPLING PLAN

SAMPLING METHODS AND PROCEDURES

Water Level Measurements

All ground water level measurements will be obtained using an electric measuring device, which indicates when a probe is in contact with ground water. Measurements will be obtained by lowering the device into the well until the water surface had been encountered, and by measuring the distance from the top of the inside riser pipe to the probe. All of the measurements will be recorded to the nearest 0.01 ft. To minimize cross-contamination, the water level indicator will be decontaminated with isopropyl alcohol and distilled water between each well.

Monitoring Well Sampling

All monitoring wells were sampled from the "cleanest" to the "most contaminated" according to the protocols listed below.

Field Protocol

Step 1	Measure water level in each well.
Step 2	Purge each monitoring well by evacuating a minimum of three well bore volumes using a disposable polyethylene bailer.
Step 3	Collect water samples using a disposable polyethylene bailer.
Step 4	Cool samples to approximately 4°C for transportation.
Step 5	Store water samples and transport to a specific laboratory, following all documentation and chain-of-custody procedures.

Upon completion of ground water sampling, a chain-of-custody log will be completed. Chain-of-custody records include the following information: project, project number, shipped by, shipped to, suspected hazard, sampling point, location, field identification number, date collected, sample type, number of containers, analysis required, and sampler's signature.

The chain-of-custody records will be shipped with the samples to the laboratory. Upon arrival at the laboratory the samples will be checked in and signed by the appropriate laboratory personnel. Laboratory identification numbers will be noted on the chain-of-custody record. Upon completion of the laboratory analysis, the completed chain-of-custody record will be returned to the project manager.

Analytical Methods

The following list identifies the various chemical constituents and analytical methods which will be used for their quantification.

Chemical Parameter	Method
Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX)	EPA Method – 8260B

APPENDIX C

LABORATORY DOCUMENTATION

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

December 03, 2018

Paul Henehan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - UPRC Federal 27-3F, 6F

Enclosed are the results of analyses for samples received by Summit Scientific on 11/21/18 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - UPRC Federal 27-3F, 6F Project Number: [none] Project Manager: Paul Henehan	**Reported:** 12/03/18 13:50

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1 8FT	1811266-01	Soil	11/21/18 00:00	11/21/18 18:00
MW-2 6FT	1811266-02	Soil	11/21/18 00:00	11/21/18 18:00
MW-3 6FT	1811266-03	Soil	11/21/18 00:00	11/21/18 18:00
MW-4 6FT	1811266-04	Soil	11/21/18 00:00	11/21/18 18:00
MW-5 6FT	1811266-05	Soil	11/21/18 00:00	11/21/18 18:00
MW-1	1811266-06	Water	11/21/18 00:00	11/21/18 18:00
MW-2	1811266-07	Water	11/21/18 00:00	11/21/18 18:00
MW-3	1811266-08	Water	11/21/18 00:00	11/21/18 18:00
MW-4	1811266-09	Water	11/21/18 00:00	11/21/18 18:00
MW-5	1811266-10	Water	11/21/18 00:00	11/21/18 18:00

Summit Scientific

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

1811266

Summit Scientific

S2

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

Page 1 of 1

Client: Fremont Environmental
Address: P.O. Box 1289
City/State/Zip: PO Box 1829 Wellington, CO 80549
Phone: 303-956-8714 Fax:
Sampler Name: HENEHAN

Project Manager: Paul Henehan
E-Mail: paulh@fremontenv.com
Project Name: NOBLE - UPRC FEDERAL 27-3F, 6F
Project Number:

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	BTEX	GRO/DRO	Napthalene	SAR	EC	Ph			
1	MW-1 8 FT	11/21/18		1			✓			✓			✓	✓	✓						
2	MW-2 6 FT			1						✓											
3	MW-3 6 FT			1						✓											
4	MW-4 6 FT			1						✓											
5	MW-5 6 FT			1						✓											
6	MW-1			2					✓				✓								
7	MW-2			2					✓				✓								
8	MW-3			2					✓				✓								
9	MW-4			2					✓				✓								
10	MW-5			2					✓				✓								

Relinquished by: PMH/FE Date/Time: 11/21/18 ~~1430~~ 1800
Received by: Date/Time: 11.21.18 1800

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

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

Turn Around Time (Check)
Same Day ___ 72 hours
___ 24 hours ___ Standard
___ 48 hours ___

Sample Integrity:
Temperature Upon Receipt:
4.6 Intact: (Yes) No

Notes:

Sample Receipt Checklist

S2 Work Order 1811266

Client: Fremont Client Project ID: Noble - UPRC Federal 27-3F, 6F

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

Matrix (check all that apply): ____Air ✓ Soil/Solid ✓ Water ____Other:_____ (Describe)

Temp (°C)	4.6

Thermometer ID: 61857155-K

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

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

CP
Custodian Printed Name or Initials

Signature of Custodian

11.21.18 1800
Date/Time

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - UPRC Federal 27-3F, 6F Project Number: [none] Project Manager: Paul Henehan	**Reported:** 12/03/18 13:50

MW-1 8FT

1811266-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1811302	11/26/18	11/27/18	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: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*86.0 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*96.3 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*99.8 %*	*21-167*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1811303	11/26/18	11/27/18	EPA 8015M	

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*81.2 %*	*30-150*		"	"	"	"	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - UPRC Federal 27-3F, 6F Project Number: [none] Project Manager: Paul Henehan	**Reported:** 12/03/18 13:50

MW-2 6FT

1811266-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1811302	11/26/18	11/27/18	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: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*89.8 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*98.8 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*100 %*	*21-167*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1811303	11/26/18	11/27/18	EPA 8015M	

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*78.2 %*	*30-150*		"	"	"	"	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - UPRC Federal 27-3F, 6F Project Number: [none] Project Manager: Paul Henehan	**Reported:** 12/03/18 13:50

MW-3 6FT

1811266-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1811302	11/26/18	11/27/18	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: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*72.0 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*98.6 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*	*21-167*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1811303	11/26/18	11/27/18	EPA 8015M	

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*85.3 %*	*30-150*		"	"	"	"	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - UPRC Federal 27-3F, 6F Project Number: [none] Project Manager: Paul Henehan	**Reported:** 12/03/18 13:50

MW-4 6FT

1811266-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1811302	11/26/18	11/27/18	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: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*84.1 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*98.0 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*99.8 %*	*21-167*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1811303	11/26/18	11/27/18	EPA 8015M	

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*78.3 %*	*30-150*		"	"	"	"	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - UPRC Federal 27-3F, 6F Project Number: [none] Project Manager: Paul Henehan	**Reported:** 12/03/18 13:50

MW-5 6FT

1811266-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1811302	11/26/18	11/27/18	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: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*89.2 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*98.0 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*101 %*	*21-167*		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1811303	11/26/18	11/27/18	EPA 8015M	

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*82.7 %*	*30-150*		"	"	"	"	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - UPRC Federal 27-3F, 6F Project Number: [none] Project Manager: Paul Henehan	**Reported:** 12/03/18 13:50

MW-1

1811266-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1811301	11/26/18	12/01/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*97.3 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*99.7 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*104 %*	*21-167*		"	"	"	"	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - UPRC Federal 27-3F, 6F Project Number: [none] Project Manager: Paul Henehan	**Reported:** 12/03/18 13:50

MW-2

1811266-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1811301	11/26/18	12/01/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*95.2 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*94.7 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*103 %*	*21-167*		"	"	"	"	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - UPRC Federal 27-3F, 6F Project Number: [none] Project Manager: Paul Henehan	**Reported:** 12/03/18 13:50

MW-3

1811266-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	**210**	100	ug/l	100	1811301	11/26/18	11/30/18	EPA 8260B	
Toluene	**1100**	100	"	"	"	"	"	"	
Ethylbenzene	**100**	100	"	"	"	"	"	"	
Xylenes (total)	**1500**	200	"	"	"	"	"	"	

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*99.0 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*95.2 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*100 %*	*21-167*		"	"	"	"	

S2

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - UPRC Federal 27-3F, 6F Project Number: [none] Project Manager: Paul Henehan	**Reported:** 12/03/18 13:50

MW-4

1811266-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1811301	11/26/18	12/01/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*97.8 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*95.2 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*100 %*	*21-167*		"	"	"	"	

Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - UPRC Federal 27-3F, 6F Project Number: [none] Project Manager: Paul Henehan	**Reported:** 12/03/18 13:50

MW-5

1811266-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1811301	11/26/18	12/01/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **11/21/18 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		*95.6 %*	*23-173*		"	"	"	"	
Surrogate: Toluene-d8		*95.2 %*	*20-170*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*99.5 %*	*21-167*		"	"	"	"	

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Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1811301 - EPA 5030 Water MS										
Blank (1811301-BLK1)				Prepared: 11/26/18 Analyzed: 11/28/18						
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	*13.1*		*"*	*13.2*		*99.3*	*23-173*			
Surrogate: Toluene-d8	*13.0*		*"*	*13.3*		*97.9*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.5*		*"*	*13.3*		*101*	*21-167*			
LCS (1811301-BS1)				Prepared: 11/26/18 Analyzed: 11/28/18						
Benzene	25.6	1.0	ug/l	33.3		76.7	70-130			
Toluene	29.6	1.0	"	33.3		88.7	70-130			
Ethylbenzene	37.1	1.0	"	33.3		111	70-130			
m,p-Xylene	72.0	2.0	"	66.7		108	70-130			
o-Xylene	34.0	1.0	"	33.3		102	70-130			
Surrogate: 1,2-Dichloroethane-d4	*11.7*		*"*	*13.2*		*88.6*	*23-173*			
Surrogate: Toluene-d8	*12.4*		*"*	*13.3*		*93.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.2*		*"*	*13.3*		*98.8*	*21-167*			
Matrix Spike (1811301-MS1)	**Source: 1811266-06**			Prepared: 11/26/18 Analyzed: 11/28/18						
Benzene	27.1	1.0	ug/l	33.3	ND	81.3	70-130			
Toluene	30.6	1.0	"	33.3	ND	91.8	70-130			
Ethylbenzene	36.4	1.0	"	33.3	ND	109	70-130			
m,p-Xylene	70.7	2.0	"	66.7	ND	106	70-130			
o-Xylene	34.0	1.0	"	33.3	ND	102	70-130			
Surrogate: 1,2-Dichloroethane-d4	*13.0*		*"*	*13.2*		*98.4*	*23-173*			
Surrogate: Toluene-d8	*13.1*		*"*	*13.3*		*98.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.0*		*"*	*13.3*		*97.4*	*21-167*			

Fremont Environmental	Project: Noble - UPRC Federal 27-3F, 6F	
PO Box 1289	Project Number: [none]	**Reported:**
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Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1811301 - EPA 5030 Water MS										
Matrix Spike Dup (1811301-MSD1)	**Source: 1811266-06**			Prepared: 11/26/18 Analyzed: 11/28/18						
Benzene	27.1	1.0	ug/l	33.3	ND	81.3	70-130	0.00	30	
Toluene	30.4	1.0	"	33.3	ND	91.1	70-130	0.689	30	
Ethylbenzene	35.6	1.0	"	33.3	ND	107	70-130	2.47	30	
m,p-Xylene	69.6	2.0	"	66.7	ND	104	70-130	1.65	30	
o-Xylene	33.5	1.0	"	33.3	ND	100	70-130	1.51	30	
Surrogate: 1,2-Dichloroethane-d4	*13.4*		*"*	*13.2*		*101*	*23-173*			
Surrogate: Toluene-d8	*12.9*		*"*	*13.3*		*96.5*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*13.3*		*"*	*13.3*		*99.5*	*21-167*			
Batch 1811302 - EPA 5030 Soil MS										
Blank (1811302-BLK1)				Prepared: 11/26/18 Analyzed: 11/27/18						
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	*0.0319*		*"*	*0.0396*		*80.6*	*23-173*			
Surrogate: Toluene-d8	*0.0388*		*"*	*0.0400*		*97.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0390*		*"*	*0.0400*		*97.5*	*21-167*			
LCS (1811302-BS1)				Prepared: 11/26/18 Analyzed: 11/27/18						
Benzene	0.0980	0.0020	mg/kg	0.100		98.0	70-130			
Toluene	0.104	0.0050	"	0.100		104	70-130			
Ethylbenzene	0.107	0.0050	"	0.100		107	70-130			
m,p-Xylene	0.213	0.010	"	0.200		107	70-130			
o-Xylene	0.104	0.0050	"	0.100		104	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0337*		*"*	*0.0396*		*85.1*	*23-173*			
Surrogate: Toluene-d8	*0.0400*		*"*	*0.0400*		*100*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0395*		*"*	*0.0400*		*98.7*	*21-167*			

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Volatile Organic Compounds by EPA Method 8260B - Quality Control

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1811302 - EPA 5030 Soil MS										
Matrix Spike (1811302-MS1)	**Source: 1811266-01**			Prepared: 11/26/18 Analyzed: 11/27/18						
Benzene	0.0965	0.0020	mg/kg	0.100	ND	96.5	70-130			
Toluene	0.101	0.0050	"	0.100	ND	101	70-130			
Ethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130			
m,p-Xylene	0.208	0.010	"	0.200	ND	104	70-130			
o-Xylene	0.102	0.0050	"	0.100	ND	102	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0343*		*"*	*0.0396*		*86.7*	*23-173*			
Surrogate: Toluene-d8	*0.0402*		*"*	*0.0400*		*100*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0401*		*"*	*0.0400*		*100*	*21-167*			
Matrix Spike Dup (1811302-MSD1)	**Source: 1811266-01**			Prepared: 11/26/18 Analyzed: 11/27/18						
Benzene	0.0985	0.0020	mg/kg	0.100	ND	98.5	70-130	2.00	30	
Toluene	0.103	0.0050	"	0.100	ND	103	70-130	2.23	30	
Ethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130	0.200	30	
m,p-Xylene	0.208	0.010	"	0.200	ND	104	70-130	0.158	30	
o-Xylene	0.101	0.0050	"	0.100	ND	101	70-130	0.473	30	
Surrogate: 1,2-Dichloroethane-d4	*0.0325*		*"*	*0.0396*		*82.0*	*23-173*			
Surrogate: Toluene-d8	*0.0392*		*"*	*0.0400*		*98.0*	*20-170*			
Surrogate: 4-Bromofluorobenzene	*0.0384*		*"*	*0.0400*		*96.0*	*21-167*			

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Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1811303 - EPA 3550A										
Blank (1811303-BLK1)				Prepared & Analyzed: 11/26/18						
C10-C28 (DRO)	ND	50	mg/kg							
LCS (1811303-BS1)				Prepared & Analyzed: 11/26/18						
C10-C28 (DRO)	515	50	mg/kg	500		103	70-130			
Matrix Spike (1811303-MS1)	**Source: 1811266-01**			Prepared & Analyzed: 11/26/18						
C10-C28 (DRO)	525	50	mg/kg	500	29.8	99.0	70-130			
Matrix Spike Dup (1811303-MSD1)	**Source: 1811266-01**			Prepared & Analyzed: 11/26/18						
C10-C28 (DRO)	518	50	mg/kg	500	29.8	97.5	70-130	1.40	20	

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Fremont Environmental	Project: Noble - UPRC Federal 27-3F, 6F	
PO Box 1289	Project Number: [none]	**Reported:**
Wellington CO, 80549	Project Manager: Paul Henehan	12/03/18 13:50

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