SITE INFORMATION

Report Type: Closure Report 1RP-4478 and 1RP-4479

General Site Information:						
Site:	**Schubert 18-4H**					
Company:	**Forge Energy, LLC.**					
Section, Township and Range	**Unit O**	**Sec. 18**	**T 19S**	**R 39E**		
Lease Number:	**API No. 30-025-43365**					
County:	**Lea County**					
GPS:	**32.65385° N**			**103.08413° W**		
Surface Owner:	**Private**					
Mineral Owner:						
Directions:	From the intersection of NM-18 and E Nadine Rd, travel east on E Nadine Rd for approximately 1.5 mi, turn north onto lease road for 1 mi to fork in the road and go northeast for approximately 0.5 mi, make hairpin turn to the west for 1.6 mi to the location on the north side of the lease road.					

Release Data:		
Date Released:	10/23/2016	10/25/2016
Type Release:	Produced water	Produced water
Source of Contamination:	Well Head	Frac Tank
Fluid Released:	70 bbls	687 bbls
Fluids Recovered:	10 bbls	320 bbls

Official Communication:			
Name:	Kory Morgan		Ike Tavarez
Company:	Forge Energy, LLC.		Tetra Tech
Address:	10999 IH 10 West		4000 N. Big Spring
	Suite 900		Ste 401
City:	San Antonio, TX 78230		Midland, Texas
Phone number:	(432) 524-1301		(432) 687-8110
Fax:			
Email:	kmorgan@forgenergy.com		Ike.Tavarez@tetratech.com

Ranking Criteria		
Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	20	
50-99 ft	***10***	70'
>100 ft.	0	
WellHead Protection:	***Ranking Score***	***Site Data***
Water Source <1,000 ft., Private <200 ft.	*20*	
Water Source >1,000 ft., Private >200 ft.	***0***	*0*
Surface Body of Water:	***Ranking Score***	***Site Data***
<200 ft.	*20*	
200 ft - 1,000 ft.	10	
>1,000 ft.	***0***	0
Total Ranking Score:	***10***	

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	50	1,000

APPROVED
By Olivia Yu at 7:30 am, Oct 26, 2018

TETRA TECH

NMOCD grants closure to 1RP-4478 & 1RP-4479.

August 7, 2017

Ms. Olivia Yu
Environmental Engineer Specialist
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

Re: Closure Report for the Forge Energy, LLC., Schubert 18-4H, Unit O, Section 18, Township 19 South, Range 39 East, Lea County, New Mexico. 1RP-4478 and 1RP-4479

Ms. Yu:

Tetra Tech, Inc. (Tetra Tech) was contacted by Forge Energy, LLC. (Forge) to assess and remediate the two spills that occurred at the Schubert 18-4H, Unit O, Section 18, Township 19 South, Range 39 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.65385º, W 103.08413º. The site location is shown on Figures 1 and 2.

Background

Two produced water releases occurred at the site in October 2016. The initial C-141 forms are included in Appendix A. The release areas are shown on Figure 3.

- 1RP-4478: According to the State of New Mexico C-141 Initial Report, the first release was discovered on October 23, 2016. Approximately seventy (70) bbls of produced water was released during completion operations. Ten (10) bbls of produced water was recovered, leaving approximately sixty (60) bbls unrecovered. The impacted area measured approximately 75' x 230' on the pad. The release also migrated into the adjacent pasture impacting areas measuring approximately 15' x 140' to the northeast of the pad, and 80' x 80' to the southeast of the pad.

- 1RP-4479: According to the State of New Mexico C-141 Initial Report, the second release was discovered on October 25, 2016, and was the result of a frac tank that overflowed. Approximately six hundred and eighty seven (687) bbls of produced water was released. Vacuum trucks were used to recover all standing fluids, and

Tetra Tech
4000 North Big Spring, Suite 401, Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

approximately three hundred and twenty (320) bbls of produced water was recovered, leaving approximately three hundred and sixty seven (367) bbls unrecovered. The release impacted the same area on the pad as the first release, which measured approximately 75' x 230'. Additionally, the fluids migrated into the adjacent pasture and impacted areas measuring approximately 30' x 40', 20' x 385' and 80' x 80'.

Groundwater

According to the NMOCD groundwater map, the average depth to groundwater in this area is between 25' and 50' below surface. However, the New Mexico Office of the State Engineer database shows one well in Section 18, which is located approximately 0.75 miles to the northeast of the site, with a reported groundwater depth of 70' below surface. The groundwater data is shown in Appendix B.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 1,000 mg/kg.

Soil Assessment and Analytical Results

On October 27 and 28, 2016, Tetra Tech personnel inspected the spill site. In addition, Tetra Tech sampled and supervised the initial remediation of the release area. Based on the visual observation, the spill foot print was well defined on the surface. A total of sixteen (16) auger holes (AH-1 through AH-16) were installed to depths of 1.5' to 4.5' below surface using a stainless steel hand auger. Auger hole (AH-5) was installed near the edge of the frac tanks to assess the impact which migrated approximately 50' under the frac tanks.

As part of rapid response, Forge proposed to scrape the heavy saturated areas and a surficial scrape on the pad. The areas of auger holes (AH-8, AH-9, AH-10, AH-11, AH-12, AH-13, and AH-14) were scraped 0.5-1.0' below surface prior to sampling.

Tetra Tech field screened selected samples for salinity using an ExStick II EC400 meter. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0.

Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all of the samples analyzed for BTEX and TPH showed concentrations below the laboratory reporting limits. Additionally, all samples collected in the areas of auger holes (AH-1, AH-4, AH-6, AH-8, AH-9, AH-12, AH-13, AH-14, and AH-16) showed chloride concentrations below 250 mg/kg in the subsurface soils.

The areas of auger holes (AH-3, AH-5 and AH-7) did not show a significant chloride impact to the soils, with concentrations at 0-1' of 655 mg/kg, 617 mg/kg and 258 mg/kg, respectively. All of the deeper samples were below 250 mg/kg. In addition, the chlorides detected at auger hole (AH-10) showed concentrations of 848 mg/kg at 0-1' and 280 mg/kg at 1-1.5', but declined below 250 mg/kg at 2-2.5' below surface. These chloride concentrations are not significant and do not appear to an environmental concern.

The area of auger hole (AH-15) did show a chloride concentrations of 3,150 mg/kg at 0-1' and declined to 46 mg/kg at 1-1.5' below surface. However, after the area was sampled, the impacted area was excavated/scraped to a depth of 0.5' to 1.0' below surface to remove the impacted soil from the area.

The areas of auger holes (AH-2 and AH-11) showed elevated chloride concentrations in the shallow soils. The chlorides detected at auger hole (AH-2) showed a concentration of 1,730 mg/kg at 0-1' below surface, before declining to 9.88 mg/kg at 1-1.5' below surface. The area of auger hole (AH-11) showed a chloride concentration of 1,470 mg/kg at 0-1' below the 0.5' excavation bottom, which then declined to 37.8 mg/kg at 1-1.5' below the excavation bottom.

A total of approximately 260 cubic yards of material was excavated from the site and hauled to Sundance Services, Inc. for proper disposal.

Re-sampling of Area AH-2 and AH-11

After the initial scraping and sampling of the release, a heavy rain event occurred in the area. On November 14, 2016 Tetra Tech returned to the site to collected additional samples in the areas of auger holes (AH-2 and AH-11). Soil samples were analyzed chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1.

Referring to Table 1, the area of auger hole (AH-11) showed the chloride concentration <5.0 mg/kg below the laboratory reporting limits at 0-1' after the rain event. However, the area of auger hole (AH-2) showed a chloride concentration of 2,520 mg/kg at 0-1' below surface and did not show a significant change or decline on the pad.

TETRA TECH

Trench for Vertical Confirmation

On May 5, 2017, Tetra Tech personnel was onsite to attain confirmation samples, as requested by the NMOCD. The areas of auger holes (AH-2, AH-5, AH-10, AH-11, and AH-15) were sampled using a backhoe to collect deeper samples for confirmation. Samples were collected at 5.0' and 8.0' below surface and submitted to Xenco Laboratories for chloride analysis by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. Referring to table 1, none of the samples collected at 5.0' and 8.0' below surface showed chloride concentrations above 250 mg/kg.

Soil Remediation

On June 14, 2017, Tetra Tech personnel were onsite to supervise the excavation and remediation activities. As proposed in the work plan, the excavation area and depth are highlighted (green) in Table 1 and shown on Figure 4. Based on the laboratory results, the area of auger hole (AH-2) on the pad was excavated to a depth of 1.0' below surface area and measured approximately 30' x 30'. Approximately 40 cubic yards was removed and transported to proper disposal. The excavated area was backfield with clean material to surface grade.

Conclusion and Recommendations

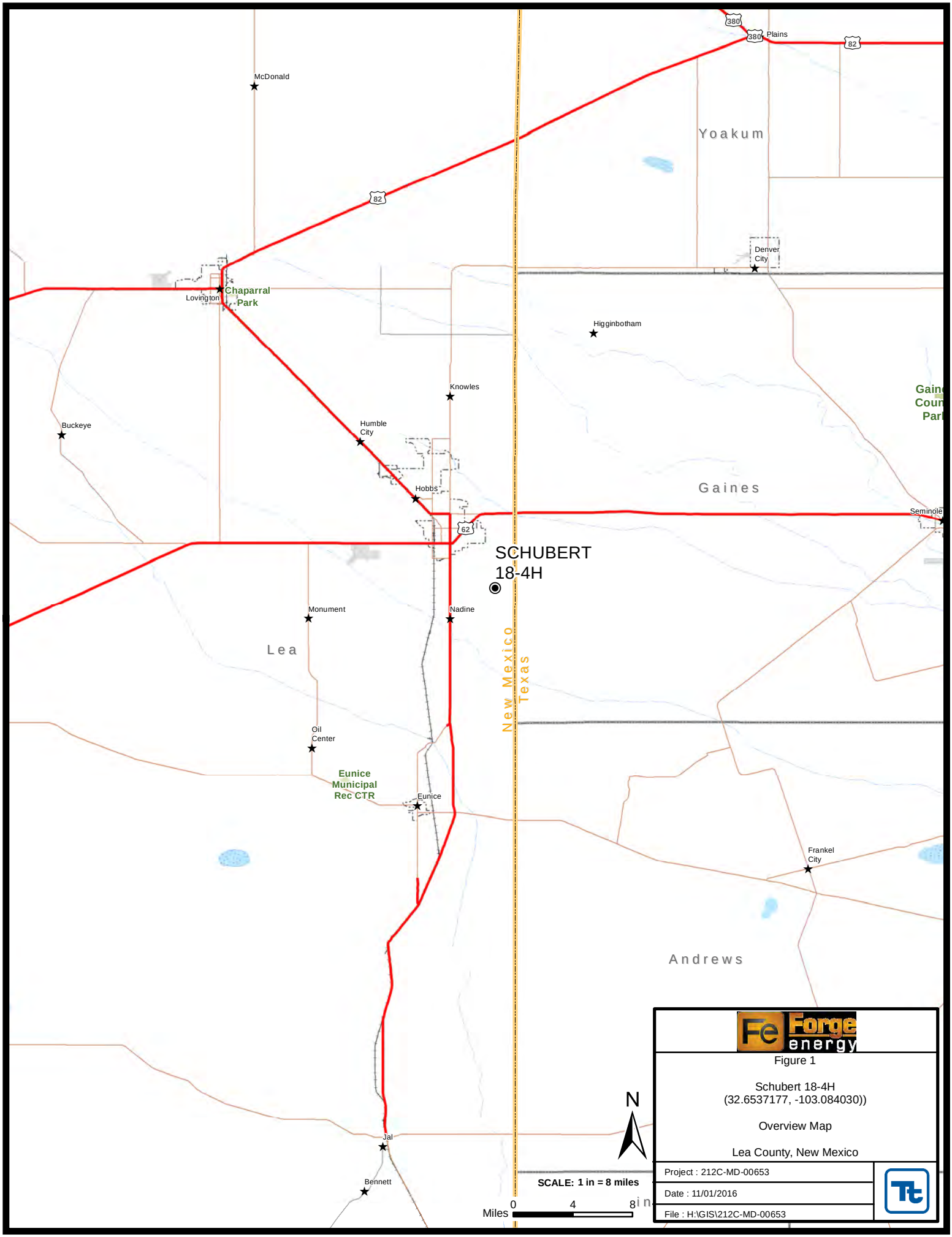
Based on the remediation work and additional sampling for confirmation, Forge requests closure of this spill issue. The final C-141s is shown in Appendix A. If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

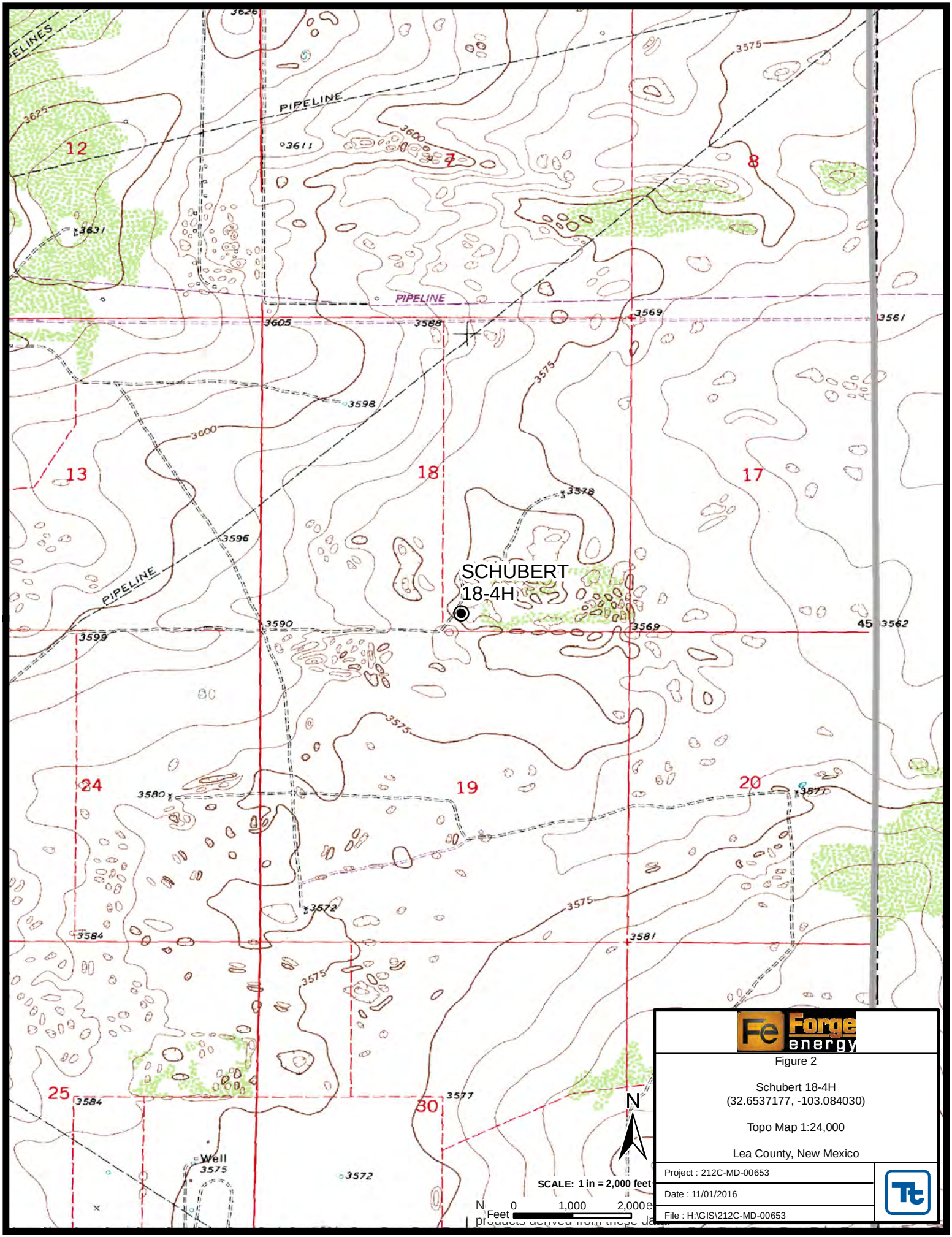
Clair Gonzales,
Geologist I

Ike Tavarez,
Senior Project Manager, P.G.

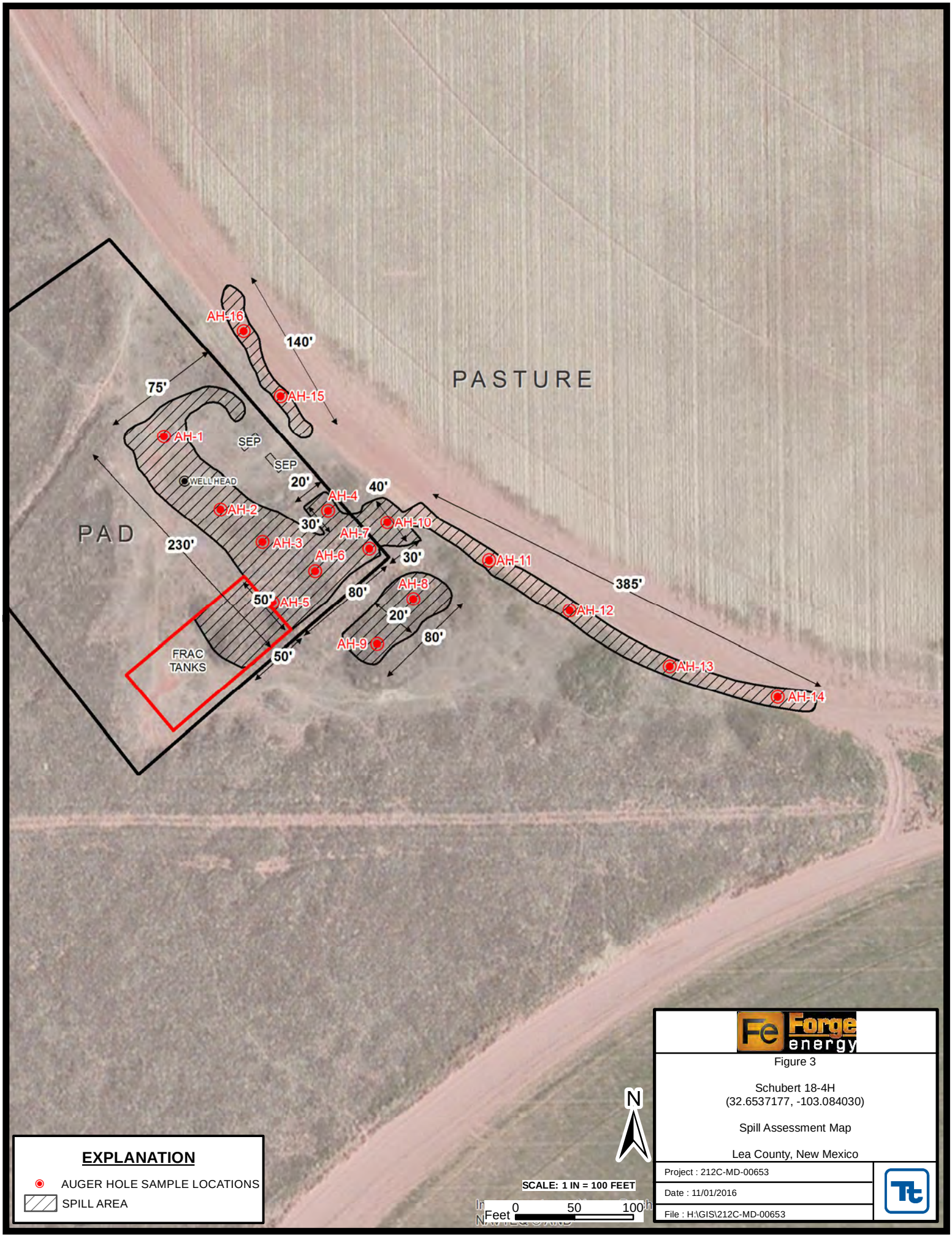
Figures

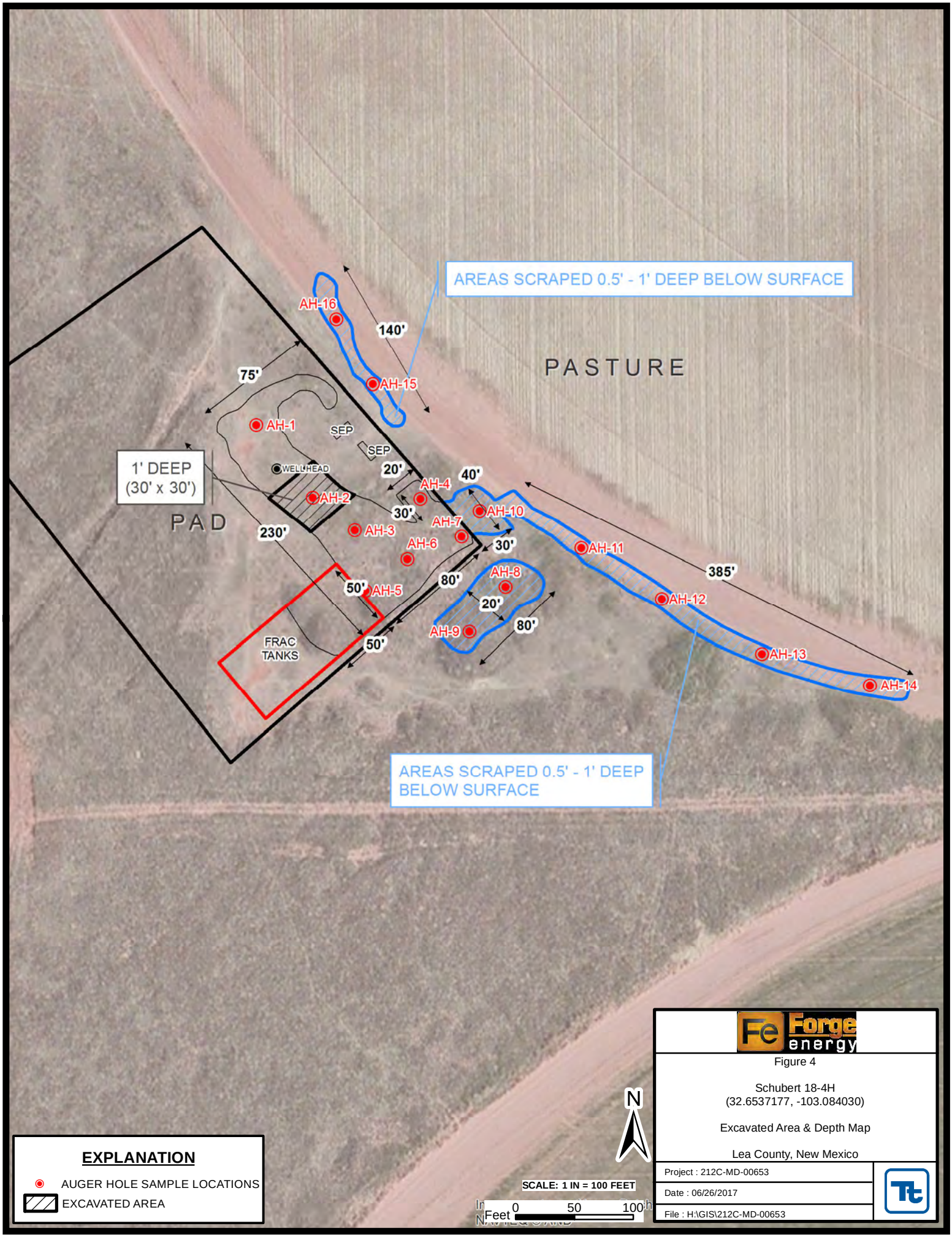


Mapped By: Isabel Marmolejo



Mapped By: Isabel Marmolejo


PASTURE
PAD
AH-16
AH-15
AH-1
AH-2
AH-3
AH-4
AH-5
AH-6
AH-7
AH-8
AH-9
AH-10
AH-11
AH-12
AH-13
AH-14
SEP
SEP
WELL HEAD
FRAC TANKS
140'
75'
230'
20'
40'
30'
30'
80'
20'
80'
50'
50'
385'
N
SCALE: 1 IN = 100 FEET
Feet 0 50 100
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
SPILL AREA
Forge energy
Figure 3
Schubert 18-4H
(32.6537177, -103.084030)
Spill Assessment Map
Lea County, New Mexico
Project : 212C-MD-00653
Date : 11/01/2016
File : H:\GIS\212C-MD-00653
Mapped By: Isabel Marmolejo


AREAS SCRAPED 0.5' - 1' DEEP BELOW SURFACE
PASTURE
AH-16
140'
AH-15
75'
AH-1
SEP
SEP
1' DEEP
(30' x 30')
WELLHEAD
20'
40'
AH-4
AH-2
AH-10
30'
AH-7
PAD
230'
AH-3
AH-6
30'
AH-11
385'
AH-8
50'
AH-5
80'
20'
AH-12
80'
AH-9
FRAC
TANKS
50'
AH-13
AH-14
AREAS SCRAPED 0.5' - 1' DEEP
BELOW SURFACE
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
EXCAVATED AREA
N
SCALE: 1 IN = 100 FEET
Feet 0 50 100
Figure 4
Schubert 18-4H
(32.6537177, -103.084030)
Excavated Area & Depth Map
Lea County, New Mexico
Project : 212C-MD-00653
Date : 06/26/2017
File : H:\GIS\212C-MD-00653
Mapped By: Isabel Marmolejo

Tables

Table 1
Forge Energy
Schubert 18-4H
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-1	10/27/2016	0-1	-	X		<15.0	<15.0	<15.0	<0.00149	<0.00199	<0.00199	<0.00199	<0.00149	158
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	5.83
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	8.18
AH-2	10/27/2016	0-1	-		X	<15.0	<15.0	<15.0	<0.00149	<0.00198	<0.00198	<0.00198	<0.00149	1,730
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	9.88
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	14.7
	11/14/2016	0-1	-		X	-	-	-	-	-	-	-	-	2,520
	5/25/2017	5	-	X		-	-	-	-	-	-	-	-	<9.60
	"	8	-	X		-	-	-	-	-	-	-	-	<9.45
AH-3	10/27/2016	0-1	-	X		<15.0	<15.0	<15.0	<0.00149	<0.00199	<0.00199	<0.00199	<0.00149	655
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	8.36
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	6.78
AH-4	10/27/2016	0-1	-	X		<15.0	<15.0	<15.0	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	215
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	13.8
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	16.0
AH-5	10/27/2016	0-1	-	X		<15.0	<15.0	<15.0	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	617
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	436
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	5.88
	5/25/2017	5	-	X		-	-	-	-	-	-	-	-	83.0
	"	8	-	X		-	-	-	-	-	-	-	-	141

Table 1
Forge Energy
Schubert 18-4H
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-6	10/27/2016	0-1	-	X		<15.0	<15.0	<15.0	<0.00149	<0.00198	<0.00198	<0.00198	<0.00149	234
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	27.1
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	17.7
AH-7	10/27/2016	0-1	-	X		<14.9	<14.9	<14.9	<0.00149	<0.00199	<0.00199	<0.00199	<0.00149	258
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	9.31
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	11.5
AH-8	10/27/2016	0-1	1	X		<15.0	<15.0	<15.0	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	7.39
	"	1-1.5	1	X		-	-	-	-	-	-	-	-	5.86
AH-9	10/27/2016	0-1	1	X		<15.0	<15.0	<15.0	<0.00149	<0.00199	<0.00199	<0.00199	<0.00149	159
	"	1-1.5	1	X		-	-	-	-	-	-	-	-	7.1
AH-10	10/27/2016	0-1	0.5	X		<15.0	<15.0	<15.0	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	849
	"	1-1.5	0.5	X		-	-	-	-	-	-	-	-	280
	"	2-2.5	0.5	X		-	-	-	-	-	-	-	-	42.1
	"	3-3.5	0.5	X		-	-	-	-	-	-	-	-	15.4
	5/25/2017	5	-	X		-	-	-	-	-	-	-	-	72.9
	"	8	-	X		-	-	-	-	-	-	-	-	<9.82
AH-11	10/27/2016	0-1	0.5	X		<15.0	<15.0	<15.0	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	1,470
	"	1-1.5	0.5	X		-	-	-	-	-	-	-	-	37.8
	"	2-2.5	0.5	X		-	-	-	-	-	-	-	-	24.8
	"	3-3.5	0.5	X		-	-	-	-	-	-	-	-	11.8
	11/14/2016	0-1	0.5	X		-	-	-	-	-	-	-	-	<5.00
	5/25/2017	5	-	X		-	-	-	-	-	-	-	-	10.1
	"	8	-	X		-	-	-	-	-	-	-	-	68.6

Table 1
Forge Energy
Schubert 18-4H
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-12	10/27/2016	0-1	0.5	X		<15.0	<15.0	<15.0	<0.00149	<0.00199	<0.00199	<0.00199	<0.00149	102
	"	1-1.5	0.5	X		-	-	-	-	-	-	-	-	60.6
	"	2-2.5	0.5	X		-	-	-	-	-	-	-	-	32.5
	"	3-3.5	0.5	X		-	-	-	-	-	-	-	-	11.5
AH-13	10/27/2016	0-1	0.5	X		<15.0	<15.0	<15.0	<0.00149	<0.00199	<0.00199	<0.00199	<0.00149	155
	"	1-1.5	0.5	X		-	-	-	-	-	-	-	-	19.7
	"	2-2.5	0.5	X		-	-	-	-	-	-	-	-	25.4
	"	3-3.5	0.5	X		-	-	-	-	-	-	-	-	19.8
AH-14	10/27/2016	0-1	0.5	X		<15.0	<15.0	<15.0	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	75.8
	"	1-1.5	0.5	X		-	-	-	-	-	-	-	-	77.1
	"	2-2.5	0.5	X		-	-	-	-	-	-	-	-	23.0
	"	3-3.5	0.5	X		-	-	-	-	-	-	-	-	18.6
AH-15	10/27/2016	0-1	-		X	<15.0	<15.0	<15.0	<0.00149	<0.00199	<0.00199	<0.00199	<0.00149	3,150
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	46.0
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	91.0
		3-3.5	-	X		-	-	-	-	-	-	-	-	37.0
	"	4-4.5	-	X		-	-	-	-	-	-	-	-	28.5
	5/25/2017	5	-	X		-	-	-	-	-	-	-	-	61.8
	"	8	-	X		-	-	-	-	-	-	-	-	16.5
AH-16	10/27/2016	0-1	-		X	<15.0	<15.0	<15.0	<0.00149	<0.00199	<0.00199	<0.00199	<0.00149	179
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	58.6
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	22.2
		3-3.5	-	X		-	-	-	-	-	-	-	-	13.9

(-) Not Analyzed

(BEB) Below Excavation Bottom

Areas Excavated to a depth of 0.5' to 1.0', after sampling

Excavation Depths

212C-MD-00653
Xenco Labs

Photos

Forge Energy LLC.
Schubert 18-4H
Lea County, New Mexico

View Southeast – Area of AH-1

View Northwest – Area of AH-2

Forge Energy LLC.
Schubert 18-4H
Lea County, New Mexico

View Southeast – Area of AH-3

View North – Area of AH-4

Forge Energy LLC.
Schubert 18-4H
Lea County, New Mexico

View South – Area of AH-5

View South – Areas of AH-6 and AH-7

Forge Energy LLC.
Schubert 18-4H
Lea County, New Mexico

View South – Areas of AH-8 and AH-9

View Northeast – Area of AH-10

Forge Energy LLC.
Schubert 18-4H
Lea County, New Mexico

View East – Areas of AH-11 and AH-12

View East – Areas of AH-13 and AH-14

Forge Energy LLC.
Schubert 18-4H
Lea County, New Mexico

View Northwest – Areas of AH-15 and AH-16

Forge Energy LLC.
Schubert 18-4H
Lea County, New Mexico

TETRA TECH

View North – Excavated area of AH-2

View North – Backfill of area AH-2

Forge Energy LLC.
Schubert 18-4H
Lea County, New Mexico

View North West – Trench Area for confirmation of AH-2

View North West – Trench Area for confirmation of AH-2, backfilled

Forge Energy LLC.
Schubert 18-4H
Lea County, New Mexico

View South East-Trench Area for confirmation of AH-5

View South East- Trench area for confirmation of AH-5, Backfilled

Forge Energy LLC.
Schubert 18-4H
Lea County, New Mexico

View North West – Trench Area for confirmation of AH-10

View North – Trench area for confirmation of AH-10, backfilled

Forge Energy LLC.
Schubert 18-4H
Lea County, New Mexico

View North-Trench area for confirmation of AH-11

View North West- Trench Area for confirmation of AH-11, backfilled

Forge Energy LLC.
Schubert 18-4H
Lea County, New Mexico

View West- Trench area for confirmation of AH-15

Forge Energy LLC.
Schubert 18-4H
Lea County, New Mexico

View West – Excavated Area of AH-2

View West – Backfilled Area of AH-2

Appendix A

REVIEWED
By Kristen Lynch at 7:31 am, Oct 31, 2016

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company FORGE ENERGY, LLC	Contact KATRINA BOYD
Address 10999 IH 10 WEST, SUITE 900, SAN ANTONIO, TX 78230	Telephone No. 432-524-1301
Facility Name SCHUBERT 18-4H	Facility Type OIL WELL

Surface Owner	Mineral Owner	API No. 30-025-43365

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	18	19S	39E	245	SOUTH	2405	EAST	LEA

Latitude 32.65371776 **Longitude** -103.0840306

NATURE OF RELEASE

Type of Release WATER	Volume of Release 70BBLS	Volume Recovered 10BBLS
Source of Release WELLHEAD	Date and Hour of Occurrence	Date and Hour of Discovery 10/23/2016 @ 2pm
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

Well started kicking while installing Artificial Lift Equipment; well started to pressure up, Vacuum truck couldn't keep up with fluid returns. BOP RAMS had trouble sealing around meter cable. Pump truck continued to pump kill fluid until it was killed. Hydril BOP was installed on top of manual BOP

Describe Area Affected and Cleanup Action Taken.*

Wellsite Location; all fluids except 2 bbls remained on location the remaining 2 bbls are on the outside edge of location. Clean-up action involves 3rd Party, Tetra Tech Environmental.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: K. Boyd

Printed Name: Katrina Boyd

Title: Operations Assistant

E-mail Address: kboyd@forgenergy.com

Date: 10/24/2016 Phone: 432-524-1301

OIL CONSERVATION DIVISION

Approved by Environmental Specialis: Kristen Lynch

Approval Date: 10/31/2016 Expiration Date: 12/31/2016

NMOCD accepts discrete samples only
Conditions of Approval:
Notify OCD prior to sampling
Please submit remediation plan no later than 11/31/2016.

Attached ☐
1RP 4478

nKL1630526579
pKL1630526875

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
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1000 Rio Brazos Road, Aztec, NM 87410
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Energy Minerals and Natural Resources

Oil Conservation Division
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Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company **Forge Energy, LLC**	Contact **Katrina Boyd**
Address **10999 IH 10 West, Ste 900, San Antonio, TX 78230**	Telephone No. **(432) 524-1301**
Facility Name Schubert 18-4H	Facility Type **Oil Well**

Surface Owner: Private	Mineral Owner	API No. 30-025-43365

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	18	19S	39E	245	SOUTH	2405	EAST	Lea

Latitude N 32.65371776° **Longitude** W 103.0840306 °

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 687 bbls	Volume Recovered 320 bbls
Source of Release: Frac Tank	Date and Hour of Occurrence 10/25/16	Date and Hour of Discovery 10/25/2016 7:00 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **Kristen Lynch**	
By Whom? Kory Morgan	Date and Hour 10/25/16 11:00 am	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

A frac tank overflowed, resulting in the release. Vacuum trucks recovered all standing fluids.

Describe Area Affected and Cleanup Action Taken.*

The release impacted an area on the pad and into the adjacent pasture.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 

Printed Name: Ike Tavarez (Agent for Forge Energy)

Title: Project Manager

E-mail Address: Ike.Tavarez@TetraTech.com

Date: 10/25/16 Phone: (432) 682-4559

OIL CONSERVATION DIVISION

Approved by District Supervisor:

Approval Date: 10/31/2016 Expiration Date: 12/31/2016

NMOCD Accepts Discrete Samples Only

Conditions of Approval:
Notify OCD prior to sampling.

Please provide Remediation plan no later than 11/31/2016.

Attached ☐

1RP 4479

* Attach Additional Sheets If Necessary

nKL1630528364
pKL1630531571

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Oil Conservation Division
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Form C-141
Revised October 10, 2003

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Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company **Forge Energy, LLC**	Contact **Katrina Boyd**
Address **10999 IH 10 West, Suite 900, San Antonio, Tx 78230**	Telephone No. **(432) 524-1301**
Facility Name **Schubert 18-4H**	Facility Type **Oil Well**

Surface Owner:	Mineral Owner	API No. 30-025-43365

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	18	19S	39E	245	South	2405	East	Lea

Latitude N 32.65371776° **Longitude** W -103.0840306°

NATURE OF RELEASE

Type of Release: Water	Volume of Release 70 bbls	Volume Recovered 10 bbls
Source of Release: Well Head	Date and Hour of Occurrence	Date and Hour of Discovery 10/23/2016 @2pm
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

N/A

APPROVED
By Olivia Yu at 7:27 am, Oct 26, 2018

Describe Cause of Problem and Remedial Action Taken.*
Well started kicking while installing Artificial lift equipment, well then started to pressure up, vacuum truck couldn't keep up with the fluid return. BOP RAMS had trouble sealing around meter cable. The pump truck continued to pump kill fluid until it was killed. Hydril BOP was installed on top of the manual BOP. The impacted soils were removed; material was transported offsite for proper disposal. The excavated areas were then backfilled with clean material to surface grade.

Describe Area Affected and Cleanup Action Taken.*
Wellsite location, all fluids except 2bbls remained on location; the remaining 2bbs are located on the outside edge. Tetra Tech assessed the site and collected samples to define the spill extent. Soil that exceeded the RRAL was removed and hauled away for proper disposal. The site was then brought to surface grade with clean backfill material. Tetra Tech prepared closure report and submitted to NMCOD for review.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION
Printed Name: Ike Tavarez	Approved by District Supervisor:
Title: Project Manager	Approval Date: 10/26/2018 Expiration Date: xx/xx/xxxx
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval: Attached ☐
Date: Phone: (432) 682-4559	

* Attach Additional Sheets If Necessary

1RP-4478

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Release Notification and Corrective Action

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Name of Company **Forge Energy, LLC**	Contact **Katrina Boyd**
Address **10999 IH 10 West, Suite 900, San Antonio, Tx 78230**	Telephone No. **(432) 524-1301**
Facility Name **Schubert 18-4H**	Facility Type **Oil Well**

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Source of Release: Frac Tank	Date and Hour of Occurrence 10/25/16	Date and Hour of Discovery 10/25/2016 @ 7:00am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Kristen Lynch	
By Whom?	Date and Hour 10/25/16 11:00am	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

N/A

APPROVED
By Olivia Yu at 7:29 am, Oct 26, 2018

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A frac tank overflowed, resulting in the release. Vacuum trucks recovered all standing fluids. The soils that impacted were removed; material was transported offsite for proper disposal. The excavated areas were then backfilled with clean material to surface grade.

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Signature:	OIL CONSERVATION DIVISION	
Printed Name: Ike Tavarez	Approved by District Supervisor:	
Title: Project Manager	Approval Date: 10/26/2018	Expiration Date: xx/xx/xxxx
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval:	Attached ☐
Date: Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

1RP-4479

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
Forge Energy - Schubert 18-4H
Lea County, New Mexico

18 South 38 East

6 63	5 70	4 66	3 64	2 69	1 83
7 53	8 58	9 64	10 69	11 82	12 82
18 53	17 54	16 63	15 66	14 70	13 35
19 49	20 57	21 63	22 62	23 80	24 74
30 38	29 57	28 69	27 72	26 80	25 95
31 80	32 47	33 53	34 104	35 48	36 78

18 South 39 East

6 90 	5 80	4
7 87 	8 81	9
18 76	17 48	16
19 69	20 72	21
30 76	29 96	28
31 93	32 59	33

19 South 38 East

6 68	5 35	4 64	3 49	2 54	1 74
7 85	8 26	9 56	10 53	11 60	12 83
18 20	17 24	16 33	15 52	14 70	13 92
19 46	20	21 45	22 59	23 69	24
30 49	29 42	28 55	27 56	26 76	25 68
31	32	33	34 47	35 56	36 55

Hobbs

19 South 39 East

6 51 107	5 90	4
7 65 110	8	9
18 70	17 91	16
19	20	21
30 90	29 65	28
31 60	32	33

20 South 38 East

6 63	5 45	4 30	3 36	2 46	1 63
7 69	8 70	9	10 47	11 42	12 53
18 50	17	16	15	14 49	13 42
19	20	21	22	23	24 30
30	29	28	27	26 65	25
31	32	33	34	35	36

20 South 39 East

6	5	4
7 62	8	9
18	17	16
19	20	21
30 40	29	28
31	32	33

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)

Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

123 Tetra Tech installed temporary wells and field water level

143 NMOCD Groundwater map well location

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 04789	L	LE	2	3	1	18	19S	39E	679094	3615532*	131	70	61
L 04789 S	L	LE		1	3	18	19S	39E	679001	3615030*	171		
L 04789 S2	L	LE	1	1	1	18	19S	39E	678888	3615935*	210		

Average Depth to Water: **70 feet**

Minimum Depth: **70 feet**

Maximum Depth: **70 feet**

Record Count: 3

PLSS Search:

Section(s): 18 **Township:** 19S **Range:** 39E

***UTM location was derived from PLSS - see Help**

Appendix C

Analytical Report 539437

for

Tetra Tech- Midland

Project Manager: Ike Tavarez

Forge-Schubert 18-4H

212C-MD-00653

03-NOV-16

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Table of Contents

03-NOV-16

Project Manager: **Ike Tavarez**
Tetra Tech- Midland
4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): **539437**
Forge-Schubert 18-4H
Project Address: Lea Co

Ike Tavarez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 539437. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 539437 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 539437

Tetra Tech- Midland, Midland, TX

Forge-Schubert 18-4H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH-1 0-1	S	10-27-16 00:00	0 - 1	539437-001
AH-1 1-1.5	S	10-27-16 00:00	1 - 1.5	539437-002
AH-1 2-2.5	S	10-27-16 00:00	2 - 2.5	539437-003
AH-2 0-1	S	10-27-16 00:00	0 - 1	539437-004
AH-2 1-1.5	S	10-27-16 00:00	1 - 1.5	539437-005
AH-2 2-2.5	S	10-27-16 00:00	2 - 2.5	539437-006
AH-3 0-1	S	10-27-16 00:00	0 - 1	539437-007
AH-3 1-1.5	S	10-27-16 00:00	1 - 1.5	539437-008
AH-3 2-2.5	S	10-27-16 00:00	2 - 2.5	539437-009
AH-4 0-1	S	10-27-16 00:00	0 - 1	539437-010
AH-4 1-1.5	S	10-27-16 00:00	1 - 1.5	539437-011
AH-4 2-2.5	S	10-27-16 00:00	2 - 2.5	539437-012
AH-5 0-1	S	10-27-16 00:00	0 - 1	539437-013
AH-5 1-1.5	S	10-27-16 00:00	1 - 1.5	539437-014
AH-5 2-2.5	S	10-27-16 00:00	2 - 2.5	539437-015
AH-6 0-1	S	10-27-16 00:00	0 - 1	539437-016
AH-6 1-1.5	S	10-27-16 00:00	1 - 1.5	539437-017
AH-6 2-2.5	S	10-27-16 00:00	2 - 2.5	539437-018
AH-7 0-1	S	10-27-16 00:00	0 - 1	539437-019
AH-7 1-1.5	S	10-27-16 00:00	1 - 1.5	539437-020
AH-7 2-2.5	S	10-27-16 00:00	2 - 2.5	539437-021
AH-8 0-1 (1' BEB)	S	10-27-16 00:00	0 - 1	539437-022
AH-8 1-1.5 (1' BEB)	S	10-27-16 00:00	1 - 1.5	539437-023
AH-9 0-1 (1' BEB)	S	10-27-16 00:00	0 - 1	539437-024
AH-9 1-1.5 (1' BEB)	S	10-27-16 00:00	1 - 1.5	539437-025
AH-10 0-1 (6" BEB)	S	10-27-16 00:00	0 - 1	539437-026
AH-10 1-1.5 (6" BEB)	S	10-27-16 00:00	1 - 1.5	539437-027
AH-10 2-2.5 (6" BEB)	S	10-27-16 00:00	2 - 2.5	539437-028
AH-10 3-3.5 (6" BEB)	S	10-27-16 00:00	3 - 3.5	539437-029
AH-11 0-1 (6" BEB)	S	10-27-16 00:00	0 - 1	539437-030
AH-11 1-1.5 (6" BEB)	S	10-27-16 00:00	1 - 1.5	539437-031
AH-11 2-2.5 (6" BEB)	S	10-27-16 00:00	2 - 2.5	539437-032
AH-11 3-3.5 (6" BEB)	S	10-27-16 00:00	3 - 3.5	539437-033
AH-12 0-1 (6" BEB)	S	10-27-16 00:00	0 - 1	539437-034
AH-12 1-1.5 (6" BEB)	S	10-27-16 00:00	1 - 1.5	539437-035
AH-12 2-2.5 (6" BEB)	S	10-27-16 00:00	2 - 2.5	539437-036
AH-12 3-3.5 (6" BEB)	S	10-27-16 00:00	3 - 3.5	539437-037
AH-13 0-1 (6" BEB)	S	10-27-16 00:00	0 - 1	539437-038
AH-13 1-1.5 (6" BEB)	S	10-27-16 00:00	1 - 1.5	539437-039
AH-13 2-2.5 (6" BEB)	S	10-27-16 00:00	2 - 2.5	539437-040
AH-13 3-3.5 (6" BEB)	S	10-27-16 00:00	3 - 3.5	539437-041
AH-14 0-1 (6" BEB)	S	10-27-16 00:00	0 - 1	539437-042
AH-14 1-1.5 (6" BEB)	S	10-27-16 00:00	1 - 1.5	539437-043

AH-14 2-2.5 (6" BEB)	S	10-27-16 00:00	2 - 2.5	539437-044
AH-14 3-3.5 (6" BEB)	S	10-27-16 00:00	3 - 3.5	539437-045
AH-15 0-1	S	10-27-16 00:00	0 - 1	539437-046
AH-15 1-1.5	S	10-27-16 00:00	1 - 1.5	539437-047
AH-15 2-2.5	S	10-27-16 00:00	2 - 2.5	539437-048
AH-15 3-3.5	S	10-27-16 00:00	3 - 3.5	539437-049
AH-15 4-4.5	S	10-27-16 00:00	4 - 4.5	539437-050
AH-16 0-1	S	10-27-16 00:00	0 - 1	539437-051
AH-16 1-1.5	S	10-27-16 00:00	1 - 1.5	539437-052
AH-16 2-2.5	S	10-27-16 00:00	2 - 2.5	539437-053
AH-16 3-3.5	S	10-27-16 00:00	3 - 3.5	539437-054

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3003040 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 539437

Tetra Tech- Midland, Midland, TX

Project Name: Forge-Schubert 18-4H

Project Id: 212C-MD-00653
Contact: Ike Tavarez
Project Location: Lea Co

Date Received in Lab: Fri Oct-28-16 03:15 pm
Report Date: 03-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	539437-001		539437-002		539437-003		539437-004		539437-005		539437-006	
	Field Id:	AH-1 0-1		AH-1 1-1.5		AH-1 2-2.5		AH-2 0-1		AH-2 1-1.5		AH-2 2-2.5	
	Depth:	0-1		1-1.5		2-2.5		0-1		1-1.5		2-2.5	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00	
BTEX by EPA 8021B	***Extracted:***	Oct-31-16 14:10						Oct-31-16 14:10					
	Analyzed:	Nov-01-16 07:48						Oct-31-16 17:02					
	Units/RL:	mg/kg	RL					mg/kg	RL				
Benzene		ND	0.00149					ND	0.00149				
Toluene		ND	0.00199					ND	0.00198				
Ethylbenzene		ND	0.00199					ND	0.00198				
m,p-Xylenes		ND	0.00199					ND	0.00198				
o-Xylene		ND	0.00299					ND	0.00298				
Total Xylenes		ND	0.00199					ND	0.00198				
Total BTEX		ND	0.00149					ND	0.00149				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Oct-31-16 10:30		Oct-31-16 10:30		Oct-31-16 10:30		Oct-31-16 10:30		Oct-31-16 10:30		Oct-31-16 10:30	
	Analyzed:	Oct-31-16 15:46		Oct-31-16 15:53		Oct-31-16 16:00		Oct-31-16 16:36		Oct-31-16 16:43		Oct-31-16 16:50	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		158	5.00	5.83	5.00	8.18	5.00	1730	5.00	9.88	5.00	14.7	5.00
TPH by SW 8015B	***Extracted:***	Oct-31-16 16:00						Oct-31-16 16:00					
	Analyzed:	Nov-01-16 00:42						Nov-01-16 01:56					
	Units/RL:	mg/kg	RL					mg/kg	RL				
C6-C10 Gasoline Range Hydrocarbons		ND	15.0					ND	15.0				
C10-C28 Diesel Range Organics		ND	15.0					ND	15.0				
Total TPH		ND	15.0					ND	15.0				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 539437

Tetra Tech- Midland, Midland, TX

Project Name: Forge-Schubert 18-4H

Project Id: 212C-MD-00653
Contact: Ike Tavarez
Project Location: Lea Co

Date Received in Lab: Fri Oct-28-16 03:15 pm
Report Date: 03-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	539437-007		539437-008		539437-009		539437-010		539437-011		539437-012	
	Field Id:	AH-3 0-1		AH-3 1-1.5		AH-3 2-2.5		AH-4 0-1		AH-4 1-1.5		AH-4 2-2.5	
	Depth:	0-1		1-1.5		2-2.5		0-1		1-1.5		2-2.5	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00	
BTEX by EPA 8021B	***Extracted:***	Oct-31-16 14:10						Oct-31-16 14:10					
	Analyzed:	Oct-31-16 18:07						Oct-31-16 18:40					
	Units/RL:	mg/kg	RL					mg/kg	RL				
Benzene		ND	0.00149					ND	0.00150				
Toluene		ND	0.00199					ND	0.00200				
Ethylbenzene		ND	0.00199					ND	0.00200				
m,p-Xylenes		ND	0.00199					ND	0.00200				
o-Xylene		ND	0.00298					ND	0.00299				
Total Xylenes		ND	0.00199					ND	0.00200				
Total BTEX		ND	0.00149					ND	0.00150				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Oct-31-16 10:30		Oct-31-16 10:30		Oct-31-16 10:30		Oct-31-16 10:30		Oct-31-16 10:30		Oct-31-16 10:30	
	Analyzed:	Oct-31-16 16:57		Oct-31-16 17:04		Oct-31-16 17:11		Oct-31-16 17:18		Oct-31-16 17:25		Oct-31-16 17:32	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		655	5.00	8.36	5.00	6.78	5.00	215	5.00	13.8	5.00	16.0	5.00
TPH by SW 8015B	***Extracted:***	Oct-31-16 16:00						Oct-31-16 16:00					
	Analyzed:	Nov-01-16 02:20						Nov-01-16 02:45					
	Units/RL:	mg/kg	RL					mg/kg	RL				
C6-C10 Gasoline Range Hydrocarbons		ND	15.0					ND	15.0				
C10-C28 Diesel Range Organics		ND	15.0					ND	15.0				
Total TPH		ND	15.0					ND	15.0				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 539437

Tetra Tech- Midland, Midland, TX

Project Name: Forge-Schubert 18-4H

Project Id: 212C-MD-00653
Contact: Ike Tavarez
Project Location: Lea Co

Date Received in Lab: Fri Oct-28-16 03:15 pm
Report Date: 03-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	539437-013		539437-014		539437-015		539437-016		539437-017		539437-018	
	Field Id:	AH-5 0-1		AH-5 1-1.5		AH-5 2-2.5		AH-6 0-1		AH-6 1-1.5		AH-6 2-2.5	
	Depth:	0-1		1-1.5		2-2.5		0-1		1-1.5		2-2.5	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00	
BTEX by EPA 8021B	***Extracted:***	Oct-31-16 14:10						Oct-31-16 14:10					
	Analyzed:	Nov-01-16 08:05						Nov-01-16 08:21					
	Units/RL:	mg/kg	RL					mg/kg	RL				
Benzene		ND	0.00150					ND	0.00149				
Toluene		ND	0.00200					ND	0.00198				
Ethylbenzene		ND	0.00200					ND	0.00198				
m,p-Xylenes		ND	0.00200					ND	0.00198				
o-Xylene		ND	0.00300					ND	0.00298				
Total Xylenes		ND	0.00200					ND	0.00198				
Total BTEX		ND	0.00150					ND	0.00149				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Oct-31-16 17:14		Oct-31-16 17:14		Oct-31-16 17:14		Oct-31-16 17:14		Oct-31-16 17:14		Oct-31-16 17:14	
	Analyzed:	Oct-31-16 19:18		Oct-31-16 19:25		Oct-31-16 19:32		Oct-31-16 19:39		Oct-31-16 19:46		Oct-31-16 19:53	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		617	5.00	436	5.00	5.88	5.00	234	5.00	27.1	5.00	17.7	5.00
TPH by SW 8015B	***Extracted:***	Oct-31-16 16:00						Oct-31-16 16:00					
	Analyzed:	Nov-01-16 03:10						Nov-01-16 03:35					
	Units/RL:	mg/kg	RL					mg/kg	RL				
C6-C10 Gasoline Range Hydrocarbons		ND	15.0					ND	15.0				
C10-C28 Diesel Range Organics		ND	15.0					ND	15.0				
Total TPH		ND	15.0					ND	15.0				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 539437

Tetra Tech- Midland, Midland, TX

Project Name: Forge-Schubert 18-4H

Project Id: 212C-MD-00653
Contact: Ike Tavarez
Project Location: Lea Co

Date Received in Lab: Fri Oct-28-16 03:15 pm
Report Date: 03-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	539437-019		539437-020		539437-021		539437-022		539437-023		539437-024	
	Field Id:	AH-7 0-1		AH-7 1-1.5		AH-7 2-2.5		AH-8 0-1 (1' BEB)		AH-8 1-1.5 (1' BEB)		AH-9 0-1 (1' BEB)	
	Depth:	0-1		1-1.5		2-2.5		0-1		1-1.5		0-1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00	
BTEX by EPA 8021B	***Extracted:***	Oct-31-16 14:10						Oct-31-16 14:10				Oct-31-16 14:10	
	Analyzed:	Oct-31-16 20:05						Nov-01-16 08:37				Oct-31-16 21:59	
	Units/RL:	mg/kg	RL					mg/kg	RL			mg/kg	RL
Benzene		ND	0.00149					ND	0.00150			ND	0.00149
Toluene		ND	0.00199					ND	0.00200			ND	0.00199
Ethylbenzene		ND	0.00199					ND	0.00200			ND	0.00199
m,p-Xylenes		ND	0.00199					ND	0.00200			ND	0.00199
o-Xylene		ND	0.00299					ND	0.00300			ND	0.00298
Total Xylenes		ND	0.00199					ND	0.00200			ND	0.00199
Total BTEX		ND	0.00149					ND	0.00150			ND	0.00149
Inorganic Anions by EPA 300/300.1	***Extracted:***	Oct-31-16 17:14		Oct-31-16 17:14		Oct-31-16 17:14		Oct-31-16 17:14		Oct-31-16 17:14		Oct-31-16 17:14	
	Analyzed:	Oct-31-16 20:14		Oct-31-16 20:21		Nov-01-16 10:20		Nov-01-16 10:27		Nov-01-16 10:34		Nov-01-16 10:41	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		258	5.00	9.31	5.00	11.5	5.00	7.39	5.00	5.86	5.00	159	5.00
TPH by SW 8015B	***Extracted:***	Oct-31-16 16:00						Oct-31-16 16:00				Oct-31-16 16:00	
	Analyzed:	Nov-01-16 04:00						Nov-01-16 04:25				Nov-01-16 04:49	
	Units/RL:	mg/kg	RL					mg/kg	RL			mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons		ND	14.9					ND	15.0			ND	15.0
C10-C28 Diesel Range Organics		ND	14.9					ND	15.0			ND	15.0
Total TPH		ND	14.9					ND	15.0			ND	15.0

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 539437

Tetra Tech- Midland, Midland, TX

Project Name: Forge-Schubert 18-4H

Project Id: 212C-MD-00653
Contact: Ike Tavarez
Project Location: Lea Co

Date Received in Lab: Fri Oct-28-16 03:15 pm
Report Date: 03-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	539437-025		539437-026		539437-027		539437-028		539437-029		539437-030	
	Field Id:	AH-9 1-1.5 (1' BEB)		AH-10 0-1 (6" BEB)		AH-10 1-1.5 (6" BEB)		AH-10 2-2.5 (6" BEB)		AH-10 3-3.5 (6" BEB)		AH-11 0-1 (6" BEB)	
	Depth:	1-1.5		0-1		1-1.5		2-2.5		3-3.5		0-1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Oct-31-16 17:14		Nov-01-16 15:54		Nov-01-16 15:54		Nov-01-16 15:54		Nov-01-16 15:54		Nov-01-16 15:54	
	Analyzed:	Nov-01-16 10:48		Nov-01-16 16:28		Nov-01-16 16:35		Nov-01-16 16:42		Nov-01-16 16:50		Nov-01-16 17:11	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		7.05	5.00	849	5.00	280	5.00	42.1	5.00	15.4	5.00	1470	5.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 539437

Tetra Tech- Midland, Midland, TX

Project Name: Forge-Schubert 18-4H

Project Id: 212C-MD-00653
Contact: Ike Tavarez
Project Location: Lea Co

Date Received in Lab: Fri Oct-28-16 03:15 pm
Report Date: 03-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested								
	Lab Id:	539437-025	539437-026		539437-027	539437-028	539437-029	539437-030	
	Field Id:	AH-9 1-1.5 (1' BEB)	AH-10 0-1 (6" BEB)		AH-10 1-1.5 (6" BEB)	AH-10 2-2.5 (6" BEB)	AH-10 3-3.5 (6" BEB)	AH-11 0-1 (6" BEB)	
	Depth:	1-1.5	0-1		1-1.5	2-2.5	3-3.5	0-1	
	Matrix:	SOIL	SOIL		SOIL	SOIL	SOIL	SOIL	
	Sampled:	Oct-27-16 00:00	Oct-27-16 00:00		Oct-27-16 00:00	Oct-27-16 00:00	Oct-27-16 00:00	Oct-27-16 00:00	
BTEX by EPA 8021B	***Extracted:***		Oct-31-16 14:10					Oct-31-16 14:10	
	Analyzed:		Oct-31-16 22:15					Oct-31-16 22:31	
	Units/RL:		mg/kg	RL				mg/kg	RL
Benzene			ND	0.00150				ND	0.00150
Toluene			ND	0.00200				ND	0.00200
Ethylbenzene			ND	0.00200				ND	0.00200
m,p-Xylenes			ND	0.00200				ND	0.00200
o-Xylene			ND	0.00299				ND	0.00300
Total Xylenes			ND	0.00200				ND	0.00200
Total BTEX			ND	0.00150				ND	0.00150
TPH by SW 8015B	***Extracted:***		Oct-31-16 16:00					Oct-31-16 16:00	
	Analyzed:		Nov-01-16 05:15					Nov-01-16 06:05	
	Units/RL:		mg/kg	RL				mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons			ND	15.0				ND	15.0
C10-C28 Diesel Range Organics			ND	15.0				ND	15.0
Total TPH			ND	15.0				ND	15.0

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 539437

Tetra Tech- Midland, Midland, TX

Project Name: Forge-Schubert 18-4H

Project Id: 212C-MD-00653
Contact: Ike Tavarez
Project Location: Lea Co

Date Received in Lab: Fri Oct-28-16 03:15 pm
Report Date: 03-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	539437-031		539437-032		539437-033		539437-034		539437-035		539437-036	
	Field Id:	AH-11 1-1.5 (6" BEB)		AH-11 2-2.5 (6" BEB)		AH-11 3-3.5 (6" BEB)		AH-12 0-1 (6" BEB)		AH-12 1-1.5 (6" BEB)		AH-12 2-2.5 (6" BEB)	
	Depth:	1-1.5		2-2.5		3-3.5		0-1		1-1.5		2-2.5	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-01-16 15:54		Nov-01-16 15:54		Nov-01-16 15:54		Nov-01-16 15:54		Nov-01-16 15:54		Nov-01-16 15:54	
	Analyzed:	Nov-01-16 17:18		Nov-01-16 17:25		Nov-01-16 17:32		Nov-01-16 17:39		Nov-01-16 17:46		Nov-01-16 18:07	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		37.8	5.00	24.8	5.00	11.8	5.00	102	5.00	60.6	5.00	32.5	5.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 539437

Tetra Tech- Midland, Midland, TX

Project Name: Forge-Schubert 18-4H

Project Id: 212C-MD-00653
Contact: Ike Tavarez
Project Location: Lea Co

Date Received in Lab: Fri Oct-28-16 03:15 pm
Report Date: 03-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	539437-031	539437-032	539437-033	539437-034	539437-035	539437-036
	Field Id:	AH-11 1-1.5 (6" BEB)	AH-11 2-2.5 (6" BEB)	AH-11 3-3.5 (6" BEB)	AH-12 0-1 (6" BEB)	AH-12 1-1.5 (6" BEB)	AH-12 2-2.5 (6" BEB)
	Depth:	1-1.5	2-2.5	3-3.5	0-1	1-1.5	2-2.5
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Oct-27-16 00:00	Oct-27-16 00:00	Oct-27-16 00:00	Oct-27-16 00:00	Oct-27-16 00:00	Oct-27-16 00:00
BTEX by EPA 8021B	***Extracted:***				Oct-31-16 14:10		
	Analyzed:				Oct-31-16 17:51		
	Units/RL:				mg/kg RL		
Benzene					ND 0.00149		
Toluene					ND 0.00199		
Ethylbenzene					ND 0.00199		
m,p-Xylenes					ND 0.00199		
o-Xylene					ND 0.00299		
Total Xylenes					ND 0.00199		
Total BTEX					ND 0.00149		
TPH by SW 8015B	***Extracted:***				Oct-31-16 16:00		
	Analyzed:				Nov-01-16 06:30		
	Units/RL:				mg/kg RL		
C6-C10 Gasoline Range Hydrocarbons					ND 15.0		
C10-C28 Diesel Range Organics					ND 15.0		
Total TPH					ND 15.0		

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 539437

Tetra Tech- Midland, Midland, TX

Project Name: Forge-Schubert 18-4H

Project Id: 212C-MD-00653
Contact: Ike Tavarez
Project Location: Lea Co

Date Received in Lab: Fri Oct-28-16 03:15 pm
Report Date: 03-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	539437-037		539437-038		539437-039		539437-040		539437-041		539437-042	
	Field Id:	AH-12 3-3.5 (6" BEB)		AH-13 0-1 (6" BEB)		AH-13 1-1.5 (6" BEB)		AH-13 2-2.5 (6" BEB)		AH-13 3-3.5 (6" BEB)		AH-14 0-1 (6" BEB)	
	Depth:	3-3.5		0-1		1-1.5		2-2.5		3-3.5		0-1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-01-16 15:54		Nov-01-16 15:54		Nov-01-16 15:54		Nov-01-16 15:54		Nov-01-16 15:54		Nov-01-16 15:54	
	Analyzed:	Nov-01-16 18:14		Nov-01-16 18:35		Nov-01-16 18:42		Nov-01-16 18:49		Nov-01-16 18:56		Nov-01-16 19:03	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		11.5	5.00	155	5.00	19.7	5.00	25.4	5.00	19.8	5.00	75.8	5.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 539437

Tetra Tech- Midland, Midland, TX

Project Name: Forge-Schubert 18-4H

Project Id: 212C-MD-00653
Contact: Ike Tavarez
Project Location: Lea Co

Date Received in Lab: Fri Oct-28-16 03:15 pm
Report Date: 03-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested								
	Lab Id:	539437-037	539437-038		539437-039	539437-040	539437-041	539437-042	
	Field Id:	AH-12 3-3.5 (6" BEB)	AH-13 0-1 (6" BEB)		AH-13 1-1.5 (6" BEB)	AH-13 2-2.5 (6" BEB)	AH-13 3-3.5 (6" BEB)	AH-14 0-1 (6" BEB)	
	Depth:	3-3.5	0-1		1-1.5	2-2.5	3-3.5	0-1	
	Matrix:	SOIL	SOIL		SOIL	SOIL	SOIL	SOIL	
	Sampled:	Oct-27-16 00:00	Oct-27-16 00:00		Oct-27-16 00:00	Oct-27-16 00:00	Oct-27-16 00:00	Oct-27-16 00:00	
BTEX by EPA 8021B	***Extracted:***		Oct-31-16 14:10					Oct-31-16 14:10	
	Analyzed:		Oct-31-16 20:01					Oct-31-16 19:12	
	Units/RL:		mg/kg	RL				mg/kg	RL
Benzene			ND	0.00149				ND	0.00150
Toluene			ND	0.00198				ND	0.00200
Ethylbenzene			ND	0.00198				ND	0.00200
m,p-Xylenes			ND	0.00198				ND	0.00200
o-Xylene			ND	0.00298				ND	0.00300
Total Xylenes			ND	0.00198				ND	0.00200
Total BTEX			ND	0.00149				ND	0.00150
TPH by SW 8015B	***Extracted:***		Oct-31-16 16:00					Oct-31-16 16:00	
	Analyzed:		Nov-01-16 06:55					Nov-01-16 07:21	
	Units/RL:		mg/kg	RL				mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons			ND	15.0				ND	15.0
C10-C28 Diesel Range Organics			ND	15.0				ND	15.0
Total TPH			ND	15.0				ND	15.0

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 539437

Tetra Tech- Midland, Midland, TX

Project Name: Forge-Schubert 18-4H

Project Id: 212C-MD-00653
Contact: Ike Tavarez
Project Location: Lea Co

Date Received in Lab: Fri Oct-28-16 03:15 pm
Report Date: 03-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	539437-043		539437-044		539437-045		539437-046		539437-047		539437-048	
	Field Id:	AH-14 1-1.5 (6" BEB)		AH-14 2-2.5 (6" BEB)		AH-14 3-3.5 (6" BEB)		AH-15 0-1		AH-15 1-1.5		AH-15 2-2.5	
	Depth:	1-1.5		2-2.5		3-3.5		0-1		1-1.5		2-2.5	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00	
BTEX by EPA 8021B	***Extracted:***							Oct-31-16 14:10					
	Analyzed:							Oct-31-16 18:56					
	Units/RL:							mg/kg	RL				
Benzene								ND	0.00149				
Toluene								ND	0.00199				
Ethylbenzene								ND	0.00199				
m,p-Xylenes								ND	0.00199				
o-Xylene								ND	0.00298				
Total Xylenes								ND	0.00199				
Total BTEX								ND	0.00149				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-01-16 15:54		Nov-01-16 15:54		Nov-01-16 17:16		Nov-01-16 17:16		Nov-01-16 17:16		Nov-01-16 17:16	
	Analyzed:	Nov-01-16 19:10		Nov-01-16 19:17		Nov-01-16 20:00		Nov-01-16 21:38		Nov-01-16 20:28		Nov-01-16 20:35	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		77.1	5.00	23.0	5.00	18.6	5.00	3150	25.0	46.0	5.00	91.0	5.00
TPH by SW 8015B	***Extracted:***							Oct-31-16 16:00					
	Analyzed:							Nov-01-16 07:45					
	Units/RL:							mg/kg	RL				
C6-C10 Gasoline Range Hydrocarbons								ND	15.0				
C10-C28 Diesel Range Organics								ND	15.0				
Total TPH								ND	15.0				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 539437

Tetra Tech- Midland, Midland, TX

Project Name: Forge-Schubert 18-4H

Project Id: 212C-MD-00653
Contact: Ike Tavarez
Project Location: Lea Co

Date Received in Lab: Fri Oct-28-16 03:15 pm
Report Date: 03-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	539437-049		539437-050		539437-051		539437-052		539437-053		539437-054	
	Field Id:	AH-15 3-3.5		AH-15 4-4.5		AH-16 0-1		AH-16 1-1.5		AH-16 2-2.5		AH-16 3-3.5	
	Depth:	3-3.5		4-4.5		0-1		1-1.5		2-2.5		3-3.5	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00		Oct-27-16 00:00	
BTEX by EPA 8021B	***Extracted:***					Oct-31-16 14:10							
	Analyzed:					Oct-31-16 19:17							
	Units/RL:					mg/kg	RL						
Benzene						ND	0.00149						
Toluene						ND	0.00199						
Ethylbenzene						ND	0.00199						
m,p-Xylenes						ND	0.00199						
o-Xylene						ND	0.00299						
Total Xylenes						ND	0.00199						
Total BTEX						ND	0.00149						
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-01-16 17:16		Nov-01-16 17:16		Nov-01-16 17:16		Nov-01-16 17:16		Nov-01-16 17:16		Nov-01-16 17:16	
	Analyzed:	Nov-01-16 20:42		Nov-01-16 20:49		Nov-01-16 21:10		Nov-01-16 21:17		Nov-01-16 21:24		Nov-01-16 21:31	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		37.0	5.00	28.5	5.00	179	5.00	58.6	5.00	22.2	5.00	13.9	5.00
TPH by SW 8015B	***Extracted:***					Oct-31-16 16:00							
	Analyzed:					Nov-01-16 08:10							
	Units/RL:					mg/kg	RL						
C6-C10 Gasoline Range Hydrocarbons						ND	15.0						
C10-C28 Diesel Range Organics						ND	15.0						
Total TPH						ND	15.0						

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Form 2 - Surrogate Recoveries

Project Name: Forge-Schubert 18-4H

Work Orders : 539437,

Project ID: 212C-MD-00653

Lab Batch #: 3003040 **Sample:** 539437-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/31/16 17:02

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

Lab Batch #: 3003040 **Sample:** 539437-034 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/31/16 17:51

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 3003040 **Sample:** 539437-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/31/16 18:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

Lab Batch #: 3003040 **Sample:** 539437-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/31/16 18:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

Lab Batch #: 3003040 **Sample:** 539437-046 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/31/16 18:56

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0325	0.0300	108	80-120	
4-Bromofluorobenzene	0.0323	0.0300	108	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Forge-Schubert 18-4H

Work Orders : 539437,

Project ID: 212C-MD-00653

Lab Batch #: 3003040 **Sample:** 539437-042 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/31/16 19:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

Lab Batch #: 3003040 **Sample:** 539437-051 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/31/16 19:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 3003040 **Sample:** 539437-038 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/31/16 20:01

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 3003040 **Sample:** 539437-019 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/31/16 20:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 3003040 **Sample:** 539437-024 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/31/16 21:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Forge-Schubert 18-4H

Work Orders : 539437,

Project ID: 212C-MD-00653

Lab Batch #: 3003040 **Sample:** 539437-026 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/31/16 22:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

Lab Batch #: 3003040 **Sample:** 539437-030 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/31/16 22:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

Lab Batch #: 3003034 **Sample:** 539437-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 00:42

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	99.9	121	70-135	
o-Terphenyl	63.7	50.0	127	70-135	

Lab Batch #: 3003034 **Sample:** 539437-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 01:56

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	99.8	114	70-135	
o-Terphenyl	60.6	49.9	121	70-135	

Lab Batch #: 3003034 **Sample:** 539437-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 02:20

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.8	115	70-135	
o-Terphenyl	59.6	49.9	119	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Forge-Schubert 18-4H

Work Orders : 539437,

Project ID: 212C-MD-00653

Lab Batch #: 3003034 **Sample:** 539437-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 02:45

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	99.7	117	70-135	
o-Terphenyl	60.5	49.9	121	70-135	

Lab Batch #: 3003034 **Sample:** 539437-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 03:10

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	99.9	118	70-135	
o-Terphenyl	61.9	50.0	124	70-135	

Lab Batch #: 3003034 **Sample:** 539437-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 03:35

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	99.9	121	70-135	
o-Terphenyl	62.8	50.0	126	70-135	

Lab Batch #: 3003034 **Sample:** 539437-019 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 04:00

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	99.6	124	70-135	
o-Terphenyl	64.5	49.8	130	70-135	

Lab Batch #: 3003034 **Sample:** 539437-022 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 04:25

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.8	112	70-135	
o-Terphenyl	59.3	49.9	119	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Forge-Schubert 18-4H

Work Orders : 539437,

Project ID: 212C-MD-00653

Lab Batch #: 3003034 **Sample:** 539437-024 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 04:49

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	60.5	50.0	121	70-135	

Lab Batch #: 3003034 **Sample:** 539437-026 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 05:15

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	99.8	114	70-135	
o-Terphenyl	60.1	49.9	120	70-135	

Lab Batch #: 3003034 **Sample:** 539437-030 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 06:05

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	99.7	116	70-135	
o-Terphenyl	61.0	49.9	122	70-135	

Lab Batch #: 3003034 **Sample:** 539437-034 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 06:30

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	99.7	113	70-135	
o-Terphenyl	59.7	49.9	120	70-135	

Lab Batch #: 3003034 **Sample:** 539437-038 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 06:55

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	61.3	50.0	123	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Forge-Schubert 18-4H

Work Orders : 539437,

Project ID: 212C-MD-00653

Lab Batch #: 3003034 **Sample:** 539437-042 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 07:21

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.9	112	70-135	
o-Terphenyl	58.1	50.0	116	70-135	

Lab Batch #: 3003034 **Sample:** 539437-046 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 07:45

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.8	115	70-135	
o-Terphenyl	60.6	49.9	121	70-135	

Lab Batch #: 3003040 **Sample:** 539437-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 07:48

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

Lab Batch #: 3003040 **Sample:** 539437-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 08:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 3003034 **Sample:** 539437-051 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 08:10

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	99.9	113	70-135	
o-Terphenyl	58.3	50.0	117	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Forge-Schubert 18-4H

Work Orders : 539437,

Project ID: 212C-MD-00653

Lab Batch #: 3003040 **Sample:** 539437-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 08:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	80-120	

Lab Batch #: 3003040 **Sample:** 539437-022 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 08:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0275	0.0300	92	80-120	

Lab Batch #: 3003040 **Sample:** 715592-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/31/16 16:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 3003034 **Sample:** 715582-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/31/16 23:28

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	61.8	50.0	124	70-135	

Lab Batch #: 3003040 **Sample:** 715592-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/31/16 14:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Forge-Schubert 18-4H

Work Orders : 539437,

Project ID: 212C-MD-00653

Lab Batch #: 3003034 **Sample:** 715582-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/31/16 23:53

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	100	128	70-135	
o-Terphenyl	63.3	50.0	127	70-135	

Lab Batch #: 3003040 **Sample:** 715592-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/31/16 14:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	80-120	

Lab Batch #: 3003034 **Sample:** 715582-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/01/16 00:17

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	63.7	50.0	127	70-135	

Lab Batch #: 3003040 **Sample:** 539437-013 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/31/16 15:30

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

Lab Batch #: 3003034 **Sample:** 539437-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 01:06

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	99.9	126	70-135	
o-Terphenyl	62.0	50.0	124	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Forge-Schubert 18-4H

Work Orders : 539437,

Project ID: 212C-MD-00653

Lab Batch #: 3003040 **Sample:** 539437-013 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/31/16 15:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0346	0.0300	115	80-120	

Lab Batch #: 3003034 **Sample:** 539437-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/01/16 01:31

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	99.7	124	70-135	
o-Terphenyl	64.0	49.9	128	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Forge-Schubert 18-4H

Work Order #: 539437 **Project ID:** 212C-MD-00653

Analyst: PJB **Date Prepared:** 11/01/2016 **Date Analyzed:** 10/31/2016

Lab Batch ID: 3003040 **Sample:** 715592-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00150	0.100	0.102	102	0.100	0.0897	90	13	70-130	35	
Toluene	<0.00200	0.100	0.102	102	0.100	0.0882	88	15	70-130	35	
Ethylbenzene	<0.00200	0.100	0.106	106	0.100	0.0934	93	13	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.217	109	0.200	0.191	96	13	70-135	35	
o-Xylene	<0.00300	0.100	0.107	107	0.100	0.0944	94	13	71-133	35	

Analyst: MNR **Date Prepared:** 10/31/2016 **Date Analyzed:** 10/31/2016

Lab Batch ID: 3003033 **Sample:** 715547-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	260	104	250	254	102	2	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: Forge-Schubert 18-4H

Work Order #: 539437 **Project ID:** 212C-MD-00653

Analyst: MNR **Date Prepared:** 10/31/2016 **Date Analyzed:** 10/31/2016

Lab Batch ID: 3003036 **Sample:** 715579-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	259	104	250	261	104	1	90-110	20	

Analyst: MNR **Date Prepared:** 11/01/2016 **Date Analyzed:** 11/01/2016

Lab Batch ID: 3003101 **Sample:** 715626-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	258	103	250	257	103	0	90-110	20	

Analyst: MNR **Date Prepared:** 11/01/2016 **Date Analyzed:** 11/01/2016

Lab Batch ID: 3003105 **Sample:** 715628-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	244	98	250	252	101	3	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: Forge-Schubert 18-4H

Work Order #: 539437 **Project ID:** 212C-MD-00653

Analyst: ARM **Date Prepared:** 10/31/2016 **Date Analyzed:** 10/31/2016

Lab Batch ID: 3003034 **Sample:** 715582-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW 8015B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	951	95	1000	983	98	3	70-135	35	
C10-C28 Diesel Range Organics	<15.0	1000	969	97	1000	991	99	2	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: Forge-Schubert 18-4H

Work Order # : 539437 **Project ID:** 212C-MD-00653

Lab Batch ID: 3003040 **QC- Sample ID:** 539437-013 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/31/2016 **Date Prepared:** 10/31/2016 **Analyst:** PJB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00150	0.0998	0.0852	85	0.0994	0.0930	94	9	70-130	35	
Toluene	<0.00200	0.0998	0.0845	85	0.0994	0.0956	96	12	70-130	35	
Ethylbenzene	<0.00200	0.0998	0.0883	88	0.0994	0.0984	99	11	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.181	91	0.199	0.207	104	13	70-135	35	
o-Xylene	<0.00299	0.0998	0.0888	89	0.0994	0.106	107	18	71-133	35	

Lab Batch ID: 3003033 **QC- Sample ID:** 539428-006 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/31/2016 **Date Prepared:** 10/31/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1280	250	1510	92	250	1520	96	1	90-110	20	

Lab Batch ID: 3003033 **QC- Sample ID:** 539437-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/31/2016 **Date Prepared:** 10/31/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	8.18	250	261	101	250	257	100	2	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: Forge-Schubert 18-4H

Work Order # : 539437 **Project ID:** 212C-MD-00653

Lab Batch ID: 3003036 **QC- Sample ID:** 539437-018 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/31/2016 **Date Prepared:** 10/31/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	17.7	250	254	95	250	248	92	2	90-110	20	

Lab Batch ID: 3003036 **QC- Sample ID:** 539505-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/31/2016 **Date Prepared:** 10/31/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	3890	1250	5110	98	1250	5160	102	1	90-110	20	

Lab Batch ID: 3003101 **QC- Sample ID:** 539437-035 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/01/2016 **Date Prepared:** 11/01/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	60.6	250	292	93	250	295	94	1	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: Forge-Schubert 18-4H

Work Order # : 539437 **Project ID:** 212C-MD-00653

Lab Batch ID: 3003101 **QC- Sample ID:** 539566-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/01/2016 **Date Prepared:** 11/01/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	16700	2500	19300	104	2500	19200	100	1	90-110	20	

Lab Batch ID: 3003105 **QC- Sample ID:** 539437-045 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/01/2016 **Date Prepared:** 11/01/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	18.6	250	267	99	250	269	100	1	90-110	20	

Lab Batch ID: 3003034 **QC- Sample ID:** 539437-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/01/2016 **Date Prepared:** 10/31/2016 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW 8015B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	999	962	96	997	996	100	3	70-135	35	
C10-C28 Diesel Range Organics	<15.0	999	980	98	997	1020	102	4	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

PAGE: 1 OF: 6

CLIENT NAME: Forge

SITE MANAGER: Ike Tavarez

PROJECT NO.: 212C-MD-00653

PROJECT NAME: Schubert 18-4H

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
		2016				Lea Co																						
		10/27	S		X	AH-1 0-1	1				X		X	X											X			
						1-1.5	1				X														X			
						2-2.5	1				X														X			
						AH-2 0-1	1				X		X	X											X			
						1-1.5	1				X														X			
						2-2.5	1				X														X			
						AH-3 0-1	1				X		X	X											X			
						1-1.5	1				X														X			
						2-2.5	1				X														X			
						AH-4 0-1	1				X		X	X											X			

RELINQUISHED BY: (Signature) Date: 10/28/16 Time:

RECEIVED BY: (Signature) Date: 10/28/16 Time: 1515

SAMPLED BY: (Print & Initial) GJ MC Date: Time:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: Xenco

ADDRESS: CITY: STATE: ZIP:

CONTACT: PHONE: DATE: TIME:

RECEIVED BY: (Signature)

TETRA TECH CONTACT PERSON: Diane Fitch

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

REMARKS: Run deeper samples if TPH exceeds 1000 mg/kg, Benzene exceeds 10 mg/kg OR total BTEX exceeds 50 mg/kg

Please fill out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Temp: IR ID:R-8
CF:+ 0.1 0.0 0.1
Corrected Temp:

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Final 1.000

FABANABA 539437

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 6

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: Forge
SITE MANAGER: Ike Tavarez
PROJECT NO.: 212C-MD-00653
PROJECT NAME: Schubert 18-4H

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE 2016	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
	10/27		S		X	AH-4 1-1.5	1				X														X				
						2-2.5	1				X														X				
						AH-5 0-1	1				X		X	X											X				
						1-1.5	1				X														X				
						2-2.5	1				X														X				
						AH-6 0-1	1				X		X	X											X				
						1-1.5	1				X														X				
						2-2.5	1				X														X				
						AH-7 0-1	1				X		X	X											X				
						1-1.5	1				X														X				

RELINQUISHED BY: (Signature) [signature] Date: 10/28/16 Time:
RECEIVED BY: (Signature) A Kramer Date: 10/28/16 Time: 1513
SAMPLED BY: (Print & Initial) CG3MC Date: Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
TETRA TECH CONTACT PERSON:
Results by:

RECEIVING LABORATORY:
RECEIVED BY: (Signature)
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE: DATE: TIME:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:
REMARKS:

Temp: IR ID:R-8
CF:+ 0.1 0.0
Corrected Temp: 0.1

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Acc

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

PAGE: 3 OF: 6

CLIENT NAME: Forge
SITE MANAGER: Ike Tavarez
PROJECT NO.: 212C-MD-00653
PROJECT NAME: Schubert 18-4H

LAB I.D. NUMBER	DATE 2010	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD (Ext. to C35) TX1005	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
	10/27		S		X	AH-7 2-2.5	1				X													X				
						AH-8 0-1 (1' BEB)	1				X		X	X										X				
						1-1.5 (1' BEB)	1				X													X				
						AH-9 0-1 (1' BEB)	1				X		X	X										X				
						1-1.5 (1' BEB)	1				X													X				
						AH-10 0-1 (6" BEB)	1				X		X	X										X				
						1-1.5 (6" BEB)	1				X													X				
						2-2.5 (6" BEB)	1				X													X				
						3-3.5 (6" BEB)	1				X													X				
			S		X	AH-11 0-1 (6" BEB)	1				X		X	X										X				

RELINQUISHED BY: (Signature) Date: 10/28/10 Time:
RECEIVED BY: (Signature) J KRAMER Date: 10/28/10 Time: 1615
SAMPLED BY: (Print & Initial) MCB Date: Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS
AIRBILL #:
OTHER:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
TETRA TECH CONTACT PERSON:
Results by:
RUSH Charges Authorized: Yes No

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:

SAMPLE CONDITION WHEN RECEIVED:
REMARKS:

Temp: IR ID:R-8
CF:+ 0.1 0.0
Corrected Temp: 0.1

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accou

B3814322-539437

Analysis Request of Chain of Custody Record

PAGE: 4 OF: 6

ANALYSIS REQUEST
(Circle or Specify Method No.)

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: Forge
SITE MANAGER: Ike Tavarez
PROJECT NO.: 212C-MD-00653
PROJECT NAME: Schubert 18-4H

LAB I.D. NUMBER	DATE 2016	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
	10/27		S		X	AH-11 1-1.5 (6" BEB)	1				X														X				
						2-2.5 (6" BEB)	1				X														X				
						3-3.5 (6" BEB)	1				X														X				
						AH-12 0-1 (6" BEB)	1				X		X	X											X				
						1-1.5 (6" BEB)	1				X														X				
						2-2.5 (6" BEB)	1				X														X				
						3-3.5 (6" BEB)	1				X														X				
						AH-13 0-1 (6" BEB)	1				X		X	X											X				
						1-1.5 (6" BEB)	1				X														X				
						2-2.8 (6" BEB)	1				X														X				

RELINQUISHED BY: (Signature) Date: 10/27/16 Time:
RECEIVED BY: (Signature) J Kramer Date: 10/28/16 Time: 1515
SAMPLED BY: (Print & Initial) CG/MG Date: Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
TETRA TECH CONTACT PERSON:
Results by:

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:
RUSH Charges Authorized: *Yes* *No*

SAMPLE CONDITION WHEN RECEIVED:
REMARKS:

Temp: IR ID:R-8
CF:+ 0.1 0.0
Corrected Temp: 0.1

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Acco

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

PAGE: 5 OF: 6

CLIENT NAME: Forge

SITE MANAGER: Ike Tavarez

PROJECT NO.: 212C-MD-00653

PROJECT NAME: Schubert 13-4H

LAB I.D. NUMBER	DATE 2016	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
	10/27		S		X	AH-13 3-3.5 (6" BEB)	1				X	
						AH-14 0-1 (6" BEB)	1				X	
						1-1.5 (6" BEB)	1				X	
						2-2.5 (6" BEB)	1				X	
						3-3.5 (6" BEB)	1				X	
						AH-15 0-1	1				X	
						1-1.5	1				X	
						2-2.5	1				X	
						3-3.5	1				X	
						4-4.5	1				X	

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B	TX1005 (Ext. to C35)	TPH 8015 MOD	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
													X				
X	X												X				
													X				
													X				
													X				
X	X												X				
													X				
													X				
													X				
													X				

RELINQUISHED BY: (Signature) Date: 10/28/16 Time:

RECEIVED BY: (Signature) JKRAMER Date: 10/28/16 Time: 1325

SAMPLED BY: (Print & Initial) CG BMC Date: Time:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

TETRA TECH CONTACT PERSON: Results by:

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:

RECEIVED BY: (Signature)
DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

REMARKS:

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

PAGE: 6 OF: 6

CLIENT NAME: Forge

SITE MANAGER: Ike Tavarez

PROJECT NO.: 212C-MD-00653

PROJECT NAME: Schubert 18-4H

LAB I.D. NUMBER	DATE 2016	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	ANALYSIS REQUEST: BTEX 8021B	TRRP 8015 MOD TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
	10/27		S		X	AH-16 0-1	1				X		X	X										X				
						1-1.5	1				X													X				
						2-2.5	1				X													X				
	X		X		X	3-3.5	1				X													X				

RELINQUISHED BY: (Signature) — Date: 10/28/16 Time:

RECEIVED BY: (Signature) — Date: 10/28/16 Time: 1615

SAMPLED BY: (Print & Initial) CG JMC — Date: Time:

RELINQUISHED BY: (Signature) — Date: Time:

RECEIVED BY: (Signature) — Date: Time:

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS
HAND DELIVERED UPS

AIRBILL #:

OTHER:

RELINQUISHED BY: (Signature) — Date: Time:

RECEIVED BY: (Signature) — Date: Time:

TETRA TECH CONTACT PERSON:

Results by:

RUSH Charges Authorized: Yes No

RECEIVING LABORATORY:

ADDRESS:

CITY: STATE: ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: TIME:

SAMPLE CONDITION WHEN RECEIVED:

REMARKS:

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 10/28/2016 03:15:00 PM

Work Order #: 539437

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.1
#2 *Shipping container in good condition?	**N/A**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seal present on shipping container/ cooler?	**N/A**
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**
#6 Custody Seals intact on sample bottles?	**N/A**
#7 *Custody Seals Signed and dated?	**N/A**
#8 *Chain of Custody present?	**Yes**
#9 Sample instructions complete on Chain of Custody?	**Yes**
#10 Any missing/extra samples?	**No**
#11 Chain of Custody signed when relinquished/ received?	**Yes**
#12 Chain of Custody agrees with sample label(s)?	**Yes**
#13 Container label(s) legible and intact?	**Yes**
#14 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#15 Samples in proper container/ bottle?	**Yes**
#16 Samples properly preserved?	**Yes**
#17 Sample container(s) intact?	**Yes**
#18 Sufficient sample amount for indicated test(s)?	**Yes**
#19 All samples received within hold time?	**Yes**
#20 Subcontract of sample(s)?	**N/A**
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**N/A**
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Jessica Kramer Date: 10/31/2016
Jessica Kramer

Checklist reviewed by: Kelsey Brooks Date: 10/31/2016
Kelsey Brooks

Analytical Report 540334

for

Tetra Tech- Midland

Project Manager: Ike Tavarez

Forge-Shubert 18 4H

212C-MD-00653

16-NOV-16

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Table of Contents

16-NOV-16

Project Manager: **Ike Tavarez**
Tetra Tech- Midland
4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): **540334**
Forge-Shubert 18 4H
Project Address: Lea Co NM

Ike Tavarez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 540334. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 540334 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 540334

Tetra Tech- Midland, Midland, TX

Forge-Shubert 18 4H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH-2 (0-1)	S	11-14-16 00:00	0 - 1 ft	540334-001
AH-11 (0-1)	S	11-14-16 00:00	0 - 1 ft	540334-002

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 540334

Tetra Tech- Midland, Midland, TX

Project Name: Forge-Shubert 18 4H

Project Id: 212C-MD-00653
Contact: Ike Tavarez
Project Location: Lea Co NM

Date Received in Lab: Tue Nov-15-16 09:54 am
Report Date: 16-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	540334-001		540334-002									
	Field Id:	AH-2 (0-1)		AH-11 (0-1)									
	Depth:	0-1 ft		0-1 ft									
	Matrix:	SOIL		SOIL									
	Sampled:	Nov-14-16 00:00		Nov-14-16 00:00									
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-15-16 14:00		Nov-15-16 14:00									
	Analyzed:	Nov-15-16 18:40		Nov-15-16 19:01									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Chloride		2520	25.0	ND	5.00								

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

	Phone	Fax
4147 Greenbriar Dr, Stafford, TX 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282	(602) 437-0330	

BS / BSD Recoveries

Project Name: Forge-Shubert 18 4H

Work Order #: 540334 **Project ID:** 212C-MD-00653

Analyst: MNR **Date Prepared:** 11/15/2016 **Date Analyzed:** 11/15/2016

Lab Batch ID: 3003961 **Sample:** 716169-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	243	97	250	260	104	7	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: Forge-Shubert 18 4H

Work Order # : 540334 **Project ID:** 212C-MD-00653

Lab Batch ID: 3003961 **QC- Sample ID:** 540334-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/15/2016 **Date Prepared:** 11/15/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	2520	1250	3850	106	1250	3840	106	0	90-110	20	

Lab Batch ID: 3003961 **QC- Sample ID:** 540364-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/15/2016 **Date Prepared:** 11/15/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	246	98	250	262	105	6	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

540334

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

ANALYSIS REQUEST
(*Circle or Specify Method No.*)

CLIENT NAME: Forge Energy LLC
SITE MANAGER: Ike Tavarez
PROJECT NO.: 212C-MD-00653
PROJECT NAME: Forge - Shubert 18 4H Lea Co, NM

LAB I.D. NUMBER	DATE 2016	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
	11.14		S		X	AH-2 (0-1')	1	N			X	X													X				
	11.14		S		X	AH-11 (0-1)	1	N			X	X													X				

RELINQUISHED BY: (Signature) [signature] Date: 11.15.16 Time:
RECEIVED BY: (Signature) [signature] Date: 11.15.16 Time: 9:54
RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) Ike Tavarez Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS
AIRBILL #: 11.15.16
OTHER:
TETRA TECH CONTACT PERSON: Ike Tavarez
Results by: 24 hrs
RUSH Charges Authorized: (Yes) No

RECEIVING LABORATORY: Xenco
ADDRESS:
CITY: Midland STATE: Tx ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:

SAMPLE CONDITION WHEN RECEIVED:
REMARKS: [initials] SAME DAY -7.7C

Temp: IR ID:R-8
CF:+ 0.1 7.6 -7.7
Corrected Temp:

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Acc

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 11/15/2016 09:54:00 AM

Work Order #: 540334

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	-7.7
#2 *Shipping container in good condition?	**N/A**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seal present on shipping container/ cooler?	**N/A**
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**
#6 Custody Seals intact on sample bottles?	**N/A**
#7 *Custody Seals Signed and dated?	**N/A**
#8 *Chain of Custody present?	**Yes**
#9 Sample instructions complete on Chain of Custody?	**Yes**
#10 Any missing/extra samples?	**No**
#11 Chain of Custody signed when relinquished/ received?	**Yes**
#12 Chain of Custody agrees with sample label(s)?	**Yes**
#13 Container label(s) legible and intact?	**Yes**
#14 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#15 Samples in proper container/ bottle?	**Yes**
#16 Samples properly preserved?	**Yes**
#17 Sample container(s) intact?	**Yes**
#18 Sufficient sample amount for indicated test(s)?	**Yes**
#19 All samples received within hold time?	**Yes**
#20 Subcontract of sample(s)?	**N/A**
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**N/A**
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by: Jessica Kramer
Jessica Kramer
Date: 11/15/2016

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks
Date: 11/15/2016

Analytical Report 554078

for

Tetra Tech- Midland

Project Manager: Ike Tavarez

Forge Energy- Forge Schubert 18-4H

212C-MD-00653

05-JUN-17

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

05-JUN-17

Project Manager: **Ike Tavarez**
Tetra Tech- Midland
4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): **554078**
Forge Energy- Forge Schubert 18-4H
Project Address: Lea CO New Mexico

Ike Tavarez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 554078. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 554078 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 554078

Tetra Tech- Midland, Midland, TX

Forge Energy- Forge Schubert 18-4H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH #2 (5') Sample	S	05-25-17 00:00		554078-001
AH #2 (8') Sample	S	05-25-17 00:00		554078-002
AH #5 (5') Sample	S	05-25-17 00:00		554078-003
AH #5 (8') Sample	S	05-25-17 00:00		554078-004
AH #10 (5') Sample	S	05-25-17 00:00		554078-005
AH #10 (8') Sample	S	05-25-17 00:00		554078-006
AH #11 (5') Sample	S	05-25-17 00:00		554078-007
AH #11 (8') Sample	S	05-25-17 00:00		554078-008
AH #15 (5') Sample	S	05-25-17 00:00		554078-009
AH #15 (8') Sample	S	05-25-17 00:00		554078-010

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 554078

Tetra Tech- Midland, Midland, TX

Project Name: Forge Energy- Forge Schubert 18-4H

Project Id: 212C-MD-00653
Contact: Ike Tavarez
Project Location: Lea CO New Mexico

Date Received in Lab: Fri May-26-17 10:49 am
Report Date: 05-JUN-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	554078-001		554078-002		554078-003		554078-004		554078-005		554078-006	
	Field Id:	AH #2 (5') Sample		AH #2 (8') Sample		AH #5 (5') Sample		AH #5 (8') Sample		AH #10 (5') Sample		AH #10 (8') Sample	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-25-17 00:00		May-25-17 00:00		May-25-17 00:00		May-25-17 00:00		May-25-17 00:00		May-25-17 00:00	
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	Jun-03-17 21:54		Jun-03-17 21:54		Jun-03-17 21:54		Jun-03-17 21:54		Jun-03-17 21:54		Jun-03-17 21:54	
	Analyzed:	Jun-03-17 22:22		Jun-03-17 22:31		Jun-03-17 22:40		Jun-03-17 22:50		Jun-03-17 23:18		Jun-03-17 23:46	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<9.60	9.60	<9.45	9.45	83.0	9.38	141	9.73	72.9	9.94	<9.82	9.82

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 554078

Tetra Tech- Midland, Midland, TX

Project Name: Forge Energy- Forge Schubert 18-4H

Project Id: 212C-MD-00653
Contact: Ike Tavarez
Project Location: Lea CO New Mexico

Date Received in Lab: Fri May-26-17 10:49 am
Report Date: 05-JUN-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	554078-007		554078-008		554078-009		554078-010					
	Field Id:	AH #11 (5') Sample		AH #11 (8') Sample		AH #15 (5') Sample		AH #15 (8') Sample					
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	May-25-17 00:00		May-25-17 00:00		May-25-17 00:00		May-25-17 00:00					
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	Jun-03-17 21:54		Jun-03-17 21:54		Jun-03-17 21:54		Jun-03-17 21:54					
	Analyzed:	Jun-03-17 23:55		Jun-04-17 00:04		Jun-04-17 00:14		Jun-04-17 00:23					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		10.1	9.86	68.6	10.0	61.8	10.0	16.5	9.92				

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

	Phone	Fax
4147 Greenbriar Dr, Stafford, TX 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282	(602) 437-0330	

BS / BSD Recoveries

Project Name: Forge Energy- Forge Schubert 18-4H

Work Order #: 554078 **Project ID:** 212C-MD-00653

Analyst: DHE **Date Prepared:** 06/03/2017 **Date Analyzed:** 06/03/2017

Lab Batch ID: 3018900 **Sample:** 725601-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<1.00	10.0	10.1	101	10.0	10.0	100	1	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: Forge Energy- Forge Schubert 18-4H

Work Order # : 554078 **Project ID:** 212C-MD-00653

Lab Batch ID: 3018900 **QC- Sample ID:** 554078-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/03/2017 **Date Prepared:** 06/03/2017 **Analyst:** DHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	141	97.3	235	97	97.3	248	110	5	80-120	20	

Lab Batch ID: 3018900 **QC- Sample ID:** 554518-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/04/2017 **Date Prepared:** 06/03/2017 **Analyst:** DHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	76.3	98.0	165	91	98.0	167	93	1	80-120	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

554078

PAGE: 1 OF: 1

CLIENT NAME: Forge Energy

SITE MANAGER: Ike Tavarez

PROJECT NO.: 212C-MD-00653

PROJECT NAME: Forge Schubert 18-4H
Lea County New Mexico

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
	5/25/17		S		X	AH #2 (5') Sample	1	N				X												X				
						AH #2 (8') Sample	1	N				X												X				
						AH # 5 (5') Sample	1	N				X												X				
						AH # 5 (8') Sample	1	N				X												X				
						AH # 10 (5') Sample	1	N				X												X				
						AH # 10 (8') Sample	1	N				X												X				
						AH # 11 (5') Sample	1	N				X												X				
						AH # 11 (8') Sample	1	N				X												X				
						AH # 15 (5') Sample	1	N				X												X				
						AH # 15 (8') Sample	1	N				X												X				

RELINQUISHED BY: (Signature) — Date: 5-26-17 Time:
RECEIVED BY: (Signature) Maria — Date: 5/26/17 Time: 10:45
SAMPLED BY: (Print & Initial) MC — Date: 5-25-17 Time:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS
AIRBILL #:
OTHER:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:
TETRA TECH CONTACT PERSON: Ike Tavarez
Results by:

RECEIVING LABORATORY:
ADDRESS:
CITY: MIDLAND STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:
REMARKS:

Temp: 16.8 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 70

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 1044255

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used :

Sent By: Marithza Anaya **Date Sent:** 05/26/2017 02:36 PM

Received By: Santiago Ortega **Date Received:** 05/27/2017 09:30 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	3.4	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 *Custody Seals Signed and dated for Containers/coolers	**Yes**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**N/A**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: _____ Date: 05/27/2017

Santiago Ortega

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 05/26/2017 10:49:00 AM

Work Order #: 554078

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : r8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	7
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seal present on shipping container/ cooler?	**N/A**
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**
#6 Custody Seals intact on sample bottles?	**N/A**
#7 *Custody Seals Signed and dated?	**N/A**
#8 *Chain of Custody present?	**Yes**
#9 Sample instructions complete on Chain of Custody?	**Yes**
#10 Any missing/extra samples?	**No**
#11 Chain of Custody signed when relinquished/ received?	**Yes**
#12 Chain of Custody agrees with sample label(s)?	**Yes**
#13 Container label(s) legible and intact?	**Yes**
#14 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#15 Samples in proper container/ bottle?	**Yes**
#16 Samples properly preserved?	**Yes**
#17 Sample container(s) intact?	**Yes**
#18 Sufficient sample amount for indicated test(s)?	**Yes**
#19 All samples received within hold time?	**Yes**
#20 Subcontract of sample(s)?	**N/A**
#21 VOC samples have zero headspace?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Marithza Anaya Date: 05/26/2017
Marithza Anaya

Checklist reviewed by: Kelsey Brooks Date: 05/26/2017
Kelsey Brooks