SITE INFORMATION

Report Type: Work Plan 1RP-5113

General Site Information:						
Site:	**Rattlesnake Reuse Pit**					
Company:	**EOG Resources, Inc.**					
Section, Township and Range	**Unit M**	**Sec. 22**	**T 26S**	**R 33E**		
Lease Number:	**1RF-12**					
County:	**Lea County**					
GPS:	**32.0227° N**			**103.5686° W**		
Surface Owner:	Fee					
Mineral Owner:						
Directions:	From the intersection of CR 1 and Pipeline Rd, travel east on Pipeline Rd for approx. 7.10 mi, turn south onto lease road and continue for 3.6 mi., turn east onto lease road for 0.8 mi, turn north for 0.15 mi to location.					

Release Data:	
Date Released:	6/22/2018
Type Release:	Produced Water
Source of Contamination:	Tank Overflow
Fluid Released:	1486 bbls
Fluids Recovered:	510 bbls

Official Communication:			
Name:	Jamon Hohensee		Clair Gonzales
Company:	EOG Resources		Tetra Tech
Address:	5509 Champions Drive		901 West Wall St.
			Suite 100
City:	Midland, TX 79706		Midland, Texas
Phone number:	(432) 556-8074		(432) 687-8123
Fax:			
Email:	jamon_hohensee@eogresources.com		clair.gonzales@tetratech.com

Ranking Criteria		
Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	20	
50-99 ft	10	
>100 ft.	***0***	*110'*
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:	***0***	

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	50	2,500

TETRA TECH

August 30, 2018

REVIEWED
By Olivia Yu at 10:36 am, Oct 07, 2018

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

Re: Work Plan for the EOG Resources, Rattlesnake Reuse Pit, Unit M, Section 22, Township 26 South, Range 33 East, Lea County, New Mexico.
1RP-5113.

Ms. Yu:

Tetra Tech, Inc. (Tetra Tech) was contacted by EOG Resources (EOG) to evaluate a release that occurred at the Rattlesnake Reuse Pit, Unit M, Section 22, Township 26 South, Range 33 East, Lea County, New Mexico (site). The spill site coordinates are N 32.0227º, W 103.5686º. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the release was discovered on June 22, 2018, and released approximately 1,486 barrels of produced water due to a tank overflow. Vacuum trucks were dispatched to remove the freestanding fluids, recovering approximately 510 barrels of produced water. The release occurred on the pad area impacting an area measuring approximately 155' x 325' before migrating onto the adjacent pipeline right-of-way's impacting areas measuring approximately 40' x 360' and 60' x 200'. The pad area was scraped as a part of the emergency response. The initial C-141 Form is included in Appendix A.

Groundwater

One water well is listed in Section 22 on the New Mexico Office of the State Engineer's website, approximately 0.50 miles east of the release area, with a reported depth to groundwater of 110 feet below surface. No wells are listed in Section 22 of the USGS National Water Information System of the Geology and Groundwater Conditions in Southern Lea County, NM (Report 6). According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is between 125 and 150 feet 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, updated August 14, 2018. 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 2,500 mg/kg (GRO + DRO + ORO) or 1,000 mg/kg (GRO + DRO). Additionally, based on the reported depth to groundwater in the area, the proposed RRAL for chlorides is 20,000 mg/kg.

Soil Assessment and Analytical Results

On July 2 and 17, 2018, Tetra Tech personnel were onsite to evaluate and sample the release area. Thirteen (13) sample points (T-1. T-2, T-3, T-4, T-5, T-6, T-7, AH-8, AH-9, AH-10, T-11, T-12, and T-13) were installed using a backhoe to trench or a hand auger. The areas between the buried pipelines were hand augered due to safety concerns. Selected samples were analyzed for TPH by EPA method 8015 modified, BTEX by EPA method 8021B, and chloride by EPA method 300.0. Copies of the laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The sample locations are shown in Figure 3.

Referring to Table 1, none of the samples collected showed chloride concentrations above the RRAL. Additionally, the areas of sample points (T-1, T-2, T-3, T-4, T-5, T-6, T-7, AH-8, T-11, T-12, and T-13) did not show any benzene, total BTEX, or TPH concentrations above the RRALs. However, the areas of sample points (AH-9 and AH-10) showed a shallow hydrocarbon impact with TPH concentrations of 13,300 mg/kg and 8,780 mg/kg at 0-1.0' below surface, respectively. The TPH concentrations in these areas then declined with depth to 237 mg/kg (AH-9) and 143 mg/kg (AH-10) at 1.0'-1.5' below surface.

Work Plan

Based on the laboratory data, EOG proposes to excavate the areas as shown on Figure 4 and highlighted (green) on Table 1. The areas of trenches (T-1, T-2, T-3, T-4, T-5, T-6**,** and T-7) to between 1.0' and 2.0' below surface to remove the shallow chloride impact to the soils. Additionally, the areas of auger holes (AH-8, AH-9, and AH-10) will be excavated to approximately 3.0' to 4.0' below surface to the maximum extent practicable in order to remove the shallow TPH and chloride impact detected. However, excavation activities will not be performed within 3.0' to 5.0' of the buried lines due to safety concerns.

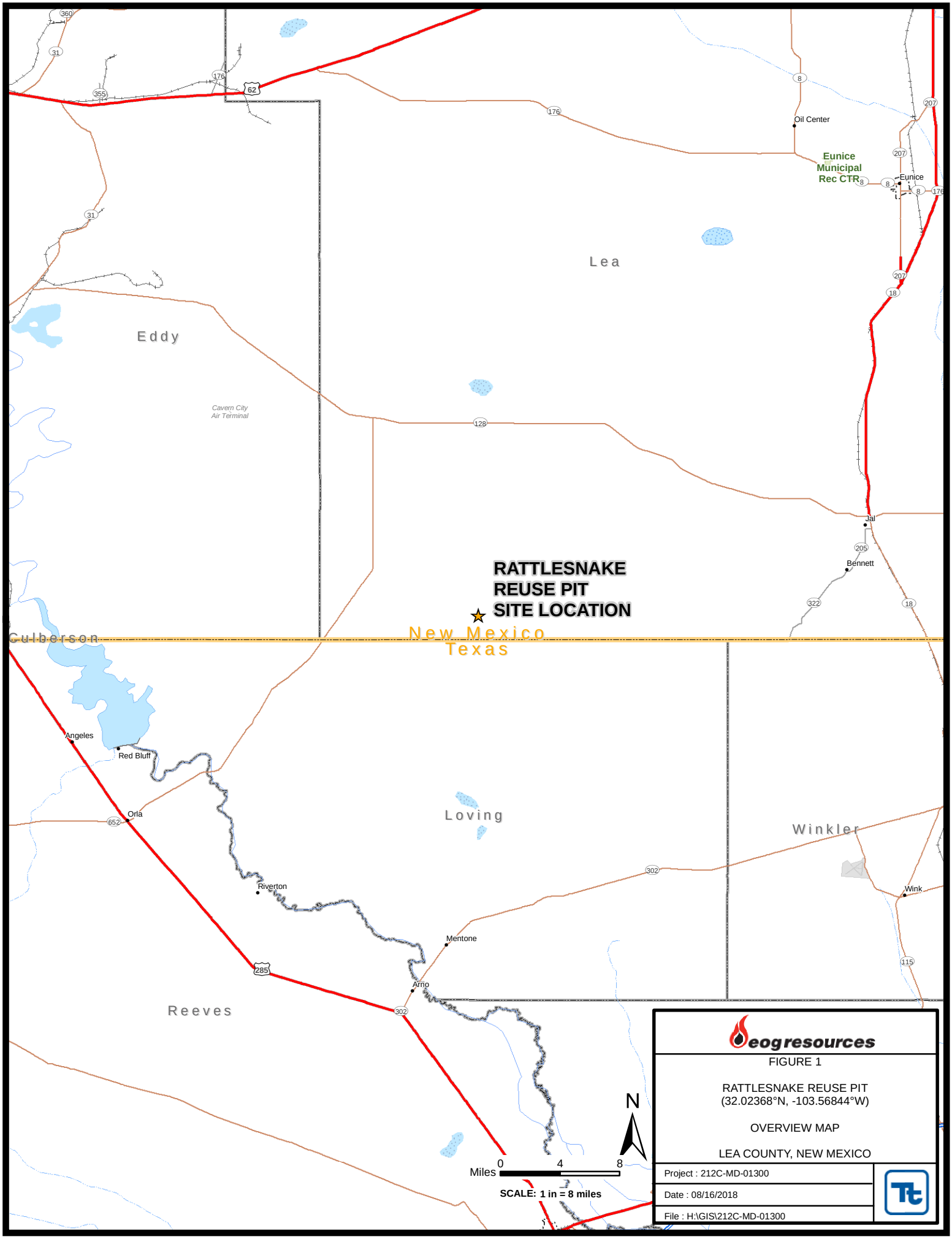
The proposed excavation depths may not be reached due to wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safely concerns for onsite personnel. As such, EOG will excavate the impacted soils to the maximum extent practicable.

Upon completion, a final report detailing the remediation activities will be submitted to the NMOCD. If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Clair Gonzales,
Project Manager

Figures



eog resources

FIGURE 1

RATTLESNAKE REUSE PIT
(32.02368°N, -103.56844°W)

OVERVIEW MAP

LEA COUNTY, NEW MEXICO

Project : 212C-MD-01300	
Date : 08/16/2018	
File : H:\GIS\212C-MD-01300	

Mapped By: Misti Morgan

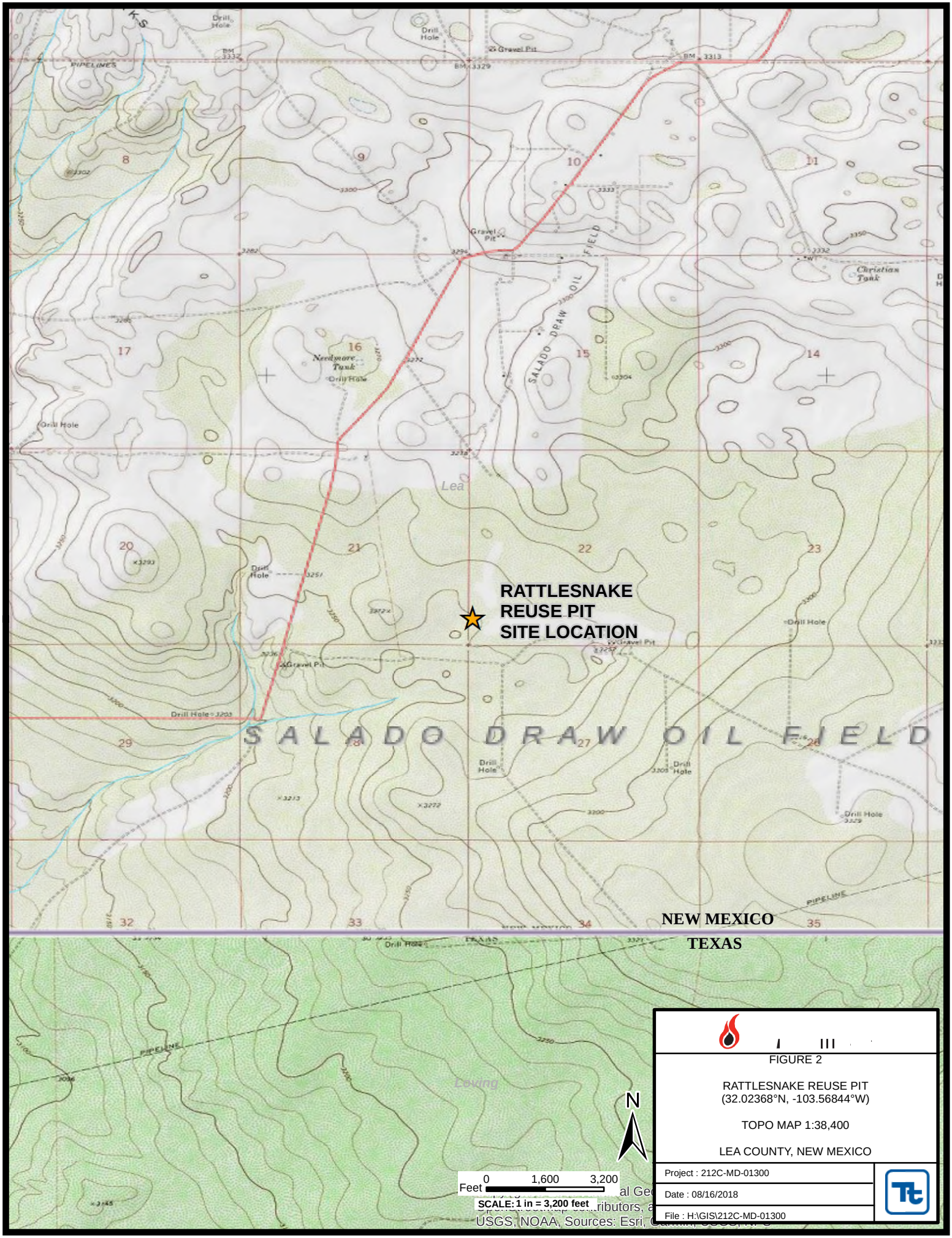


FIGURE 2

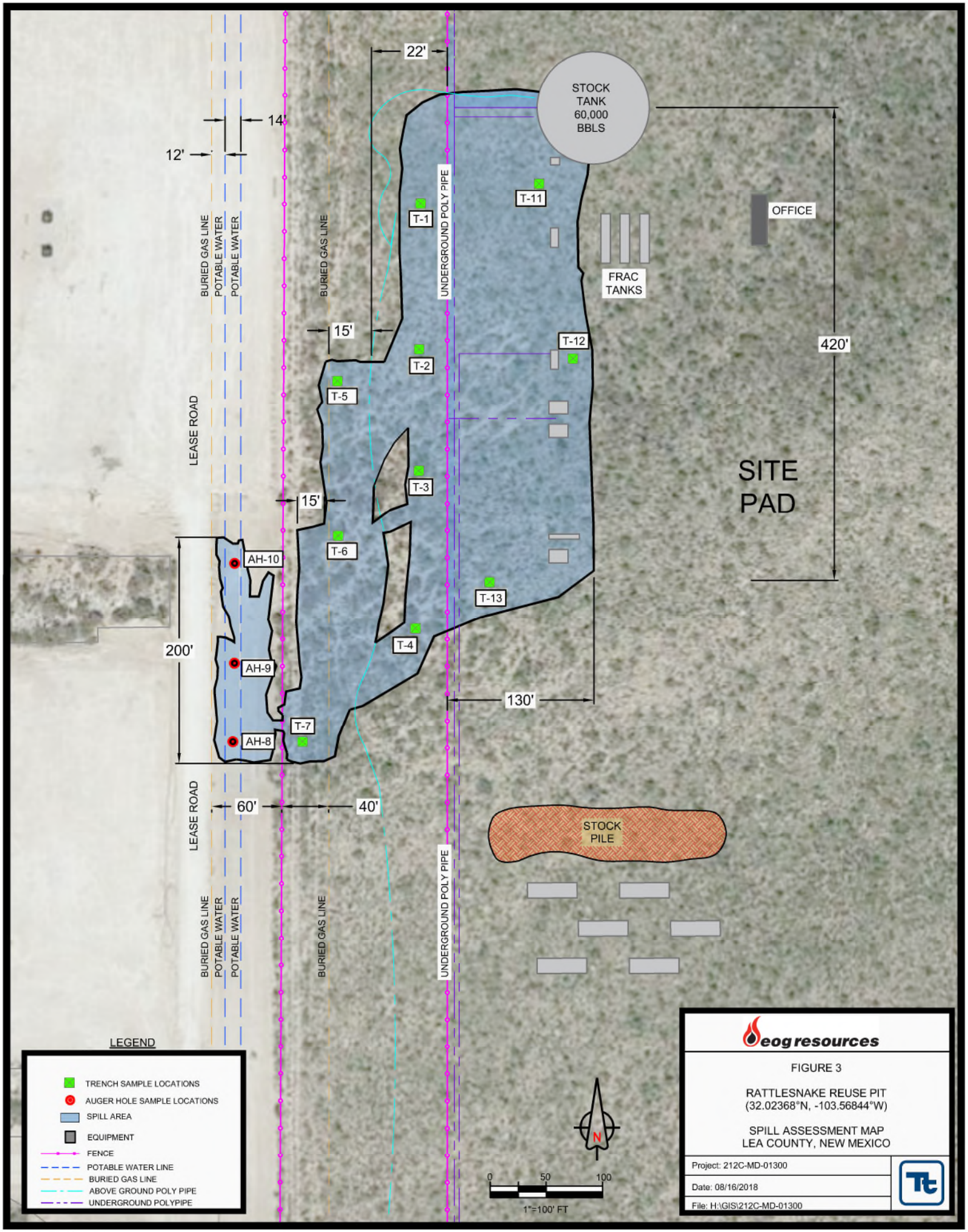
RATTLESNAKE REUSE PIT
(32.02368°N, -103.56844°W)

TOPO MAP 1:38,400

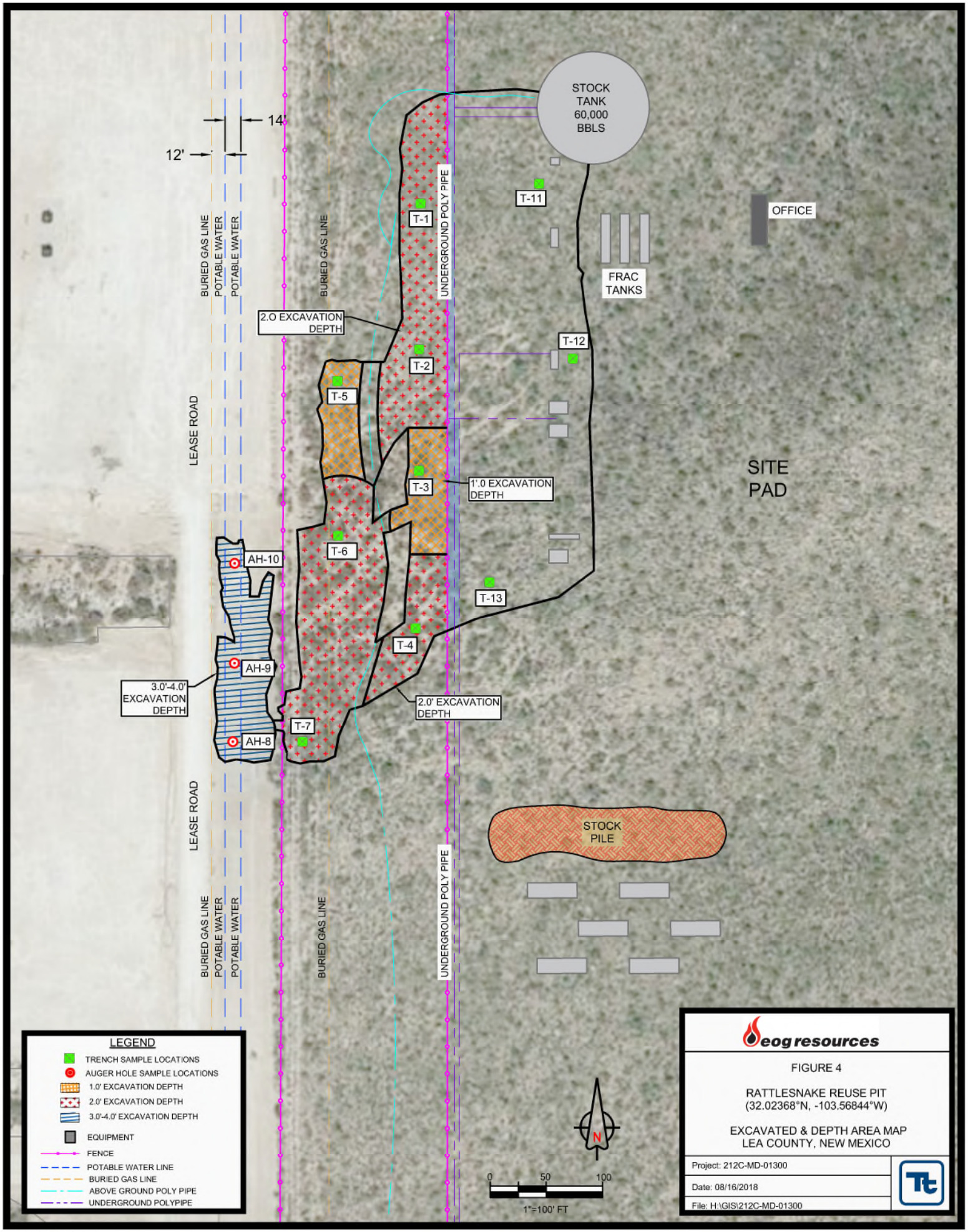
LEA COUNTY, NEW MEXICO

Project : 212C-MD-01300	
Date : 08/16/2018	
File : H:\GIS\212C-MD-01300	

Mapped By: Misti Morgan



Drawn By: MISTI MORGAN



Drawn By: MISTI MORGAN

Tables

Table 1
EOG Resources
Rattlesnake Reuse Pit
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (in)	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	ORO	Total						
T-1	7/2/2018	0-1	-	X		<14.9	537	<14.9	537	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	5,560
	"	1	-	X		-	-	-	-	-	-	-	-	-	6,460
	"	2	-	X		-	-	-	-	-	-	-	-	-	1,880
	"	4	-	X		-	-	-	-	-	-	-	-	-	14.7
	"	6	-	X		-	-	-	-	-	-	-	-	-	138
	"	8	-	X		-	-	-	-	-	-	-	-	-	131
	"	10	-	X		-	-	-	-	-	-	-	-	-	289
	"	12	-	X		-	-	-	-	-	-	-	-	-	418
T-2	7/2/2018	0-1	-	X		<15.0	18.6	<15.0	18.6	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	935
	"	1	-	X		-	-	-	-	-	-	-	-	-	154
	"	2	-	X		-	-	-	-	-	-	-	-	-	4,230
	"	4	-	X		-	-	-	-	-	-	-	-	-	34.5
	"	6	-	X		-	-	-	-	-	-	-	-	-	24.5
	"	8	-	X		-	-	-	-	-	-	-	-	-	72.4
T-3	7/2/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	2,130
	"	1	-	X		-	-	-	-	-	-	-	-	-	2,000
	"	2	-	X		-	-	-	-	-	-	-	-	-	270
	"	4	-	X		-	-	-	-	-	-	-	-	-	33.3
	"	6	-	X		-	-	-	-	-	-	-	-	-	219
	"	8	-	X		-	-	-	-	-	-	-	-	-	7.59
	"	10	-	X		-	-	-	-	-	-	-	-	-	<4.95
T-4	7/2/2018	0-1	-	X		<15.0	26.5	<15.0	26.5	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	2,700
	"	1	-	X		-	-	-	-	-	-	-	-	-	3,580
	"	2	-	X		-	-	-	-	-	-	-	-	-	3,290
	"	4	-	X		-	-	-	-	-	-	-	-	-	195
	"	6	-	X		-	-	-	-	-	-	-	-	-	117
	"	8	-	X		-	-	-	-	-	-	-	-	-	10.7
T-5	7/2/2018	0-1	-	X		<15.0	168	<15.0	168	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	1,770
	"	1	-	X		-	-	-	-	-	-	-	-	-	2,020
	"	2	-	X		-	-	-	-	-	-	-	-	-	146
	"	4	-	X		-	-	-	-	-	-	-	-	-	48.2
	"	6	-	X		-	-	-	-	-	-	-	-	-	21.1
	"	8	-	X		-	-	-	-	-	-	-	-	-	15.7
T-6	7/2/2018	0-1	-	X		<15.0	404	<15.0	404	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	5,290
	"	1	-	X		-	-	-	-	-	-	-	-	-	4,140
	"	2	-	X		-	-	-	-	-	-	-	-	-	1,240
	"	4	-	X		-	-	-	-	-	-	-	-	-	8.37
	"	6	-	X		-	-	-	-	-	-	-	-	-	1,010
	"	8	-	X		-	-	-	-	-	-	-	-	-	11.5
T-7	7/2/2018	0-1	-	X		<15.0	538	<15.0	538	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	4,850
	"	1	-	X		-	-	-	-	-	-	-	-	-	5,060
	"	2	-	X		-	-	-	-	-	-	-	-	-	3,490
	"	4	-	X		-	-	-	-	-	-	-	-	-	219
	"	6	-	X		-	-	-	-	-	-	-	-	-	54.1
	"	8	-	X		-	-	-	-	-	-	-	-	-	427

Table 1
EOG Resources
Rattlesnake Reuse Pit
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (in)	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	ORO	Total						
AH-8	7/2/2018	0-1	-	X		<15.0	653	<15.0	653	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	4,070
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	-	4,590
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	5,470
AH-9	7/2/2018	0-1	-	X		**224**	**13,000**	**89.8**	**13,300**	<0.00200	<0.00200	0.00746	0.0921	0.0996	3,140
	"	1-1.5	-	X		<15.0	237	<15.0	237	-	-	-	-	-	4,400
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	7,250
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	-	4,960
AH-10	7/2/2018	0-1	-	X		**104**	**8,530**	**147**	**8,780**	<0.00199	<0.00199	0.00346	0.0674	0.0709	3,340
	"	1-1.5	-	X		<15.0	143	<15.0	143	-	-	-	-	-	4,850
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	6,140
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	-	4,000
T-11	7/17/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	3,120
	"	1	-	X		-	-	-	-	-	-	-	-	-	2,020
	"	2	-	X		-	-	-	-	-	-	-	-	-	960
	"	4	-	X		-	-	-	-	-	-	-	-	-	118
	"	6	-	X		-	-	-	-	-	-	-	-	-	<4.96
	"	8	-	X		-	-	-	-	-	-	-	-	-	12.6
	"	10	-	X		-	-	-	-	-	-	-	-	-	49
T-12	7/17/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	1,260
	"	1	-	X		-	-	-	-	-	-	-	-	-	826
	"	2	-	X		-	-	-	-	-	-	-	-	-	50.2
	"	4	-	X		-	-	-	-	-	-	-	-	-	5.83
	"	6	-	X		-	-	-	-	-	-	-	-	-	24.7
	"	8	-	X		-	-	-	-	-	-	-	-	-	24.8
	"	10	-	X		-	-	-	-	-	-	-	-	-	12.4
T-13	7/17/2018	0-1	-	X		<14.9	<14.9	<14.9	<14.9	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	261
	"	1	-	X		-	-	-	-	-	-	-	-	-	28.2
	"	2	-	X		-	-	-	-	-	-	-	-	-	10.7
	"	4	-	X		-	-	-	-	-	-	-	-	-	17
	"	6	-	X		-	-	-	-	-	-	-	-	-	12.1
	"	8	-	X		-	-	-	-	-	-	-	-	-	<5.00
	"	10	-	X		-	-	-	-	-	-	-	-	-	<5.01

(-) Not Analyzed

Proposed Excavation Depths

Photos

EOG Resources
Rattlesnake Reuse Pit
Lea County, New Mexico

View North – Area of T-1

View South – Areas of T-2 and T-3

EOG Resources
Rattlesnake Reuse Pit
Lea County, New Mexico

View East – Area of T-4

View East – Area of T-5

EOG Resources
Rattlesnake Reuse Pit
Lea County, New Mexico

View South – Area of T-6

View North – Area of T-7

EOG Resources
Rattlesnake Reuse Pit
Lea County, New Mexico

View North – Areas of AH-8 and AH-9

View North – Area of AH-10

EOG Resources
Rattlesnake Reuse Pit
Lea County, New Mexico

View North – Area of T-11

View North – Area of T-12

EOG Resources
Rattlesnake Reuse Pit
Lea County, New Mexico

View North – Area of T-13

Appendix A

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: EOG Resources	Contact: Jamon Hohensee
Address: 5509 Champions Drive, Midland, TX 79706	Telephone No. 432-556-8074
Facility Name: Rattlesnake Reuse Pit	Facility Type: PW water recycling facility

Surface Owner: Oliver Keinhe	Mineral Owner: EOG Resources	API No. 1RF-12

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	22	26S	33E					

Latitude 32.0227 **Longitude** -103.5686

NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: 1486 bbls	Volume Recovered: 510bbls
Source of Release: Tank overflow	Date and Hour of Occurrence 6/22/18 0200	Date and Hour of Discovery 6/22/18 0800
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Olivia Yu	
By Whom? Jamon Hohensee	Date and Hour: 6/22/18 0900	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		

RECEIVED
By Olivia Yu at 10:08 am, Jul 03, 2018

Describe Cause of Problem and Remedial Action Taken.*
On, 6/22/18 ESD alarm failed to shut off pw riser flowing into main tank. 1486bbls of pw ran over the top of the tank and onto pad and adjacent pipeline ROW. 510bbls of pw reclaimed by vac trucks. Pad was scraped up immediately to remove surface contaminates. Spill area will be vertically and horizontally delineated. Site will be cleaned to OCD standards.

Describe Area Affected and Cleanup Action Taken.*

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: Jamon Hohensee	Approved by Environmental Specialist:
Title: Environmental Rep	Approval Date: 7/3/2018 Expiration Date:
E-mail Address: jamon_hohensee@eogresources.com	Conditions of Approval: see attached directive Attached ☑
Date: 6/28/18 Phone: 432-556-8074	

* Attach Additional Sheets If Necessary

1RP-5113 nOY1818436853 pOY1818438144

fTO1716429249

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
EOG - Rattlesnake Re-Use Pit
Lea County, New Mexico

25 South 32 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32 **290**	33	34	35	36

25 South 33 East

6	5	4	3 172	2	1
7	8	9	10	11 140	12 200
18	17	16	15	14	13
19	20 **200**	21 120	22	23	24
30	29	28	27 125	26	25
31 **257**	32	33	34	35	36

25 South 34 East

6	5	4	3	2	1 **260**
7	8	9	10	11	12
18	17	16	15 **135**	14	13
19	20	21	22	23	24 **300**
30	29 **128** **50**	28	27	26	25
31	32	33	34	35	36

26 South 32 East

6 **350**	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 **333** **180**	22	23	24
30	29	28	27	26	25
31 **295**	32	33	34	35	36

26 South 33 East

6	5	4	3 **175**	2	1
7	8	9	10	11 **145**	12 **200**
18	17	16	15	14 **135**	13
19	20	21 **120**	22 **110**	23	24
30	29	28	27 **125**	26	25
31	32	33	34	35	36

26 South 34 East

6 **160** **175**	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y	Depth Well	Depth Water	Water Column
C 02270		CUB	LE	1	1	2	27	26S	33E	636063	3543722	150	125	25
C 02273		CUB	LE		1	2	21	26S	33E	634549	3545134*	160	120	40
C 02285 POD1		CUB	LE	1	4	4	03	26S	33E	636613	3548855	220	220	0
C 02286		CUB	LE	3	4	4	03	26S	33E	636470	3548714	220	175	45
C 02287		C	LE	3	4	4	03	26S	33E	636427	3548708	220		
C 02288		CUB	LE	4	4	4	03	26S	33E	636646	3548758	220	180	40
C 02289		CUB	LE	4	4	4	03	26S	33E	636612	3548675*	200	160	40
C 02290		CUB	LE	4	4	4	03	26S	33E	636538	3548770	200	160	40
C 02293		CUB	LE	2	2	1	14	26S	33E	637501	3546975	200	135	65
C 02294		CUB	LE	4	4	3	11	26S	33E	637465	3547003	200	145	55
C 02295		CUB	LE	2	2	4	12	26S	33E	639850	3547710*	250	200	50
C 03577 POD1		CUB	LE	3	3	3	22	26S	33E	636010	3543771	750	110	640
C 03596 POD1		C	LE	3	3	4	22	26S	33E	636017	3543756	225		

Average Depth to Water: **157 feet**

Minimum Depth: **110 feet**

Maximum Depth: **220 feet**

Record Count: 13

PLSS Search:

Township: 26S **Range:** 33E

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

Appendix C

Analytical Report 591157

for

Tetra Tech- Midland

Project Manager: Clair Gonzales

Rattle Snake Reuse Pit

212C-MD-01300

10-JUL-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-26), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-15)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

10-JUL-18

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

Reference: XENCO Report No(s): **591157**
Rattle Snake Reuse Pit
Project Address: Lea County, NM

Clair Gonzales:

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) 591157. 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. 591157 will be filed for 45 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 591157

Tetra Tech- Midland, Midland, TX

Rattle Snake Reuse Pit

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T-1 (0-1')	S	07-02-18 00:00		591157-001
T-1 (1')	S	07-02-18 00:00		591157-002
T-1 (2')	S	07-02-18 00:00		591157-003
T-1 (4')	S	07-02-18 00:00		591157-004
T-1 (6')	S	07-02-18 00:00		591157-005
T-1 (8')	S	07-02-18 00:00		591157-006
T-1 (10')	S	07-02-18 00:00		591157-007
T-1 (12')	S	07-02-18 00:00		591157-008
T-2 (0-1')	S	07-02-18 00:00		591157-009
T-2 (1')	S	07-02-18 00:00		591157-010
T-2 (2')	S	07-02-18 00:00		591157-011
T-2 (4')	S	07-02-18 00:00		591157-012
T-2 (6')	S	07-02-18 00:00		591157-013
T-2 (8')	S	07-02-18 00:00		591157-014
T-3 (0-1')	S	07-02-18 00:00		591157-015
T-3 (1')	S	07-02-18 00:00		591157-016
T-3 (2')	S	07-02-18 00:00		591157-017
T-3 (4')	S	07-02-18 00:00		591157-018
T-3 (6')	S	07-02-18 00:00		591157-019
T-3 (8')	S	07-02-18 00:00		591157-020
T-3 (10')	S	07-02-18 00:00		591157-021
T-4 (0-1')	S	07-02-18 00:00		591157-022
T-4 (1')	S	07-02-18 00:00		591157-023
T-4 (2')	S	07-02-18 00:00		591157-024
T-4 (4')	S	07-02-18 00:00		591157-025
T-4 (6')	S	07-02-18 00:00		591157-026
T-4 (8')	S	07-02-18 00:00		591157-027
T-5 (0-1')	S	07-02-18 00:00		591157-028
T-5 (1')	S	07-02-18 00:00		591157-029
T-5 (2')	S	07-02-18 00:00		591157-030
T-5 (4')	S	07-02-18 00:00		591157-031
T-5 (6')	S	07-02-18 00:00		591157-032
T-5 (8')	S	07-02-18 00:00		591157-033
T-6 (0-1')	S	07-02-18 00:00		591157-034
T-6 (1')	S	07-02-18 00:00		591157-035
T-6 (2')	S	07-02-18 00:00		591157-036
T-6 (4')	S	07-02-18 00:00		591157-037
T-6 (6')	S	07-02-18 00:00		591157-038
T-6 (8')	S	07-02-18 00:00		591157-039
T-7 (0-1')	S	07-02-18 00:00		591157-040
T-7 (1')	S	07-02-18 00:00		591157-041
T-7 (2')	S	07-02-18 00:00		591157-042
T-7 (4')	S	07-02-18 00:00		591157-043

T-7 (6')	S	07-02-18 00:00	591157-044
T-7 (8')	S	07-02-18 00:00	591157-045
AH-8 (0-1')	S	07-02-18 00:00	591157-046
AH-8 (1-1.5')	S	07-02-18 00:00	591157-047
AH-8 (2-2.5')	S	07-02-18 00:00	591157-048
AH-8 (3-3.5')	S	07-02-18 00:00	591157-049
AH-9 (0-1')	S	07-02-18 00:00	591157-050
AH-9 (1-1.5')	S	07-02-18 00:00	591157-051
AH-9 (2-2.5')	S	07-02-18 00:00	591157-052
AH-9 (3-3.5')	S	07-02-18 00:00	591157-053
AH-10 (0-1')	S	07-02-18 00:00	591157-054
AH-10 (1-1.5')	S	07-02-18 00:00	591157-055
AH-10 (2-2.5')	S	07-02-18 00:00	591157-056
AH-10 (3-3.5')	S	07-02-18 00:00	591157-057

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3055792 Chloride by EPA 300

Lab Sample ID 591157-025 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 591157-015, -016, -017, -018, -019, -020, -021, -022, -023, -024, -025, -026, -027, -028, -029, -030, -031, -032, -033, -034.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3055798 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3055801 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 591157

Tetra Tech- Midland, Midland, TX

Project Name: Rattle Snake Reuse Pit

Project Id: 212C-MD-01300
Contact: Clair Gonzales
Project Location: Lea County, NM

Date Received in Lab: Tue Jul-03-18 09:41 am
Report Date: 10-JUL-18
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	591157-001		591157-002		591157-003		591157-004		591157-005		591157-006	
	Field Id:	T-1 (0-1')		T-1 (1')		T-1 (2')		T-1 (4')		T-1 (6')		T-1 (8')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00	
BTEX by EPA 8021B	***Extracted:***	Jul-08-18 08:00											
	Analyzed:	Jul-08-18 14:58											
	Units/RL:	mg/kg	RL										
Benzene		<0.00201	0.00201										
Toluene		<0.00201	0.00201										
Ethylbenzene		<0.00201	0.00201										
m,p-Xylenes		<0.00402	0.00402										
o-Xylene		<0.00201	0.00201										
Total Xylenes		<0.00201	0.00201										
Total BTEX		<0.00201	0.00201										
Chloride by EPA 300	***Extracted:***	Jul-07-18 11:30		Jul-07-18 11:30		Jul-07-18 11:30		Jul-07-18 11:30		Jul-07-18 11:30		Jul-07-18 11:30	
	Analyzed:	Jul-07-18 13:34		Jul-07-18 13:39		Jul-07-18 13:45		Jul-07-18 13:55		Jul-07-18 13:50		Jul-07-18 14:12	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		5560	50.0	6460	49.6	1880	25.0	14.7	4.98	138	25.0	131	24.7
TPH by SW8015 Mod	***Extracted:***	Jul-08-18 10:00											
	Analyzed:	Jul-08-18 17:31											
	Units/RL:	mg/kg	RL										
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9										
Diesel Range Organics (DRO)		537	14.9										
Oil Range Hydrocarbons (ORO)		<14.9	14.9										
Total TPH		537	14.9										

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 591157

Tetra Tech- Midland, Midland, TX

Project Name: Rattle Snake Reuse Pit

Project Id: 212C-MD-01300
Contact: Clair Gonzales
Project Location: Lea County, NM

Date Received in Lab: Tue Jul-03-18 09:41 am
Report Date: 10-JUL-18
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	591157-007		591157-008		591157-009		591157-010		591157-011		591157-012	
	Field Id:	T-1 (10')		T-1 (12')		T-2 (0-1')		T-2 (1')		T-2 (2')		T-2 (4')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00	
BTEX by EPA 8021B	***Extracted:***					Jul-08-18 08:00							
	Analyzed:					Jul-08-18 15:16							
	Units/RL:					mg/kg	RL						
Benzene						<0.00201	0.00201						
Toluene						<0.00201	0.00201						
Ethylbenzene						<0.00201	0.00201						
m,p-Xylenes						<0.00402	0.00402						
o-Xylene						<0.00201	0.00201						
Total Xylenes						<0.00201	0.00201						
Total BTEX						<0.00201	0.00201						
Chloride by EPA 300	***Extracted:***	Jul-07-18 11:30		Jul-07-18 11:30		Jul-07-18 11:30		Jul-07-18 11:30		Jul-07-18 11:30		Jul-07-18 11:30	
	Analyzed:	Jul-07-18 14:17		Jul-07-18 14:33		Jul-07-18 14:39		Jul-07-18 14:44		Jul-07-18 14:49		Jul-07-18 14:55	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		289	24.5	418	24.9	935	4.98	154	4.94	4230	25.0	34.5	4.92
TPH by SW8015 Mod	***Extracted:***					Jul-08-18 10:00							
	Analyzed:					Jul-08-18 17:50							
	Units/RL:					mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)						<15.0	15.0						
Diesel Range Organics (DRO)						18.6	15.0						
Oil Range Hydrocarbons (ORO)						<15.0	15.0						
Total TPH						18.6	15.0						

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 591157

Tetra Tech- Midland, Midland, TX

Project Name: Rattle Snake Reuse Pit

Project Id: 212C-MD-01300
Contact: Clair Gonzales
Project Location: Lea County, NM

Date Received in Lab: Tue Jul-03-18 09:41 am
Report Date: 10-JUL-18
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	591157-013		591157-014		591157-015		591157-016		591157-017		591157-018	
	Field Id:	T-2 (6')		T-2 (8')		T-3 (0-1')		T-3 (1')		T-3 (2')		T-3 (4')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00	
BTEX by EPA 8021B	***Extracted:***					Jul-08-18 08:00							
	Analyzed:					Jul-08-18 15:34							
	Units/RL:					mg/kg	RL						
Benzene						<0.00199	0.00199						
Toluene						<0.00199	0.00199						
Ethylbenzene						<0.00199	0.00199						
m,p-Xylenes						<0.00398	0.00398						
o-Xylene						<0.00199	0.00199						
Total Xylenes						<0.00199	0.00199						
Total BTEX						<0.00199	0.00199						
Chloride by EPA 300	***Extracted:***	Jul-07-18 11:30		Jul-07-18 11:30		Jul-07-18 12:00		Jul-07-18 12:00		Jul-07-18 12:00		Jul-07-18 12:00	
	Analyzed:	Jul-09-18 11:49		Jul-07-18 15:06		Jul-07-18 15:54		Jul-07-18 16:00		Jul-07-18 15:38		Jul-07-18 16:05	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		24.5	4.99	72.4	24.6	2130	24.8	2000	24.8	270	4.94	33.3	4.93
TPH by SW8015 Mod	***Extracted:***					Jul-08-18 10:00							
	Analyzed:					Jul-08-18 18:09							
	Units/RL:					mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)						<15.0	15.0						
Diesel Range Organics (DRO)						<15.0	15.0						
Oil Range Hydrocarbons (ORO)						<15.0	15.0						
Total TPH						<15.0	15.0						

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 591157

Tetra Tech- Midland, Midland, TX

Project Name: Rattle Snake Reuse Pit

Project Id: 212C-MD-01300
Contact: Clair Gonzales
Project Location: Lea County, NM

Date Received in Lab: Tue Jul-03-18 09:41 am
Report Date: 10-JUL-18
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	591157-019		591157-020		591157-021		591157-022		591157-023		591157-024	
	Field Id:	T-3 (6')		T-3 (8')		T-3 (10')		T-4 (0-1')		T-4 (1')		T-4 (2')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00	
BTEX by EPA 8021B	***Extracted:***							Jul-08-18 08:00					
	Analyzed:							Jul-08-18 15:52					
	Units/RL:							mg/kg	RL				
Benzene								<0.00200	0.00200				
Toluene								<0.00200	0.00200				
Ethylbenzene								<0.00200	0.00200				
m,p-Xylenes								<0.00399	0.00399				
o-Xylene								<0.00200	0.00200				
Total Xylenes								<0.00200	0.00200				
Total BTEX								<0.00200	0.00200				
Chloride by EPA 300	***Extracted:***	Jul-07-18 12:00		Jul-07-18 12:00		Jul-07-18 12:00		Jul-07-18 12:00		Jul-07-18 12:00		Jul-07-18 12:00	
	Analyzed:	Jul-07-18 16:10		Jul-07-18 16:27		Jul-07-18 16:32		Jul-07-18 16:37		Jul-07-18 16:43		Jul-07-18 16:48	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		21.9	4.94	7.59	5.00	<4.95	4.95	2700	24.9	3580	24.6	3290	24.5
TPH by SW8015 Mod	***Extracted:***							Jul-08-18 10:00					
	Analyzed:							Jul-08-18 18:29					
	Units/RL:							mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)								<15.0	15.0				
Diesel Range Organics (DRO)								26.5	15.0				
Oil Range Hydrocarbons (ORO)								<15.0	15.0				
Total TPH								26.5	15.0				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 591157

Tetra Tech- Midland, Midland, TX

Project Name: Rattle Snake Reuse Pit

Project Id: 212C-MD-01300
Contact: Clair Gonzales
Project Location: Lea County, NM

Date Received in Lab: Tue Jul-03-18 09:41 am
Report Date: 10-JUL-18
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	591157-025		591157-026		591157-027		591157-028		591157-029		591157-030	
	Field Id:	T-4 (4')		T-4 (6')		T-4 (8')		T-5 (0-1')		T-5 (1')		T-5 (2')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00	
BTEX by EPA 8021B	***Extracted:***							Jul-08-18 08:00					
	Analyzed:							Jul-08-18 16:10					
	Units/RL:							mg/kg	RL				
Benzene								<0.00200	0.00200				
Toluene								<0.00200	0.00200				
Ethylbenzene								<0.00200	0.00200				
m,p-Xylenes								<0.00401	0.00401				
o-Xylene								<0.00200	0.00200				
Total Xylenes								<0.00200	0.00200				
Total BTEX								<0.00200	0.00200				
Chloride by EPA 300	***Extracted:***	Jul-07-18 12:00		Jul-07-18 12:00		Jul-07-18 12:00		Jul-07-18 12:00		Jul-07-18 12:00		Jul-07-18 12:00	
	Analyzed:	Jul-07-18 16:54		Jul-07-18 17:10		Jul-07-18 17:15		Jul-07-18 17:31		Jul-07-18 17:37		Jul-07-18 17:42	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		195	4.92	117	4.96	10.7	4.94	1770	24.6	2020	25.0	146	4.90
TPH by SW8015 Mod	***Extracted:***							Jul-08-18 10:00					
	Analyzed:							Jul-08-18 18:48					
	Units/RL:							mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)								<15.0	15.0				
Diesel Range Organics (DRO)								168	15.0				
Oil Range Hydrocarbons (ORO)								<15.0	15.0				
Total TPH								168	15.0				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 591157

Tetra Tech- Midland, Midland, TX

Project Name: Rattle Snake Reuse Pit

Project Id: 212C-MD-01300
Contact: Clair Gonzales
Project Location: Lea County, NM

Date Received in Lab: Tue Jul-03-18 09:41 am
Report Date: 10-JUL-18
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	591157-031		591157-032		591157-033		591157-034		591157-035		591157-036	
	Field Id:	T-5 (4')		T-5 (6')		T-5 (8')		T-6 (0-1')		T-6 (1')		T-6 (2')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00	
BTEX by EPA 8021B	***Extracted:***							Jul-08-18 08:00					
	Analyzed:							Jul-08-18 16:28					
	Units/RL:							mg/kg	RL				
Benzene								<0.00199	0.00199				
Toluene								<0.00199	0.00199				
Ethylbenzene								<0.00199	0.00199				
m,p-Xylenes								<0.00398	0.00398				
o-Xylene								<0.00199	0.00199				
Total Xylenes								<0.00199	0.00199				
Total BTEX								<0.00199	0.00199				
Chloride by EPA 300	***Extracted:***	Jul-07-18 12:00		Jul-07-18 12:00		Jul-07-18 12:00		Jul-07-18 12:00		Jul-09-18 14:00		Jul-09-18 14:00	
	Analyzed:	Jul-07-18 17:48		Jul-07-18 17:53		Jul-07-18 17:58		Jul-07-18 18:04		Jul-09-18 18:46		Jul-09-18 18:52	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		48.2	4.90	21.1	4.95	15.7	4.90	5290	49.9	4140	25.0	1240	4.94
TPH by SW8015 Mod	***Extracted:***							Jul-08-18 10:00					
	Analyzed:							Jul-08-18 19:07					
	Units/RL:							mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)								<15.0	15.0				
Diesel Range Organics (DRO)								404	15.0				
Oil Range Hydrocarbons (ORO)								<15.0	15.0				
Total TPH								404	15.0				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 591157

Tetra Tech- Midland, Midland, TX

Project Name: Rattle Snake Reuse Pit

Project Id: 212C-MD-01300
Contact: Clair Gonzales
Project Location: Lea County, NM

Date Received in Lab: Tue Jul-03-18 09:41 am
Report Date: 10-JUL-18
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	591157-037		591157-038		591157-039		591157-040		591157-041		591157-042	
	Field Id:	T-6 (4')		T-6 (6')		T-6 (8')		T-7 (0-1')		T-7 (1')		T-7 (2')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00	
BTEX by EPA 8021B	***Extracted:***							Jul-08-18 08:30					
	Analyzed:							Jul-08-18 19:10					
	Units/RL:							mg/kg	RL				
Benzene								<0.00201	0.00201				
Toluene								<0.00201	0.00201				
Ethylbenzene								<0.00201	0.00201				
m,p-Xylenes								<0.00402	0.00402				
o-Xylene								<0.00201	0.00201				
Total Xylenes								<0.00201	0.00201				
Total BTEX								<0.00201	0.00201				
Chloride by EPA 300	***Extracted:***	Jul-09-18 14:00		Jul-09-18 14:00		Jul-09-18 14:00		Jul-09-18 15:30		Jul-09-18 15:30		Jul-09-18 15:30	
	Analyzed:	Jul-09-18 18:57		Jul-09-18 19:03		Jul-09-18 19:08		Jul-09-18 19:57		Jul-09-18 20:02		Jul-09-18 20:07	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		8.37	4.92	1010	4.98	11.5	5.00	4850	49.2	5060	49.6	3490	24.8
TPH by SW8015 Mod	***Extracted:***							Jul-08-18 10:00					
	Analyzed:							Jul-08-18 19:27					
	Units/RL:							mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)								<15.0	15.0				
Diesel Range Organics (DRO)								538	15.0				
Oil Range Hydrocarbons (ORO)								<15.0	15.0				
Total TPH								538	15.0				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 591157

Tetra Tech- Midland, Midland, TX

Project Name: Rattle Snake Reuse Pit

Project Id: 212C-MD-01300
Contact: Clair Gonzales
Project Location: Lea County, NM

Date Received in Lab: Tue Jul-03-18 09:41 am
Report Date: 10-JUL-18
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	591157-043		591157-044		591157-045		591157-046		591157-047		591157-048	
	Field Id:	T-7 (4')		T-7 (6')		T-7 (8')		AH-8 (0-1')		AH-8 (1-1.5')		AH-8 (2-2.5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00	
BTEX by EPA 8021B	***Extracted:***							Jul-08-18 08:30					
	Analyzed:							Jul-08-18 19:28					
	Units/RL:							mg/kg	RL				
Benzene								<0.00200	0.00200				
Toluene								<0.00200	0.00200				
Ethylbenzene								<0.00200	0.00200				
m,p-Xylenes								<0.00401	0.00401				
o-Xylene								<0.00200	0.00200				
Total Xylenes								<0.00200	0.00200				
Total BTEX								<0.00200	0.00200				
Chloride by EPA 300	***Extracted:***	Jul-09-18 15:30		Jul-09-18 15:30		Jul-09-18 15:30		Jul-09-18 15:30		Jul-09-18 15:30		Jul-09-18 15:30	
	Analyzed:	Jul-09-18 19:40		Jul-09-18 20:13		Jul-09-18 20:29		Jul-09-18 20:34		Jul-09-18 20:40		Jul-09-18 20:45	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		219	4.94	54.1	4.91	427	4.90	4070	24.9	4590	50.0	5470	49.1
TPH by SW8015 Mod	***Extracted:***							Jul-08-18 10:00					
	Analyzed:							Jul-08-18 19:46					
	Units/RL:							mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)								<15.0	15.0				
Diesel Range Organics (DRO)								653	15.0				
Oil Range Hydrocarbons (ORO)								<15.0	15.0				
Total TPH								653	15.0				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 591157

Tetra Tech- Midland, Midland, TX

Project Name: Rattle Snake Reuse Pit

Project Id: 212C-MD-01300
Contact: Clair Gonzales
Project Location: Lea County, NM

Date Received in Lab: Tue Jul-03-18 09:41 am
Report Date: 10-JUL-18
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	591157-049		591157-050		591157-051		591157-052		591157-053		591157-054	
	Field Id:	AH-8 (3-3.5')		AH-9 (0-1')		AH-9 (1-1.5')		AH-9 (2-2.5')		AH-9 (3-3.5')		AH-10 (0-1')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00	
BTEX by EPA 8021B	***Extracted:***			Jul-08-18 08:30								Jul-08-18 08:30	
	Analyzed:			Jul-08-18 20:22								Jul-08-18 19:46	
	Units/RL:			mg/kg	RL							mg/kg	RL
Benzene				<0.00200	0.00200							<0.00199	0.00199
Toluene				<0.00200	0.00200							<0.00199	0.00199
Ethylbenzene				0.00746	0.00200							0.00346	0.00199
m,p-Xylenes				0.0808	0.00399							0.0603	0.00398
o-Xylene				0.0113	0.00200							0.00713	0.00199
Total Xylenes				0.0921	0.00200							0.0674	0.00199
Total BTEX				0.0996	0.00200							0.0709	0.00199
Chloride by EPA 300	***Extracted:***	Jul-09-18 15:30		Jul-09-18 15:30		Jul-09-18 15:30		Jul-09-18 15:30		Jul-09-18 15:30		Jul-09-18 15:30	
	Analyzed:	Jul-09-18 20:51		Jul-09-18 21:18		Jul-09-18 21:34		Jul-09-18 21:39		Jul-09-18 21:45		Jul-09-18 21:50	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1540	24.9	3140	25.0	4400	49.5	7250	49.8	4960	49.6	3340	24.9
TPH by SW8015 Mod	***Extracted:***			Jul-08-18 10:00								Jul-07-18 11:00	
	Analyzed:			Jul-08-18 20:06								Jul-08-18 09:09	
	Units/RL:			mg/kg	RL							mg/kg	RL
Gasoline Range Hydrocarbons (GRO)				224	74.9							104	74.9
Diesel Range Organics (DRO)				13000	74.9							8530	74.9
Oil Range Hydrocarbons (ORO)				89.8	74.9							147	74.9
Total TPH				13300	74.9							8780	74.9

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 591157

Tetra Tech- Midland, Midland, TX

Project Name: Rattle Snake Reuse Pit

Project Id: 212C-MD-01300
Contact: Clair Gonzales
Project Location: Lea County, NM

Date Received in Lab: Tue Jul-03-18 09:41 am
Report Date: 10-JUL-18
Project Manager: Kelsey Brooks

Analysis Requested											
	Lab Id:	591157-055		591157-056		591157-057					
	Field Id:	AH-10 (1-1.5')		AH-10 (2-2.5')		AH-10 (3-3.5')					
	Depth:										
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	Jul-02-18 00:00		Jul-02-18 00:00		Jul-02-18 00:00					
Chloride by EPA 300	***Extracted:***	Jul-09-18 15:30		Jul-09-18 15:30		Jul-09-18 15:30					
	Analyzed:	Jul-09-18 21:55		Jul-09-18 22:01		Jul-09-18 22:06					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		4850	49.0	6140	49.9	4000	24.9				

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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ 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: Rattle Snake Reuse Pit

Work Orders : 591157,

Project ID: 212C-MD-01300

Lab Batch #: 3055923 **Sample:** 591157-054 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 09:09

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.8	103	70-135	
o-Terphenyl	64.4	49.9	129	70-135	

Lab Batch #: 3055798 **Sample:** 591157-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 14:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	70-130	
4-Bromofluorobenzene	0.0276	0.0300	92	70-130	

Lab Batch #: 3055798 **Sample:** 591157-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 15:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0337	0.0300	112	70-130	
4-Bromofluorobenzene	0.0252	0.0300	84	70-130	

Lab Batch #: 3055798 **Sample:** 591157-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 15:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0379	0.0300	126	70-130	
4-Bromofluorobenzene	0.0262	0.0300	87	70-130	

Lab Batch #: 3055798 **Sample:** 591157-022 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 15:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0213	0.0300	71	70-130	
4-Bromofluorobenzene	0.0249	0.0300	83	70-130	

* 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: Rattle Snake Reuse Pit

Work Orders : 591157,

Project ID: 212C-MD-01300

Lab Batch #: 3055798 **Sample:** 591157-028 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 16:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0357	0.0300	119	70-130	
4-Bromofluorobenzene	0.0245	0.0300	82	70-130	

Lab Batch #: 3055798 **Sample:** 591157-034 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 16:28

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	70-130	
4-Bromofluorobenzene	0.0251	0.0300	84	70-130	

Lab Batch #: 3055931 **Sample:** 591157-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 17:31

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.2	99.6	99	70-135	
o-Terphenyl	56.9	49.8	114	70-135	

Lab Batch #: 3055931 **Sample:** 591157-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 17:50

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.3	99.9	98	70-135	
o-Terphenyl	51.0	50.0	102	70-135	

Lab Batch #: 3055931 **Sample:** 591157-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 18:09

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	51.8	50.0	104	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: Rattle Snake Reuse Pit

Work Orders : 591157,

Project ID: 212C-MD-01300

Lab Batch #: 3055931 **Sample:** 591157-022 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 18:29

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.4	100	95	70-135	
o-Terphenyl	50.3	50.0	101	70-135	

Lab Batch #: 3055931 **Sample:** 591157-028 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 18:48

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.6	99.7	94	70-135	
o-Terphenyl	53.3	49.9	107	70-135	

Lab Batch #: 3055931 **Sample:** 591157-034 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 19:07

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.9	99.7	97	70-135	
o-Terphenyl	55.1	49.9	110	70-135	

Lab Batch #: 3055801 **Sample:** 591157-040 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 19:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0388	0.0300	129	70-130	
4-Bromofluorobenzene	0.0269	0.0300	90	70-130	

Lab Batch #: 3055931 **Sample:** 591157-040 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 19:27

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.9	107	70-135	
o-Terphenyl	61.1	50.0	122	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: Rattle Snake Reuse Pit

Work Orders : 591157,

Project ID: 212C-MD-01300

Lab Batch #: 3055801 **Sample:** 591157-046 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 19:28

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	70-130	
4-Bromofluorobenzene	0.0260	0.0300	87	70-130	

Lab Batch #: 3055931 **Sample:** 591157-046 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 19:46

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.8	99.8	98	70-135	
o-Terphenyl	58.3	49.9	117	70-135	

Lab Batch #: 3055801 **Sample:** 591157-054 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 19:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0213	0.0300	71	70-130	
4-Bromofluorobenzene	0.0272	0.0300	91	70-130	

Lab Batch #: 3055931 **Sample:** 591157-050 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 20:06

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.8	106	70-135	
o-Terphenyl	49.4	49.9	99	70-135	

Lab Batch #: 3055801 **Sample:** 591157-050 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 20:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0320	0.0300	107	70-130	
4-Bromofluorobenzene	0.0340	0.0300	113	70-130	

* 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: Rattle Snake Reuse Pit

Work Orders : 591157,

Project ID: 212C-MD-01300

Lab Batch #: 3055923 **Sample:** 7658082-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/07/18 19:02

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.8	100	100	70-135	
o-Terphenyl	53.9	50.0	108	70-135	

Lab Batch #: 3055798 **Sample:** 7658000-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/08/18 09:51

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0322	0.0300	107	70-130	
4-Bromofluorobenzene	0.0218	0.0300	73	70-130	

Lab Batch #: 3055931 **Sample:** 7658088-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/08/18 11:36

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.6	100	98	70-135	
o-Terphenyl	52.4	50.0	105	70-135	

Lab Batch #: 3055801 **Sample:** 7658002-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/08/18 18:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0366	0.0300	122	70-130	
4-Bromofluorobenzene	0.0337	0.0300	112	70-130	

Lab Batch #: 3055923 **Sample:** 7658082-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/07/18 19:22

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	100	119	70-135	
o-Terphenyl	57.7	50.0	115	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: Rattle Snake Reuse Pit

Work Orders : 591157,

Project ID: 212C-MD-01300

Lab Batch #: 3055798 **Sample:** 7658000-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/08/18 08:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0272	0.0300	91	70-130	
4-Bromofluorobenzene	0.0256	0.0300	85	70-130	

Lab Batch #: 3055931 **Sample:** 7658088-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/08/18 11:56

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	55.4	50.0	111	70-135	

Lab Batch #: 3055801 **Sample:** 7658002-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/08/18 17:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0269	0.0300	90	70-130	
4-Bromofluorobenzene	0.0227	0.0300	76	70-130	

Lab Batch #: 3055923 **Sample:** 7658082-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/07/18 19:41

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	56.2	50.0	112	70-135	

Lab Batch #: 3055798 **Sample:** 7658000-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/08/18 08:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	70-130	
4-Bromofluorobenzene	0.0247	0.0300	82	70-130	

* 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: Rattle Snake Reuse Pit

Work Orders : 591157,

Project ID: 212C-MD-01300

Lab Batch #: 3055931 **Sample:** 7658088-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/08/18 12:15

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	53.8	50.0	108	70-135	

Lab Batch #: 3055801 **Sample:** 7658002-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/08/18 17:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0255	0.0300	85	70-130	
4-Bromofluorobenzene	0.0264	0.0300	88	70-130	

Lab Batch #: 3055923 **Sample:** 591024-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/07/18 20:20

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	99.7	118	70-135	
o-Terphenyl	48.7	49.9	98	70-135	

Lab Batch #: 3055798 **Sample:** 591031-011 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 08:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	70-130	
4-Bromofluorobenzene	0.0271	0.0300	90	70-130	

Lab Batch #: 3055931 **Sample:** 591031-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 12:55

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	99.9	118	70-135	
o-Terphenyl	53.4	50.0	107	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: Rattle Snake Reuse Pit

Work Orders : 591157,

Project ID: 212C-MD-01300

Lab Batch #: 3055801 **Sample:** 591178-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 17:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0367	0.0300	122	70-130	
4-Bromofluorobenzene	0.0265	0.0300	88	70-130	

Lab Batch #: 3055923 **Sample:** 591024-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/07/18 20:40

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	99.9	116	70-135	
o-Terphenyl	48.9	50.0	98	70-135	

Lab Batch #: 3055798 **Sample:** 591031-011 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 09:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0378	0.0300	126	70-130	
4-Bromofluorobenzene	0.0313	0.0300	104	70-130	

Lab Batch #: 3055931 **Sample:** 591031-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 13:15

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	99.9	118	70-135	
o-Terphenyl	51.1	50.0	102	70-135	

Lab Batch #: 3055801 **Sample:** 591178-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/08/18 17:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0269	0.0300	90	70-130	
4-Bromofluorobenzene	0.0232	0.0300	77	70-130	

* 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: Rattle Snake Reuse Pit

Work Order #: 591157 **Project ID:** 212C-MD-01300

Analyst: ALJ **Date Prepared:** 07/08/2018 **Date Analyzed:** 07/08/2018

Lab Batch ID: 3055798 **Sample:** 7658000-1-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	<0.00200	0.100	0.104	104	0.101	0.0859	85	19	70-130	35	
Toluene	<0.00200	0.100	0.107	107	0.101	0.0893	88	18	70-130	35	
Ethylbenzene	<0.00200	0.100	0.108	108	0.101	0.0885	88	20	70-130	35	
m,p-Xylenes	<0.00401	0.200	0.221	111	0.201	0.181	90	20	70-130	35	
o-Xylene	<0.00200	0.100	0.104	104	0.101	0.0863	85	19	70-130	35	

Analyst: ALJ **Date Prepared:** 07/08/2018 **Date Analyzed:** 07/08/2018

Lab Batch ID: 3055801 **Sample:** 7658002-1-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	<0.00200	0.100	0.0837	84	0.101	0.0829	82	1	70-130	35	
Toluene	<0.00200	0.100	0.0837	84	0.101	0.0837	83	0	70-130	35	
Ethylbenzene	<0.00200	0.100	0.0839	84	0.101	0.0822	81	2	70-130	35	
m,p-Xylenes	<0.00401	0.200	0.173	87	0.201	0.171	85	1	70-130	35	
o-Xylene	<0.00200	0.100	0.0809	81	0.101	0.0847	84	5	70-130	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

BS / BSD Recoveries

Project Name: Rattle Snake Reuse Pit

Work Order #: 591157 **Project ID:** 212C-MD-01300

Analyst: SCM **Date Prepared:** 07/07/2018 **Date Analyzed:** 07/07/2018

Lab Batch ID: 3055789 **Sample:** 7657954-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	250	100	250	252	101	1	90-110	20	

Analyst: SCM **Date Prepared:** 07/07/2018 **Date Analyzed:** 07/07/2018

Lab Batch ID: 3055792 **Sample:** 7657955-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	249	100	250	248	99	0	90-110	20	

Analyst: SCM **Date Prepared:** 07/09/2018 **Date Analyzed:** 07/09/2018

Lab Batch ID: 3055865 **Sample:** 7658034-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	272	109	250	271	108	0	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: Rattle Snake Reuse Pit

Work Order #: 591157 **Project ID:** 212C-MD-01300

Analyst: SCM **Date Prepared:** 07/09/2018 **Date Analyzed:** 07/09/2018

Lab Batch ID: 3055866 **Sample:** 7658035-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	<4.99	250	270	108	250	264	106	2	90-110	20	

Analyst: ARM **Date Prepared:** 07/07/2018 **Date Analyzed:** 07/07/2018

Lab Batch ID: 3055923 **Sample:** 7658082-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod 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
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1000	100	1000	991	99	1	70-135	20	
Diesel Range Organics (DRO)	<15.0	1000	1050	105	1000	1030	103	2	70-135	20	

Analyst: ARM **Date Prepared:** 07/08/2018 **Date Analyzed:** 07/08/2018

Lab Batch ID: 3055931 **Sample:** 7658088-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod 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
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	937	94	1000	1000	100	7	70-135	20	
Diesel Range Organics (DRO)	<15.0	1000	978	98	1000	1040	104	6	70-135	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: Rattle Snake Reuse Pit

Work Order # : 591157 **Project ID:** 212C-MD-01300

Lab Batch ID: 3055798 **QC- Sample ID:** 591031-011 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/08/2018 **Date Prepared:** 07/08/2018 **Analyst:** ALJ

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	<0.00202	0.101	0.0980	97	0.100	0.0845	85	15	70-130	35	
Toluene	<0.00202	0.101	0.0955	95	0.100	0.0816	82	16	70-130	35	
Ethylbenzene	<0.00202	0.101	0.0927	92	0.100	0.0836	84	10	70-130	35	
m,p-Xylenes	<0.00403	0.202	0.192	95	0.201	0.171	85	12	70-130	35	
o-Xylene	<0.00202	0.101	0.0887	88	0.100	0.0788	79	12	70-130	35	

Lab Batch ID: 3055801 **QC- Sample ID:** 591178-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/08/2018 **Date Prepared:** 07/08/2018 **Analyst:** ALJ

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	<0.00200	0.100	0.0959	96	0.101	0.0722	71	28	70-130	35	
Toluene	<0.00200	0.100	0.0759	76	0.101	0.0642	64	17	70-130	35	X
Ethylbenzene	<0.00200	0.100	0.0586	59	0.101	0.0451	45	26	70-130	35	X
m,p-Xylenes	<0.00401	0.200	0.118	59	0.201	0.0902	45	27	70-130	35	X
o-Xylene	<0.00200	0.100	0.0591	59	0.101	0.0415	41	35	70-130	35	X

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: Rattle Snake Reuse Pit

Work Order # : 591157 **Project ID:** 212C-MD-01300

Lab Batch ID: 3055789 **QC- Sample ID:** 591085-017 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/07/2018 **Date Prepared:** 07/07/2018 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	<4.90	245	242	99	245	242	99	0	90-110	20	

Lab Batch ID: 3055789 **QC- Sample ID:** 591157-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/07/2018 **Date Prepared:** 07/07/2018 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	14.7	249	258	98	249	257	97	0	90-110	20	

Lab Batch ID: 3055792 **QC- Sample ID:** 591157-017 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/07/2018 **Date Prepared:** 07/07/2018 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	270	247	487	88	247	486	87	0	90-110	20	X

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: Rattle Snake Reuse Pit

Work Order # : 591157 **Project ID:** 212C-MD-01300

Lab Batch ID: 3055792 **QC- Sample ID:** 591157-025 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/07/2018 **Date Prepared:** 07/07/2018 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	195	246	426	94	246	424	93	0	90-110	20	

Lab Batch ID: 3055865 **QC- Sample ID:** 591545-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/09/2018 **Date Prepared:** 07/09/2018 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	270	250	535	106	250	533	105	0	90-110	20	

Lab Batch ID: 3055865 **QC- Sample ID:** 591545-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/09/2018 **Date Prepared:** 07/09/2018 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	148	249	409	105	249	409	105	0	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: Rattle Snake Reuse Pit

Work Order # : 591157 **Project ID:** 212C-MD-01300

Lab Batch ID: 3055866 **QC- Sample ID:** 591157-043 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/09/2018 **Date Prepared:** 07/09/2018 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	219	247	482	106	247	478	105	1	90-110	20	

Lab Batch ID: 3055866 **QC- Sample ID:** 591564-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/09/2018 **Date Prepared:** 07/09/2018 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	440	247	683	98	247	682	98	0	90-110	20	

Lab Batch ID: 3055923 **QC- Sample ID:** 591024-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/07/2018 **Date Prepared:** 07/07/2018 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod 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
Gasoline Range Hydrocarbons (GRO)	<15.0	997	952	95	999	948	95	0	70-135	20	
Diesel Range Organics (DRO)	<15.0	997	1070	107	999	1060	106	1	70-135	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.

Form 3 - MS / MSD Recoveries

Project Name: Rattle Snake Reuse Pit

Work Order # : 591157 **Project ID:** 212C-MD-01300

Lab Batch ID: 3055931 **QC- Sample ID:** 591031-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/08/2018 **Date Prepared:** 07/08/2018 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod 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
Gasoline Range Hydrocarbons (GRO)	<15.0	999	1010	101	999	989	99	2	70-135	20	
Diesel Range Organics (DRO)	<15.0	999	1050	105	999	1020	102	3	70-135	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, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

591157

Client Name: EOG	**Site Manager:** Clair Gonzales
Project Name: Rattle Snake Reuse Pit	
Project Location: (county, state) Lea County, New Mexico	**Project #:** 212C-MD-01300
Invoice to: EOG	
Receiving Laboratory: Xenco	**Sampler Signature:** Mike Carmona
Comments: Run Deeper samples if benzene exceeds 10 mg/kg or total BTEX exceeds 50 mg/kg. Run deeper samples if TPH exceeds 1,000 mg/kg	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2018 DATE	TIME	MATRIX WATER	SOIL		PRESERVATIVE METHOD HCL	HNO_3	ICE	None		# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
	T-1 (0-1')	7/2/2018			X				X			1	N	X		X												X								
	T-1 (1')	7/2/2018			X				X			1	N															X								
	T-1 (2')	7/2/2018			X				X			1	N															X								
	T-1 (4')	7/2/2018			X				X			1	N															X								
	T-1 (6')	7/2/2018			X				X			1	N															X								
	T-1 (8')	7/2/2018			X				X			1	N															X								
	T-1 (10')	7/2/2018			X				X			1	N															X								
	T-1 (12')	7/2/2018			X				X			1	N															X								
	T-2 (0-1')	7/2/2018			X				X			1	N	X		X												X								
	T-2 (1')	7/2/2018			X				X			1	N															X								

Final 1.000

Page 33 of 39

Relinquished by: Preston Pickett	Date: 7-3-18	Time:
Received by:	Date: 7/3/18	Time: 1941
Relinquished by:	Date:	Time:
Received by:	Date:	Time:
Relinquished by:	Date:	Time:
Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature 3.2 | 0.0 | NE

REMARKS:

- [X] STANDARD
- [ ] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste 401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

591157

Client Name: EOG
Site Manager: Clair Gonzales
Project Name: Rattle Snake Reuse Pit
Project Location: (county, state) Lea County, New Mexico
Project #: 212C-MD-01300
Invoice to: EOG
Receiving Laboratory: Xenco
Sampler Signature: Mike Carmona
Comments: Run Deeper samples if benzene exceeds 10 mg/kg or total BTEX exceeds 50 mg/kg. Run deeper samples if TPH exceeds 1,000 mg/kg

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE (YEAR: 2018)	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: None	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	Hold
	T-2 (2')	7/2/2018			X			X		1	N															X				
	T-2 (4')	7/2/2018			X			X		1	N															X				
	T-2 (6')	7/2/2018			X			X		1	N															X				
	T-2 (8')	7/2/2018			X			X		1	N															X				
	T-3 (0-1')	7/2/2018			X			X		1	N	X		X												X				
	T-3 (1')	7/2/2018			X			X		1	N															X				
	T-3 (2')	7/2/2018			X			X		1	N															X				
	T-3 (4')	7/2/2018			X			X		1	N															X				
	T-3 (6')	7/2/2018			X			X		1	N															X				
	T-3 (8')	7/2/2018			X			X		1	N															X				

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Preston Pitevint	7-3-18		[signature]	7/3/18	0941

LAB USE ONLY
Sample Temperature: 3.2/0.0 RE

REMARKS:
- [x] STANDARD
- [ ] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: ____________

ORIGINAL COPY

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste 401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

591157

Client Name: EOG
Site Manager: Clair Gonzales
Project Name: Rattle Snake Reuse Pit
Project Location: (county, state) Lea County, New Mexico
Project #: 212C-MD-01300
Invoice to: EOG
Receiving Laboratory: Xenco
Sampler Signature: Mike Carmona
Comments: Run Deeper samples if benzene exceeds 10 mg/kg or total BTEX exceeds 50 mg/kg. Run deeper samples if TPH exceeds 1,000 mg/kg

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING (YEAR: 2018) DATE	TIME	MATRIX WATER	SOIL	PRESERVATIVE METHOD HCL	HNO_3	ICE	None	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	Hold
	T-3 (10')	7/2/2018			X			X		1	N															X				
	T-4 (0-1')	7/2/2018			X			X		1	N	X		X												X				
	T-4 (1')	7/2/2018			X			X		1	N															X				
	T-4 (2')	7/2/2018			X			X		1	N															X				
	T-4 (4')	7/2/2018			X			X		1	N															X				
	T-4 (6')	7/2/2018			X			X		1	N															X				
	T-4 (8')	7/2/2018			X			X		1	N															X				
	T-5 (0-1')	7/2/2018			X			X		1	N	X		X												X				
	T-5 (1')	7/2/2018			X			X		1	N															X				
	T-5 (2')	7/2/2018			X			X		1	N															X				

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Preston Portenkirt	7-3-18		[signature]	7/3/18	0941

LAB USE ONLY
Sample Temperature: 3.2/0.0 RS

REMARKS:
- [X] STANDARD
- [ ] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: ____

ORIGINAL COPY

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland, Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

591157

Client Name: EOG	**Site Manager:** Clair Gonzales
Project Name: Rattle Snake Reuse Pit	
Project Location: (county, state) Lea County, New Mexico	**Project #:** 212C-MD-01300
Invoice to: EOG	
Receiving Laboratory: Xenco	**Sampler Signature:** Mike Carmona

Comments: Run Deeper samples if benzene exceeds 10 mg/kg or total BTEX exceeds 50 mg/kg. Run deeper samples if TPH exceeds 1,000 mg/kg

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2018 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B	BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
	T-5 (4')	7/2/2018			X				X			1	N																X								
	T-5 (6')	7/2/2018			X				X			1	N																X								
	T-5 (8')	7/2/2018			X				X			1	N																X								
	T-6 (0-1')	7/2/2018			X				X			1	N	X		X													X								
	T-6 (1')	7/2/2018			X				X			1	N																X								
	T-6 (2')	7/2/2018			X				X			1	N																X								
	T-6 (4')	7/2/2018			X				X			1	N																X								
	T-6 (6')	7/2/2018			X				X			1	N																X								
	T-6 (8')	7/2/2018			X				X			1	N																X								
	T-7 (0-1')	7/2/2018			X				X			1	N	X		X													X								

Relinquished by: Preston Pasteright	Date: 7-3-18	Time:	Received by: [illegible] 7/3/18
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

Time: 0941

LAB USE ONLY

Sample Temperature 3.2/0.0 KS

REMARKS:

- [x] STANDARD
- [ ] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY

Final 1.000

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

59157

Client Name: EOG	**Site Manager:** Clair Gonzales
Project Name: Rattle Snake Reuse Pit	
Project Location: (county, state) Lea County, New Mexico	**Project #:** 212C-MD-01300
Invoice to: EOG	
Receiving Laboratory: Xenco	**Sampler Signature:** Mike Carmona

Comments: Run Deeper samples if benzene exceeds 10 mg/kg or total BTEX exceeds 50 mg/kg. Run deeper samples if TPH exceeds 1,000 mg/kg

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2018 DATE	TIME	MATRIX WATER	SOIL		PRESERVATIVE METHOD HCL	HNO_3	ICE	None		# CONTAINERS	FILTERED (Y/N)	BTEX 8021B	BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
	T-7 (1')	7/2/2018			X				X			1	N																X							
	T-7 (2')	7/2/2018			X				X			1	N																X							
	T-7 (4')	7/2/2018			X				X			1	N																X							
	T-7 (6')	7/2/2018			X				X			1	N																X							
	T-7 (8')	7/2/2018			X				X			1	N																X							
	AH-8 (0-1')	7/2/2018			X				X			1	N	X		X													X							
	AH-8 (1'-1.5')	7/2/2018			X				X			1	N																X							
	AH-8 (2'-2.5')	7/2/2018			X				X			1	N																X							
	AH-8 (3'-3.5')	7/2/2018			X				X			1	N																X							
	AH-9 (0-1')	7/2/2018			X				X			1	N	X		X													X							

Relinquished by: Preston Poiteint	Date: 7-3-18	Time:	Received by: [signature] 7/3/18 0941
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

LAB USE ONLY

Sample Temperature 3.2/0.0 NE

REMARKS:

- ☒ STANDARD
- ☐ RUSH: Same Day 24 hr 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Final 1.000

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste 401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

591157

Client Name:	EOG	Site Manager:	Clair Gonzales
Project Name:	Rattle Snake Reuse Pit		
Project Location: (county, state)	Lea County, New Mexico	Project #:	212C-MD-01300
Invoice to:	EOG		
Receiving Laboratory:	Xenco	Sampler Signature:	Mike Carmona

Comments: Run Deeper samples if benzene exceeds 10 mg/kg or total BTEX exceeds 50 mg/kg. Run deeper samples if TPH exceeds 1,000 mg/kg

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE (YEAR: 2018)	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE HCL	HNO_3	ICE	None	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	Hold
	AH-9 (1'-1.5')	7/2/2018			X			X		1	N															X				
	AH-9 (2'-2.5')	7/2/2018			X			X		1	N															X				
	AH-9 (3'-3.5')	7/2/2018			X			X		1	N															X				
	AH-10 (0-1')	7/2/2018			X			X		1	N	X		X												X				
	AH-10 (1'-1.5')	7/2/2018			X			X		1	N															X				
	AH-10 (2'-2.5')	7/2/2018			X			X		1	N															X				
	AH-10 (3'-3.5')	7/2/2018			X			X		1	N															X				

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Preston Poitevint	7-3-18		[signature]	7/3/18	0901

LAB USE ONLY
Sample Temperature: 3.2/0.0 KB

REMARKS:
- [x] STANDARD
- [ ] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: ______

ORIGINAL COPY

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 07/03/2018 09:41:00 AM

Work Order #: 591157

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)?	3.2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water 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: Katie Lowe Date: 07/03/2018

Checklist reviewed by: Kelsey Brooks Date: 07/05/2018

Analytical Report 592594

for

Tetra Tech- Midland

Project Manager: Clair Gonzales

EOG-Rattlesnake Reuse Pit

212C-MD-01300

20-JUL-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-26), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-15)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

20-JUL-18

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

Reference: XENCO Report No(s): **592594**
EOG-Rattlesnake Reuse Pit
Project Address: Lea County, New Mexico

Clair Gonzales:

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) 592594. 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. 592594 will be filed for 45 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 592594

Tetra Tech- Midland, Midland, TX

EOG-Rattlesnake Reuse Pit

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T-11 (0-1')	S	07-17-18 00:00		592594-001
T-11 (1')	S	07-17-18 00:00		592594-002
T-11 (2')	S	07-17-18 00:00		592594-003
T-11 (4')	S	07-17-18 00:00		592594-004
T-11 (6')	S	07-17-18 00:00		592594-005
T-11 (8')	S	07-17-18 00:00		592594-006
T-11 (10')	S	07-17-18 00:00		592594-007
T-12 (0-1')	S	07-17-18 00:00		592594-008
T-12 (1')	S	07-17-18 00:00		592594-009
T-12 (2')	S	07-17-18 00:00		592594-010
T-12 (4')	S	07-17-18 00:00		592594-011
T-12 (6')	S	07-17-18 00:00		592594-012
T-12 (8')	S	07-17-18 00:00		592594-013
T-12 (10')	S	07-17-18 00:00		592594-014
T-13 (0-1')	S	07-17-18 00:00		592594-015
T-13 (1)	S	07-17-18 00:00		592594-016
T-13(2')	S	07-17-18 00:00		592594-017
T-13 (4')	S	07-17-18 00:00		592594-018
T-13 (6')	S	07-17-18 00:00		592594-019
T-13 (8')	S	07-17-18 00:00		592594-020
T-13 (10')	S	07-17-18 00:00		592594-021

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3056801 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 592594

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Rattlesnake Reuse Pit

Project Id: 212C-MD-01300
Contact: Clair Gonzales
Project Location: Lea County, New Mexico

Date Received in Lab: Tue Jul-17-18 04:48 pm
Report Date: 20-JUL-18
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	592594-001		592594-002		592594-003		592594-004		592594-005		592594-006	
	Field Id:	T-11 (0-1')		T-11 (1')		T-11 (2')		T-11 (4')		T-11 (6')		T-11 (8')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-17-18 00:00		Jul-17-18 00:00		Jul-17-18 00:00		Jul-17-18 00:00		Jul-17-18 00:00		Jul-17-18 00:00	
BTEX by EPA 8021B	***Extracted:***	Jul-17-18 18:00											
	Analyzed:	Jul-18-18 09:53											
	Units/RL:	mg/kg	RL										
Benzene		<0.00200	0.00200										
Toluene		<0.00200	0.00200										
Ethylbenzene		<0.00200	0.00200										
m,p-Xylenes		<0.00399	0.00399										
o-Xylene		<0.00200	0.00200										
Total Xylenes		<0.00200	0.00200										
Total BTEX		<0.00200	0.00200										
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jul-18-18 16:00		Jul-18-18 16:00		Jul-18-18 16:00		Jul-19-18 16:00		Jul-19-18 16:00		Jul-19-18 16:00	
	Analyzed:	Jul-18-18 20:01		Jul-18-18 20:06		Jul-18-18 20:12		Jul-19-18 17:48		Jul-19-18 18:04		Jul-19-18 18:09	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		3120	25.0	2020	25.1	960	4.98	118	5.04	<4.96	4.96	12.6	5.01
TPH By SW8015 Mod	***Extracted:***	Jul-19-18 12:00											
	Analyzed:	Jul-19-18 15:49											
	Units/RL:	mg/kg	RL										
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0										
Diesel Range Organics (DRO)		<15.0	15.0										
Oil Range Hydrocarbons (ORO)		<15.0	15.0										
Total TPH		<15.0	15.0										

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 592594

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Rattlesnake Reuse Pit

Project Id: 212C-MD-01300
Contact: Clair Gonzales
Project Location: Lea County, New Mexico

Date Received in Lab: Tue Jul-17-18 04:48 pm
Report Date: 20-JUL-18
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	592594-007		592594-008		592594-009		592594-010		592594-011		592594-012	
	Field Id:	T-11 (10')		T-12 (0-1')		T-12 (1')		T-12 (2')		T-12 (4')		T-12 (6')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-17-18 00:00		Jul-17-18 00:00		Jul-17-18 00:00		Jul-17-18 00:00		Jul-17-18 00:00		Jul-17-18 00:00	
BTEX by EPA 8021B	***Extracted:***			Jul-17-18 18:00									
	Analyzed:			Jul-18-18 10:11									
	Units/RL:			mg/kg	RL								
Benzene				<0.00201	0.00201								
Toluene				<0.00201	0.00201								
Ethylbenzene				<0.00201	0.00201								
m,p-Xylenes				<0.00402	0.00402								
o-Xylene				<0.00201	0.00201								
Total Xylenes				<0.00201	0.00201								
Total BTEX				<0.00201	0.00201								
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jul-19-18 16:00		Jul-19-18 16:00		Jul-19-18 16:00		Jul-19-18 16:00		Jul-19-18 16:00		Jul-19-18 16:00	
	Analyzed:	Jul-19-18 18:15		Jul-19-18 18:20		Jul-19-18 18:36		Jul-19-18 18:42		Jul-19-18 18:47		Jul-19-18 18:52	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		49.0	5.05	1260	25.1	826	4.95	50.2	5.01	5.83	5.00	24.7	4.96
TPH By SW8015 Mod	***Extracted:***			Jul-19-18 12:00									
	Analyzed:			Jul-19-18 16:09									
	Units/RL:			mg/kg	RL								
Gasoline Range Hydrocarbons (GRO)				<15.0	15.0								
Diesel Range Organics (DRO)				<15.0	15.0								
Oil Range Hydrocarbons (ORO)				<15.0	15.0								
Total TPH				<15.0	15.0								

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 592594

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Rattlesnake Reuse Pit

Project Id: 212C-MD-01300
Contact: Clair Gonzales
Project Location: Lea County, New Mexico

Date Received in Lab: Tue Jul-17-18 04:48 pm
Report Date: 20-JUL-18
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	592594-013		592594-014		592594-015		592594-016		592594-017		592594-018	
	Field Id:	T-12 (8')		T-12 (10')		T-13 (0-1')		T-13 (1)		T-13(2')		T-13 (4')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-17-18 00:00		Jul-17-18 00:00		Jul-17-18 00:00		Jul-17-18 00:00		Jul-17-18 00:00		Jul-17-18 00:00	
BTEX by EPA 8021B	***Extracted:***					Jul-17-18 18:00							
	Analyzed:					Jul-18-18 10:29							
	Units/RL:					mg/kg	RL						
Benzene						<0.00202	0.00202						
Toluene						<0.00202	0.00202						
Ethylbenzene						<0.00202	0.00202						
m,p-Xylenes						<0.00403	0.00403						
o-Xylene						<0.00202	0.00202						
Total Xylenes						<0.00202	0.00202						
Total BTEX						<0.00202	0.00202						
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jul-19-18 16:00		Jul-19-18 16:00		Jul-19-18 16:00		Jul-19-18 16:00		Jul-19-18 16:00		Jul-19-18 16:00	
	Analyzed:	Jul-19-18 18:58		Jul-19-18 19:03		Jul-19-18 19:19		Jul-19-18 19:25		Jul-19-18 19:41		Jul-19-18 19:46	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		24.8	5.03	12.4	4.95	261	4.99	28.2	4.97	10.7	5.04	17.0	5.02
TPH By SW8015 Mod	***Extracted:***					Jul-19-18 12:00							
	Analyzed:					Jul-19-18 16:29							
	Units/RL:					mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)						<14.9	14.9						
Diesel Range Organics (DRO)						<14.9	14.9						
Oil Range Hydrocarbons (ORO)						<14.9	14.9						
Total TPH						<14.9	14.9						

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 592594

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Rattlesnake Reuse Pit

Project Id: 212C-MD-01300
Contact: Clair Gonzales
Project Location: Lea County, New Mexico

Date Received in Lab: Tue Jul-17-18 04:48 pm
Report Date: 20-JUL-18
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	592594-019		592594-020		592594-021			
	Field Id:	T-13 (6')		T-13 (8')		T-13 (10')			
	Depth:								
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Jul-17-18 00:00		Jul-17-18 00:00		Jul-17-18 00:00			
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jul-19-18 16:00		Jul-19-18 16:00		Jul-19-18 16:00			
	Analyzed:	Jul-19-18 19:52		Jul-19-18 19:57		Jul-19-18 20:03			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		12.1	5.02	<5.00	5.00	<5.01	5.01		

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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ 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: EOG-Rattlesnake Reuse Pit

Work Orders : 592594,

Project ID: 212C-MD-01300

Lab Batch #: 3056801 **Sample:** 592594-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/18/18 09:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0259	0.0300	86	70-130	
4-Bromofluorobenzene	0.0284	0.0300	95	70-130	

Lab Batch #: 3056801 **Sample:** 592594-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/18/18 10:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0241	0.0300	80	70-130	
4-Bromofluorobenzene	0.0244	0.0300	81	70-130	

Lab Batch #: 3056801 **Sample:** 592594-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/18/18 10:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0221	0.0300	74	70-130	
4-Bromofluorobenzene	0.0254	0.0300	85	70-130	

Lab Batch #: 3057120 **Sample:** 592594-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/19/18 15:49

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.0	99.8	98	70-135	
o-Terphenyl	51.0	49.9	102	70-135	

Lab Batch #: 3057120 **Sample:** 592594-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/19/18 16:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.0	99.9	97	70-135	
o-Terphenyl	49.9	50.0	100	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: EOG-Rattlesnake Reuse Pit

Work Orders : 592594,

Project ID: 212C-MD-01300

Lab Batch #: 3057120 **Sample:** 592594-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/19/18 16:29

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.0	99.6	98	70-135	
o-Terphenyl	50.7	49.8	102	70-135	

Lab Batch #: 3056801 **Sample:** 7658578-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/18/18 03:39

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	70-130	
4-Bromofluorobenzene	0.0306	0.0300	102	70-130	

Lab Batch #: 3057120 **Sample:** 7658750-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/19/18 12:49

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.9	100	95	70-135	
o-Terphenyl	50.3	50.0	101	70-135	

Lab Batch #: 3056801 **Sample:** 7658578-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/18/18 02:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	70-130	
4-Bromofluorobenzene	0.0313	0.0300	104	70-130	

Lab Batch #: 3057120 **Sample:** 7658750-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/19/18 13:08

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	56.5	50.0	113	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: EOG-Rattlesnake Reuse Pit

Work Orders : 592594,

Project ID: 212C-MD-01300

Lab Batch #: 3056801 **Sample:** 7658578-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/18/18 02:28

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	70-130	
4-Bromofluorobenzene	0.0303	0.0300	101	70-130	

Lab Batch #: 3057120 **Sample:** 7658750-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/19/18 13:28

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	100	123	70-135	
o-Terphenyl	57.1	50.0	114	70-135	

Lab Batch #: 3056801 **Sample:** 592472-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/18/18 02:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	70-130	
4-Bromofluorobenzene	0.0220	0.0300	73	70-130	

Lab Batch #: 3057120 **Sample:** 592471-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/19/18 14:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	99.8	124	70-135	
o-Terphenyl	55.9	49.9	112	70-135	

Lab Batch #: 3056801 **Sample:** 592472-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/18/18 03:04

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	70-130	
4-Bromofluorobenzene	0.0266	0.0300	89	70-130	

* 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: EOG-Rattlesnake Reuse Pit

Work Orders : 592594,
Project ID: 212C-MD-01300
Lab Batch #: 3057120 **Sample:** 592471-001 SD / MSD **Batch:** 1 **Matrix:** Soil
Units: mg/kg **Date Analyzed:** 07/19/18 14:29

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	59.2	50.0	118	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: EOG-Rattlesnake Reuse Pit

Work Order #: 592594 **Project ID:** 212C-MD-01300

Analyst: ALJ **Date Prepared:** 07/17/2018 **Date Analyzed:** 07/18/2018

Lab Batch ID: 3056801 **Sample:** 7658578-1-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	<0.00200	0.0998	0.0944	95	0.100	0.110	110	15	70-130	35	
Toluene	<0.00200	0.0998	0.0972	97	0.100	0.106	106	9	70-130	35	
Ethylbenzene	<0.00200	0.0998	0.0942	94	0.100	0.103	103	9	70-130	35	
m,p-Xylenes	<0.00399	0.200	0.195	98	0.201	0.212	105	8	70-130	35	
o-Xylene	<0.00200	0.0998	0.0908	91	0.100	0.0994	99	9	70-130	35	

Analyst: SCM **Date Prepared:** 07/18/2018 **Date Analyzed:** 07/18/2018

Lab Batch ID: 3056961 **Sample:** 7658662-1-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	251	100	250	250	100	0	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: EOG-Rattlesnake Reuse Pit

Work Order #: 592594 **Project ID:** 212C-MD-01300

Analyst: SCM **Date Prepared:** 07/19/2018 **Date Analyzed:** 07/19/2018

Lab Batch ID: 3057083 **Sample:** 7658719-1-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	252	101	250	252	101	0	90-110	20	

Analyst: ARM **Date Prepared:** 07/19/2018 **Date Analyzed:** 07/19/2018

Lab Batch ID: 3057120 **Sample:** 7658750-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod 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
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	958	96	1000	969	97	1	70-135	20	
Diesel Range Organics (DRO)	<15.0	1000	986	99	1000	1000	100	1	70-135	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: EOG-Rattlesnake Reuse Pit

Work Order # : 592594 **Project ID:** 212C-MD-01300

Lab Batch ID: 3056801 **QC- Sample ID:** 592472-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/18/2018 **Date Prepared:** 07/17/2018 **Analyst:** ALJ

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	<0.00199	0.0996	0.0740	74	0.100	0.0723	72	2	70-130	35	
Toluene	<0.00199	0.0996	0.0693	70	0.100	0.0777	78	11	70-130	35	
Ethylbenzene	<0.00199	0.0996	0.0660	66	0.100	0.0651	65	1	70-130	35	X
m,p-Xylenes	<0.00398	0.199	0.136	68	0.200	0.136	68	0	70-130	35	X
o-Xylene	<0.00199	0.0996	0.0642	64	0.100	0.0658	66	2	70-130	35	X

Lab Batch ID: 3056961 **QC- Sample ID:** 592018-006 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/18/2018 **Date Prepared:** 07/18/2018 **Analyst:** SCM

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	282	250	532	100	250	522	96	2	90-110	20	

Lab Batch ID: 3056961 **QC- Sample ID:** 592472-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/18/2018 **Date Prepared:** 07/18/2018 **Analyst:** SCM

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	83.3	248	334	101	248	334	101	0	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: EOG-Rattlesnake Reuse Pit

Work Order # : 592594 **Project ID:** 212C-MD-01300

Lab Batch ID: 3057083 **QC- Sample ID:** 592594-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/19/2018 **Date Prepared:** 07/19/2018 **Analyst:** SCM

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	118	252	360	96	252	361	96	0	90-110	20	

Lab Batch ID: 3057083 **QC- Sample ID:** 592594-014 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/19/2018 **Date Prepared:** 07/19/2018 **Analyst:** SCM

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	12.4	248	253	97	248	259	99	2	90-110	20	

Lab Batch ID: 3057120 **QC- Sample ID:** 592471-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/19/2018 **Date Prepared:** 07/19/2018 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod 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
Gasoline Range Hydrocarbons (GRO)	<15.0	998	912	91	1000	923	92	1	70-135	20	
Diesel Range Organics (DRO)	<15.0	998	941	94	1000	957	96	2	70-135	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.

Analysis Request of Chain of Custody Record 592594 Page 1 of 2

Tetra Tech. Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: EOG	**Site Manager:** Clair Gonzales
Project Name: Rattlesnake Reuse Pit	
Project Location: (county, state) Lea County, New Mexico	**Project #:** 212C-MD-01300
Invoice to:	
Receiving Laboratory: Xenco Labs	**Sampler Signature:** Mike Carmona

Comments: Run deeper samples if benzene exceeds 10 mg/kg or total BTEX exceeds 50 mg/kg. Run deeper samples if TPH exceeds 1,000 mg/kg.

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2018 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None		# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
	T-11 (0-1')	7/17/2018			X				X			1	N	X		X												X								
	T-11 (1')	7/17/2018			X				X			1	N															X								
	T-11 (2')	7/17/2018			X				X			1	N															X								
	T-11 (4')	7/17/2018			X				X			1	N															X								
	T-11 (6')	7/17/2018			X				X			1	N															X								
	T-11 (8')	7/17/2018			X				X			1	N															X								
	T-11 (10')	7/17/2018			X				X			1	N															X								
	T-12 (0-1')	7/17/2018			X				X			1	N	X		X												X								
	T-12 (1')	7/17/2018			X				X			1	N															X								
	T-12 (2')	7/17/2018			X				X			1	N															X								

Relinquished by: Matthew Castrejon	Date: 7-17-18	Time: 1646	Received by: [signature] Date: 7/17/18 Time: 1646
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

LAB USE ONLY
Sample Temperature 4.2/0.0 NB

REMARKS:
- [X] STANDARD
- [ ] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Final 1.000

Page 18 of 20

Analysis Request of Chain of Custody Record

597594

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: EOG	**Site Manager:** Clair Gonzales
Project Name: Rattlesnake Reuse Pit	
Project Location: (county, state) Lea County, New Mexico	**Project #:** 212C-MD-01300
Invoice to:	
Receiving Laboratory: Xenco Labs	**Sampler Signature:** Mike Carmona

Comments: Run deeper samples if benzene exceeds 10 mg/kg or total BTEX exceeds 50 mg/kg. Run deeper samples if TPH exceeds 1,000 mg/kg.

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None		# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
	T-12 (4')	7/17/2018			X				X			1	N															X							
	T-12 (6')	7/17/2018			X				X			1	N															X							
	T-12 (8')	7/17/2018			X				X			1	N															X							
	T-12 (10')	7/17/2018			X				X			1	N															X							
	T-13 (0-1')	7/17/2018			X				X			1	N	X		X												X							
	T-13 (1')	7/17/2018			X				X			1	N															X							
	T-13 (2')	7/17/2018			X				X			1	N															X							
	T-13 (4')	7/17/2018			X				X			1	N															X							
	T-13 (6')	7/17/2018			X				X			1	N															X							
	T-13 (8')	7/17/2018			X				X			1	N															X							
	T-13 (10')	7/17/2018			X				X			1	N															X							

Final 1.000

Relinquished by: Matthew Gustafson	Date: 7-17-18	Time: 1644	Received by: [signature] Date: 7/17/18 Time: 1644
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

LAB USE ONLY

Sample Temperature 4.7/0.0 RS

REMARKS:

- [X] STANDARD
- [ ] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 07/17/2018 04:48:00 PM

Work Order #: 592594

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)?	4.2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water 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: Brianna Teel Date: 07/17/2018

Brianna Teel

Checklist reviewed by: Kelsey Brooks Date: 07/19/2018

Kelsey Brooks