

SITE INFORMATION

Report Type: Work Plan 2RP-4959

General Site Information:

Site:	El Presidente State #4H					
Company:	Marathon Oil Permian, LLC					
Section, Township and Range	Unit O	Sec. 02	T 24S	R 27E		
Lease Number:	API No. 30-015-44165					
County:	Eddy County					
GPS:	32.2400799° N			104.153171° W		
Surface Owner:	State					
Mineral Owner:						
Directions:	From the intersection of US 285 and Black River Village Rd in Malaga, travel west on Black River Village for approximatey 1.7 mi, turn north onto Higby Hole Rd for approx. 2.85 mi, turn west and continue for 2.05 mi, turn south for 2.0 miles to location.					

Release Data:

Date Released:	12/24/2017
Type Release:	Oil and Produced Water
Source of Contamination:	Oil Tank
Fluid Released:	91 bbls
Fluids Recovered:	13 bbls

Official Communication:

Name:	Callie Karrigan		Ike Tavaréz
Company:	Marathon Oil Permian, LLC.		Tetra Tech
Address:	2423 Bonita St.		4000 N. Big Spring
			Ste 401
City:	Carlsbad, NM 88220		Midland, Texas
Phone number:	(575) 297-0956		(432) 687-8110
Fax:			
Email:	cnkarrigan@marathonoil.com		Ike.Tavaréz@tetrattech.com

Ranking Criteria

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	50'-75'
>100 ft.	0	
WellHead Protection:	Ranking Score	Site Data
Water Source <1,000 ft., Private <200 ft.	20	
Water Source >1,000 ft., Private >200 ft.	0	0
Surface Body of Water:	Ranking Score	Site Data
<200 ft.	20	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
Total Ranking Score:		10

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



May 7, 2018

Mike Bratcher
Environmental Engineer Specialist
Oil Conservation Division, District 2
811 S. First Street
Artesia, New Mexico 88210

Re: Work Plan for the Marathon Oil Company, El Presidente State #4H, Unit O, Section 02, Township 24 South, Range 27 East, Eddy County, New Mexico. 2RP-4557.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by Marathon Oil Company (Marathon) to investigate and assess a release that occurred at the El Presidente State #4H, Unit O, Section 02, Township 24 South, Range 27 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.2400799°, W 104.153171°. 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 December 24, 2017, and released approximately ninety-one (91) barrels of fluids (89 bbls of oil and 2 bbls of produced water) due to a water hauler failing to disconnect from the load line prior to disembarking. Approximately thirteen (13) barrels of fluids were recovered. The release occurred on the pad area and measured approximately 150' x 200' and approximately 3.7 barrels of fluids migrated into the adjacent pasture impacting an area measuring approximately 30' x 125'. The initial C-141 form is included in Appendix A.

Groundwater

No wells are listed within Section 02 in the New Mexico Office of the State Engineers database, the USGS National Water Information System, or the Geology and Ground-Water Resources of Eddy County, NM (Report 3). However, the State Engineers database lists a well in Township 23 South, Range 27 East, Section 35, approximately 1.45 miles northwest of the site, with a reported depth to water of 67' below surface. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is between 50' and 75' below surface. The groundwater data is shown in Appendix B.

Tetra Tech

4000 North Big Spring, Suite 401, Midland, TX 79705

Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com



Regulatory

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

Soil Assessment and Analytical Results

On February 22, 2018, Tetra Tech personnel were onsite to evaluate and sample the release area. Eight auger holes (AH-1 through AH-8) were installed in the release footprint to total depths ranging from 6" to 4.5' below surface. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B, and chloride by EPA method 300.0. Copies of the laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole locations are shown in Figure 3.

TPH

Referring to Table 1, the areas of auger holes (AH-1, AH-3, and AH-4) showed TPH highs below the RRAL with concentrations of 209 mg/kg (AH-1), 599 mg/kg (AH-3), and 18.0 mg/kg (AH-4). The remaining auger hole locations showed elevated TPH concentrations to the shallow soils. The areas of auger holes (AH-2, AH-5, AH-6, AH-7, and AH-8) showed TPH highs of 16,100 mg/kg (0-6"), 45,700 mg/kg (0-1'), 10,500 mg/kg (0-1'), 15,000 mg/kg (0-1'), and 7,640 mg/kg (0-1'), respectively. The TPH concentrations declined with depth in the areas of auger holes (AH-5, AH-5, AH-7, and AH-8) to below the RRAL at depths ranging from 1.0'-1.5' to 3.0'-3.5' below surface. However, deeper samples were not collected in the area of auger hole (AH-2) due to a dense formation and the impact was not vertically defined.

Benzene and Total BTEX

The areas of auger holes (AH-1, AH-2, and AH-3) did not show any benzene or total BTEX concentrations above the RRALs. The area of auger hole (AH-5) showed a benzene concentration of 28.3 mg/kg at 0-1', which declined with depth to 13.8 mg/kg at 1.0'-1.5' and <0.101 mg/kg at 2.0'-2.5' below surface. None of the remaining areas showed benzene concentrations above 10 mg/kg. Additionally, the areas of auger holes (AH-5, AH-6, AH-7, and AH-8) showed total BTEX concentrations above the RRAL in the shallow soils, with BTEX highs of 870 mg/kg (1.0'-1.5'), 309 mg/kg (0-1'), 412 mg/kg (0-1'), and 101 mg/kg (0-1'), respectively. The BTEX concentrations then declined with depth to below the RRAL's at depths between 1.0'-1.5' and 2.0'-2.5' below surface.

Chloride

The areas of auger holes (AH-1, AH-4, AH-5, AH-6, and AH-8) did not show elevated chloride concentrations above the 600 mg/kg threshold. However, a shallow chloride impact was detected in the areas of auger holes (AH-2, AH-3, and AH-7), with concentrations of 1,510 mg/kg, 2,000 mg/kg, and 2,900 mg/kg at 0-1' below surface, respectively. The chloride concentrations detected in auger hole (AH-7) declined with depth to 73.7 mg/kg at 1.0'-1.5' below surface. Deeper samples were not collected in the areas of auger holes (AH-2 and AH-3) due to a dense formation and the chloride impact was not vertically defined.

Work Plan

Based on the laboratory results, Marathon proposes to remove the impacted soils as shown on Figure 4 and highlighted (green) on Table 1. The areas of auger holes (AH-2, AH-3, AH-6, AH-7 and AH-8) will be excavated to approximately 1.0'-2.0' below surface and the area of auger hole (AH-5) will be excavated to approximately 2.0'-3.0' below surface. During the excavation activities, deeper samples will be collected using a backhoe in the areas of auger holes (AH-2 and AH-3) in order to vertically define the extents. Based on the results those areas will be excavated to the appropriate depths. The excavated areas will then be backfilled with clean material to surface grade. All of the excavated material will be transported offsite for proper disposal.

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 safety concerns for onsite personnel. As such, Marathon will excavate the impacted soils to the maximum extent practicable.

Revegetation Plan

The backfilled areas in the pasture will be seeded in June 2018 in order to coincide with the rainy season in Southeastern New Mexico to aid in revegetation. Based on the soils at the site, the NMSLO Loamy (L) Sites Seed Mixture will be used for seeding and will be planted in the amount specified in the pounds pure live seed (PLS) per acre. The seed mixture will be spread by a drill equipped with a depth regulator or a hand-held broadcaster and raked. If a hand-held broadcaster is used for dispersal, the pounds pure live seed per acre will be doubled.

Site inspections will be performed to assess the revegetation progress and evaluate the site for the presence of primary or secondary noxious weeds. If noxious weeds are identified, the NMSLO will be contacted to determine an effective method for eradication. If the site does not show revegetation after one growing season, the area will be reseeded as appropriate. The NMSLO seed mixture details and corresponding pounds pure live seed per acre are included in Appendix D.



TETRA TECH

Conclusion

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.

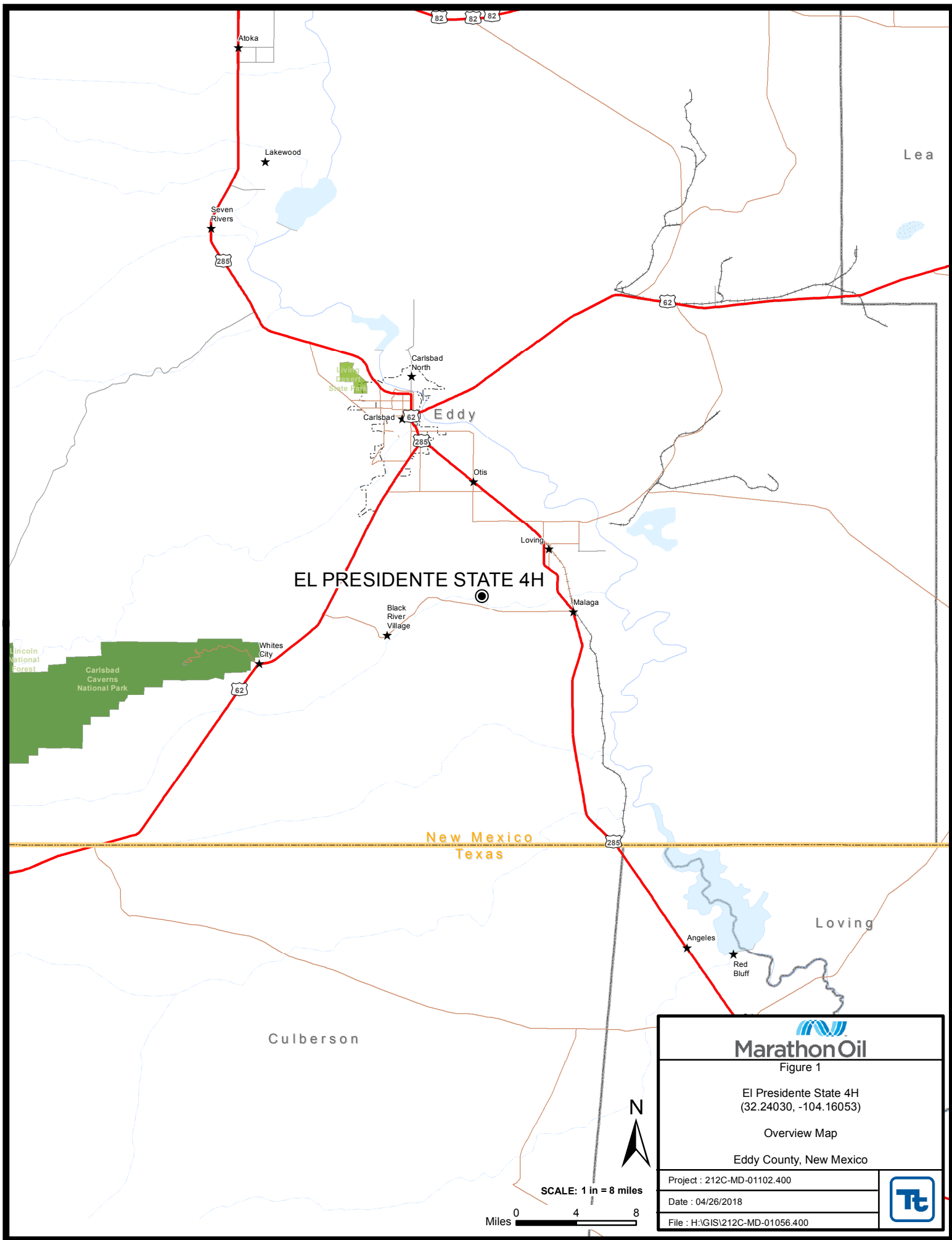
Respectfully submitted,
TETRA TECH

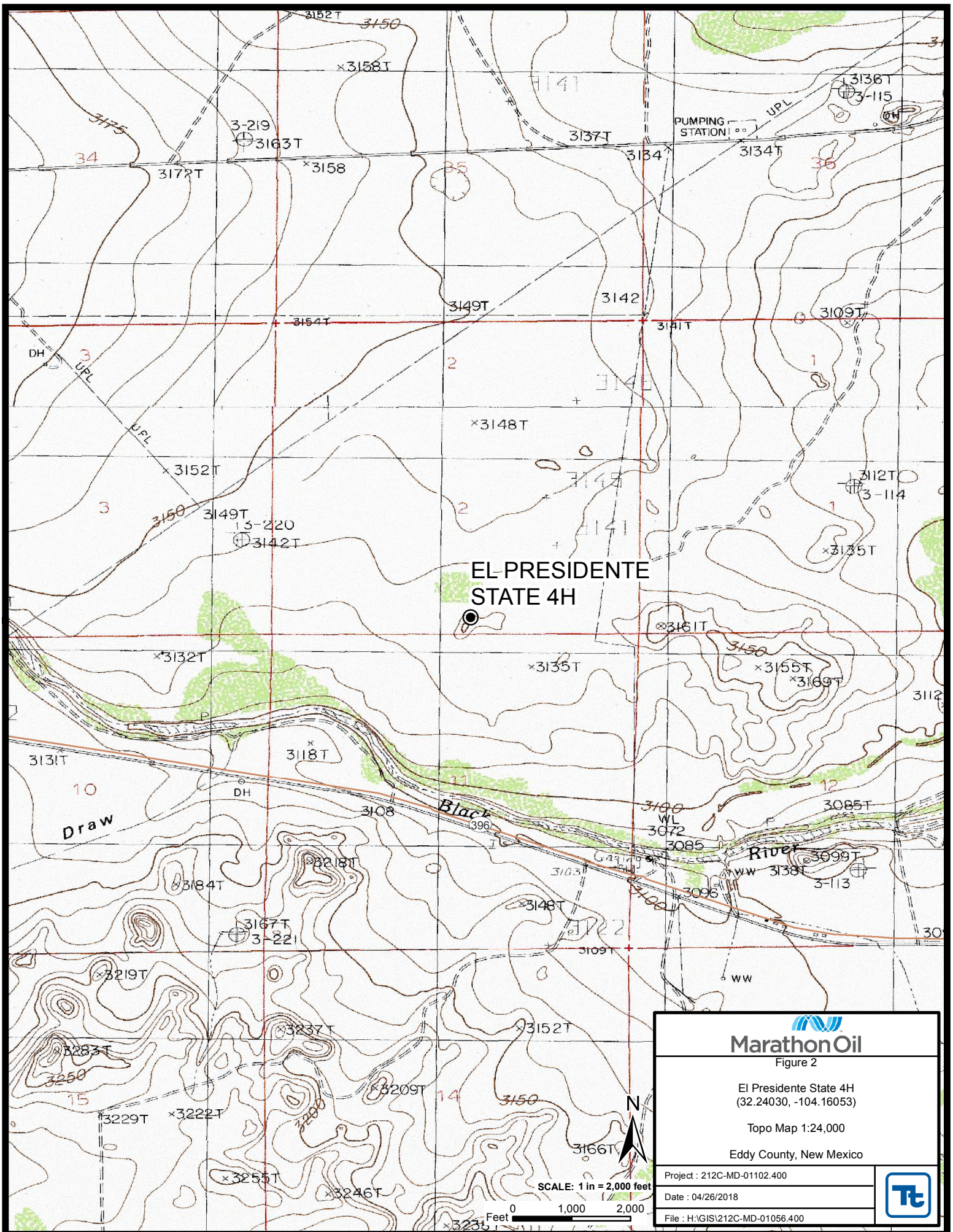
Clair Gonzales,
Project Manager

Ike Tavaréz,
Senior Project Manager, P.G.

cc: Crystal Weaver – NMOCD
Ryan Mann - NMSLO
Callie Karrigan - Marathon

Figures





EL-PRESIDENTE
STATE 4H


Marathon Oil
Figure 2

El Presidente State 4H
(32.24030, -104.16053)

Topo Map 1:24,000

Eddy County, New Mexico

Project : 212C-MD-01102.400

Date : 04/26/2018

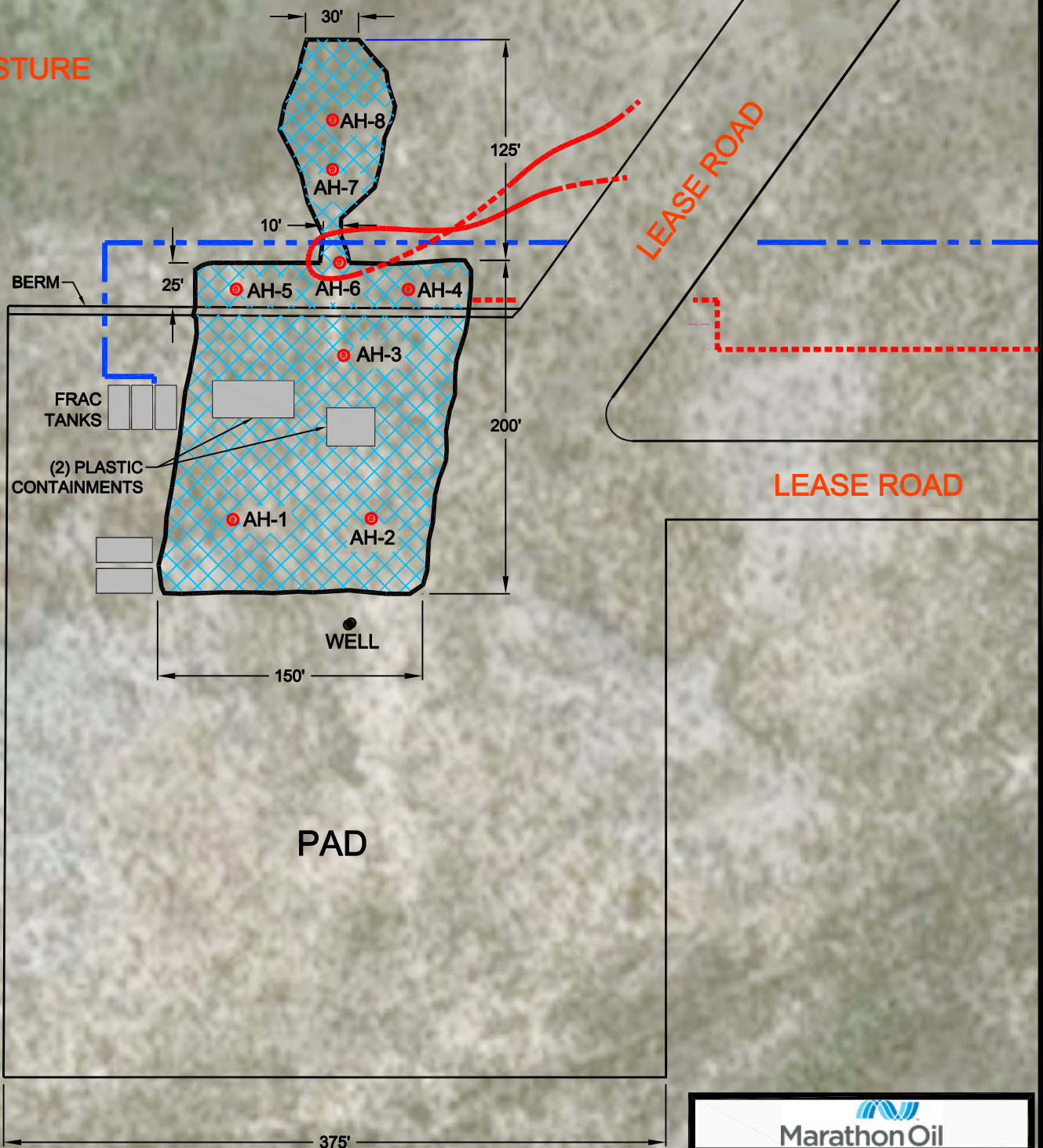
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SCALE: 1 in = 2,000 feet

0 1,000 2,000
Feet

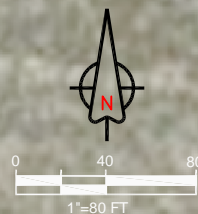
PASTURE



LEGEND

- AUGER HOLE SAMPLE LOCATIONS
- SPILL AREAS
- STEEL PIPE
- POLY PIPE

PASTURE



Marathon Oil

Figure 3

EL Presidente 1102
(32.24030, -104.16053)

Spill Assessment Map
Lea County, New Mexico

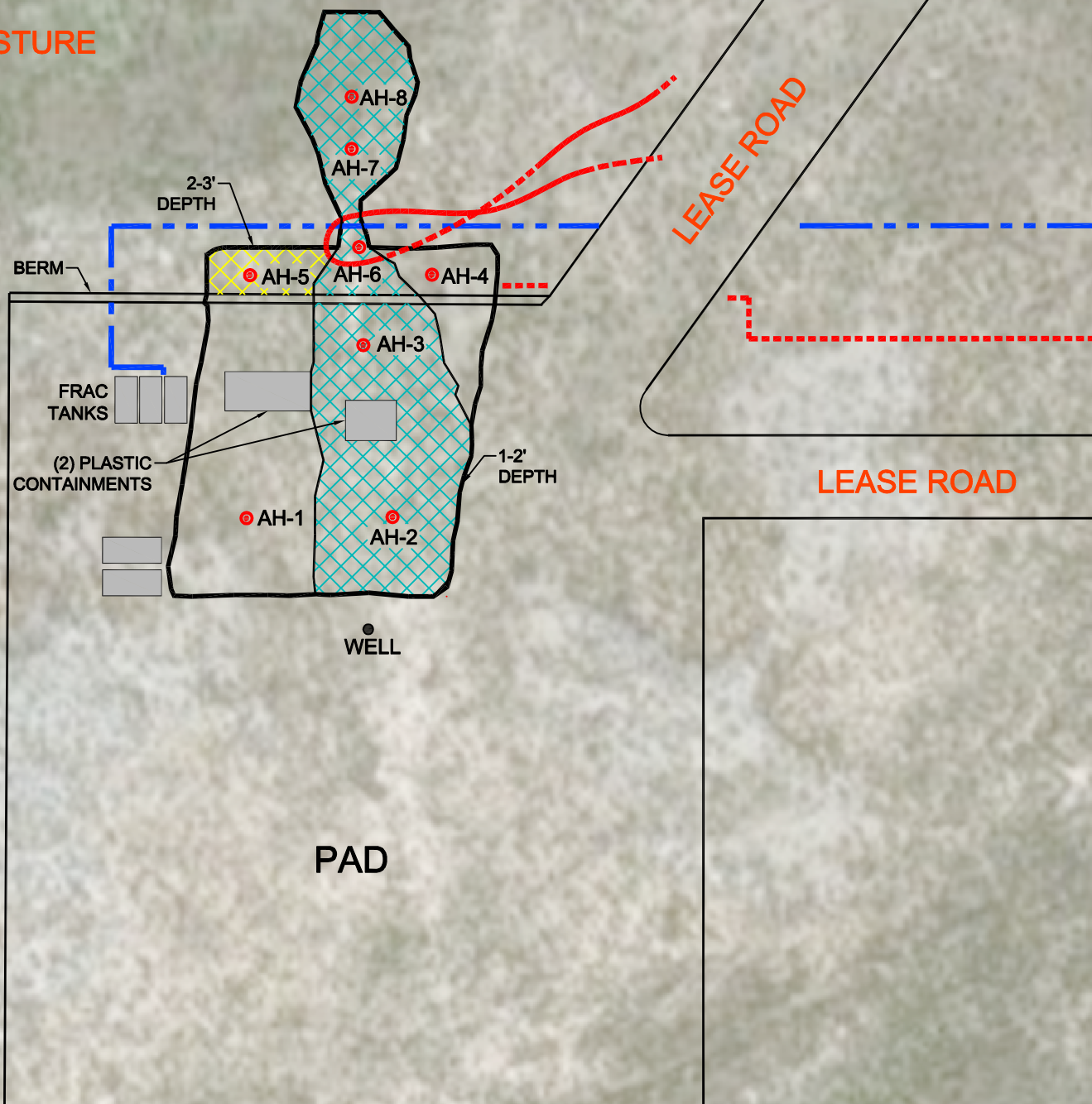
Project: 212C-MD-01102.400

Date: 05/04/2018

File: H:\GIS\212C-MD-01102.300



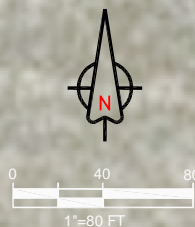
PASTURE



LEGEND

- AUGER HOLE SAMPLE LOCATIONS
- 1-2' EXCAVATED DEPTH
- 2-3' EXCAVATED DEPTH
- STEEL PIPE
- POLY PIPE

PASTURE



MarathonOil

Figure 4

EL Presidente 1102
(32.24030,-104.16053)

Excavated Area & Depth Map
Lea County, New Mexico

Project: 212C-MD-01102.400

Date: 05/04/2018

File: H:\GIS\212C-MD-01102.300



Tables

Table 1
Marathon Oil Company
EI Presidente State #4H
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	ORO	Total						
AH-1	2/22/2018	0-6"	X		<15.0	194	15.2	209	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	47.9
AH-2	2/22/2018	0-6"	X		1,100	14,600	407	16,100	<0.00200	0.121	0.0547	0.680	0.856	1,510
AH-3	2/22/2018	0-6"	X		16.4	552	30.8	599	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	2,000
AH-4	2/22/2018	0-1	X		<15.0	18.0	<15.0	18.0	<0.00201	<0.00201	<0.00201	0.00427	0.00427	36.9
	"	1-1.5	X		<14.9	<14.9	<14.9	<14.9	<0.00202	<0.00202	<0.00202	0.0150	0.0150	12.9
AH-5	2/22/2018	0-1	X		18,700	26,600	366	45,700	28.3	255	42.5	435	761	71.9
	"	1-1.5	X		17,100	22,500	273	39,900	13.8	182	82.4	592	870	7.60
	"	2-2.5	X		652	2,000	85.8	2,740	<0.101	0.612	1.15	11.9	13.7	53.2
	"	3-3.5	X		25.3	426	<14.9	451	-	-	-	-	-	33.5
AH-6	2/22/2018	0-1	X		3,470	6,940	82	10,500	<1.00	31.5	27.2	250	309	508
	"	1-1.5	X		201	1,130	19.6	1,350	<0.00200	0.140	0.0541	0.613	0.807	195
	"	2-2.5	X		28.8	306	19.8	355	-	-	-	-	-	16.2
	"	3-3.5	X		-	-	-	-	-	-	-	-	-	53.0
AH-7	2/22/2018	0-1	X		5,180	9,640	176	15,000	1.11	69.2	33.1	308	412	2,900
	"	1-1.5	X		43.6	272	<15.0	316	<0.00198	0.00823	0.00619	0.102	0.117	73.7
	"	2-2.5	X		-	-	-	-	-	-	-	-	-	45.7
	"	3-3.5	X		-	-	-	-	-	-	-	-	-	6.11
	"	4-4.5	X		-	-	-	-	-	-	-	-	-	91.8
AH-8	2/22/2018	0-1	X		2,830	4,740	68.7	7,640	<0.0992	10.5	7.10	83.1	101	268
	"	1-1.5	X		<15.0	76.6	<15.0	76.6	<0.00202	0.00367	<0.00202	0.0326	0.0363	13.4
	"	2-2.5	X		-	-	-	-	-	-	-	-	-	<5.00
	"	3-3.5	X		-	-	-	-	-	-	-	-	-	54.6

(-) Not Analyzed

BEB Below Excavation Bottom

Proposed Excavation

Photos

Marathon Oil Permian, LLC.
El Presidente State #4H
Eddy County, New Mexico



View East – Area of AH-1 and AH-2



View West – Area of AH-3

Marathon Oil Permian, LLC.
El Presidente State #4H
Eddy County, New Mexico



TETRA TECH



View South – Area of AH-4



View Southwest – Area of AH-5

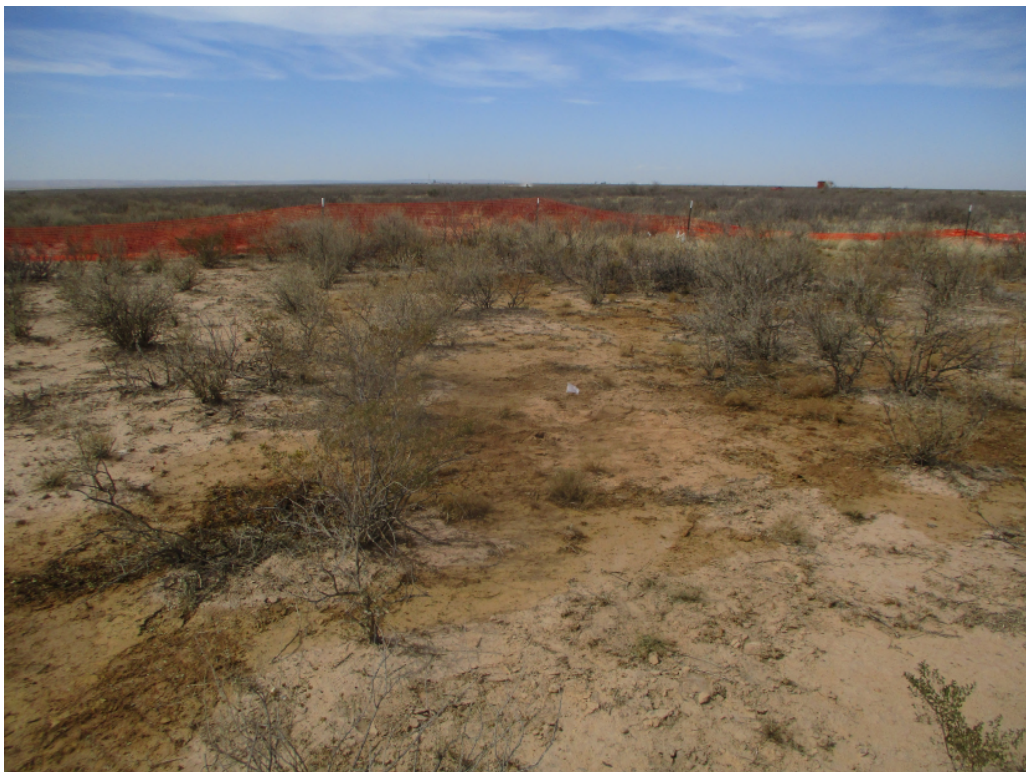
Marathon Oil Permian, LLC.
El Presidente State #4H
Eddy County, New Mexico



TETRA TECH



View North – Area of AH-6



View North – Area of AH-7

Marathon Oil Permian, LLC.
El Presidente State #4H
Eddy County, New Mexico



TETRA TECH



View Southwest – Area of AH-8

Appendix A

NM OIL CONSERVATION
ARTESIA DISTRICT

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

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

JAN 08 2018

Form C-141
Revised April 3, 2017

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

RECEIVED

Release Notification and Corrective Action

NAB 1800929918

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Marathon Oil Permian LLC 372098	Contact: Jason Wardell
Address: 5555 San Felipe St., Houston, TX 77056	Telephone No.: 575-297-0682
Facility Name: El Presidente State 4H	Facility Type: Oil Well
Surface Owner: State	Mineral Owner: State
API No.: 30-015-44165	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	02	24S	27E	330	FSL	2310	FEL	Eddy

Latitude 32.24007999999999 Longitude -104.153171 NAD83

NATURE OF RELEASE 89 bbls oil / 2 bbls water 3.7 bbls soil ↓

Type of Release: Crude Oil	Volume of Release: 91 bbls *	Volume Recovered: 13 bbls ?
Source of Release: Oil Tanks	Date and Hour of Occurrence: 12/24/17 - 2130 HRS	Date and Hour of Discovery: 12/14/17 - 2130 HRS
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Email to Crystal Weaver and Mike Bratcher	
By Whom? Jason Wardell	Date and Hour: 12/25/2017 1456 HRS	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*

A water hauler failed to disconnect from the water load line before driving off. As a result, the oil load line and the water load line were damaged and approximately 91 bbls of produced fluid (89 bbls oil, 2 bbls water) was spilled onto location with approximately 3.7 bbls leaving location. ?↑

Describe Area Affected and Cleanup Action Taken.*

All but 3.7 bbls of the 91 spilled, remained on location. Impacted soil on location has been cleaned up and disposed of appropriately. Impacted area off of location has been fenced off pending an approved clean up and remediation plan.

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

Signature: Jason Wardell		OIL CONSERVATION DIVISION	
Printed Name: Jason Wardell		Approved by Environmental Specialist: [Signature]	
Title: HES Professional	Approval Date: 1/9/18	Expiration Date: N/A	
E-mail Address: jwardell@marathonoil.com	Conditions of Approval: See attached		Attached <input type="checkbox"/> ARP-4557
Date: 01/08/2018	Phone: 575-297-06892		

* Attach Additional Sheets If Necessary

1/11/18 AB

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
Marathon - El Presidente State #4H
Eddy County, New Mexico

23 South			26 East		
6	5	4	3 220	2	1
7	8 267	9	10	11	12
18	17	16	15	14	13
19	20	21	22 224	23	24
30 99	29	28	27	26	25
31	32 223	33	34	35	36

23 South			27 East		
6 83	5	4 90	3	2 70	1 17
7	8	9	10	11	12 40
18	17	16	15	14 75	13
19	20	21	22	23 23	24 90
30	29 103	28	27	26	25
31	32	33	34	35 67	36

23 South			28 East		
6 16.5	5	4	3	2	1
7 26.5	8	9	10	11 30.5	12 20
18	17	16	15	14	13 12
19 63	20	21	22 14	23	24 33
30	29 56	28	27 39	26	25 36
31	32 28.7	33	34	35	36 44

24 South			26 East		
6 63	5	4	3	2	1
7 250	8 450	9	10	11	12
18	17	16	15	14 30	13
19 650	20	21	22	23 38	24 28
30	29 46	28	27 30	26	25 37
31 70	32 111	33	34	35	36 30

24 South			27 East		
6	5	4	3	2	1
7	8 36	9 50	10	11	12
18	17 26	16 43	15	14	13 27
19 34	20	21	22	23	24 31
30	29	28	27 70	26	25
31	32	33	34	35	36

24 South			28 East		
6 70	5 30	4 30	3	2 55	1 60
7	8 50	9	10	11	12
18	17	16	15 17	14 20	13 73
19	20 42	21 29	22 18	23 52	24 34
30	29 48	28	27	26	25
31	32	33	34	35	36

25 South			26 East		
6	5	4	3 45	2	1
7	8	9 45	10	11	12
18	17	16	15	14	13
19 60	20	21	22	23	24
30	29	28	27 118	26	25
31	32	33	34	35	36

25 South			27 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29 24	28 26	27 67	26	25
31	32	33 16	34	35	36 12

25 South			28 East		
6	5	4 35	3 32	2	1 Site
7	8	9	10	11	12
18	17	16	15 48	14	13
19 67	20	21	22 49	23	24
30	29 96	28	27	26 40	25
31	32 15	33 90	34	35	36 40

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)
 Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

123 Tetra Tech installed temporary wells and field water level

143 NMOCD Groundwater map well location

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	DepthWell	DepthWater	Water Column
C 00342	C	CUB	ED	4	1	13	24S	27E		580432	3565080*	<input type="text"/>	2565	
C 00347		CUB	ED	1	1	13	24S	27E		580010	3565479*	<input type="text"/>	60	30 30
C 00364	C	CUB	ED	1	2	09	24S	27E		575997	3567043*	<input type="text"/>	2270	
C 00516		CUB	ED	1	3	4	08	24S	27E	574288	3565901*	<input type="text"/>	105	36 69
C 00516 CLW201016	O		ED	1	3	4	08	24S	27E	574288	3565901*	<input type="text"/>	62	
C 00516 CLW308590	O		ED	1	3	4	08	24S	27E	574288	3565901*	<input type="text"/>	105	36 69
C 00516 POD6		CUB	ED	1	4	3	08	24S	27E	573885	3565895*	<input type="text"/>	78	17 61
C 00516 S		CUB	ED	1	3	4	08	24S	27E	574288	3565901	<input type="text"/>	50	17 33
C 00631	C	ED		3	3	4	08	24S	27E	574288	3565701*	<input type="text"/>	50	24 26
C 00683	C	ED		4	3	08	24S	27E		573986	3565796*	<input type="text"/>	50	17 33
C 00821	C	ED		3	2	09	24S	27E		575996	3566635*	<input type="text"/>	97	50 47
C 00850	C	ED		2	3	09	24S	27E		575595	3566223*	<input type="text"/>	108	35 73
C 00929	C	ED		3	3	18	24S	27E		572013	3564159*	<input type="text"/>	54	33 21
C 01169	C	ED		1	4	3	18	24S	27E	572282	3564261*	<input type="text"/>	55	35 20
C 01187	C	ED		4	3	08	24S	27E		573986	3565796*	<input type="text"/>	108	17 91
C 01366		CUB	ED		4	08	24S	27E		574590	3566003*	<input type="text"/>	60	35 25
C 01452	C	ED					22	24S	27E	577435	3563175*	<input type="text"/>	95	70 25
C 01721	C	ED			1	25	24S	27E		580271	3562033*	<input type="text"/>	170	
C 01841	C	ED			1	29	24S	27E		573806	3561953*	<input type="text"/>	150	
C 01943	C	ED			1	13	24S	27E		580221	3565275*	<input type="text"/>	30	25 5
C 02976	C	ED		4	2	3	12	24S	27E	580519	3566195*	<input type="text"/>	57	27 30
C 03037	C	ED		4	3	4	12	24S	27E	580930	3565795*	<input type="text"/>	116	25 91
C 03092	C	ED		4	3	1	08	24S	27E	573678	3566501*	<input type="text"/>	54	37 17
C 03145	C	ED		3	1	4	13	24S	27E	580749	3564579*	<input type="text"/>	103	40 63
C 03147	C	ED		3	3	3	12	24S	27E	579885	3565715	<input type="text"/>	140	
C 03260 POD1		C	ED	3	3	3	12	24S	27E	579995	3565935	<input type="text"/>	80	56 24
C 03260 POD2	O	C	ED	1	3	3	12	24S	27E	580100	3565984	<input type="text"/>	80	56 24
C 03489 POD1		CUB	ED	2	4	3	08	24S	27E	574153	3565939	<input type="text"/>	200	
C 03490 POD1		CUB	ED	3	4	3	08	24S	27E	573812	3565709	<input type="text"/>	140	23 117
C 03560 POD1	C	ED		2	3	3	18	24S	27E	572009	3564150	<input type="text"/>	68	28 40
C 03740 POD1	C	ED		4	4	4	12	24S	27E	581283	3565795	<input type="text"/>	340	
C 04147 POD1		CUB	ED	4	1	3	24	24S	27E	580101	3562969	<input type="text"/>	35	

Average Depth to Water: **33 feet**

Minimum Depth: **17 feet**

Maximum Depth: **70 feet**

Record Count: 32

PLSS Search:

Township: 24S Range: 27E

*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.

4/4/18 9:52 AM

WATER COLUMN/ AVERAGE DEPTH
TO WATER



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec 35	Tws 23S	Rng 27E	X 578315	Y 3569206*	DepthWell	DepthWater	Water Column
C 03031		C	ED	1	3	3	35	23S	27E	578315	3569206*	150	67	83

Average Depth to Water: **67 feet**

Minimum Depth: **67 feet**

Maximum Depth: **67 feet**

Record Count: 1

PLSS Search:

Section(s): 31-36

Township: 23S

Range: 27E

*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.

4/24/18 8:30 AM

WATER COLUMN/ AVERAGE DEPTH TO
WATER

Appendix C

Analytical Report 577383

**for
Tetra Tech- Midland**

Project Manager: Ike Tavaréz

El Presidente State 4H

212C-MD-01102

05-MAR-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-18-24), 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 (T104704400-18-14)

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)



05-MAR-18

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

Reference: XENCO Report No(s): **577383**
El Presidente State 4H
Project Address: Eddy Co, NM

Ike Tavaréz:

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) 577383. 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. 577383 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks

Project Manager

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

Tetra Tech- Midland, Midland, TX

El Presidente State 4H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH #1 (0-6")	S	02-22-18 00:00		577383-001
AH #2 (0-6")	S	02-22-18 00:00		577383-002
AH #3 (0-6")	S	02-22-18 00:00		577383-003
AH #4 (0-1')	S	02-22-18 00:00		577383-004
AH #4 (1-1.5')	S	02-22-18 00:00		577383-005
AH #5 (0-1')	S	02-22-18 00:00		577383-006
AH #5 (1-1.5')	S	02-22-18 00:00		577383-007
AH #5 (2-2.5')	S	02-22-18 00:00		577383-008
AH #5 (3-3.5')	S	02-22-18 00:00		577383-009
AH #6 (0-1')	S	02-22-18 00:00		577383-010
AH #6 (1-1.5')	S	02-22-18 00:00		577383-011
AH #6 (2-2.5')	S	02-22-18 00:00		577383-012
AH #6 (3-3.5')	S	02-22-18 00:00		577383-013
AH #7 (0-1')	S	02-22-18 00:00		577383-014
AH #7 (1-1.5')	S	02-22-18 00:00		577383-015
AH #7 (2-2.5')	S	02-22-18 00:00		577383-016
AH #7 (3-3.5')	S	02-22-18 00:00		577383-017
AH #7 (4-4.5')	S	02-22-18 00:00		577383-018
AH #8 (0-1')	S	02-22-18 00:00		577383-019
AH #8 (1-1.5')	S	02-22-18 00:00		577383-020
AH #8 (2-2.5')	S	02-22-18 00:00		577383-021
AH #8 (3-3.5')	S	02-22-18 00:00		577383-022



CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: El Presidente State 4H

Project ID: 212C-MD-01102
Work Order Number(s): 577383

Report Date: 05-MAR-18
Date Received: 02/23/2018

Sample receipt non conformance and comments:

Sample receipt non conformance and comments per sample:

None

Analytical non conformance and comments:

Batch: LBA-3042214 BTEX by EPA 8021B

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

Surrogate 1,4-Difluorobenzene recovered below QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 577383-006.

Dilutions necessitated by poor internal visibility at a lower dilution.

Batch: LBA-3042224 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 577383-002.

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

Lab Sample ID 577383-004 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene 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: 577383-001, -002, -003, -004, -005, -011, -015, -020.

The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3042346 BTEX by EPA 8021B

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

Dilutions due to poor resolution of internal.

Batch: LBA-3042388 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 577383-007.

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



CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: El Presidente State 4H

Project ID: 212C-MD-01102
Work Order Number(s): 577383

Report Date: 05-MAR-18
Date Received: 02/23/2018

Batch: LBA-3042451 Inorganic Anions by EPA 300/300.1

Lab Sample ID 577383-012 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 577383-002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020, -021.

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

Batch: LBA-3042728 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030. Dilution due to excessive hydrocarbons.



Certificate of Analysis Summary 577383



Tetra Tech- Midland, Midland, TX

Project Name: El Presidente State 4H

Project Id: 212C-MD-01102

Contact: Ike Tavaréz

Project Location: Eddy Co, NM

Date Received in Lab: Fri Feb-23-18 02:35 pm

Report Date: 05-MAR-18

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	577383-001	577383-002	577383-003	577383-004	577383-005	577383-006
	<i>Field Id:</i>	AH #1 (0-6")	AH #2 (0-6")	AH #3 (0-6")	AH #4 (0-1')	AH #4 (1-1.5')	AH #5 (0-1')
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Feb-22-18 00:00	Feb-22-18 00:00	Feb-22-18 00:00	Feb-22-18 00:00	Feb-22-18 00:00	Feb-22-18 00:00
BTEX by EPA 8021B	<i>Extracted:</i>	Feb-24-18 11:00	Feb-24-18 11:00	Feb-24-18 11:00	Feb-24-18 11:00	Feb-24-18 11:00	Feb-24-18 11:00
	<i>Analyzed:</i>	Feb-24-18 21:07	Feb-24-18 21:26	Feb-24-18 21:44	Feb-24-18 20:49	Feb-24-18 22:03	Feb-25-18 17:33
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00200 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202	28.3 20.0
Toluene		<0.00202 0.00202	0.121 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202	255 20.0
Ethylbenzene		<0.00202 0.00202	0.0547 0.00200	<0.00199 0.00199	<0.00201 0.00201	<0.00202 0.00202	42.5 20.0
m,p-Xylenes		<0.00403 0.00403	0.464 0.00401	<0.00398 0.00398	0.00427 0.00402	0.0119 0.00404	315 40.1
o-Xylene		<0.00202 0.00202	0.216 0.00200	<0.00199 0.00199	<0.00201 0.00201	0.00311 0.00202	120 20.0
Total Xylenes		<0.00202 0.00202	0.680 0.00200	<0.00199 0.00199	0.00427 0.00201	0.0150 0.00202	435 20.0
Total BTEX		<0.00202 0.00202	0.856 0.00200	<0.00199 0.00199	0.00427 0.00201	0.0150 0.00202	761 20.0
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Feb-27-18 12:00	Feb-27-18 16:20	Feb-27-18 16:20	Feb-27-18 16:20	Feb-27-18 16:20	Feb-27-18 16:20
	<i>Analyzed:</i>	Feb-27-18 16:41	Feb-27-18 17:38	Feb-27-18 17:44	Feb-27-18 17:12	Feb-27-18 17:49	Feb-27-18 17:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		47.9 25.0	1510 25.0	2000 25.0	36.9 5.00	12.9 5.00	71.9 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Feb-23-18 15:00	Feb-23-18 15:00	Feb-23-18 15:00	Feb-23-18 15:00	Feb-23-18 15:00	Feb-23-18 15:00
	<i>Analyzed:</i>	Feb-23-18 20:41	Feb-24-18 12:07	Feb-23-18 21:32	Feb-23-18 21:59	Feb-23-18 22:26	Feb-24-18 12:32
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons		<15.0 15.0	1100 74.9	16.4 15.0	<15.0 15.0	<14.9 14.9	18700 150
Diesel Range Organics		194 15.0	14600 74.9	552 15.0	18.0 15.0	<14.9 14.9	26600 150
Oil Range Hydrocarbons		15.2 15.0	407 74.9	30.8 15.0	<15.0 15.0	<14.9 14.9	366 150
Total TPH		209 15.0	16100 74.9	599 15.0	18.0 15.0	<14.9 14.9	45700 150

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.

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 577383

Tetra Tech- Midland, Midland, TX

Project Name: El Presidente State 4H



Project Id: 212C-MD-01102

Contact: Ike Tavaréz

Project Location: Eddy Co, NM

Date Received in Lab: Fri Feb-23-18 02:35 pm

Report Date: 05-MAR-18

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	577383-007	577383-008	577383-009	577383-010	577383-011	577383-012
	<i>Field Id:</i>	AH #5 (1-1.5')	AH #5 (2-2.5')	AH #5 (3-3.5')	AH #6 (0-1')	AH #6 (1-1.5')	AH #6 (2-2.5')
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Feb-22-18 00:00	Feb-22-18 00:00	Feb-22-18 00:00	Feb-22-18 00:00	Feb-22-18 00:00	Feb-22-18 00:00
BTEX by EPA 8021B	<i>Extracted:</i>	Feb-26-18 17:15	Mar-04-18 08:00		Feb-27-18 09:30	Feb-24-18 11:00	
	<i>Analyzed:</i>	Feb-28-18 15:36	Mar-04-18 14:25		Feb-27-18 15:10	Feb-24-18 22:40	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL		mg/kg RL	mg/kg RL	
Benzene		13.8 1.99	<0.101 0.101		<1.00 1.00	<0.00200 0.00200	
Toluene		182 1.99	0.612 0.101		31.5 1.00	0.140 0.00200	
Ethylbenzene		82.4 1.99	1.15 0.101		27.2 1.00	0.0541 0.00200	
m,p-Xylenes		431 3.98	9.05 0.202		195 2.00	0.436 0.00399	
o-Xylene		161 1.99	2.88 0.101		55.2 1.00	0.177 0.00200	
Total Xylenes		592 1.99	11.9 0.101		250 1.00	0.613 0.00200	
Total BTEX		870 1.99	13.7 0.101		309 1.00	0.807 0.00200	
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Feb-27-18 16:20	Feb-27-18 16:20	Feb-27-18 16:20	Feb-27-18 16:20	Feb-27-18 16:20	Feb-27-18 16:20
	<i>Analyzed:</i>	Feb-27-18 18:10	Feb-27-18 18:15	Feb-27-18 18:21	Feb-27-18 18:26	Feb-27-18 18:31	Feb-27-18 18:37
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		7.60 5.00	53.2 5.00	33.5 5.00	508 5.00	195 5.00	16.2 5.00
TPH By SW8015 Mod	<i>Extracted:</i>	Feb-23-18 16:00	Feb-26-18 16:00	Mar-02-18 18:00	Feb-23-18 16:00	Feb-23-18 16:00	Feb-26-18 16:00
	<i>Analyzed:</i>	Feb-24-18 12:58	Feb-27-18 08:17	Mar-03-18 14:56	Feb-24-18 13:23	Feb-24-18 09:31	Feb-27-18 08:43
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons		17100 150	652 15.0	25.3 14.9	3470 74.9	201 14.9	28.8 15.0
Diesel Range Organics		22500 150	2000 15.0	426 14.9	6940 74.9	1130 14.9	306 15.0
Oil Range Hydrocarbons		273 150	85.8 15.0	<14.9 14.9	81.9 74.9	19.6 14.9	19.8 15.0
Total TPH		39900 150	2740 15.0	451 14.9	10500 74.9	1350 14.9	355 15.0

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 577383

Tetra Tech- Midland, Midland, TX

Project Name: El Presidente State 4H



Project Id: 212C-MD-01102

Contact: Ike Tavarez

Project Location: Eddy Co, NM

Date Received in Lab: Fri Feb-23-18 02:35 pm

Report Date: 05-MAR-18

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	577383-013	577383-014	577383-015	577383-016	577383-017	577383-018
	<i>Field Id:</i>	AH #6 (3-3.5')	AH #7 (0-1')	AH #7 (1-1.5')	AH #7 (2-2.5')	AH #7 (3-3.5')	AH #7 (4-4.5')
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Feb-22-18 00:00	Feb-22-18 00:00	Feb-22-18 00:00	Feb-22-18 00:00	Feb-22-18 00:00	Feb-22-18 00:00
BTEX by EPA 8021B	<i>Extracted:</i>		Feb-27-18 09:30	Feb-24-18 11:00			
	<i>Analyzed:</i>		Feb-27-18 15:29	Feb-24-18 22:58			
	<i>Units/RL:</i>		mg/kg RL	mg/kg RL			
Benzene			1.11 0.998	<0.00198 0.00198			
Toluene			69.2 0.998	0.00823 0.00198			
Ethylbenzene			33.1 0.998	0.00619 0.00198			
m,p-Xylenes			241 2.00	0.0685 0.00396			
o-Xylene			67.2 0.998	0.0337 0.00198			
Total Xylenes			308 0.998	0.102 0.00198			
Total BTEX			412 0.998	0.117 0.00198			
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Feb-27-18 16:20	Feb-27-18 16:20	Feb-27-18 16:20	Feb-27-18 16:20	Feb-27-18 16:20	Feb-27-18 16:20
	<i>Analyzed:</i>	Feb-27-18 18:53	Feb-27-18 18:58	Feb-27-18 19:14	Feb-27-18 19:19	Feb-27-18 19:24	Feb-27-18 19:30
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		53.0 5.00	2900 25.0	73.7 5.00	45.7 5.00	6.11 5.00	91.8 5.00
TPH By SW8015 Mod	<i>Extracted:</i>		Feb-23-18 16:00	Feb-23-18 16:00			
	<i>Analyzed:</i>		Feb-24-18 13:50	Feb-24-18 10:23			
	<i>Units/RL:</i>		mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons			5180 74.7	43.6 15.0			
Diesel Range Organics			9640 74.7	272 15.0			
Oil Range Hydrocarbons			176 74.7	<15.0 15.0			
Total TPH			15000 74.7	316 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.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 577383

Tetra Tech- Midland, Midland, TX

Project Name: El Presidente State 4H



Project Id: 212C-MD-01102

Contact: Ike Tavarez

Project Location: Eddy Co, NM

Date Received in Lab: Fri Feb-23-18 02:35 pm

Report Date: 05-MAR-18

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	577383-019	577383-020	577383-021	577383-022		
	<i>Field Id:</i>	AH #8 (0-1')	AH #8 (1-1.5')	AH #8 (2-2.5')	AH #8 (3-3.5')		
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Feb-22-18 00:00	Feb-22-18 00:00	Feb-22-18 00:00	Feb-22-18 00:00		
BTEX by EPA 8021B	<i>Extracted:</i>	Feb-27-18 09:30	Feb-24-18 11:00				
	<i>Analyzed:</i>	Feb-27-18 17:13	Feb-24-18 23:17				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
Benzene		<0.0992 0.0992	<0.00202 0.00202				
Toluene		10.5 0.0992	0.00367 0.00202				
Ethylbenzene		7.10 0.0992	<0.00202 0.00202				
m,p-Xylenes		67.9 D 0.994	0.0220 0.00403				
o-Xylene		15.2 0.0992	0.0106 0.00202				
Total Xylenes		83.1 0.0992	0.0326 0.00202				
Total BTEX		101 0.0992	0.0363 0.00202				
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	Feb-27-18 16:20	Feb-27-18 16:20	Feb-27-18 16:20	Feb-27-18 17:00		
	<i>Analyzed:</i>	Feb-27-18 19:35	Feb-27-18 19:40	Feb-27-18 19:45	Feb-27-18 20:17		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		268 5.00	13.4 5.00	<5.00 5.00	54.6 5.00		
TPH By SW8015 Mod	<i>Extracted:</i>	Feb-23-18 16:00	Feb-23-18 16:00				
	<i>Analyzed:</i>	Feb-24-18 10:49	Feb-24-18 11:14				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons		2830 15.0	<15.0 15.0				
Diesel Range Organics		4740 15.0	76.6 15.0				
Oil Range Hydrocarbons		68.7 15.0	<15.0 15.0				
Total TPH		7640 15.0	76.6 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.

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Kelsey Brooks
Project Manager

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

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Form 2 - Surrogate Recoveries

Project Name: El Presidente State 4H

Work Orders : 577383,

Lab Batch #: 3042060

Sample: 577383-001 / SMP

Project ID: 212C-MD-01102

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/23/18 20:41

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.8	99.7	98	70-135	
o-Terphenyl	49.0	49.9	98	70-135	

Lab Batch #: 3042060

Sample: 577383-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/23/18 21:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.8	108	70-135	
o-Terphenyl	59.3	49.9	119	70-135	

Lab Batch #: 3042060

Sample: 577383-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/23/18 21:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.9	110	70-135	
o-Terphenyl	53.7	50.0	107	70-135	

Lab Batch #: 3042060

Sample: 577383-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/23/18 22:26

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.6	109	70-135	
o-Terphenyl	54.5	49.8	109	70-135	

Lab Batch #: 3042063

Sample: 577383-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 09:31

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.6	115	70-135	
o-Terphenyl	63.7	49.8	128	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: El Presidente State 4H

Work Orders : 577383,

Lab Batch #: 3042063

Sample: 577383-015 / SMP

Project ID: 212C-MD-01102

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 10:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.7	112	70-135	
o-Terphenyl	56.8	49.9	114	70-135	

Lab Batch #: 3042063

Sample: 577383-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 10:49

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	99.8	122	70-135	
o-Terphenyl	41.6	49.9	83	70-135	

Lab Batch #: 3042063

Sample: 577383-020 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 11:14

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.8	115	70-135	
o-Terphenyl	58.6	49.9	117	70-135	

Lab Batch #: 3042060

Sample: 577383-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 12:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	99.8	118	70-135	
o-Terphenyl	40.5	49.9	81	70-135	

Lab Batch #: 3042060

Sample: 577383-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 12:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	99.7	128	70-135	
o-Terphenyl	48.9	49.9	98	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: El Presidente State 4H

Work Orders : 577383,

Lab Batch #: 3042063

Sample: 577383-007 / SMP

Project ID: 212C-MD-01102

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 12:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.7	103	70-135	
o-Terphenyl	46.8	49.9	94	70-135	

Lab Batch #: 3042063

Sample: 577383-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 13:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.8	115	70-135	
o-Terphenyl	59.3	49.9	119	70-135	

Lab Batch #: 3042063

Sample: 577383-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 13:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	99.6	126	70-135	
o-Terphenyl	47.5	49.8	95	70-135	

Lab Batch #: 3042224

Sample: 577383-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 20:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0248	0.0300	83	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 3042224

Sample: 577383-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 21:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0247	0.0300	82	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: El Presidente State 4H

Work Orders : 577383,

Lab Batch #: 3042224

Sample: 577383-002 / SMP

Project ID: 212C-MD-01102

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 21:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0241	0.0300	80	80-120	
4-Bromofluorobenzene	0.0780	0.0300	260	80-120	**

Lab Batch #: 3042224

Sample: 577383-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 21:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0245	0.0300	82	80-120	
4-Bromofluorobenzene	0.0333	0.0300	111	80-120	

Lab Batch #: 3042224

Sample: 577383-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 22:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0247	0.0300	82	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

Lab Batch #: 3042224

Sample: 577383-011 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 22:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0244	0.0300	81	80-120	
4-Bromofluorobenzene	0.0352	0.0300	117	80-120	

Lab Batch #: 3042224

Sample: 577383-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 22:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0245	0.0300	82	80-120	
4-Bromofluorobenzene	0.0355	0.0300	118	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: El Presidente State 4H

Work Orders : 577383,

Lab Batch #: 3042224

Sample: 577383-020 / SMP

Project ID: 212C-MD-01102

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 23:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0255	0.0300	85	80-120	
4-Bromofluorobenzene	0.0346	0.0300	115	80-120	

Lab Batch #: 3042214

Sample: 577383-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/25/18 17:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0219	0.0300	73	80-120	***
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

Lab Batch #: 3042220

Sample: 577383-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/27/18 08:17

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	99.8	125	70-135	
o-Terphenyl	64.9	49.9	130	70-135	

Lab Batch #: 3042220

Sample: 577383-012 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/27/18 08:43

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.7	115	70-135	
o-Terphenyl	59.0	49.9	118	70-135	

Lab Batch #: 3042346

Sample: 577383-010 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/27/18 15:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0226	0.0300	75	70-130	
4-Bromofluorobenzene	0.0347	0.0300	116	70-130	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: El Presidente State 4H

Work Orders : 577383,

Lab Batch #: 3042346

Sample: 577383-014 / SMP

Project ID: 212C-MD-01102

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/27/18 15:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0248	0.0300	83	70-130	
4-Bromofluorobenzene	0.0380	0.0300	127	70-130	

Lab Batch #: 3042346

Sample: 577383-019 / DL

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/27/18 16:32

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0233	0.0300	78	70-130	
4-Bromofluorobenzene	0.0375	0.0300	125	70-130	

Lab Batch #: 3042346

Sample: 577383-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/27/18 17:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0238	0.0300	79	70-130	
4-Bromofluorobenzene	0.0373	0.0300	124	70-130	

Lab Batch #: 3042388

Sample: 577383-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/28/18 15:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	70-130	
4-Bromofluorobenzene	0.0896	0.0300	299	70-130	**

Lab Batch #: 3042778

Sample: 577383-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/03/18 14:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	99.6	114	70-135	
o-Terphenyl	58.0	49.8	116	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: El Presidente State 4H

Work Orders : 577383,

Lab Batch #: 3042728

Sample: 577383-008 / SMP

Project ID: 212C-MD-01102

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/04/18 14:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0221	0.0300	74	70-130	
4-Bromofluorobenzene	0.0383	0.0300	128	70-130	

Lab Batch #: 3042060

Sample: 7639737-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/23/18 10:57

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	55.7	50.0	111	70-135	

Lab Batch #: 3042063

Sample: 7639738-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/23/18 23:45

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	54.8	50.0	110	70-135	

Lab Batch #: 3042224

Sample: 7639837-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/24/18 20:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0251	0.0300	84	70-130	
4-Bromofluorobenzene	0.0300	0.0300	100	70-130	

Lab Batch #: 3042214

Sample: 7639819-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/25/18 10:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0250	0.0300	83	80-120	
4-Bromofluorobenzene	0.0333	0.0300	111	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: El Presidente State 4H

Work Orders : 577383,

Lab Batch #: 3042220

Sample: 7639806-1-BLK / BLK

Project ID: 212C-MD-01102

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/26/18 21:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	61.6	50.0	123	70-135	

Lab Batch #: 3042346

Sample: 7639907-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/27/18 09:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	70-130	
4-Bromofluorobenzene	0.0284	0.0300	95	70-130	

Lab Batch #: 3042388

Sample: 7639915-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/28/18 05:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0239	0.0300	80	70-130	
4-Bromofluorobenzene	0.0280	0.0300	93	70-130	

Lab Batch #: 3042778

Sample: 7640127-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 03/03/18 04:04

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	52.4	50.0	105	70-135	

Lab Batch #: 3042728

Sample: 7640119-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 03/04/18 11:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0238	0.0300	79	70-130	
4-Bromofluorobenzene	0.0311	0.0300	104	70-130	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: El Presidente State 4H

Work Orders : 577383,

Lab Batch #: 3042060

Sample: 7639737-1-BKS / BKS

Project ID: 212C-MD-01102

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/23/18 11:24

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	52.3	50.0	105	70-135	

Lab Batch #: 3042063

Sample: 7639738-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/24/18 00:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	61.8	50.0	124	70-135	

Lab Batch #: 3042224

Sample: 7639837-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/24/18 18:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	70-130	
4-Bromofluorobenzene	0.0360	0.0300	120	70-130	

Lab Batch #: 3042214

Sample: 7639819-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/25/18 08:51

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0351	0.0300	117	80-120	

Lab Batch #: 3042220

Sample: 7639806-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/26/18 21:55

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	55.6	50.0	111	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: El Presidente State 4H

Work Orders : 577383,

Lab Batch #: 3042346

Sample: 7639907-1-BKS / BKS

Project ID: 212C-MD-01102

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/27/18 07:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0272	0.0300	91	70-130	
4-Bromofluorobenzene	0.0323	0.0300	108	70-130	

Lab Batch #: 3042388

Sample: 7639915-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/28/18 03:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0262	0.0300	87	70-130	
4-Bromofluorobenzene	0.0338	0.0300	113	70-130	

Lab Batch #: 3042778

Sample: 7640127-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 03/03/18 04:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	64.8	50.0	130	70-135	

Lab Batch #: 3042728

Sample: 7640119-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 03/04/18 09:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0243	0.0300	81	70-130	
4-Bromofluorobenzene	0.0348	0.0300	116	70-130	

Lab Batch #: 3042060

Sample: 7639737-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/23/18 11:50

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	52.9	50.0	106	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: El Presidente State 4H

Work Orders : 577383,

Lab Batch #: 3042063

Sample: 7639738-1-BSD / BSD

Project ID: 212C-MD-01102

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/24/18 00:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	100	126	70-135	
o-Terphenyl	63.6	50.0	127	70-135	

Lab Batch #: 3042224

Sample: 7639837-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/24/18 19:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	70-130	
4-Bromofluorobenzene	0.0359	0.0300	120	70-130	

Lab Batch #: 3042214

Sample: 7639819-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/25/18 09:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0360	0.0300	120	80-120	

Lab Batch #: 3042220

Sample: 7639806-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/26/18 22:22

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	58.8	50.0	118	70-135	

Lab Batch #: 3042346

Sample: 7639907-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/27/18 07:28

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	70-130	
4-Bromofluorobenzene	0.0333	0.0300	111	70-130	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: El Presidente State 4H

Work Orders : 577383,

Lab Batch #: 3042388

Sample: 7639915-1-BSD / BSD

Project ID: 212C-MD-01102

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/28/18 04:01

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0253	0.0300	84	70-130	
4-Bromofluorobenzene	0.0349	0.0300	116	70-130	

Lab Batch #: 3042778

Sample: 7640127-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 03/03/18 04:57

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	59.1	50.0	118	70-135	

Lab Batch #: 3042728

Sample: 7640119-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 03/04/18 09:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0253	0.0300	84	70-130	
4-Bromofluorobenzene	0.0355	0.0300	118	70-130	

Lab Batch #: 3042060

Sample: 577014-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/23/18 13:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.9	110	70-135	
o-Terphenyl	52.7	50.0	105	70-135	

Lab Batch #: 3042063

Sample: 577388-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 01:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.7	103	70-135	
o-Terphenyl	50.7	49.9	102	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: El Presidente State 4H

Work Orders : 577383,

Lab Batch #: 3042224

Sample: 577383-004 S / MS

Project ID: 212C-MD-01102

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 19:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	70-130	
4-Bromofluorobenzene	0.0347	0.0300	116	70-130	

Lab Batch #: 3042214

Sample: 577310-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/25/18 09:28

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0332	0.0300	111	80-120	

Lab Batch #: 3042220

Sample: 577420-012 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/26/18 23:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	99.9	122	70-135	
o-Terphenyl	57.9	50.0	116	70-135	

Lab Batch #: 3042346

Sample: 577420-010 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/27/18 07:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	70-130	
4-Bromofluorobenzene	0.0343	0.0300	114	70-130	

Lab Batch #: 3042388

Sample: 577388-008 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/28/18 04:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0266	0.0300	89	70-130	
4-Bromofluorobenzene	0.0347	0.0300	116	70-130	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: El Presidente State 4H

Work Orders : 577383,

Lab Batch #: 3042778

Sample: 577595-021 S / MS

Project ID: 212C-MD-01102

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/03/18 05:49

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	99.9	117	70-135	
o-Terphenyl	56.6	50.0	113	70-135	

Lab Batch #: 3042728

Sample: 577777-010 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/04/18 09:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0237	0.0300	79	70-130	
4-Bromofluorobenzene	0.0374	0.0300	125	70-130	

Lab Batch #: 3042060

Sample: 577014-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/23/18 13:41

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.7	109	70-135	
o-Terphenyl	52.4	49.9	105	70-135	

Lab Batch #: 3042063

Sample: 577388-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 01:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.9	115	70-135	
o-Terphenyl	55.7	50.0	111	70-135	

Lab Batch #: 3042224

Sample: 577383-004 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/24/18 19:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	70-130	
4-Bromofluorobenzene	0.0353	0.0300	118	70-130	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: El Presidente State 4H

Work Orders : 577383,

Lab Batch #: 3042214

Sample: 577310-001 SD / MSD

Project ID: 212C-MD-01102

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/25/18 09:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0242	0.0300	81	80-120	
4-Bromofluorobenzene	0.0331	0.0300	110	80-120	

Lab Batch #: 3042220

Sample: 577420-012 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/26/18 23:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.7	105	70-135	
o-Terphenyl	51.1	49.9	102	70-135	

Lab Batch #: 3042388

Sample: 577388-008 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/28/18 04:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0247	0.0300	82	70-130	
4-Bromofluorobenzene	0.0337	0.0300	112	70-130	

Lab Batch #: 3042346

Sample: 577420-010 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/28/18 10:51

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	70-130	
4-Bromofluorobenzene	0.0328	0.0300	109	70-130	

Lab Batch #: 3042778

Sample: 577595-021 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/03/18 06:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	99.7	114	70-135	
o-Terphenyl	53.8	49.9	108	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



Form 2 - Surrogate Recoveries

Project Name: El Presidente State 4H

Work Orders : 577383,

Lab Batch #: 3042728

Sample: 577777-010 SD / MSD

Project ID: 212C-MD-01102

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/04/18 10:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0251	0.0300	84	70-130	
4-Bromofluorobenzene	0.0367	0.0300	122	70-130	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = $100 * A / B$

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



BS / BSD Recoveries



Project Name: El Presidente State 4H

Work Order #: 577383

Project ID: 212C-MD-01102

Analyst: ALJ

Date Prepared: 02/24/2018

Date Analyzed: 02/25/2018

Lab Batch ID: 3042214

Sample: 7639819-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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
Analytes											
Benzene	<0.00202	0.101	0.0846	84	0.100	0.0712	71	17	70-130	35	
Toluene	<0.00202	0.101	0.0847	84	0.100	0.0705	71	18	70-130	35	
Ethylbenzene	<0.00202	0.101	0.0907	90	0.100	0.0736	74	21	71-129	35	
m,p-Xylenes	<0.00403	0.202	0.175	87	0.200	0.144	72	19	70-135	35	
o-Xylene	<0.00202	0.101	0.0899	89	0.100	0.0762	76	16	71-133	35	

Analyst: ALJ

Date Prepared: 02/24/2018

Date Analyzed: 02/24/2018

Lab Batch ID: 3042224

Sample: 7639837-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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
Analytes											
Benzene	<0.00200	0.0998	0.0805	81	0.100	0.0762	76	5	70-130	35	
Toluene	<0.00200	0.0998	0.0851	85	0.100	0.0770	77	10	70-130	35	
Ethylbenzene	<0.00200	0.0998	0.0899	90	0.100	0.0820	82	9	70-130	35	
m,p-Xylenes	<0.00399	0.200	0.174	87	0.201	0.160	80	8	70-130	35	
o-Xylene	<0.00200	0.0998	0.0902	90	0.100	0.0835	84	8	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: El Presidente State 4H

Work Order #: 577383

Project ID: 212C-MD-01102

Analyst: ALJ

Date Prepared: 02/27/2018

Date Analyzed: 02/27/2018

Lab Batch ID: 3042346

Sample: 7639907-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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
Analytes											
Benzene	<0.00199	0.0996	0.0899	90	0.0994	0.0887	89	1	70-130	35	
Toluene	<0.00199	0.0996	0.0945	95	0.0994	0.0941	95	0	70-130	35	
Ethylbenzene	<0.00199	0.0996	0.107	107	0.0994	0.107	108	0	70-130	35	
m,p-Xylenes	<0.00398	0.199	0.213	107	0.199	0.213	107	0	70-130	35	
o-Xylene	<0.00199	0.0996	0.104	104	0.0994	0.104	105	0	70-130	35	

Analyst: ALJ

Date Prepared: 02/26/2018

Date Analyzed: 02/28/2018

Lab Batch ID: 3042388

Sample: 7639915-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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
Analytes											
Benzene	<0.00202	0.101	0.0833	82	0.100	0.0797	80	4	70-130	35	
Toluene	<0.00202	0.101	0.0877	87	0.100	0.0857	86	2	70-130	35	
Ethylbenzene	<0.00202	0.101	0.0994	98	0.100	0.0970	97	2	70-130	35	
m,p-Xylenes	<0.00403	0.202	0.196	97	0.200	0.192	96	2	70-130	35	
o-Xylene	<0.00202	0.101	0.0981	97	0.100	0.0976	98	1	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: El Presidente State 4H

Work Order #: 577383

Project ID: 212C-MD-01102

Analyst: ALJ

Date Prepared: 03/04/2018

Date Analyzed: 03/04/2018

Lab Batch ID: 3042728

Sample: 7640119-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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
Analytes											
Benzene	<0.00201	0.100	0.0887	89	0.101	0.0889	88	0	70-130	35	
Toluene	<0.00201	0.100	0.0951	95	0.101	0.0943	93	1	70-130	35	
Ethylbenzene	<0.00201	0.100	0.109	109	0.101	0.108	107	1	70-130	35	
m,p-Xylenes	<0.00402	0.201	0.215	107	0.202	0.213	105	1	70-130	35	
o-Xylene	<0.00201	0.100	0.106	106	0.101	0.104	103	2	70-130	35	

Analyst: OJS

Date Prepared: 02/27/2018

Date Analyzed: 02/27/2018

Lab Batch ID: 3042428

Sample: 7639871-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic 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
Analytes											
Chloride	<5.00	250	262	105	250	258	103	2	90-110	20	

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

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



BS / BSD Recoveries



Project Name: El Presidente State 4H

Work Order #: 577383

Project ID: 212C-MD-01102

Analyst: OJS

Date Prepared: 02/27/2018

Date Analyzed: 02/27/2018

Lab Batch ID: 3042451

Sample: 7639872-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic 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
Analytes											
Chloride	<5.00	250	254	102	250	270	108	6	90-110	20	

Analyst: OJS

Date Prepared: 02/27/2018

Date Analyzed: 02/27/2018

Lab Batch ID: 3042453

Sample: 7639873-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic 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
Analytes											
Chloride	<5.00	250	274	110	250	274	110	0	90-110	20	

Analyst: ARM

Date Prepared: 02/23/2018

Date Analyzed: 02/23/2018

Lab Batch ID: 3042060

Sample: 7639737-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
Gasoline Range Hydrocarbons	<15.0	1000	883	88	1000	894	89	1	70-135	35	
Diesel Range Organics	<15.0	1000	900	90	1000	911	91	1	70-135	35	

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

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes

Project Name: El Presidente State 4H

Work Order #: 577383

Project ID: 212C-MD-01102

Analyst: ARM

Date Prepared: 02/23/2018

Date Analyzed: 02/24/2018

Lab Batch ID: 3042063

Sample: 7639738-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
Gasoline Range Hydrocarbons	<15.0	1000	1040	104	1000	1050	105	1	70-135	35	
Diesel Range Organics	<15.0	1000	1080	108	1000	1090	109	1	70-135	35	

Analyst: ARM

Date Prepared: 02/26/2018

Date Analyzed: 02/26/2018

Lab Batch ID: 3042220

Sample: 7639806-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
Gasoline Range Hydrocarbons	<15.0	1000	924	92	1000	980	98	6	70-135	35	
Diesel Range Organics	<15.0	1000	959	96	1000	1000	100	4	70-135	35	

Analyst: ARM

Date Prepared: 03/02/2018

Date Analyzed: 03/03/2018

Lab Batch ID: 3042778

Sample: 7640127-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
Gasoline Range Hydrocarbons	<15.0	1000	1100	110	1000	1040	104	6	70-135	35	
Diesel Range Organics	<15.0	1000	1140	114	1000	1060	106	7	70-135	35	

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

Blank Spike Recovery [D] = $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] = $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



Form 3 - MS / MSD Recoveries



Project Name: El Presidente State 4H

Work Order #: 577383

Project ID: 212C-MD-01102

Lab Batch ID: 3042214

QC- Sample ID: 577310-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/25/2018

Date Prepared: 02/24/2018

Analyst: ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00199	0.0996	0.0528	53	0.100	0.0624	62	17	70-130	35	X
Toluene	<0.00199	0.0996	0.0443	44	0.100	0.0578	58	26	70-130	35	X
Ethylbenzene	<0.00199	0.0996	0.0461	46	0.100	0.0583	58	23	71-129	35	X
m,p-Xylenes	<0.00398	0.199	0.0891	45	0.200	0.110	55	21	70-135	35	X
o-Xylene	<0.00199	0.0996	0.0476	48	0.100	0.0588	59	21	71-133	35	X

Lab Batch ID: 3042224

QC- Sample ID: 577383-004 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/24/2018

Date Prepared: 02/24/2018

Analyst: ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00198	0.0992	0.0590	59	0.0998	0.0584	59	1	70-130	35	X
Toluene	<0.00198	0.0992	0.0583	59	0.0998	0.0465	47	23	70-130	35	X
Ethylbenzene	<0.00198	0.0992	0.0528	53	0.0998	0.0459	46	14	70-130	35	X
m,p-Xylenes	0.00427	0.198	0.103	50	0.200	0.0944	45	9	70-130	35	X
o-Xylene	<0.00198	0.0992	0.0532	54	0.0998	0.0488	49	9	70-130	35	X

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

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

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

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



Form 3 - MS / MSD Recoveries



Project Name: El Presidente State 4H

Work Order #: 577383

Project ID: 212C-MD-01102

Lab Batch ID: 3042346

QC- Sample ID: 577420-010 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/27/2018

Date Prepared: 02/27/2018

Analyst: ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00199	0.0996	0.0839	84	0.0998	0.0602	60	33	70-130	35	X
Toluene	<0.00199	0.0996	0.0875	88	0.0998	0.0402	40	74	70-130	35	XF
Ethylbenzene	<0.00199	0.0996	0.0987	99	0.0998	0.0647	65	42	70-130	35	XF
m,p-Xylenes	<0.00398	0.199	0.194	97	0.200	0.127	64	42	70-130	35	XF
o-Xylene	<0.00199	0.0996	0.0959	96	0.0998	0.0628	63	42	70-130	35	XF

Lab Batch ID: 3042388

QC- Sample ID: 577388-008 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/28/2018

Date Prepared: 02/26/2018

Analyst: ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00199	0.0996	0.0794	80	0.0994	0.0699	70	13	70-130	35	
Toluene	<0.00199	0.0996	0.0844	85	0.0994	0.0739	74	13	70-130	35	
Ethylbenzene	<0.00199	0.0996	0.0929	93	0.0994	0.0819	82	13	70-130	35	
m,p-Xylenes	<0.00398	0.199	0.183	92	0.199	0.161	81	13	70-130	35	
o-Xylene	<0.00199	0.0996	0.0913	92	0.0994	0.0793	80	14	70-130	35	

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

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

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

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



Form 3 - MS / MSD Recoveries



Project Name: El Presidente State 4H

Work Order #: 577383

Project ID: 212C-MD-01102

Lab Batch ID: 3042728

QC- Sample ID: 577777-010 S

Batch #: 1 Matrix: Soil

Date Analyzed: 03/04/2018

Date Prepared: 03/04/2018

Analyst: ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.0998	0.0693	69	0.100	0.0693	69	0	70-130	35	X
Toluene	<0.00200	0.0998	0.0728	73	0.100	0.0739	74	1	70-130	35	
Ethylbenzene	<0.00200	0.0998	0.0825	83	0.100	0.0832	83	1	70-130	35	
m,p-Xylenes	<0.00399	0.200	0.162	81	0.200	0.165	83	2	70-130	35	
o-Xylene	<0.00200	0.0998	0.0806	81	0.100	0.0820	82	2	70-130	35	

Lab Batch ID: 3042428

QC- Sample ID: 577380-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/27/2018

Date Prepared: 02/27/2018

Analyst: OJS

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1230	250	1390	64	250	1470	96	6	90-110	20	X

Lab Batch ID: 3042428

QC- Sample ID: 577380-010 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/27/2018

Date Prepared: 02/27/2018

Analyst: OJS

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	2690	250	2740	20	250	2830	56	3	90-110	20	X

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

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

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: El Presidente State 4H

Work Order # : 577383

Project ID: 212C-MD-01102

Lab Batch ID: 3042451

QC- Sample ID: 577383-004 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/27/2018

Date Prepared: 02/27/2018

Analyst: OJS

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	36.9	250	301	106	250	305	107	1	90-110	20	

Lab Batch ID: 3042451

QC- Sample ID: 577383-012 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/27/2018

Date Prepared: 02/27/2018

Analyst: OJS

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	16.2	250	295	112	250	294	111	0	90-110	20	X

Lab Batch ID: 3042453

QC- Sample ID: 577383-022 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/27/2018

Date Prepared: 02/27/2018

Analyst: OJS

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	54.6	250	303	99	250	311	103	3	90-110	20	

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

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

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

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



Form 3 - MS / MSD Recoveries



Project Name: El Presidente State 4H

Work Order #: 577383

Project ID: 212C-MD-01102

Lab Batch ID: 3042453

QC- Sample ID: 577388-010 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/27/2018

Date Prepared: 02/27/2018

Analyst: OJS

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	268	107	250	262	105	2	90-110	20	

Lab Batch ID: 3042060

QC- Sample ID: 577014-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/23/2018

Date Prepared: 02/23/2018

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons	<15.0	999	880	88	997	885	89	1	70-135	35	
Diesel Range Organics	<15.0	999	988	99	997	984	99	0	70-135	35	

Lab Batch ID: 3042063

QC- Sample ID: 577388-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/24/2018

Date Prepared: 02/23/2018

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons	<15.0	997	879	88	999	987	99	12	70-135	35	
Diesel Range Organics	29.5	997	982	96	999	1080	105	10	70-135	35	

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

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

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

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



Form 3 - MS / MSD Recoveries



Project Name: El Presidente State 4H

Work Order #: 577383

Project ID: 212C-MD-01102

Lab Batch ID: 3042220

QC- Sample ID: 577420-012 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/26/2018

Date Prepared: 02/26/2018

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons	<15.0	999	1040	104	997	910	91	13	70-135	35	
Diesel Range Organics	<15.0	999	1160	116	997	1040	104	11	70-135	35	

Lab Batch ID: 3042778

QC- Sample ID: 577595-021 S

Batch #: 1 Matrix: Soil

Date Analyzed: 03/03/2018

Date Prepared: 03/02/2018

Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons	<15.0	999	1060	106	997	1030	103	3	70-135	35	
Diesel Range Organics	<15.0	999	1100	110	997	1050	105	5	70-135	35	

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

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

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

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

Analysis Request of Chain of Custody Record

Page 1 of 3



Tetra Tech, Inc.

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

577383

Client Name: Marathon		Site Manager: Ike Tavares																														
Project Name: El Presidente State 4H																																
Project Location: (county, state) Eddy Co., NM		Project #: 212C-MD-01102																														
Invoice to: Tetra Tech		Receiving Laboratory: Xenco																														
Comments:		Sampler Signature: <i>[Signature]</i>																														
Run deeper sample if Benzene exceeds 10 mg/kg, total BTEX exceeds 50 mg/kg, or TPH exceeds 1000 mg/kg.																																
LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B	BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRQ)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	Hold					
		YEAR:	DATE																									TIME				
	AH #1 (0-6")		2/22/2018		X		1	X		X																						
	AH #2 (0-6")		2/22/2018		X		1	X		X																						
	AH #3 (0-6")		2/22/2018		X		1	X		X																						
	AH #4 (0-1')		2/22/2018		X		1	X		X																						
	AH #4 (1-1.5')		2/22/2018		X		1	X		X																						
	AH #5 (0-1')		2/22/2018		X		1	X		X																						
	AH #5 (1.1.5')		2/22/2018		X		1	X		X																						
	AH #5 (2-2.5')		2/22/2018		X		1	X		X																						
	AH #5 (3-3.5')		2/22/2018		X		1	X		X																						
	AH #6 (0-1')		2/22/2018		X		1	X		X																						
Relinquished by:	<i>[Signature]</i>	Date:	2/22/2018	Time:	1435	Received by:	<i>[Signature]</i>	Date:	2/23/18	Time:	1435																					
Relinquished by:		Date:		Time:		Received by:		Date:		Time:																						
Relinquished by:		Date:		Time:		Received by:		Date:		Time:																						

ORIGINAL COPY

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB USE ONLY

Sample Temperature

REMARKS:

☐ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

Temp: 4.5 IR ID: R-8

CF: (0-6: -0.2°C)

(6-23: +0.2°C)

Corrected Temp: 4.3

Analysis Request of Chain of Custody Record

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

577383



Tetra Tech, Inc.

Client Name: Marathon		Site Manager: Ike Tavaroz	
Project Name: El Presidente State 4H			
Project Location: (county, state) Eddy Co., NM		Project #: 212C-MD-01102	
Invoice to: Tetra Tech			
Receiving Laboratory: Xenco		Sampler Signature: <i>[Signature]</i>	
Comments: Run deeper sample if Benzene exceeds 10 mg/kg, total BTEX exceeds 50 mg/kg, or TPH exceeds 1000 mg/kg.			

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX	PRESERVATIVE METHOD				# CONTAINERS	FILTERED (Y/N)			
		YEAR	DATE		TIME	WATER	SOIL	HCL			HNO ₃	ICE	
AH #6 (1-1.5')			2/22/2018		X			X		1		X	
AH #6 (2-2.5')			2/22/2018		X			X		1		X	
AH #6 (3-3.5')			2/22/2018		X			X		1		X	
AH #7 (0-1')			2/22/2018		X			X		1		X	
AH #7 (1-1.5')			2/22/2018		X			X		1		X	
AH #7 (2-2.5')			2/22/2018		X			X		1		X	
AH #7 (3-3.5')			2/22/2018		X			X		1		X	
AH #7 (4-4.5')			2/22/2018		X			X		1		X	
AH #8 (0-1')			2/22/2018		X			X		1		X	
AH #8 (1-1.5')			2/22/2018		X			X		1		X	

Relinquished by: <i>[Signature]</i>	Date: 2/22/18	Time: 1435	Received by: <i>[Signature]</i>	Date: 2/23/18	Time: 1435
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY	REMARKS:	Sample Temperature	
		<input type="checkbox"/> RUSH: Same Day 24 hr 48 hr 72 hr <input type="checkbox"/> Rush Charges Authorized <input type="checkbox"/> Special Report Limits or TRRP Report	

ORIGINAL COPY

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

Temp: 4.5 IR ID: R-8
 CF: (0-6: -0.2°C) 4.3
 Corrected Temp:

Page 3 of 3



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

571383

[illegible]

ORIGINAL COPY

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

Temp: 4.5
CF: (0.6; -0.2°C)
(6-23; +0.2°C)
Corrected Temp: 4.3
IR ID: R-8



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: Tetra Tech- Midland

Date/ Time Received: 02/23/2018 02:35:00 PM

Work Order #: 577383

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	4.3
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Connie Hernandez

Date: 02/23/2018

Checklist reviewed by:

Kelsey Brooks

Date: 03/01/2018

Appendix D

Eddy Area, New Mexico

RE—Reagan-Upton association, 0 to 9 percent slopes

Map Unit Setting

National map unit symbol: 1w5d

Elevation: 1,100 to 5,400 feet

Mean annual precipitation: 6 to 14 inches

Mean annual air temperature: 60 to 64 degrees F

Frost-free period: 180 to 240 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Reagan and similar soils: 70 percent

Upton and similar soils: 25 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Reagan

Setting

Landform: Fan remnants, alluvial fans

Landform position (three-dimensional): Rise

Down-slope shape: Convex, linear

Across-slope shape: Linear

Parent material: Alluvium and/or eolian deposits

Typical profile

H1 - 0 to 8 inches: loam

H2 - 8 to 60 inches: loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat):

Moderately high to high (0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 40 percent

Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 1.0

Available water storage in profile: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: B

Ecological site: Loamy (R070DY153NM)

Hydric soil rating: No

Description of Upton

Setting

Landform: Ridges, fans

Landform position (three-dimensional): Side slope, rise

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Residuum weathered from limestone

Typical profile

H1 - 0 to 9 inches: gravelly loam

H2 - 9 to 13 inches: gravelly loam

H3 - 13 to 21 inches: cemented

H4 - 21 to 60 inches: very gravelly loam

Properties and qualities

Slope: 0 to 9 percent

Depth to restrictive feature: 7 to 20 inches to petrocalcic

Natural drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 75 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 1.0

Available water storage in profile: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D

Ecological site: Shallow Loamy (R070DY159NM)

Hydric soil rating: No

Minor Components

Pima

Percent of map unit:

Ecological site: Bottomland (R042XC017NM)

Hydric soil rating: No

Atoka

Percent of map unit:

Ecological site: Loamy (R042XC007NM)

Hydric soil rating: No

Data Source Information

Soil Survey Area: Eddy Area, New Mexico

Survey Area Data: Version 13, Sep 9, 2017

NMSLO Seed Mix

Loamy (L)

LOAMY (L) SITES SEED MIXTURE:

COMMON NAME	VARIETY	APPLICATION RATE (PLS/Acre)	DRILL BOX
Grasses:			
Black grama	VNS, Southern	1.0	D
Blue grama	Lovington	1.0	D
Sideoats grama	Vaughn, El Reno	4.0	F
Sand dropseed	VNS, Southern	2.0	S
Alkali sacaton	VNS, Southern	1.0	
Little bluestem	Cimarron, Pastura	1.5	F
Forbs:			
Firewheel (<i>Gaillardia</i>)	VNS, Southern	1.0	D
Shrubs:			
Fourwing saltbush	Marana, Santa Rita	1.0	D
Common winterfat	VNS, Southern	0.5	F
Total PLS/acre		18.0	

S = Small seed drill box, D = Standard seed drill box, F = Fluffy seed drill box

VNS = Variety Not Stated, PLS = Pure Live Seed

- Seed mixes should be provided in bags separating seed types into the three categories: small (S), standard (D) and fluffy (F).
- VNS, Southern – Seed should be from a southern latitude collection of this species.
- Double seed application rate for broadcast or hydroseeding.
- If one species is not available, contact the SLO for an approved substitute; alternatively the SLO may require other species proportionately increased.
- Additional information on these seed species can be found on the USDA Plants Database website at <http://plants.usda.gov>.

