		SIT	E INFORMA									
	F	Report Type	e: Work Pla	n <u>1</u> R	P-5113							
General Site Info	ormation:											
Site:		Rattlesnake Re	euse Pit									
Company:		EOG Resource	es, Inc.									
Section, Townsh	nip and Range	Unit M	Sec. 22	T 26S	R 33E							
Lease Number:	· · · ·	1RF-12										
County:		Lea County										
GPS:			32.0227º N		103.5686º W							
Surface Owner:		Fee										
Mineral Owner:		1										
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:												
		2/22/2010										
Date Released:		6/22/2018										
Type Release:	• • •	Produced Wate	r <u> </u>									
Source of Contam	nination:	Tank Overflow										
Fluid Released:	<del>.</del>	1486 bbls										
Fluids Recovered		510 bbls										
Official Commun	nication:											
Name:	Jamon Hohensee				Clair Gonzales							
Company:	EOG Resources				Tetra Tech							
Address:	5509 Champions D	rive	1		901 West Wall St.							
					Suite 100							
City:	Midland, TX 79706		+		Midland, Texas							
City. Phone number:			ł		,							
	(432) 556-8074				(432) 687-8123							
Fax:												
Email:	jamon_hohensee	@eogresources.	<u>com</u>		clair.gonzales@tetratech.com							
Ranking Criteria												
Depth to Groundw	vater:		Ranking Score	ſ	Site Data							
<50 ft			20									
50-99 ft			10	l								
>100 ft.			0		110'							
			·									
WellHead Protection			Ranking Score		Site Data	_						
	000 ft., Private <200 ft		20									
Water Source >1,0	000 ft., Private >200 ft	<u>t.</u>	0		0							
Surface Body of W	Votor		Ranking Score	·	Site Data							
<200 ft.	later.		20		Sile Dala							
200 ft - 1,000 ft.			10									
>1,000 ft.			0		0							
Тс	otal Ranking Score	):	0									

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



August 30, 2018

Ms. Olivia Yu Environmental Engineer Specialist Oil Conservation Division, District 1 1625 North French Drive Hobbs, New Mexico, 88240 **REVIEWED** By Olivia Yu at 10:36 am, Oct 07, 2018

### 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 32.0227°, W 103.5686°. 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.



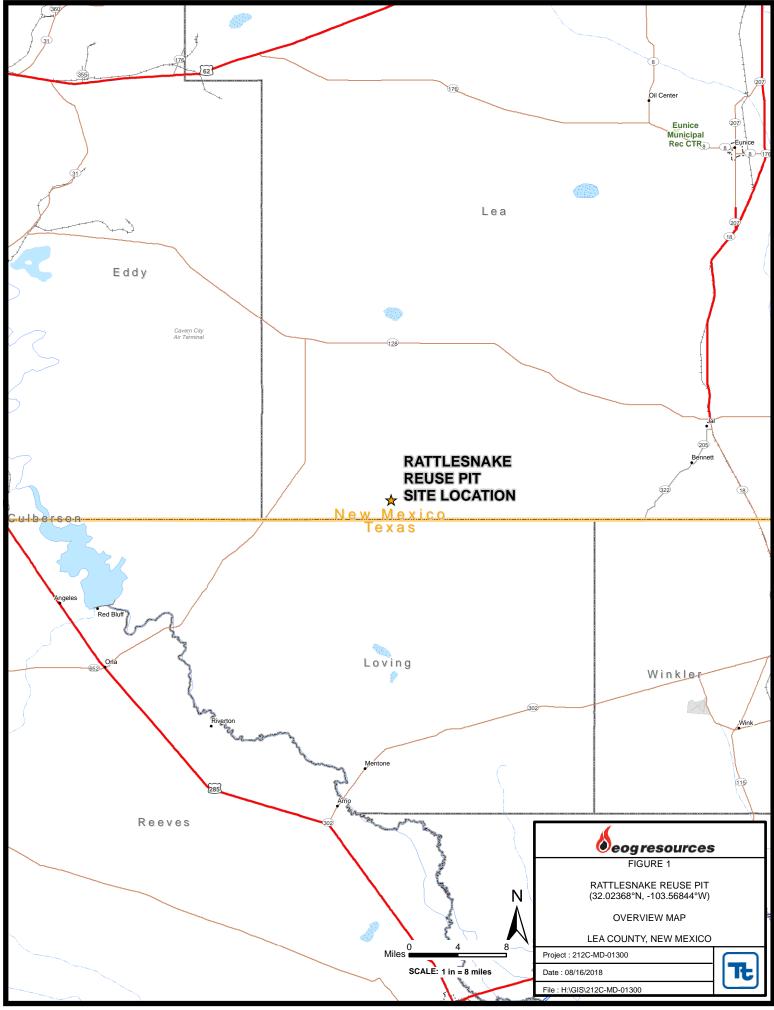
The proposed excavation depths may not be reached due to wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safely concerns for onsite personnel. As such, EOG will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

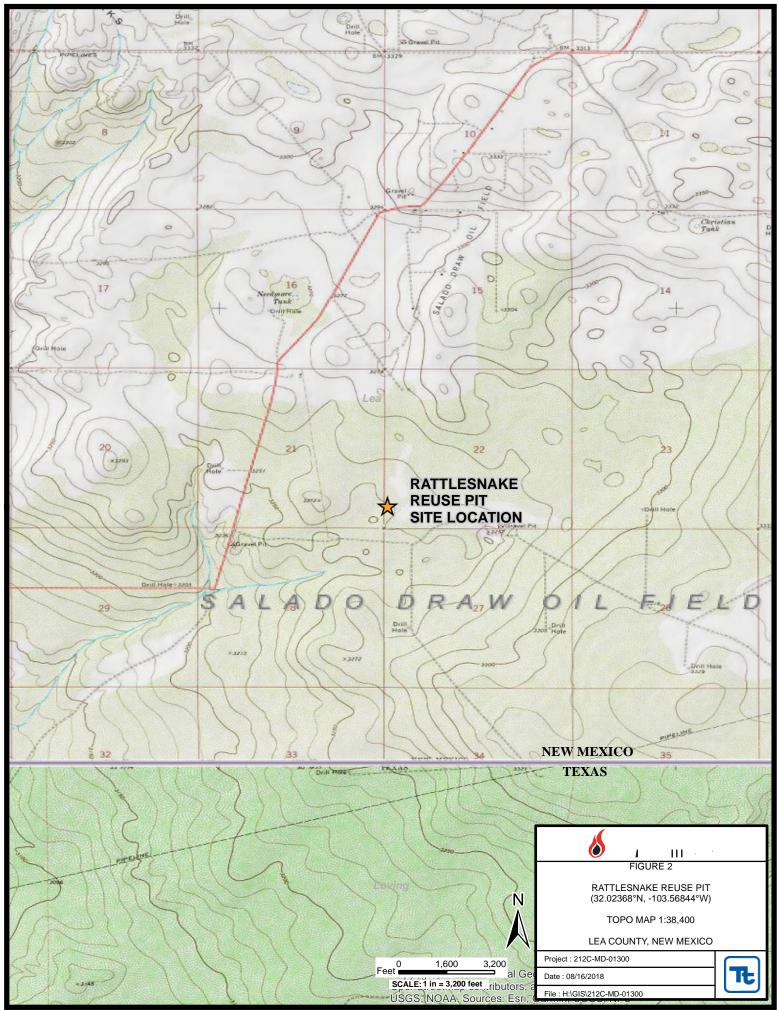
Respectfully submitted, TETRA TECH

Clair Gonzales, Project Manager

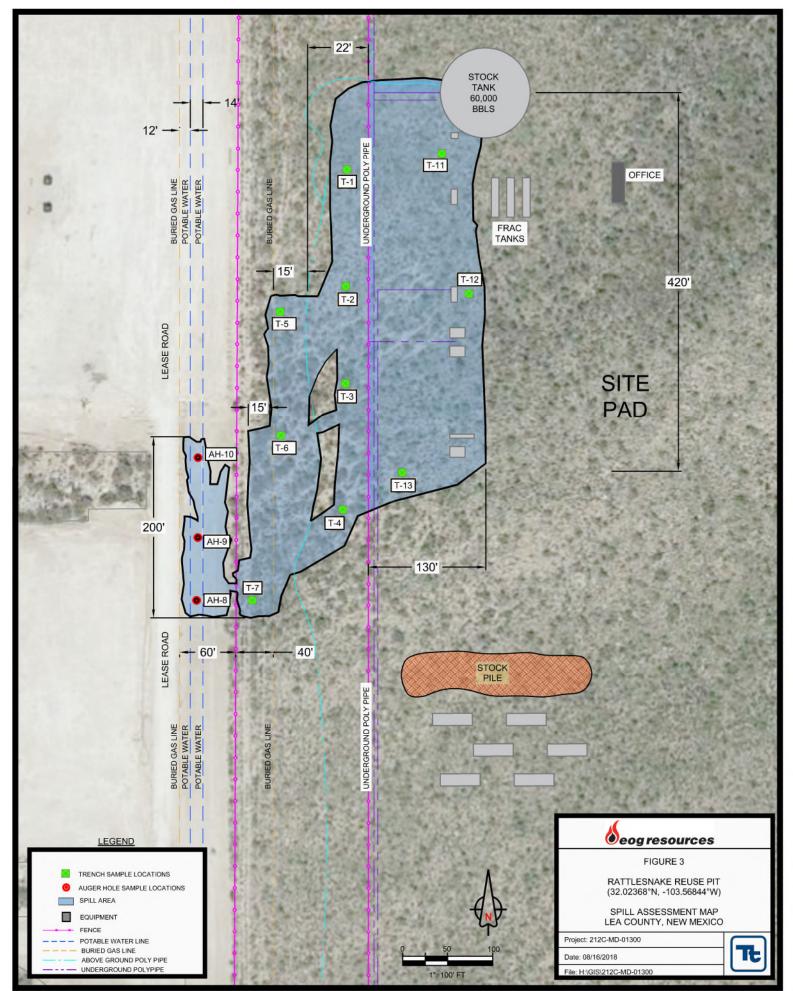
# Figures



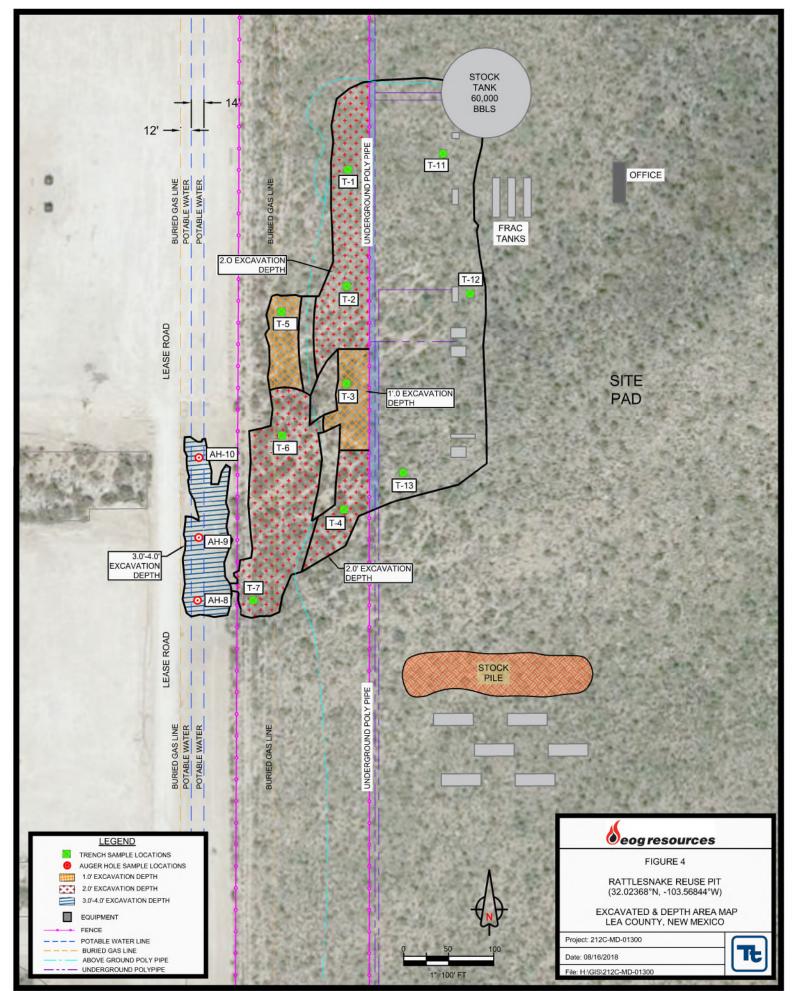
Mapped By: Misti Morgan



Mapped By: Misti Morgan



Drawn By: MISTI MORGAN



Drawn By: MISTI MORGAN

# Tables

	Sample	Sample	BEB	Soil	Status		TPH (m	na/ka)		Benzene	Toluene	Ethlybenzene			Chloride
Sample ID	Date	Depth (ft)	Sample Depth (in)			0.00	DRO		Tetel	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
T-1	7/2/2018	0-1	-	In-Situ X	Removed	GRO <14.9	537	ORO <14.9	Total 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			-	-	-	-	-	-	-	-	133
		10	_	X		-	-		-		-	-	-	-	289
	"	10	-	X		-	-	-	-	-	-	-	-	-	418
T-2	7/2/2018	0-1	-	Х		<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
	n	4	-	X		-	-	-	-	-	-	-	-	-	34.5
	"	6	-	х		-	-	-	-	-	-	-	-	-	24.5
	"	8	-	Х		-	-	-	-	-	-	-	-	-	72.4
T-3	7/2/2018	0-1	-	Х		<15.0	<15.0	<15.0	<15.0	< 0.00199	< 0.00199	<0.00199	< 0.00199	< 0.00199	2,130
	"	1	-	Х		-	-	-	-	-	-	-	-	-	2,000
	"	2	-	Х		-	-	-	-	-	-	-	-	-	270
	"	4	-	Х		-	-	-	-	-	-	-	-	-	33.3
	"	6	-	Х		-	-	-	-	-	-	-	-	-	219
	"	8	-	Х		-	-	-	-	-	-	-	-	-	7.59
	п	10	-	Х		-	-	-	-	-	-	-	-	-	<4.95
T-4	7/2/2018	0-1	-	Х		<15.0	26.5	<15.0	26.5	< 0.00200	< 0.00200	<0.00200	< 0.00200	< 0.00200	2,700
	"	1	-	Х		-	-	-	-	-	-	-	-	-	3,580
	"	2	-	Х		-	-	-	-	-	-	-	-	-	3,290
	"	4	-	Х		-	-	-	-	-	-	-	-	-	195
	"	6	-	Х		-	-	-	-	-	-	-	-	-	117
	n	8	-	Х		-	-	-	-	-	-	-	-	-	10.7
T-5	7/2/2018	0-1	-	Х		<15.0	168	<15.0	168	< 0.00200	< 0.00200	<0.00200	< 0.00200	< 0.00200	1,770
	"	1	-	Х		-	-	-	-	-	-	-	-	-	2,020
	"	2	-	х		-	-	-	-	-	-	-	-	-	146
	"	4	-	Х		-	-	-	-	-	-	-	-	-	48.2
	"	6	-	Х		-	-	-	-	-	-	-	-	-	21.1
	n	8	-	Х		-	-	-	-	-	-	-	-	-	15.7
T-6	7/2/2018	0-1	-	Х		<15.0	404	<15.0	404	<0.00199	< 0.00199	<0.00199	< 0.00199	< 0.00199	5,290
	"	1	-	Х		-	-	-	-	-	-	-	-	-	4,140
	"	2	-	Х		-	-	-	-	-	-	-	-	-	1,240
	"	4	-	х		-	-	-	-	-	-	-	-	-	8.37
	"	6	-	Х		-	-	-	-	-	-	-	-	-	1,010
	n	8	-	Х		-	-	-	-	-	-	-	-	-	11.5
T-7	7/2/2018	0-1	-	Х		<15.0	538	<15.0	538	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	4,850
	"	1	-	Х		-	-	-	-	-	-	-	-	-	5,060
	"	2	-	Х		-	-	-	-	-	-	-	-	-	3,490
	"	4	-	х		-	-	-	-	-	-	-	-	-	219
	"	6	-	Х		-	-	-	-	-	-	-	-	-	54.1
		8	-	Х	1	-	-	-	-	-	-	-	-	-	427

Semale ID	Sample	Sample	BEB	Soil S	Status		TPH (mg/kg)		Benzene	Toluene	Ethlybenzene	Xylene	Total BTEX	Chlorid	
Sample ID	Date	Depth (ft)	Sample Depth (in)	In-Situ	Removed	GRO         DRO         ORO         Total           <15.0         653         <15.0         653         <0.		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg		
AH-8	7/2/2018	0-1	-	Х		<15.0	653	<15.0	653	<0.00200	<0.00200	<0.00200	< 0.00200	< 0.00200	4,07
	"	1-1.5	-	Х		-	-	-	-	-	-	-	-	-	4,59
	"	2-2.5	-	Х		-	-	-	-	-	-	-	-	-	5,47
AH-9	7/2/2018	0-1	-	Х		224	13,000	89.8	13,300	< 0.00200	< 0.00200	0.00746	0.0921	0.0996	3,14
	"	1-1.5	-	Х		<15.0	237	<15.0	237	-	-	-	-	-	4,40
	"	2-2.5	-	Х		-	-	-	-	-	-	-	-	-	7,25
	"	3-3.5	-	Х		-	-	-	-	-	-	-	-	-	4,96
AH-10	7/2/2018	0-1	-	Х		104	8,530	147	8,780	< 0.00199	< 0.00199	0.00346	0.0674	0.0709	3,34
	"	1-1.5	-	Х		<15.0	143	<15.0	143	-	-	-	-	-	4,85
	"	2-2.5	-	Х		-	-	-	-	-	-	-	-	-	6,14
	"	3-3.5	-	Х		-	-	-	-	-	-	-	-	-	4,00
T-11	7/17/2018	0-1	-	Х		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	3,12
	"	1	-	Х		-	-	-	-	-	-	-	-	-	2,02
	"	2	-	Х		-	-	-	-	-	-	-	-	-	960
	"	4	-	Х		-	-	-	-	-	-	-	-	-	118
	"	6	-	Х		-	-	-	-	-	-	-	-	-	<4.9
	"	8	-	Х		-	-	-	-	-	-	-	-	-	12.
	"	10	-	Х		-	-	-	-	-	-	-	-	-	49
T-12	7/17/2018	0-1	-	Х		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	1,26
	"	1	-	Х		-	-	-	-	-	-	-	-	-	826
	"	2	-	Х		-	-	-	-	-	-	-	-	-	50.
	"	4	-	Х		-	-	-	-	-	-	-	-	-	5.8
	"	6	-	Х		-	-	-	-	-	-	-	-	-	24.
	"	8	-	Х		-	-	-	-	-	-	-	-	-	24.
	"	10	-	Х		-	-	-	-	-	-	-	-	-	12.
T-13	7/17/2018	0-1	-	Х		<14.9	<14.9	<14.9	<14.9	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	26
	"	1	-	Х		-	-	-	-	-	-	-	-	-	28.
	"	2	-	Х		-	-	-	-	-	-	-	-	-	10.
	"	4	-	Х		-	-	-	-	-	-	-	-	-	17
	"	6	-	Х		-	-	-	-	-	-	-	-	-	12.
	"	8	-	Х		-	-	-	-	-	-	-	-	-	<5.0
	"	10	-	Х		-	-	-	-	-	-	-	-	-	<5.0
(-)	Not Analyzed Proposed Exe		oths												

# Photos



View North – Area of T-1



View South – Areas of T-2 and T-3



View East – Area of T-4



View East – Area of T-5



View South – Area of T-6



View North – Area of T-7



View North – Areas of AH-8 and AH-9



View North – Area of AH-10



View North – Area of T-11



View North – Area of T-12



View North – Area of T-13

# Appendix A

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

1220 S. St. Francis Dr., Santa Fe, NM 87505 Santa I	Fe, NM 87505							
Release Notification	on and Corrective Action							
	<b>OPERATOR</b> Initial Report I 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							
LOCATIO	DN OF RELEASE							
Unit LetterSectionTownshipRangeFeet from theNortM2226S33E	h/South Line Feet from the East/West Line County							
Latitude32.0227	Longitude103.5686							
NATURI	E OF RELEASE							
Type of Release: Produced water	Volume of Release: 1486 bbls Volume Recovered: 510bbls							
Source of Release: Tank overflow	Date and Hour of OccurrenceDate and Hour of Discovery 6/22/186/22/18 02000800							
Was Immediate Notice Given?	If YES, To Whom?							
By Whom? Jamon Hohensee	Date and Hour: 6/22/18 0900							
Was a Watercourse Reached?	If YES, Volume Impacting the Watercourse.							
If a Watercourse was Impacted, Describe Fully.*								
	RECEIVED							
	By Olivia Yu at 10:08 am, Jul 03, 2018							
	k. 1486bbls of pw ran over the top of the tank and onto pad and adjacent pipeline ediately to remove surface contaminates. Spill area will be vertically and							
Describe Area Affected and Cleanup Action Taken.*								
regulations all operators are required to report and/or file certain release public health or the environment. The acceptance of a C-141 report by t should their operations have failed to adequately investigate and remedia	the best of my knowledge and understand that pursuant to NMOCD rules and notifications and perform corrective actions for releases which may endanger the NMOCD marked as "Final Report" does not relieve the operator of liability ate contamination that pose a threat to ground water, surface water, human health does not relieve the operator of responsibility for compliance with any other							
	OIL CONSERVATION DIVISION							
Signature: Sou A	$\mathcal{I}_{\mathcal{N}}$							
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:							
Date: 6/28/18 Phone: 432-556-8074	See attached directive							
* 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 Eas	t	
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 <b>290</b>	33	34	35	36	

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

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

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

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

	26 So	outh	34	East	
6 1 <mark>60</mark> 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

DepthWellDepthWater Column

Water

25

40

_														
		Wat							00		v		Engineer <b>th to W</b>	ater
	(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)	(R=POD replaced, O=orpha C=the file closed)	ned,	(qı						E 3=SV argest)	V 4=SE) (NAD8	3 UTM in meter	s) (In	feet)
	POD Number	Cada	POD Sub-	County	-	Q 16		See	True	Dna	x	V	DouthWollDouth	Water Colum
	<u>C 02270</u>	Code	CUB	County LE	1			27	1 ws 26S	33E	A 636063	¥ 3543722 🧉	DepthWellDepth 150	125
	<u>C 02273</u>		CUB	LE		1	2	21	26S	33E	634549	3545134* 🌍	160	120
	<u>C 02285 POD1</u>		CUB	LE	1	4	4	03	26S	33E	636613	3548855 🌍	220	220
	C 02286		CUB	LE	3	4	4	03	265	33F	636470	3548714 🧰	220	175

<u>C 02285 POD1</u>	CUB	LE	1	4	4	03	26S	33E	636613	3548855 🌍	220	220	0
<u>C 02286</u>	CUB	LE	3	4	4	03	26S	33E	636470	3548714 🌍	220	175	45
<u>C 02287</u>	С	LE	3	4	4	03	26S	33E	636427	3548708 🌍	220		
<u>C 02288</u>	CUB	LE	4	4	4	03	26S	33E	636646	3548758 🧉	220	180	40
<u>C 02289</u>	CUB	LE	4	4	4	03	26S	33E	636612	3548675* 🌍	200	160	40
<u>C 02290</u>	CUB	LE	4	4	4	03	26S	33E	636538	3548770 🌍	200	160	40
<u>C 02293</u>	CUB	LE	2	2	1	14	26S	33E	637501	3546975 🌍	200	135	65
<u>C 02294</u>	CUB	LE	4	4	3	11	26S	33E	637465	3547003 🌍	200	145	55
<u>C 02295</u>	CUB	LE	2	2	4	12	26S	33E	639850	3547710* 🌍	250	200	50
<u>C 03577 POD1</u>	CUB	LE	3	3	3	22	26S	33E	636010	3543771 🧉	750	110	640
<u>C 03596 POD1</u>	С	LE	3	3	4	22	26S	33E	636017	3543756 🌍	225		
										Average Depth to	Water:	157 fee	t
										Minimum	Depth:	110 fee	t
										Maximum	Depth:	220 fee	t

Record Count: 13

#### PLSS Search:

Township: 26S Range: 33E

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

8/3/18 12:40 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

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,

Knisk

Kelsey Brooks Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies. A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



# 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')
T-7 (8')
AH-8 (0-1')
AH-8 (1-1.5')
AH-8 (2-2.5')
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')
AH-10 (1-1.5')
AH-10 (2-2.5')
AH-10 (3-3.5')

# Sample Cross Reference 591157



## Tetra Tech- Midland, Midland, TX

Rattle Snake Reuse Pit

S	07-02-18 00:00	591157-044
S	07-02-18 00:00	591157-045
S	07-02-18 00:00	591157-046
S	07-02-18 00:00	591157-047
S	07-02-18 00:00	591157-048
S	07-02-18 00:00	591157-049
S	07-02-18 00:00	591157-050
S	07-02-18 00:00	591157-051
S	07-02-18 00:00	591157-052
S	07-02-18 00:00	591157-053
S	07-02-18 00:00	591157-054
S	07-02-18 00:00	591157-055
S	07-02-18 00:00	591157-056
S	07-02-18 00:00	591157-057



# CASE NARRATIVE

Client Name: Tetra Tech- Midland Project Name: Rattle Snake Reuse Pit

Project ID: 212C-MD-01300 Work Order Number(s): 591157 Report Date: 10-JUL-18 Date Received: 07/03/2018

#### 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.



Lea County, NM

**Project Id:** 

**Project Location:** 

**Contact:** 

Certificate of Analysis Summary 591157

Tetra Tech- Midland, Midland, TX Project Name: Rattle Snake Reuse Pit



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

	Lab Id:	591157-(	001	591157-0	02	591157-0	003	591157-0	004	591157-0	05	591157-0	06
	Field Id:	T-1 (0-1	1')	T-1 (1')	)	T-1 (2'	)	T-1 (4'	)	T-1 (6)	,	T-1 (8)	)
Analysis Requested	Depth:		, ,										
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-02-18 (	00:00	Jul-02-18 0	00:00	Jul-02-18 (	00:00	Jul-02-18 (	00:00	Jul-02-18 0	0:00	Jul-02-18 0	00:00
BTEX by EPA 8021B	Extracted:	Jul-08-18 (	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 1	1:30	Jul-07-18 1	1:30	Jul-07-18 1	1:30	Jul-07-18 11:30	
	Analyzed:	Jul-07-18	13:34	Jul-07-18 1	3:39	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	537 14.9										
Oil Range Hydrocarbons (ORO)		<14.9	<14.9 14.9										
Total TPH	Н		14.9										

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing,

Huns Arah

Kelsey Brooks Project Manager



Lea County, NM

**Project Id:** 

**Project Location:** 

**Contact:** 

Certificate of Analysis Summary 591157

Tetra Tech- Midland, Midland, TX Project Name: Rattle Snake Reuse Pit



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

	Lab Id:	591157-0	07	591157-0	008	591157-0	09	591157-0	10	591157-0	11	591157-0	)12
	Field Id:	T-1 (10	') ('	T-1 (12	.)	T-2 (0-1	.)	T-2 (1')		T-2 (2)	)	T-2 (4"	)
Analysis Requested	Depth:	,	, 	x	, ,	x	, 	. ,					
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-02-18 0	00:00	Jul-02-18 (	00:00	Jul-02-18 0	0:00	Jul-02-18 0	0:00	Jul-02-18 0	0:00	Jul-02-18 0	00:00
BTEX by EPA 8021B	Extracted:					Jul-08-18 0	8:00						
	Analyzed:					Jul-08-18 1	5:16						
	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						
o-Xylene							0.00201						
Total Xylenes							0.00201						
Total BTEX						< 0.00201	0.00201						
Chloride by EPA 300	Extracted:	Jul-07-18 1	1:30	Jul-07-18 11:30		Jul-07-18 1	1:30	Jul-07-18 1	1:30	Jul-07-18 1	1:30	Jul-07-18 11:30	
	Analyzed:	Jul-07-18 1	4:17	Jul-07-18 1	4:33	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 1	0:00						
	Analyzed:					Jul-08-18 1	7:50						
	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						

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing,

Huns Arah

Kelsey Brooks Project Manager



Lea County, NM

**Project Id:** 

**Project Location:** 

**Contact:** 

Certificate of Analysis Summary 591157

Tetra Tech- Midland, Midland, TX Project Name: Rattle Snake Reuse Pit



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

	Lab Id:	591157-0	13	591157-0	014	591157-0	15	591157-0	16	591157-0	017	591157-0	18
( <b>1</b> · <b>D</b> · <b>J</b>	Field Id:	T-2 (6)	)	T-2 (8)	)	T-3 (0-1	')	T-3 (1)	)	T-3 (2'	)	T-3 (4')	)
Analysis Requested	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL	SOIL		SOIL		
	Sampled:	Jul-02-18 0	0:00	Jul-02-18 0	00:00	Jul-02-18 0	0:00	Jul-02-18 0	0:00	Jul-02-18 (	00:00	Jul-02-18 0	0:00
BTEX by EPA 8021B	Extracted:					Jul-08-18 0	8:00						
	Analyzed:					Jul-08-18 1	5:34						
	Units/RL:					mg/kg	RL						
Benzene	·					< 0.00199	0.00199						
Toluene						< 0.00199	0.00199						
Ethylbenzene							0.00199						
m,p-Xylenes							0.00398						
o-Xylene							0.00199						
Total Xylenes							0.00199						
Total BTEX						< 0.00199	0.00199						
Chloride by EPA 300	Extracted:	Jul-07-18 1	1:30	Jul-07-18 11:30		Jul-07-18 1	2:00	Jul-07-18 1	2:00	Jul-07-18 12:00		Jul-07-18 12:00	
	Analyzed:	Jul-09-18 1	1:49	Jul-07-18 1	5:06	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 1	0:00						
	Analyzed:					Jul-08-18 1	8:09						
	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						

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing,

Huns Arah

Kelsey Brooks Project Manager



Lea County, NM

**Project Id:** 

**Project Location:** 

**Contact:** 

Certificate of Analysis Summary 591157

Tetra Tech- Midland, Midland, TX Project Name: Rattle Snake Reuse Pit



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

	Lab Id:	591157-0	)19	591157-0	20	591157-0	21	591157-0	022	591157-0	023	591157-0	024
A surface Democrate I	Field Id:	T-3 (6'	)	T-3 (8)	)	T-3 (10'	)	T-4 (0-	1')	T-4 (1'	)	T-4 (2')	)
Analysis Requested	Depth:												
	Matrix:	SOIL		SOIL		SOIL	SOIL		,	SOIL		SOIL	
	Sampled:	Jul-02-18 (	00:00	Jul-02-18 0	00:00	Jul-02-18 0	0:00	Jul-02-18	00:00	Jul-02-18 0	00:00	Jul-02-18 0	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 1	12:00	Jul-07-18 1	2:00	Jul-07-18 1	2:00	Jul-07-18	12:00	Jul-07-18 1	2:00	Jul-07-18 1	2:00
	Analyzed:	Jul-07-18 1	16:10	Jul-07-18 1	6:27	Jul-07-18 1	6:32	Jul-07-18	16:37	Jul-07-18 1	6:43	Jul-07-18 1	6:48
	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				

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing,

Huns Arah

Kelsey Brooks Project Manager



Lea County, NM

**Project Id:** 

**Project Location:** 

**Contact:** 

Certificate of Analysis Summary 591157

Tetra Tech- Midland, Midland, TX Project Name: Rattle Snake Reuse Pit



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

	Lab Id:	591157-0	025	591157-0	026	591157-0	27	591157-(	028	591157-0	29	591157-0	)30
	Field Id:	T-4 (4'	)	T-4 (6'	)	T-4 (8)	)	T-5 (0-1	l')	T-5 (1)	)	T-5 (2)	)
Analysis Requested	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-02-18 (	00:00	Jul-02-18 (	00:00	Jul-02-18 0	00:00	Jul-02-18 (	00:00	Jul-02-18 0	00:00	Jul-02-18 0	00:00
BTEX by EPA 8021B	Extracted:		1					Jul-08-18 (	08:00				
	Analyzed:							Jul-08-18 1	6:10				
	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 1	12:00	Jul-07-18 12:00		Jul-07-18 1	2:00	Jul-07-18 1	2:00	Jul-07-18 12:00		Jul-07-18 12:00	
	Analyzed:	Jul-07-18 1	6:54	Jul-07-18 1	7:10	Jul-07-18 17:15		Jul-07-18 1	7:31	Jul-07-18 1	7:37	Jul-07-18 1	7:42
	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 1	0:00				
	Analyzed:							Jul-08-18 1	8:48				
	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				

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Huns Arah

Kelsey Brooks Project Manager



Lea County, NM

**Project Id:** 

**Project Location:** 

**Contact:** 

Certificate of Analysis Summary 591157

Tetra Tech- Midland, Midland, TX Project Name: Rattle Snake Reuse Pit



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

	Lab Id:	591157-0	031	591157-0	032	591157-0	033	591157-(	034	591157-0	35	591157-0	)36
	Field Id:	T-5 (4)	)	T-5 (6'	)	T-5 (8)	)	T-6 (0-	l')	T-6 (1)	)	T-6 (2)	)
Analysis Requested	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-02-18 0	00:00	Jul-02-18 (	00:00	Jul-02-18 0	00:00	Jul-02-18 (	00:00	Jul-02-18 0	0:00	Jul-02-18 0	00:00
BTEX by EPA 8021B	Extracted:		1					Jul-08-18 (	08:00				
	Analyzed:							Jul-08-18	6:28				
	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 1	2:00	Jul-07-18 12:00		Jul-07-18 12:00		Jul-07-18	2:00	Jul-09-18 14:00		Jul-09-18 14:00	
	Analyzed:	Jul-07-18 1	7:48	Jul-07-18 17:53		Jul-07-18 17:58		Jul-07-18 18:04		Jul-09-18 1	8:46	Jul-09-18 1	8:52
	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	0:00				
	Analyzed:							Jul-08-18	9:07				
	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				

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Huns Arah

Kelsey Brooks Project Manager



Lea County, NM

**Project Id:** 

**Project Location:** 

**Contact:** 

Certificate of Analysis Summary 591157

Tetra Tech- Midland, Midland, TX Project Name: Rattle Snake Reuse Pit



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

	Lab Id:	591157-0	)37	591157-0	)38	591157-0	39	591157-0	)40	591157-0	41	591157-0	)42
An aluais De au ested	Field Id:	T-6 (4)	)	T-6 (6'	)	T-6 (8')	)	T-7 (0-1	l')	T-7 (1)	)	T-7 (2')	)
Analysis Requested	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-02-18 0	00:00	Jul-02-18 (	00:00	Jul-02-18 0	0:00	Jul-02-18 (	00:00	Jul-02-18 0	0:00	Jul-02-18 0	00:00
BTEX by EPA 8021B	Extracted:		Í					Jul-08-18 (	08:30				
	Analyzed:							Jul-08-18 1	9:10				
	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 1	4:00	Jul-09-18 1	4:00	Jul-09-18 1	4:00	Jul-09-18 1	5:30	Jul-09-18 1	5:30	Jul-09-18 1	5:30
	Analyzed:	Jul-09-18 1	18:57	Jul-09-18 1	9:03	Jul-09-18 1	9:08	Jul-09-18 1	9:57	Jul-09-18 2	0:02	Jul-09-18 2	0:07
	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 1	0:00				
	Analyzed:							Jul-08-18 1	9:27				
	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				

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Huns Arah

Kelsey Brooks Project Manager



Lea County, NM

**Project Id:** 

**Project Location:** 

**Contact:** 

Certificate of Analysis Summary 591157

Tetra Tech- Midland, Midland, TX Project Name: Rattle Snake Reuse Pit



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

	Lab Id:	591157-0	43	591157-0	)44	591157-0	045	591157-0	46	591157-0	47	591157-0	48
	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')
Analysis Requested	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-02-18 0	00:00	Jul-02-18 0	00:00	Jul-02-18 0	00:00	Jul-02-18 0	0:00	Jul-02-18 0	0:00	Jul-02-18 0	0:00
BTEX by EPA 8021B	Extracted:							Jul-08-18 0	8:30		-		
	Analyzed:							Jul-08-18 1	9:28				
	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 1	5:30	Jul-09-18 1	5:30	Jul-09-18 1	5:30						
	Analyzed:	Jul-09-18 1	9:40	Jul-09-18 2	20:13	Jul-09-18 2	0:29	Jul-09-18 2	0:34	Jul-09-18 2	0:40	Jul-09-18 2	0:45
	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 1	0:00				
	Analyzed:							Jul-08-18 1	9:46				
	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				

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Huns Arah

Kelsey Brooks Project Manager



Lea County, NM

**Project Id:** 

**Project Location:** 

**Contact:** 

Certificate of Analysis Summary 591157

Tetra Tech- Midland, Midland, TX Project Name: Rattle Snake Reuse Pit



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

	Lab Id:	591157-0	49	591157-0	50	591157-0	51	591157-(	)52	591157-0	53	591157-	054
A ser lessie Deserved a l	Field Id:	AH-8 (3-3	3.5')	AH-9 (0-	1')	AH-9 (1-1	.5')	AH-9 (2-2	2.5')	AH-9 (3-3	.5')	AH-10 ((	0-1')
Analysis Requested	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	-
	Sampled:	Jul-02-18 0	00:00	Jul-02-18 0	0:00	Jul-02-18 0	0:00	Jul-02-18 (	00:00	Jul-02-18 0	0:00	Jul-02-18	00:00
BTEX by EPA 8021B	Extracted:			Jul-08-18 0	8:30							Jul-08-18	08:30
	Analyzed:			Jul-08-18 2	0:22							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 1	5:30	Jul-09-18 1	5:30	Jul-09-18 1	5:30	Jul-09-18 1	5:30	Jul-09-18 1	5:30	Jul-09-18	15:30
	Analyzed:	Jul-09-18 2	20:51	Jul-09-18 2	1:18	Jul-09-18 2	1:34	Jul-09-18 2	1:39	Jul-09-18 2	1:45	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 1	0:00							Jul-07-18	11:00
	Analyzed:			Jul-08-18 2	0:06							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

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Huns Arah

Kelsey Brooks Project Manager



Lea County, NM

**Contact:** 

**Project Location:** 

Certificate of Analysis Summary 591157

Tetra Tech- Midland, Midland, TX Project Name: Rattle Snake Reuse Pit



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

	Lab Id:	591157-0	55	591157-0	56	591157-0	57		
Analysis Requested	Field Id:	AH-10 (1-1	1.5')	AH-10 (2-2	2.5')	AH-10 (3-3	3.5')		
Analysis Requested	Depth:								
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Jul-02-18 0	0:00	Jul-02-18 0	0:00	Jul-02-18 0	0:00		
Chloride by EPA 300	Extracted:	Jul-09-18 1	5:30	Jul-09-18 1	5:30	Jul-09-18 1	5:30		
	Analyzed:	Jul-09-18 2	1:55	Jul-09-18 2	2:01	Jul-09-18 2	2:06		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		4850	49.0	6140	49.9	4000	24.9		

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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 LimitSDLSample Detection LimitLOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable

SMP Clie	ent Sample	BLK	Method Blank	
BKS/LCS	S Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labor	ratory 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



# Project Name: Rattle Snake Reuse Pit

Units:	mg/kg	Date Analyzed: 07/08/18 09:09			ECOVEDY					
Units:	mg/kg	Date Analyzed: 07/08/18 09.09	SU	RROGATE R	RECOVERY STUDY					
	TPH h	y SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]					
1-Chlorooctan	ie		103	99.8	103	70-135				
o-Terphenyl			64.4	49.9	129	70-135				
Lab Batch #:	: 3055798	Sample: 591157-001 / SMP	Batcl	h: 1 Matrix	: Soil					
Units:	mg/kg	Date Analyzed: 07/08/18 14:58	SU	RROGATE R	ECOVERY S	STUDY				
		L by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1.4-Difluorobe			0.0280	0.0300	93	70-130				
4-Bromofluor			0.0276	0.0300	92	70-130				
Lab Batch #:		Sample: 591157-009 / SMP	Batcl			10 100				
Units:	mg/kg	Date Analyzed: 07/08/18 15:16		RROGATE R		STUDY				
	BTEX	C by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]					
1,4-Difluorobe	enzene		0.0337	0.0300	112	70-130				
4-Bromofluor	obenzene		0.0252	0.0300	84	70-130				
Lab Batch #:	: 3055798	Sample: 591157-015 / SMP	Batc	h: 1 Matrix	: Soil					
Units:	mg/kg	Date Analyzed: 07/08/18 15:34	SU	RROGATE R	ECOVERY S	STUDY				
		L by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1,4-Difluorobe			0.0379	0.0300	126	70-130				
4-Bromofluor	obenzene		0.0262	0.0300	87	70-130				
Lab Batch #:	: 3055798	Sample: 591157-022 / SMP	Batcl	h: 1 Matrix	: Soil	1	<u> </u>			
Units:	mg/kg	Date Analyzed: 07/08/18 15:52	SU	RROGATE R	ECOVERY	STUDY				
	BTEX	t by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]					
1,4-Difluorobe	enzene		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



# Project Name: Rattle Snake Reuse Pit

Work Ord Lab Batch #:	ers: 59115 3055798	7, Sample: 591157-028 / SMP								
Units:	mg/kg	Date Analyzed: 07/08/18 16:10	SU	RROGATE R	ECOVERY S	STUDY				
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]					
1,4-Difluorobe	enzene		0.0357	0.0300	119	70-130				
4-Bromofluor	obenzene		0.0245	0.0300	82	70-130				
Lab Batch #:	3055798	Sample: 591157-034 / SMP	Batcl	h: 1 Matrix	: Soil					
U <b>nits:</b>	mg/kg	Date Analyzed: 07/08/18 16:28	SU	RROGATE R	ECOVERY S	STUDY				
	втех	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
		Analytes								
1,4-Difluorobe			0.0297	0.0300	99	70-130				
4-Bromofluor			0.0251	0.0300	84	70-130				
Lab Batch #:		Sample: 591157-001 / SMP	Batcl	h: 1 Matrix	: Soil					
Units:	mg/kg	Date Analyzed: 07/08/18 17:31	SU	RROGATE R	ECOVERY S	STUDY				
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		Analytes			[D]					
1-Chlorooctan	e		98.2	99.6	99	70-135				
o-Terphenyl			56.9	49.8	114	70-135				
Lab Batch #:	3055931	Sample: 591157-009 / SMP	Batcl	h: 1 Matrix	: Soil					
Units:	mg/kg	Date Analyzed: 07/08/18 17:50	SU	RROGATE R	ECOVERY S	STUDY				
	TPH	by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctan	e		98.3	99.9	98	70-135				
o-Terphenyl			51.0	50.0	102	70-135				
Lab Batch #:	3055931	Sample: 591157-015 / SMP	Batcl							
Units:	mg/kg	Date Analyzed: 07/08/18 18:09		RROGATE R		STUDY				
	TPH	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1 Chlorecot-	0	Analytes	101	100		70.125				
1-Chlorooctan	e		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



# Project Name: Rattle Snake Reuse Pit

Lab Batch #:		Sample: 591157-022 / SMP	Batc	h: 1 Matrix	. 501			
Units:	mg/kg	Date Analyzed: 07/08/18 18:29	SU	JRROGATE R	ECOVERY S	STUDY		
	TPH b	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage	
		Analytes			[D]			
1-Chlorooctane	;		95.4	100	95	70-135		
o-Terphenyl			50.3	50.0	101	70-135		
Lab Batch #:	3055931	Sample: 591157-028 / SMP	Batc	h: 1 Matrix	: Soil	<u> </u>		
Units:	mg/kg	Date Analyzed: 07/08/18 18:48	SU	JRROGATE R	ECOVERY S	STUDY		
		oy SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane		Anaryus	93.6	99.7	94	70-135		
o-Terphenyl			53.3	49.9	107	70-135		
Lab Batch #:	3055931	Sample: 591157-034 / SMP	Batc					
Units:	mg/kg	Date Analyzed: 07/08/18 19:07	SURROGATE RECOVERY STUDY					
		oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
		Analytes			[D]			
1-Chlorooctane	•		96.9	99.7	97	70-135		
o-Terphenyl			55.1	49.9	110	70-135		
Lab Batch #:		Sample: 591157-040 / SMP	Batc	h: 1 Matrix	: Soil			
Units:	mg/kg	<b>Date Analyzed:</b> 07/08/18 19:10	SU	JRROGATE R	ECOVERY S	STUDY		
		Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobe		Analytes	0.0388	0.0300	129	70-130		
4-Bromofluoro			0.0269	0.0300	90	70-130		
Lab Batch #:		Sample: 591157-040 / SMP	Batc					
Units:	mg/kg	Date Analyzed: 07/08/18 19:27		JRROGATE R		STUDY		
		oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag	
		Analytes			[D]			
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



# Project Name: Rattle Snake Reuse Pit

		Sample: 591157-046 / SMP		ch: 1 Matrix							
Units: r	ng/kg	Date Analyzed: 07/08/18 19:28	SURROGATE RECOVERY STUDY								
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage				
		Analytes			[D]						
1,4-Difluorobenz	zene		0.0314	0.0300	105	70-130					
4-Bromofluorobe	enzene		0.0260	0.0300	87	70-130					
Lab Batch #: 3	3055931	Sample: 591157-046 / SMP	Batc	ch: 1 Matrix	: Soil						
Units: r	ng/kg	Date Analyzed: 07/08/18 19:46	SU	URROGATE R	ECOVERY S	STUDY					
		oy 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 #: 3	3055801	Sample: 591157-054 / SMP	Batc	h: 1 Matrix	: Soil						
Units: r	ng/kg	Date Analyzed: 07/08/18 19:46	su	JRROGATE R	ECOVERY	STUDY					
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage				
		Analytes			[D]						
1,4-Difluorobenz	zene		0.0213	0.0300	71	70-130					
4-Bromofluorobe	enzene		0.0272	0.0300	91	70-130					
Lab Batch #: 3	3055931	Sample: 591157-050 / SMP	Batc	ch: 1 Matrix	: Soil						
Units: r	ng/kg	Date Analyzed: 07/08/18 20:06	SU	URROGATE R	ECOVERY S	STUDY					
		oy 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 #: 3	3055801	Sample: 591157-050 / SMP	Batc	h: 1 Matrix	: Soil						
Units: r	ng/kg	Date Analyzed: 07/08/18 20:22	SU	JRROGATE R	ECOVERY S	STUDY					
		by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag				
4 4 75 10 1		Analytes									
1,4-Difluorobenz			0.0320	0.0300	107	70-130					
4-Bromofluorobe	enzene		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



# Project Name: Rattle Snake Reuse Pit

	#: 3055923	Sample: 7658082-1-BLK / 1			: Solid		
Units:	mg/kg	Date Analyzed: 07/07/18 19:02	SU	RROGATE R	ECOVERY S	STUDY	
	TPH b	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooct	ane		99.8	100	100	70-135	
o-Terpheny			53.9	50.0	108	70-135	
Lab Batch	#: 3055798	Sample: 7658000-1-BLK / 1	BLK Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 07/08/18 09:51	SU	RROGATE R	ECOVERY S	STUDY	
		X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro		Anarytes	0.0322	0.0300	107	70-130	
4-Bromoflu			0.0322	0.0300	73	70-130	
	#: 3055931	Sample: 7658088-1-BLK / 1			: Solid	70-130	
Units:	mg/kg	Date Analyzed: 07/08/18 11:36					
Omits.	iiig/Kg	Date Analyzet. 07/00/10 11:50	SU	RROGATE R	ECOVERY S	STUDY	
	TPH b	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage
		Analytes			[D]		
1-Chlorooct	ane		97.6	100	98	70-135	
o-Terpheny			52.4	50.0	105	70-135	
Lab Batch	#: 3055801	Sample: 7658002-1-BLK / 1	BLK Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 07/08/18 18:35	SU	RROGATE R	ECOVERY S	STUDY	
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage
		Analytes			[D]		
1,4-Difluoro	benzene		0.0366	0.0300	122	70-130	
4-Bromoflu	orobenzene		0.0337	0.0300	112	70-130	
Lab Batch	#: 3055923	Sample: 7658082-1-BKS / 1	BKS Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 07/07/18 19:22	SU	RROGATE R	ECOVERY S	STUDY	
		oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage
		Analytes			[D]		
1-Chlorooct	ane		119	100	119	70-135	
o-Terpheny			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



# Project Name: Rattle Snake Reuse Pit

Units:	mg/kg	Date Analyzed: 07/08/18 08:22	CT	RROGATE R	ECOVERV	STUDV	
		by EPA 8021B	Amount Found	True Amount	Recovery	Control Limits	Flags
		Analytes	[A]	[B]	%R [D]	%R	
1,4-Difluoro	benzene		0.0272	0.0300	91	70-130	
4-Bromofluc	orobenzene		0.0256	0.0300	85	70-130	
Lab Batch #	#: 3055931	Sample: 7658088-1-BKS / 1	BKS Bate	h: 1 Matrix	: Solid	1	
Units:	mg/kg	Date Analyzed: 07/08/18 11:56	SU	RROGATE R	ECOVERY	STUDY	
		by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chloroocta		Analytes	122	100	122	70-135	
o-Terphenyl			55.4	50.0	111	70-135	
Lab Batch	#: 3055801	Sample: 7658002-1-BKS / 1				70-155	
Units:	mg/kg	Date Analyzed: 07/08/18 17:04		URROGATE R	-	STUDY	
	BTEX	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes	[A]	[0]	[D]	701	
1,4-Difluoro	benzene		0.0269	0.0300	90	70-130	
4-Bromofluc	orobenzene		0.0227	0.0300	76	70-130	
Lab Batch #	#: 3055923	Sample: 7658082-1-BSD / 1	BSD Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 07/07/18 19:41	SU	RROGATE R	ECOVERY S	STUDY	
		oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 Chlansset		Analytes	100	100		70.105	
1-Chloroocta	ane		122	100	122	70-135	
o-Terphenyl Lab Batch <del>i</del>	#• 3055708	Sample: 7658000-1-BSD / 1	56.2 BSD Bate	50.0 h: 1 Matrix	112 :: Solid	70-135	
Lab Batch 7 Units:	mg/kg	Date Analyzed: 07/08/18 08:40					
omis.	mg/kg	Date Analyzeu: 07/06/18 08.40	SU	URROGATE R	ECOVERY S	STUDY	
	BTEX	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluoro	benzene		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



# Project Name: Rattle Snake Reuse Pit

Units:	mg/kg	Date Analyzed: 07/08/18 12:15	CT.	RROGATE R	FCOVEDV	TUDV				
c must	ing kg	Duce 111111 2011 01/100/10 12:10	50	KKUGAIE N						
	TPH b	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage			
		Analytes			[D]					
1-Chlorooctar	ne		118	100	118	70-135				
o-Terphenyl			53.8	50.0	108	70-135				
Lab Batch #	: 3055801	Sample: 7658002-1-BSD / B	SD Bate	h: 1 Matrix	: Solid	· · · · · · · · · · · · · · · · · · ·				
Units:	mg/kg	Date Analyzed: 07/08/18 17:22	SURROGATE RECOVERY STUDY							
		X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
		Analytes								
1,4-Difluorob			0.0255	0.0300	85	70-130				
4-Bromofluor			0.0264	0.0300	88	70-130				
Lab Batch #		Sample: 591024-001 S / MS	Batc	h: 1 Matrix	: Soil					
Units:	mg/kg	Date Analyzed: 07/07/18 20:20	SU	RROGATE R	ECOVERY S	STUDY				
	TPH b	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage			
		Analytes			[D]					
1-Chlorooctar	ne		118	99.7	118	70-135				
o-Terphenyl			48.7	49.9	98	70-135				
Lab Batch #	: 3055798	Sample: 591031-011 S / MS	Batc	h: 1 Matrix	: Soil					
Units:	mg/kg	Date Analyzed: 07/08/18 08:58	SU	RROGATE R	ECOVERY S	STUDY				
	BTEX	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage			
		Analytes			[D]					
1,4-Difluorob	enzene		0.0308	0.0300	103	70-130				
4-Bromofluor	obenzene		0.0271	0.0300	90	70-130				
Lab Batch #	: 3055931	Sample: 591031-001 S / MS	Batc	h: 1 Matrix	: Soil					
Units:	mg/kg	Date Analyzed: 07/08/18 12:55	SU	RROGATE R	ECOVERY S	STUDY				
	TPH b	oy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag			
		Analytes	<u>[]</u>	[2]	[D]	, or				
1-Chlorooctar	ne		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



# Project Name: Rattle Snake Reuse Pit

	rders : 59115 #: 3055801	7, <b>Sample:</b> 591178-001 S / MS	S Batel		: 212C-MD-0	)1300	
Units:	mg/kg	Date Analyzed: 07/08/18 17:40	SU	RROGATE R	ECOVERY	STUDY	
		X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	obenzene		0.0367	0.0300	122	70-130	
4-Bromoflu	iorobenzene		0.0265	0.0300	88	70-130	
Lab Batch	#: 3055923	Sample: 591024-001 SD / M	ASD Batcl	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 07/07/18 20:40	SU	RROGATE R	ECOVERY	STUDY	
		oy SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1 Chlanses		Analytes	114	00.0		70.105	
1-Chlorooc			116	99.9	116	70-135	
o-Terpheny			48.9	50.0	98	70-135	
	#: 3055798	Sample: 591031-011 SD / M					
Units:	mg/kg	Date Analyzed: 07/08/18 09:16	SU	RROGATE R	ECOVERY S	STUDY	
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	obenzene		0.0378	0.0300	126	70-130	
4-Bromoflu	iorobenzene		0.0313	0.0300	104	70-130	
Lab Batch	#: 3055931	Sample: 591031-001 SD / N	ASD Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 07/08/18 13:15	SU	RROGATE R	ECOVERY S	STUDY	
		oy SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooc			118	99.9	118	70-135	
o-Terpheny			51.1	50.0	102	70-135	
	#: 3055801	Sample: 591178-001 SD / N					
Units:	mg/kg	<b>Date Analyzed:</b> 07/08/18 17:58		RROGATE R		STUDY	
		X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	obenzene		0.0269	0.0300	90	70-130	
4-Bromoflu	iorobenzene		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



### **BS / BSD Recoveries**



### Project Name: Rattle Snake Reuse Pit

Work Order	#: 591157							Proj	ect ID:	212C-MD-(	01300	
Analyst:	ALJ	D	ate Prepar	red: 07/08/202	18			Date A	nalyzed: (	07/08/2018		
Lab Batch ID:	: 3055798 Sample: 7658000-1	-BKS	Bate	<b>h #:</b> 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	K /BLANK	SPIKE / 1	BLANK S	SPIKE DUP	LICATE	RECOVI	ERY STUI	ЭY	
Analy	BTEX by EPA 8021B	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	
Ethylbenzo	ene	< 0.00200	0.100	0.108	108	0.101	0.0885	88	20	70-130	35	
m,p-Xylen	ies	< 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	D	ate Prepar	ed: 07/08/202	18			Date A	nalyzed: (	07/08/2018		
Lab Batch ID:	: 3055801 Sample: 7658002-1	-BKS	Batc	<b>h #:</b> 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	K/BLANK	SPIKE / 1	BLANK S	SPIKE DUP	LICATE	RECOVI	ERY STUI	DY	
Analy	BTEX by EPA 8021B	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	
Ethylbenzo	ene	< 0.00200	0.100	0.0839	84	0.101	0.0822	81	2	70-130	35	
m,p-Xylen	ies	< 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							Pro	ject ID:	212C-MD-(	01300	
Analyst:	SCM	D	ate Prepar	red: 07/07/201	8			Date A	nalyzed: (	07/07/2018		
Lab Batch ID	: 3055789 Sample: 7657954-1-	BKS	Batc	<b>h #:</b> 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	K /BLANK S	SPIKE / I	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUD	ΟY	
Analy	Chloride by EPA 300	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	D	ate Prepar	ed: 07/07/201	.8		·	Date A	nalyzed: (	7/07/2018		
Lab Batch ID	: 3055792 Sample: 7657955-1-	BKS	Batc	<b>h #:</b> 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	K/BLANK S	SPIKE / I	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUE	ΟY	
Analy	Chloride by EPA 300	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
Analy		Sample Result	Added	Spike Result	Spike %R	Added	Spike Duplicate	Dup. %R		Limits	Limits	Flag
		Sample Result [A] <5.00	<b>Added</b> [B] 250	Spike Result [C]	<b>Spike</b> %R [D] 100	Added [E]	Spike Duplicate Result [F]	Dup. %R [G] 99	<b>%</b> 0	Limits %R	Limits %RPD	Flag
Chloride	v <b>tes</b>	Sample Result [A] <5.00 D	Added [B] 250 ate Prepar	Spike Result [C] 249	<b>Spike</b> %R [D] 100	Added [E]	Spike Duplicate Result [F]	Dup. %R [G] 99	<b>%</b> 0	Limits %R 90-110 07/09/2018	Limits %RPD	Flag
Chloride Analyst:	v <b>tes</b>	Sample Result [A] <5.00 D	Added [B] 250 ate Prepar Batc	Spike Result [C] 249 red: 07/09/201	<b>Spike</b> % <b>R</b> [ <b>D</b> ] 100 8	<b>Added</b> [E] 250	Spike Duplicate Result [F] 248	Dup. %R [G] 99 Date A	% 0 nalyzed: ( Matrix: S	Limits %R 90-110 07/09/2018 Solid	Limits %RPD 20	Flag
Chloride Analyst: Lab Batch ID:	SCM         Sample: 7658034-1-           mg/kg         Chloride by EPA 300	Sample Result [A] <5.00 D	Added [B] 250 ate Prepar Batc	Spike Result [C] 249 red: 07/09/201 h #: 1	<b>Spike</b> % <b>R</b> [ <b>D</b> ] 100 8	<b>Added</b> [E] 250	Spike Duplicate Result [F] 248	Dup. %R [G] 99 Date A	% 0 nalyzed: ( Matrix: S	Limits %R 90-110 07/09/2018 Solid	Limits %RPD 20	Flag

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							Proj	ject ID:	212C-MD-	01300	
Analyst:	SCM	D	ate Prepar	ed: 07/09/20	18			Date A	nalyzed:	07/09/2018		
Lab Batch ID	: 3055866 Sample: 7658035-	I-BKS	Batcl	<b>h #:</b> 1					Matrix:	Solid		
Units:	mg/kg		BLAN	K /BLANK	SPIKE / ]	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY	
Analy	Chloride by EPA 300	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	D	ate Prepar	ed: 07/07/20	18	ļ	1	Date A	nalyzed: (	07/07/2018	1	1
Lab Batch ID	: 3055923 Sample: 7658082-		Batcl						Matrix:	Solid		
Units:	mg/kg		BLAN	K /BLANK	SPIKE / ]	BLANK	SPIKE DUP	LICATE	RECOV	ERY STU	DY	
	TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analy	vtes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Gasoline I	Range Hydrocarbons (GRO)	<15.0	1000	1000	100	1000	991	99	1	70-135	20	
Diesel Rat	nge Organics (DRO)	<15.0	1000	1050	105	1000	1030	103	2	70-135	20	
Analyst:	ARM	D	ate Prepar	ed: 07/08/20	18	1		Date A	nalyzed:	07/08/2018	1	
Lab Batch ID	: 3055931 Sample: 7658088-	I-BKS	Batcl	<b>h #:</b> 1					Matrix:	Solid		
Units:	mg/kg		BLAN	K /BLANK	SPIKE / ]	BLANK	SPIKE DUP	LICATE	RECOV	ERY STU	DY	
	TPH by SW8015 Mod	Blank Sample Result	Spike Added	Blank Spike	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analy	/tes	[A]	[B]	Result [C]	5%K [D]	[E]	Result [F]	[G]	70	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Analy Gasoline I	r <b>tes</b> Range Hydrocarbons (GRO)	[A] <15.0	[ <b>B</b> ]			[E] 1000	-		7	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



#### **Project Name: Rattle Snake Reuse Pit**



Work Order # :	591157						Project II	<b>):</b> 212C-1	MD-0130	0		
Lab Batch ID:	3055798	QC- Sample ID:	591031-01	11 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed:	07/08/2018	Date Prepared:	07/08/201	8	An	alyst: A	ALJ					
<b>Reporting Units:</b>	mg/kg		MA	TRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	BTEX by EPA 8021B	Parent Sample Result	Spike Added	piked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Analytes	[A]	[B]		[D]	[E]		[G]				
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:	591178-00	01 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed:	07/08/2018	Date Prepared:	07/08/201	8	An	alyst: A	ALJ					
<b>Reporting Units:</b>	mg/kg		MA	TRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	BTEX by EPA 8021B	Parent Sample Result	Spike Added	piked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Analytes	[A]	[B]		[D]	[E]		[G]				
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)/BRelative Percent Difference RPD = 200\*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E



#### **Project Name: Rattle Snake Reuse Pit**



Work Order # :	591157						Project II	<b>):</b> 212C-N	MD-01300	)		
Lab Batch ID:	3055789	QC- Sample ID:	591085	-017 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	07/07/2018	Date Prepared:	07/07/2	018	An	alyst: S	SCM					
<b>Reporting Units:</b>	mg/kg		Ν	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA'	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		<4.90	245	242	99	245	242	99	0	90-110	20	
Lab Batch ID:	3055789	QC- Sample ID:	591157	-004 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	07/07/2018	Date Prepared:	07/07/2	018	An	alyst: S	SCM					
<b>Reporting Units:</b>	mg/kg		Ν	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA'	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		14.7	249	258	98	249	257	97	0	90-110	20	
Lab Batch ID:	3055792	QC- Sample ID:	591157	-017 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	07/07/2018	Date Prepared:	07/07/2	018	An	alyst: S	SCM					
<b>Reporting Units:</b>	mg/kg		Ν	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA'	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		270	247	487	88	247	486	87	0	90-110	20	X

Matrix Spike Percent Recovery [D] = 100\*(C-A)/BRelative Percent Difference RPD = 200\*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E



#### **Project Name: Rattle Snake Reuse Pit**



Work Order # :	591157						Project II	<b>):</b> 212C-1	MD-0130	)		
Lab Batch ID:	3055792	QC- Sample ID:	591157	-025 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	07/07/2018	Date Prepared:	07/07/2	018	An	alyst: S	SCM					
<b>Reporting Units:</b>	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample Result	Spike	Spiked Sample Result	Sample		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		195	246	426	94	246	424	93	0	90-110	20	
Lab Batch ID:	3055865	QC- Sample ID:	591545	-001 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	07/09/2018	Date Prepared:	07/09/2	018	An	alyst: S	SCM					
<b>Reporting Units:</b>	mg/kg		Ν	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		270	250	535	106	250	533	105	0	90-110	20	
Lab Batch ID:	3055865	QC- Sample ID:	591545	-003 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	07/09/2018	Date Prepared:	07/09/2	018	An	alyst: S	SCM					
<b>Reporting Units:</b>	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample Result	Spike	Spiked Sample Result	Spiked Sample %R	-	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
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



#### **Project Name: Rattle Snake Reuse Pit**



Work Order # :	591157						Project II	<b>):</b> 212C-1	MD-0130	0		
Lab Batch ID:	3055866	QC- Sample ID:	591157	-043 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	07/09/2018	Date Prepared:	07/09/2	2018	An	alyst: S	SCM					
<b>Reporting Units:</b>	mg/kg		Ν	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample Result	Spike	Spiked Sample Result	Spiked Sample %R	Spike	Duplicate Spiked Sample	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Analytes	[A]	Added [B]	[C]	%K [D]	Added [E]	Result [F]	%K [G]	70	% <b>K</b>	%KPD	
Chloride		219	247	482	106	247	478	105	1	90-110	20	
Lab Batch ID:	3055866	QC- Sample ID:	591564	-001 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	07/09/2018	Date Prepared:	07/09/2	2018	An	alyst: S	SCM					
<b>Reporting Units:</b>	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	Chloride by EPA 300	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		440	247	683	98	247	682	98	0	90-110	20	
Lab Batch ID:	3055923	QC- Sample ID:	591024	-001 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	07/07/2018	Date Prepared:	07/07/2	2018	An	alyst: A	ARM					
<b>Reporting Units:</b>	mg/kg		Ν	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	TPH by SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Gasoline Range	e Hydrocarbons (GRO)	<15.0	997	952	95	999	948	95	0	70-135	20	
Diesel Range C	Drganics (DRO)	<15.0	997	1070	107	999	1060	106	1	70-135	20	

Matrix Spike Percent Recovery [D] = 100\*(C-A)/BRelative Percent Difference RPD = 200\*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E



#### **Project Name: Rattle Snake Reuse Pit**



Work Order # :	591157						Project II	<b>):</b> 212C-1	MD-01300	)		
Lab Batch ID:	3055931	QC- Sample ID:	591031	-001 S	Ba	tch #:	1 Matrix	<b>k:</b> Soil				
Date Analyzed:	07/08/2018	Date Prepared:	07/08/2	018	An	alyst: A	ARM					
<b>Reporting Units:</b>	mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY S	STUDY		
,	ГРН by SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample		RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Gasoline Range	Hydrocarbons (GRO)	<15.0	999	1010	101	999	989	99	2	70-135	20	
Diesel Range Or	rganics (DRO)	<15.0	999	1050	105	999	1020	102	3	70-135	20	

Matrix Spike Percent Recovery [D] = 100\*(C-A)/BRelative Percent Difference RPD = 200\*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery  $[G] = 100^{*}(F-A)/E$ 

		Relinquished by:		Pelinguished by:	Relinquisbelt by:	Τ-	т. Т.	<b>T-</b>	<b>T</b> -	<b>T</b> -	<b>-</b>							ΔΡ #				Deceiving	Invoice to:	Project Location: (county, state)	Project Name:			
		Date: Time:		~ Viterty + 7-3-12	Date: Time:	T-2 (1')	T-2 (0-1')	T-1 (12')	T-1 (10')	T-1 (8')	T-1 (6')	T-1 (4)	1-1 (2)	1-1 (1)						Run Deeper samples if benzene exceeds 10 mg/kg or total BTEX exceeds 50 mg/kg. 1,000 mg/kg	Ty: Xenco	EOG		Lea County, New Mexico	Rattle Snake Reuse Pit	EOG	Tetra Tech, Inc.	
ORIGINAL COPY		Received by:	Heceived by:	Mulle	Received by:	7/2/2018	7/2/2018	7/2/2018	7/2/2018	7/2/2018	7/2/2018	7/2/2018	7/2/2018	7/2/2018	7/2/2018	DATE		YEAR: 2018	SAMPLING	I BTEX exceeds 50 m	Sampler Signature:			Project #:		Site Manager:		
×		Date:	Date:	13/	∩ Date:	×	×	×	×	X	X	×	×	×	×	WAT SOIL HCL HNO			MATRIX PRI	g/kg.  Run deeper samples if T	Mike Carmona			212C-MD-01300		Clair Gonzales	4000 N. Big Spring Street, Ste 401 Midland, Texas 79705 Tel (432) 662-4559 Fax (432) 662-3946	
		Time:	- Time:	18 1941	me:	_		_	×	× 1 1		X 1N	X 1 N	X 1 N	X 1N	ICE None # CON	TÁIN	NER		nples if TPH exceeds	ona			1300			J Street, Ste xas 79705 2-4559 2-3946	
(טווסויי) האועם טיבנועבאבט		100 2990	Sample Temperature	ONLY			×								×	PAH 8 Total M	8021 X100 D15M 270C etals	B 95 (E 1 ( G ; Ag	BTEX Ext to ( iRO - I	( 8260B	b Se H	-						
FEDEX OPS		Rush Charges Authorized	RUSH: Same Day	TANDARD	REMARKS:										·	TCLP V TCLP S RCI GC/MS	olatil emi Vol. Sem	les Vola 826 ii. Vo	tiles 30B / 6 51. 82			19			le or Specify Method	ANALYSIS REQ	50115	1 A REPORT
I racking #:	Special Report Limits or TRRP Report	; Authorized	24 hr 48 hr	ARD			< >	< >	× ;	× ;	× ;	×	×	×	×	NORM PLM (A Chloride Chlorid Genera Anion/C	e S I Wa	Sulfa	Chemi	TDS istry (see	attacl	ned I	ist)		lethod No.)	REQUEST	Ψ	Page
	Ā		72 hr											Page		Hold of 39						Fi	nai	1.000				1 of 6

Analysis Reque	Analysis Request of Chain of Custody Record											_	Daue	D			s 2		'n	
F	Tetra Tech, Inc.		4000 N, Bi 401 Mid Tel ( Fax (	4000 N. Big Spring Street, Ste 401 Midland, Texas 79705 Tel (432) 682-4559 Fax (432) 682-3946				21	$\underline{\mathcal{O}}$		J I	$\frac{1}{11}$	T l	•				1		J'`
Client Name:	EOG	Site Manager:	Clair Gonzales	zales				≥ (	ANALYSIS		REQUEST	ĨĬ,	۲ <b>۲</b>							<b>I</b>
Project Name:	Rattle Snake Reuse Pit							(Circle o	– e – sp	Specify Method	N		- õ		- <u>?</u>		-			
Project Location: (county, state)	Lea County, New Mexico	Project #:	212C-1	212C-MD-01300																1.000
Invoice to:	EOG							]							ed list)					Final
Receiving Laboratory:	Yanno	Sampler Signature:	Mike C	Mike Carmona				*****							ttach					
Comments: Run 1,00	Aun 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	L FEX exceeds 50 m	g/kg. Run deepe	er samples if TP	H exceeds	5)						,		DS	ry (see					
		SAMPLING	MATRIX	PRESERVATIVE					atiles					ate		alance				
LAB #	SAMPLE IDENTIFICATION	YEAR: 2018	7			1005 (E	roc (	tals Ag	mi Vola				estos)	Sulf		tion Ba				
( LAB USE )		DATE	WATEI SOIL	HCL HNO <sub>3</sub> ICE None	# CONT	3TEX 80 17PH TX 17PH 801	PAH 827 Total Met	CLP Me	CLP Se	C/MS V	PCB's 80	IORM	LM (Ast	hloride	ieneral \	nion/Ca			old	of 39
T-2 (2')	2')	7/2/2018	×	×	╪┥	Ē	ł	1		_		_			C	_ <u> </u> ^	+	1	Н	34 c
T-2 (4')	4')	7/2/2018	×	×	-1 Z			-					$\times$	<u> </u> †		-+	+	T	Τ	age
T-2 (6')	6')	7/2/2018	X	×	1 2							$\square$	×			-+	+		T	F
T-2 (8')	(8)	7/2/2018	×	×	1 N								×			-	$\neg$			l
T-3 (0-1')	0-1)	7/2/2018	×	×	1 N	××							×			-+	-+			
T-3 (1)	1)	7/2/2018	×	×	1 Z								×				-			L
T-3 (2')	2)	7/2/2018	×	×	_1 Z								×							
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						(Circle) HAND DELIVERED	AND DEL	IVERED	FEDEX	X UPS		Tracking #:	ing #:							

ORIGINAL COPY

	Relinquished by:		Relinguished by:	Relinquisped by:										( LAB USE )	LAB #			Heceiving Laboratory:	Invoice to:	Project Location: (county, state)	Project Name:			Analysis Re
	Date: Time:		-lonkoving 73-18	A Date: Time:	1-5 (1) T-5 (2)	1-5 (0-1) 7 F (2)	1-4 (8')	T-4 (6')	T-4 (4')	T-4 (2')	T-4 (1')	T-4 (0-1')	T-3 (10')		SAMPLE IDENTIFICATION		Run Deeper samples if benzene exceeds 10 mg/kg or total BTEX exceeds 50 mg/kg. Run deeper samples if TPH 1,000 mg/kg	tory: Xenco	EOG	Lea County, New Mexico	Rattle Snake Reuse Pit	EOG	Tetra Tech, Inc.	Analysis Request of Chain of Custody Record
ORIGINAL COPY	Received by:	Heceived by:	But	7/2/2018 Received by:	7/2/2018	7/2/2018	7/2/2018	7/2/2018	7/2/2018	7/2/2018	7/2/2018	7/2/2018	7/2/2018	DATE	YEAR: 2018	SAMPLING	BTEX exceeds 50 m	Sampler Signature:		Project #:		Site Manager:		
Ϋ́	Date:	Date:	Ull 7/3/		×	×	×	×	×	X	×	×	×	WATER SOIL HCL	2	MATRIX	ng/kg. Run deeper	Mike Carmona		212C-MD-01300		Clair Gonzales	4000 N. Big S 401 - Midlan Tel (432 Fax (432	
	: Time:	: Time:	Ċ,		×	×	×	×	×	×	×	×	×	HNO <sub>3</sub> ICE None		PRESERVATIVE	samples if TPH e	rmona		D-01300		ales	4000 N. Big Spring Street, Ste 401 Midland, Texas 79705 Tel (432) 682-4559 Fax (432) 682-3946	
				1 Z	Z	1 Z	1 N	L N	_ Z	- Z	N N	- Z	N N	# CONTA			exceeds							
(Circle) HAND DELIVERED		Sample Temperature	LAB ON			X X						× ×		BTEX 802 TPH TX10 TPH 8015	005 (	Ext to		RO)						
ND DELN	600	mperature	LAB USE											PAH 8270 Total Meta	DC als Ag	j As B	a Cd Cr P	b Se Hg			(Circle			
														TCLP Meta TCLP Vola TCLP Sem	atiles		Ba Cd Cr F	'b Se H	g		_ q	Ą		
FEDEX	]Specia	]RUSH												RCI GC/MS Vo			624				Specify Method No.	ANALYSIS	$\mathcal{T}$	
UPS	Prush Charges Authorized	RUSH: Same Day	s: STANDARD						$\neg$				_	GC/MS Se PCB's 808			270C/625				- ify N	SREC	D	
Tracking #:	s Autho rt Limits	e Day	ARD	<u> </u>					$\neg$			4		NORM PLM (Asbe	estos	)					leth	REQUES		σ
;#[	orized	24 hr		×	×	×	×	×	×	×	×	×	×	Chloride Chloride	Sul		TDS				– d – V	Ī	ן ת	Page
	1RP Re	. 48 hr								+			- (	General W	/ater	Chen	nistry (see	attach	ned list	)	- <u>0</u>	.	<u>ا لہ</u>	
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8000L		Relinquished by:	romiquisition by.	Mester 1	Relinquished by:	T-7			T		- T	Т.	T_5	<u></u>	T-5	( LAB USE ONLY )	LAB #		Comments: Ru		Depoiving Laborator	Invoice to:	Project Location: (county, state)	Project Name:		Client Name:	(F)	Analysis Requ
		Date: Time:		R	Date: Time:	T-7 (0-1')	T-6 (8')	1-0 (4 ) T-6 (6')	1-0 (∠) Τ.ε. (Λ')		1-0 (0-1) T-6 (41)		T-5 (8')	T-5 (6')	5 (4')		SAMPLE IDENTIFICATION		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	Xenco	EOG		Lea County, New Mexico	Rattle Snake Reuse Pit	EOG	1	Tetra Tech, Inc.	Analysis Request of Chain of Custody Record
		Received by:	Received by:	Alusia	Received by:	8102/2/1	7/2/2018	7/2/2018	7/2/2018	7/2/2018	7/2/2018	7/2/2018	01077271	8 F NC/C/T	7/2/2018	DATE	YEAR: 2018	SAMPLING	II BTEX exceeds 50 m	Sampler Signature:			Project #:		She manager:	Site Manager		
		Date:	Date:	W 7/3		< ×	×	×	×	×	×	×	>	< [	×	WATER SOIL HCL		MATRIX	g/kg. Run deeper	Mike Carmona			212C-M		Clair Gonzales		4000 N. Big S 401 Midlar Tel (433 Fax (433	
		: Time:	Time	lle	I IX III	< ×	×	×	×	×	×	×	>	<;	×	HNO <sub>3</sub> ICE None		PRESERVATIVE METHOD	samples if TPH (	rmona			212C-MD-01300		ales		4000 N. Big Spring Street, Ste 401 Mildand,Texas 79705 Tel (432) 682-4559 Fax (432) 682-3946	
(Cin		t	San		N N		Z	Z	1 Z	-1 Z	1 2 X	1 Z			z	# CONTA FILTERE	) (Y	′N)	SXCeeds 4 8260B									
(Circle) HAND DELIVERED	NC8	2. 4 (0.0	Sample Temperature	LAB USE	×						×					TPH TX10 TPH 8015 PAH 8270 Fotal Meta	M ( (	GRO -	DRO - OI		g			(Cir				
VERED FEDEX UPS	Special Re		RUSH: Same Day		BEMADKS.										F	TCLP Meta TCLP Vola TCLP Sem RCI GC/MS Vo GC/MS Se	tiles i Vol I. 82	atiles 260B / 6	624	b Se H	łg			Circle or Specify Method	ANALYSIS A	C	2	
S Tracking #:	Special Report Limits or TRRP Report	Rush Charges Authorized	24 hr	STANDARD		×	×	×	×	×	×	×	×		۲ ۲ ۲	PCB's 808 NORM PLM (Asbe Chloride Chloride	stos) Suli	) fate	TDS					V Method No.	REQUEST		+ 7 1 1 1	Page
	<sup>o</sup> Report		48 hr 72 hr													General W				e attacl	ned li	st)	······································	- `` 				4 of
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Analysis Re	Analysis Request of Chain of Custody Record													- TO	Page	Φ			თ ი	ç		თ	
	Tetra Tech, Inc.		4000 N. Big 401 Midi Tei (4: Fax (4:	4000 N. Big Spring Street, Ste 401 Midland, Texas 79705 Tel (432) 682-4559 Fax (432) 682-3946					5	イー	$\underline{\bigcirc}$		$\sum$	-11	$\top$					l.			
Client Name:	EOG	Site Manager:	Clair Gonzales	ales					≥	ANALYSIS	NSI:		REQUEST	<b>IES</b>	٦ŀ								
Project Name:	Rattle Snake Reuse Pit					 		– Circle	- Ö	- ୧ - ୬	- 'p	_¥	Specify Method	- th	- 0 2	Ę	- ··		-				
Project Location: (county, state)	Lea County, New Mexico	Project #:	212C-N	212C-MD-01300					·					· · · ·	<u></u>							1:000	
Invoice to:	EOG																d list)					Tinai	mai
Receiving Laboratory:		Sampler Signature:					)	<u> </u>	е нд								ache						
	Xenco		Mike Carmona	armona			RO		105								e at						
Comments:	Run Deeper samples if benzene exceeds 10 mg/kg or total BTEX exceeds 50 mg/kg. 1,000 mg/kg	TEX exceeds 50 mg	/kg. Run deepe	Run deeper samples if TPH	l exceeds	8260B	DRO - OI	Cd Cr Pl	Cd Cr F		24	'0C/625			- · ·	TDS	stry (see						
		SAMPLING	MATRIX	PRESERVATIVE METHOD			GRO -	-	g As Ba	latiles	260B / 6		808	)	,	fate	Chem	alance					
LAB #	SAMPLE IDENTIFICATION	YEAR: 2018	R				·····			mi Vol	/ol. 82		082 / 6	pestos		Sul	Water	tion B					
		DATE	WATE SOIL	HCL HNO <sub>3</sub> ICE None		BTEX 8	PH 80 AH 82		CLP Me	CLP Se	C/MS V	C/MS S	CB's 8	LM (Asl	hloride	hloride	ieneral	nion/Ca				old जाउल	
	T-7 (1')	7/2/2018	×	×	╞┥										-		0	4	+	+	- -	-	5, 1
	T-7 (2')	7/2/2018	×	×	1 Z	_		_			+		+	+	$\overline{z}$	1			+	╉	+	ade	~90
	T-7 (4')	7/2/2018	×	×	-1 Z					-+	-+		+		׆:						+		
	T-7 (6')	7/2/2018	×	×	1 N		-			-	-		_	$\dashv$	×			_	$\rightarrow$	+	+		
	1-7 (8')	7/2/2018	×	×	1 N										×						-+		
	Ан-в (U-1')	7/2/2018	×	×	1 N	×	×								×						-+		
	AH-8 (7:-7:5)	7/2/2018	×	×	1 Z		-	ļ							×								
	AH 6 (2: 2 EV AH -6 (2-2.3)	7/2/2018	×	×	_1 Z					┣	<u> </u>		<b> </b>		×								
	AH-9 (0-1')	7/2/2018	< ×	× ×	z		:	—				1	+	+	×			<b> </b>		-		1	
Relinquished by:	A Date: Time:	Received by:		te: Time:	-	^	2		Ŗ		Ì−		$\vdash$	$\vdash$	×				$\vdash$	$\vdash$	┢	1	
hester	Postevint 7-3-18	MUJU	U 71.	9	941		ONLY	ς ο Π			ي ب	ΓAΝ	STANDARD	G									
neiinquisnea by:	Date: Time:	Received by:	Date:	te: Time:		Sample Temperature	Tempe	rature		╎╷	HSD	ເ	RUSH: Same Day	Day	24 hr	<sup>i</sup> hr	48 hr		72 hr	=			
Relinquished by:	Date: Time:	Received by:	Date:	te: Time:		١	25	6° 3		╵└┈	ush (	Chan	Rush Charges Authorized	Auth	orize	ă							
							,									Ā		repo				1	
						(Circle) HAND DELIVERED	HAND	DELIV	ERED	FEDEX		UPS		Tracking #:	g#:							_	

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Relinquished by: Relinquished by: Relinguished by: Project Location: Analysis Request of Chain of Custody Record Comments: (county, state) <sup>o</sup>roject Name: leceiving Laboratory: lient Name: voice to: LAB USE LAB # ies tox đ AH-10 (3'-3.5') AH-10 (2'-2.5') AH-9 (3'-3.5') AH-9 (2'-2.5') AH-9 (1'-1.5') 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 AH-10 (1'-1.5') AH-10 (0-1') Xenco EOG EOG Rattle Snake Reuse Pit Lea County, New Mexico **Fetra Tech, Inc.** SAMPLE IDENTIFICATION 73418 Date: Date: Date: Time: lime: Time: Received by: Received by Receiv Sampler Signature: YEAR: 2018 Project #: Site Manager: 7/2/2018 7/2/2018 7/2/2018 7/2/2018 7/2/2018 7/2/2018 7/2/2018 DATE SAMPLING TIME WATER Clair Gonzales MATRIX × × X × ×  $\times \times$ SOIL 4000 N. Big Spring Street, Ste 401 Midland,Texas 79705 Tel (432) 682-4559 Fax (432) 682-3946 212C-MD-01300 Mike Carmona Date: Date: Date HCL Ś PRESERVATIVE HNO<sub>3</sub> CA) × × × × × × ICE Time: × Time: Ī None Cqu, # CONTAINERS z z z z Z z z FILTERED (Y/N) (Circle) HAND DELIVERED Sample Temperature × BTEX 8021B BTEX 8260B 32100 TPH TX1005 (Ext to C35) LAB USE ONLY  $\times$ TPH 8015M ( GRO - DRO - ORO ) んじ PAH 8270C (Circle or Specify Method No.) Total Metals Ag As Ba Cd Cr Pb Se Hg TCLP Metals Ag As Ba Cd Cr Pb Se Hg TCLP Volatiles REMARKS: **ANALYSIS REQUEST** X RUSH: Same Day 24 hr TCLP Semi Volatiles \_\_\_\_Rush Charges Authorized FEDEX UPS Special Report Limits or TRRP Report RCI STANDARD GC/MS Vol. 8260B / 624 GC/MS Semi. Vol. 8270C/625 PCB's 8082 / 608 Tracking #: NORM Page PLM (Asbestos) × ××  $\times \times$ X × Chloride Chloride Sulfate TDS 48 hr General Water Chemistry (see attached list) Anion/Cation Balance 72 hr თ ੍ਰ Hold Page 38 of 39 Final 1.000

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### **XENCO** Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: Tetra Tech- Midland Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 07/03/2018 09:41:00 AM Temperature Measuring device used : R8 Work Order #: 591157 Comments Sample Receipt Checklist 3.2 #1 \*Temperature of cooler(s)? #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#:

Date: 07/03/2018

Checklist completed by: Market Katie Lowe Checklist reviewed by: Market 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,

Kursh

Kelsey Brooks Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies. A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



### 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



### CASE NARRATIVE

Client Name: Tetra Tech- Midland Project Name: EOG-Rattlesnake Reuse Pit

Project ID: 212C-MD-01300 Work Order Number(s): 592594 Report Date:20-JUL-18Date Received:07/17/2018

#### 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-01300Contact:Clair GonzalesProject Location:Lea County, New Mexico

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

	Lab Id:	592594-0	001	592594-0	02	592594-0	03	592594-0	04	592594-0	05	592594-0	06
	Field Id:	T-11 (0-	1')	T-11 (1	)	T-11 (2'		T-11 (4	')	T-11 (6'	)	T-11 (8'	)
Analysis Requested	Depth:	,	<i>,</i>	,	,	,	,	,	, ,				,
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-17-18 (	00:00	Jul-17-18 0	0:00	Jul-17-18 0	0:00	Jul-17-18 (	0:00	Jul-17-18 0	0:00	Jul-17-18 0	0:00
BTEX by EPA 8021B	Extracted:	Jul-17-18 1	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 1	16:00	Jul-18-18 1	6:00	Jul-18-18 1	6:00	Jul-19-18 1	6:00	Jul-19-18 1	5:00	Jul-19-18 1	6:00
	Analyzed:	Jul-18-18 2	20:01	Jul-18-18 2	0:06	Jul-18-18 2	0:12	Jul-19-18 1	7:48	Jul-19-18 1	3:04	Jul-19-18 1	8:09
	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 1	12:00										
	Analyzed:	Jul-19-18 1	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										

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Huns Arah

Kelsey Brooks Project Manager



### Certificate of Analysis Summary 592594

Tetra Tech- Midland, Midland, TX Project Name: EOG-Rattlesnake Reuse Pit



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

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

	Lab Id:	592594-0	07	592594-0	08	592594-0	000	592594-0	10	592594-(	)11	592594-0	)12
	Field Id:	T-11 (10							-	T-12 (4			
Analysis Requested		1-11 (10	,)	T-12 (0-1	.)	T-12 (1	)	T-12 (2	)	1-12 (4	)	T-12 (6	)
~ 1	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-17-18 0	00:00	Jul-17-18 0	0:00	Jul-17-18 0	00:00	Jul-17-18 (	00:00	Jul-17-18 (	00:00	Jul-17-18 0	00:00
BTEX by EPA 8021B	Extracted:			Jul-17-18 1	8:00								
	Analyzed:			Jul-18-18 1	0:11								
	Units/RL:			mg/kg	RL								
Benzene				< 0.00201	0.00201								
Toluene				< 0.00201	0.00201								
Ethylbenzene					0.00201								
m,p-Xylenes				< 0.00402	0.00402								
o-Xylene					0.00201								
Total Xylenes					0.00201								
Total BTEX				< 0.00201	0.00201								
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-19-18 1	6:00	Jul-19-18 1	6:00	Jul-19-18 1	6:00	Jul-19-18 1	6:00	Jul-19-18 1	6:00	Jul-19-18 1	6:00
	Analyzed:	Jul-19-18 1	8:15	Jul-19-18 1	8:20	Jul-19-18 1	8:36	Jul-19-18 1	8:42	Jul-19-18 1	8:47	Jul-19-18 1	8:52
	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 1	2:00								
	Analyzed:			Jul-19-18 1	6:09								
	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								

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Huns Arah

Kelsey Brooks Project Manager



### Certificate of Analysis Summary 592594

Tetra Tech- Midland, Midland, TX Project Name: EOG-Rattlesnake Reuse Pit



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

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

	Lab Id:	592594-0	)13	592594-0	014	592594-0	15	592594-0	16	592594-0	)17	592594-0	18
Analysis Requested	Field Id:	T-12 (8	)	T-12 (10	)))	T-13 (0-1	1')	T-13 (1	)	T-13(2	)	T-13 (4	')
Inulysis Requested	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-17-18 (	00:00	Jul-17-18 0	00:00	Jul-17-18 0	0:00	Jul-17-18 0	0:00	Jul-17-18 (	00:00	Jul-17-18 0	0:00
BTEX by EPA 8021B	Extracted:		1			Jul-17-18 1	8:00						
	Analyzed:					Jul-18-18 10	0:29						
	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						
o-Xylene							0.00202						
Total Xylenes							0.00202						
Total BTEX						< 0.00202	0.00202						
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-19-18 1	16:00	Jul-19-18 1	6:00	Jul-19-18 1	6:00	Jul-19-18 1	6:00	Jul-19-18 1	6:00	Jul-19-18 1	6:00
	Analyzed:	Jul-19-18 1	18:58	Jul-19-18 1	9:03	Jul-19-18 19	9:19	Jul-19-18 1	9:25	Jul-19-18 1	9:41	Jul-19-18 1	9:46
	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	2:00						
	Analyzed:					Jul-19-18 1	6:29						
	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						

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Huns froah

Kelsey Brooks Project Manager



Lea County, New Mexico

**Contact:** 

**Project Location:** 

Certificate of Analysis Summary 592594

Tetra Tech- Midland, Midland, TX Project Name: EOG-Rattlesnake Reuse Pit



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

	Lab Id:	592594-0	19	592594-0	20	592594-0	21		
Analysis Requested	Field Id:	T-13 (6	)	T-13 (8)	)	T-13 (10	')		
Analysis Kequestea	Depth:								
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Jul-17-18 0	0:00	Jul-17-18 0	0:00	Jul-17-18 0	0:00		
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-19-18 1	6:00	Jul-19-18 1	5:00	Jul-19-18 1	6:00		
	Analyzed:	Jul-19-18 1	9:52	Jul-19-18 19	9:57	Jul-19-18 20	0:03		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		12.1	5.02	< 5.00	5.00	< 5.01	5.01		

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Huns Roah

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 LimitSDLSample Detection LimitLOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable

SMP Clie	ent Sample	BLK	Method Blank	
BKS/LCS	S Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labo	ratory 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



## Project Name: EOG-Rattlesnake Reuse Pit

	<b>ders :</b> 592594 #: 3056801	Sample: 592594-001 / SMP	Batc	Project ID h: 1 Matrix			
Units:	mg/kg	Date Analyzed: 07/18/18 09:53	st	JRROGATE R	ECOVERY	STUDY	
	BTEX	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluoro	obenzene		0.0259	0.0300	86	70-130	
4-Bromoflue	orobenzene		0.0284	0.0300	95	70-130	
Lab Batch	#: 3056801	Sample: 592594-008 / SMP	Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 07/18/18 10:11	st	JRROGATE R	ECOVERY S	STUDY	
		by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluoro			0.0241	0.0300	80	70-130	
4-Bromoflue			0.0244	0.0300	81	70-130	
	#: 3056801	Sample: 592594-015 / SMP	Batc			10 100	
Units:	mg/kg	Date Analyzed: 07/18/18 10:29	su	JRROGATE R	ECOVERY	STUDY	
	BTEX	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage
		Analytes			[D]		
1,4-Difluoro	obenzene		0.0221	0.0300	74	70-130	
4-Bromoflue	orobenzene		0.0254	0.0300	85	70-130	
Lab Batch	#: 3057120	Sample: 592594-001 / SMP	Batc	h: 1 Matrix	: Soil		
Units:	mg/kg	Date Analyzed: 07/19/18 15:49	st	JRROGATE R	ECOVERY S	STUDY	
		By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooct			98.0	99.8	98	70-135	
o-Terphenyl			51.0	49.9	102	70-135	
	#: 3057120	Sample: 592594-008 / SMP	Batc				<u> </u>
Units:	mg/kg	<b>Date Analyzed:</b> 07/19/18 16:09	SU	JRROGATE R	ECOVERY S	STUDY	
	ТРН В	Sy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
		Analytes			[D]		
1-Chlorooct	ane		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



## Project Name: EOG-Rattlesnake Reuse Pit

Lab Batch #:	305/120	Sample: 592594-015 / SMP	Batc	h: 1 Matrix	: 5011		
U <b>nits:</b>	mg/kg	Date Analyzed: 07/19/18 16:29	SU	RROGATE R	ECOVERY	STUDY	
	TPH F	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage
		Analytes			[D]		
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 / B	LK Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 07/18/18 03:39	SU	RROGATE R	ECOVERYS	STUDY	
		A by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1.4-Difluorobe		Anaryus	0.0304	0.0300	101	70-130	
4-Bromofluoro			0.0304	0.0300	101	70-130	
Lab Batch #:		Sample: 7658750-1-BLK / B				, 0 150	
Units:	mg/kg	<b>Date Analyzed:</b> 07/19/18 12:49		RROGATE R		STUDY	
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes	[]	[2]	[D]	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
1-Chlorooctane			94.9	100	95	70-135	
o-Terphenyl			50.3	50.0	101	70-135	
Lab Batch #:	3056801	Sample: 7658578-1-BKS / B	KS Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 07/18/18 02:10	SU	RROGATE R	ECOVERYS	STUDY	
	BTEX	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluorobe	nzene		0.0270	0.0300	90	70-130	
4-Bromofluoro	benzene		0.0313	0.0300	104	70-130	
Lab Batch #:	3057120	Sample: 7658750-1-BKS / B	KS Bate	h: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 07/19/18 13:08	SU	RROGATE R	ECOVERY	STUDY	
	TPH I	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage
		Analytes	പ്ര	[1]	[D]	701	
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



## Project Name: EOG-Rattlesnake Reuse Pit

Units:	mg/kg	Date Analyzed: 07/18/18 02:28	CT.		FCOVEDV						
onnes.	mg/kg		SL	JRROGATE R	ECOVERY	STUDY					
	BTEX	5 by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes			[D]						
1,4-Difluor	benzene		0.0288	0.0300	96	70-130					
4-Bromoflu	orobenzene		0.0303	0.0300	101	70-130					
Lab Batch	#: 3057120	Sample: 7658750-1-BSD / BS	D Batc	h: 1 Matrix	: Solid						
Units:	mg/kg	<b>Date Analyzed:</b> 07/19/18 13:28	SU	RROGATE R	ECOVERY S	STUDY					
		By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooct		Analytes	102	100		70.125					
o-Terpheny			123	100	123	70-135					
1 2	#: 3056801	Sample: 592472-001 S / MS	57.1 Bate	50.0 h: 1 Matrix	114	70-135					
		•									
Units:	mg/kg	Date Analyzed: 07/18/18 02:46	SU	RROGATE R	ECOVERY	STUDY					
	BTEX	L by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
		Analytes			[D]						
1,4-Difluoro	obenzene		0.0309	0.0300	103	70-130					
4-Bromoflu	orobenzene		0.0220	0.0300							
Lab Batch	#: 3057120	Sample: 592471-001 S / MS	Batc	h: 1 Matrix	: Soil						
Units:	mg/kg	<b>Date Analyzed:</b> 07/19/18 14:09	SU	RROGATE R	ECOVERY S	STUDY					
		By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooct	ane		124	99.8	124	70-135					
o-Terpheny			55.9	49.9	112	70-135					
Lab Batch	#: 3056801	Sample: 592472-001 SD / MS	D Bate	h: 1 Matrix	: Soil	1					
Units:	mg/kg	Date Analyzed: 07/18/18 03:04	SU	RROGATE R	ECOVERY	STUDY					
	BTEX	t by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage				
		Analytes			[D]						
1,4-Difluor	obenzene		0.0292	0.0300	97	70-130					
4-Bromoflu	orobenzene		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



## Project Name: EOG-Rattlesnake Reuse Pit

	orders : 592594 h #: 3057120 mg/kg	4, Sample: 592471-001 SD / N Date Analyzed: 07/19/18 14:29		Project ID: n: 1 Matrix: RROGATE RI	Soil		
		By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorood	ctane		125	100	125	70-135	
o-Terphen	yl		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



### **BS / BSD Recoveries**



#### Project Name: EOG-Rattlesnake Reuse Pit

Work Order	#: 592594	<b>Project ID:</b> 212C-MD-01300										
Analyst:	ALJ	D	ate Prepar	red: 07/17/201	8			Date A	nalyzed: (	07/18/2018		
Lab Batch ID:	: 3056801 Sample: 7658578-	1-BKS	Bate	<b>h #:</b> 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	K /BLANK S	SPIKE / I	BLANK S	SPIKE DUP	LICATE	RECOVI	ERY STUI	ΟY	
	BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analy	rtes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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	
Ethylbenze	ene	< 0.00200	0.0998	0.0942	94	0.100	0.103	103	9	70-130	35	
m,p-Xylen	les	< 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	D	ate Prepar	red: 07/18/201	8	•		Date A	nalyzed: (	07/18/2018		
Lab Batch ID:	<b>:</b> 3056961 <b>Sample:</b> 7658662-	1-BKS	Batc	<b>h #:</b> 1					Matrix: S	Solid		
Units:	mg/kg		BLAN	K /BLANK	SPIKE / I	BLANK S	SPIKE DUP	LICATE	RECOVI	ERY STUI	ΟY	
Inorga Analy	anic Anions by EPA 300/300.1 /tes	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 Orde	er #: 592594						<b>Project ID:</b> 212C-MD-01300							
Analyst:	SCM	D	ate Preparo	ed: 07/19/201	18			Date A	nalyzed: (	07/19/2018				
Lab Batch II	<b>Sample:</b> 7658719-	-BKS	Batch	<b>1 #:</b> 1					Matrix: S	Solid				
Units:	mg/kg		BLAN	K/BLANK S	SPIKE / ]	BLANK	SPIKE DUP	LICATE	RECOV	ERY STUI	ΟY			
	ganic Anions by EPA 300/300.1	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							0	00.110	20			
Chioride		< 5.00	250	252	101	250	252	101	0	90-110	20	1		
· · · · · · · · · · · · · · · · · · ·			L		-		1			+	+	+		
Analyst:	ARM	Da	ate Prepare	ed: 07/19/201	18	ł		Date A	nalyzed: (	07/19/2018				
Analyst: Lab Batch II			ate Prepare Batch		18				nalyzed:( Matrix: S		•			
-			Batch			BLANK	SPIKE DUP		Matrix: S	Solid	)Y			
Lab Batch II	D: 3057120 Sample: 7658750- mg/kg TPH By SW8015 Mod		Batch	n#: 1		BLANK S Spike Added [E]	SPIKE DUP Blank Spike Duplicate Result [F]		Matrix: S	Solid	DY Control Limits %RPD	Flag		
Lab Batch II Units: Anal	D: 3057120 Sample: 7658750- mg/kg TPH By SW8015 Mod	I-BKS Blank Sample Result	Batch BLANI Spike Added	n #: 1 K /BLANK S Blank Spike Result	SPIKE / ] Blank Spike %R	Spike Added	Blank Spike Duplicate	LICATE Blk. Spk Dup. %R	Matrix: S RECOV	Solid ERY STUE Control Limits	Control Limits	Flag		

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 II	<b>):</b> 212C-1	MD-0130	C		
Lab Batch ID:	3056801	QC- Sample ID:	592472	-001 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	07/18/2018	Date Prepared:	07/17/2	018	An	alyst: A	ALJ					
<b>Reporting Units:</b>	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
	BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Analytes	[A]	[B]	[0]	[D]	[E]		[G]	,,,		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
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	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	07/18/2018	Date Prepared:	07/18/2	018	An	alyst: S	SCM					
<b>Reporting Units:</b>	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorgai	nic Anions by EPA 300/300.1	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits %R	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%K	%RPD	
Chloride		282	250	532	100	250	522	96	2	90-110	20	
Lab Batch ID:	3056961	QC- Sample ID:	592472	-001 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	07/18/2018	Date Prepared:	07/18/2	018	An	alyst: S	SCM					
<b>Reporting Units:</b>	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorgai	nic Anions by EPA 300/300.1	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Analytes	[A]	[B]	r.,	[D]	[E]		[G]				
Chloride		83.3	248	334	101	248	334	101	0	90-110	20	

Matrix Spike Percent Recovery  $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD =  $200^{\circ}|(C-F)/(C+F)|$  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 II	<b>):</b> 212C-1	MD-0130	0		
Lab Batch ID:	3057083	QC- Sample ID:	592594	-004 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	07/19/2018	Date Prepared:	07/19/2	018	An	alyst: S	SCM					
<b>Reporting Units:</b>	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA'	TE REC	OVERY	STUDY		
Inorga	nnic Anions by EPA 300/300.1	Parent Sample	Spike	Spiked Sample Result	Sample		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		118	252	360	96	252	361	96	0	90-110	20	
Lab Batch ID:	3057083	QC- Sample ID:	592594	-014 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	07/19/2018	Date Prepared:	07/19/2	018	An	alyst: S	SCM					
<b>Reporting Units:</b>	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA'	TE REC	OVERY	STUDY		
Inorga	nnic Anions by EPA 300/300.1	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		12.4	248	253	97	248	259	99	2	90-110	20	
Lab Batch ID:	3057120	QC- Sample ID:	592471	-001 S	Ba	tch #:	1 Matrix	: Soil				
Date Analyzed:	07/19/2018	Date Prepared:	07/19/2	018	An	alyst: A	ARM					
<b>Reporting Units:</b>	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA'	TE REC	OVERY	STUDY		
	TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Gasoline Rang	e 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)/BRelative 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.

	Relinquished by:		Relinquished by:	All Martiney by											LAB USE	LAB #		Comments:	Receiving Laboratory:	Invoice to:	Project Location: (county, state)	Project Name:	CHERT NAME;	æ	Analysis Re
	Date:		. · Date:	End Cagnyinn 7-(7	T-12 (2')	T-12 (1')	T-12 (0-1')	T-11 (10')	T-11 (8')	T-11 (6')	T-11 (4')	T-11 (2')	T-11 (1')	T-11 (0-1')		SAMPLE IDENTIFICATION		Run deeper samples if benzene exceeds 10 mg/kg or total BTEX exceeds 50 mg/kg. Run deeper samples 1,000 mg/kg.	<sup>atory:</sup> Xenco Labs		Lea County, New Mexico	Rattlesnake Reuse Pit	EOG	Tetra Tech.	Analysis Request of Chain of Custody Record
	Time:		Time:	-11me: -(8  646												ION		ds 10 mg/kg or total B						ch. Inc.	
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### **XENCO** Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: Tetra Tech- Midland Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 07/17/2018 04:48:00 PM Temperature Measuring device used : R8 Work Order #: 592594 Comments Sample Receipt Checklist 4.2 #1 \*Temperature of cooler(s)? #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#:

Date: 07/17/2018

Checklist completed by: Ballo Tal Brianna Teel Checklist reviewed by: Many Moah Kelsev Brooks

Date: 07/19/2018