SITE INFORMATION

Report Type: Work Plan 2RP-5041

General Site Information:						
Site:	**SRO State Com #10H**					
Company:	**COG Operating LLC**					
Section, Township and Range	**Unit D**	**Sec. 03**	**T 26S**	**R 28E**		
Lease Number:	**API No. 30-015-38072**					
County:	**Eddy County**					
GPS:	**32.077205**			**-104.082883**		
Surface Owner:	**State**					
Directions:	From the intersection of Hwy 285 and White City Rd, head west on White City for 1.06 miles, turn right (north) onto unnamed lease road and go 1.04, turn right (east) and go 150 feet and arrive at location.					

Release Data:		
Date Released:	10/23/2018	
Type Release:	Crude oil and Produced water	
Source of Contamination:	Corroded flowline	
Fluid Released:	4 bbls oil/10 bbls water	
Fluids Recovered:	4 bbls oil/6 bbls water	

Official Communication:			
Name:	Ike Tavarez		Clair Gonzales
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center		901 West Wall Street
	600 W. Illinois Ave.		Suite 100
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 687-8110
Fax:	(432) 684-7137		
Email:	itavarez@concho.com		Clair.Gonzales@tetratech.com

Site Characterization	
Depth to Groundwater:	*120' below surface*
Karst Potential:	*Medium*

Recommended Remedial Action Levels (RRALs)			
Benzene	***Total BTEX***	***TPH (GRO+DRO+MRO)***	***Chlorides***
10 mg/kg	*50 mg/kg*	*100 mg/kg*	*600 mg/kg*

TETRA TECH

April 19, 2019

Mr. Mike Bratcher
District Supervisor
Oil Conservation Division, District 2
811 S. First Street
Artesia, New Mexico 88210

Re: Work Plan for the COG Operating, LLC, SRO State Com #10H, Unit D, Section 03, Township 26 South, Range 28 East, Eddy County, New Mexico.
2RP-5041

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating, LLC, (COG) to assess a release that occurred at SRO State Com #10H, Unit D, Section 03, Township 26 South, Range 28 East, Eddy County, New Mexico (Site). The spill site coordinates are 32.07710º, -104.08255º. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico Initial C-141, the release was discovered on October 23, 2018, and released approximately ten (10) barrels of produced water and four (4) barrels of oil, due to a corroded flowline. Six (6) barrels of produced water and four (4) barrels of oil were recovered. The release impacted an area on the pad and pasture measuring approximately 45' x 175'. A copy of the initial C-141 Form is included in Appendix A.

Site Characterization

A site characterization was performed for the site and no watercourses, lakebeds, sinkholes, playa lakes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, springs, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the specified distances and the site is located in a medium karst potential area. No water wells were listed within Section 03 on the New Mexico Office of the State Engineer's (NMOSE) database, the Geology and Groundwater Resources of Eddy County (Report 3), or the USGS National Water Information Database. The nearest well listed is in Section 02 on the NMOSE database, approximately 1.54 miles east-southeast of the site, and has a reported depth to groundwater of 120 feet below surface. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in this area is approximately 50'-75' below surface. The site characterization data is shown in Appendix B.

Tetra Tech
901 West Wall St, Ste 100 Midland, TX 79701
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.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, updated August 14, 2018. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the medium karst potential, the proposed RRAL for TPH is 100 mg/kg (GRO + DRO + ORO). Additionally, the proposed RRAL for chlorides is 600 mg/kg.

Soil Assessment and Analytical Results

Initial Sampling

On November 15, 2018, COG personnel were onsite to evaluate and sample the release area. A total of five (5) sample points (S-1, S-2, S-3, S-4, and S-5) were installed inside the spill footprint to total depths ranging from 1' to 10' below surface. Additionally, four (4) horizontal delineation samples (North, South, East, and West) were collected. Soil samples were collected and submitted to the laboratory for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B, and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The sample location is shown on Figure 3.

Referring to Table 1, the area of horizontal sample (West) did not show any benzene, total BTEX, TPH or chloride concentration above the RRALs'. None of the samples analyzed in the areas of (S-1, S-2, S-3, S-4, S-5, North, South, and East) showed benzene or total BTEX, above the RRALs. However, the areas of (S-1, S-2, S-3, S-4, S-5, North, South, and East) all showed TPH or chloride concentration above the RRALs' and the areas of (S-2 and S-5) were not vertically defined.

Secondary Sampling

On January 24, 2019, Tetra Tech personnel were onsite to vertically define the areas of (S-2 and S-5). A total of one (1) borehole (BH-1) was drilled to 29' - 30' below surface. One (1) background borehole was drilled to 29' - 30' below ground surface in order to evaluate the native soils. A secondary sample point (S-5A) was also installed in the area of (S-5) to a total depth of 2'-2.5' below surface. Additionally, three (3) horizontal delineation samples (North, East, and South) were collected. Soil samples were collected and submitted to the laboratory for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B, and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The sample locations are shown on Figure 3.

Background

Referring to Table 1, the background borehole (Background) showed chloride concentrations that increased with depth to a chloride high of 768 mg/kg at 9'-10' below surface.

Borehole

Referring to Table 1, the area of borehole (BH-1) did not show any benzene or total BTEX above the RRALs. However, the area of borehole (BH-1) showed a TPH concentration of 4,786 mg/kg at 0-1', which declined with depth to below the RRAL with a concentration of 38.2 mg/kg at 9'-10' below surface. Additionally, elevated chlorides above the background concentrations were detected at borehole (BH-1) to a depth of 19'-20', before declining below the RRAL at 24'-25'.

Sample Point

Referring to Table 1, the area of (S-5A) did not show any benzene, total BTEX, TPH or chloride concentrations above the RRALs'.

Horizontals

Referring to Table 1, the areas of (North and South) not show any benzene, total BTEX, TPH, or chloride concentrations above the RRALs'. The area of (South) did not show any benzene, total BTEX, or chloride concentrations above the RRALs', however it did show a TPH concentration of 407 mg/kg.

Work Plan

Based on the laboratory data, COG proposes to excavate the areas as shown on Figure 4 and highlighted (green) in Table 1. The areas of (S-1, S-3, S-4, S-5, North, South, and East) will be excavated to approximately 6" below surface to remove the shallow chloride and TPH impact. The area of (S-2 and BH-1) will be excavated to approximately 6' below surface to remove the deeper chloride and TPH impact. Approximately 600 cubic yards of material is estimated to be removed. Five point composite sidewall and bottom hole confirmation samples will be collected every 400 square feet to be representative of the area and to confirm proper removal of the impacted soils. Once excavated, the area will be backfilled with clean material to surface grade and the removed materials will be hauled for proper disposal. The remediation will be implemented within 90 days after the work plan approval.

Impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safely concerns for onsite personnel. As such, COG will excavate the impacted soils to the maximum extent practicable.

TETRA TECH

Conclusion

Once the remediation activities are completed, a closure report will be prepared for NMOCD approval. If you have any questions or comments concerning the assessment or remediation activities for this site, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Clair Gonzales,
Project Manager

Johnathon Kell,
Geologist II

cc: Ryan Mann – SLO
Mike Bratcher - NMOCD
Ike Tavarez – COG
Dakota Neel - COG
Rebecca Haskell - COG
Sheldon Hitchcock - COG
DeAnn Grant - COG

Tables

Table 1
COG
SRO State Com #10H
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (in)	Soil Status		TPH (mg/kg)					Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	GRO+DRO	ORO	Total						
S-1	11/15/2018	Surface	-	X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.025	-	-	-	<0.150	**1,600**
	"	1	-	X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.025	-	-	-	<0.150	160
S-2	11/15/2018	Surface	-	X		56.6	3,070	**3,127**	437	**3,564**	<0.025	-	-	-	0.296	**1,960**
	"	1	-	X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.025	-	-	-	<0.150	**784**
	"	2	-	X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.025	-	-	-	<0.150	**736**
	"	3	-	X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.025	-	-	-	<0.150	**1,170**
	"	4	-	X		<10.0	10.0	10.0	<10.0	10.0	<0.025	-	-	-	<0.150	**656**
	"	6	-	X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.025	-	-	-	<0.150	**1,680**
	"	8	-	X		<10.0	44.8	44.8	<10.0	44.8	<0.025	-	-	-	<0.150	**1,300**
	"	10	-	X		<10.0	10.0	10.0	<10.0	10.0	<0.025	-	-	-	<0.150	**1,070**
BH-1	1/24/2019	0-1	-	X		601.0	3,720	**4,321**	465	**4,786**	<0.00201	0.00328	<0.00201	0.0124	0.0157	**1,430**
	"	2-3	-	X		25	1,800	**1,825**	258	**2,083**	<0.00199	<0.00199	<0.00199	0.00588	0.00588	**1,810**
	"	4-5	-	X		<15.0	984	**984**	122	**1,110**	-	-	-	-	-	**1,020**
	"	6-7	-	X		<14.9	114	**114**	<14.9	**114**	-	-	-	-	-	471
	"	9-10	-	X		<15.0	38.2	38.2	<15.0	38.2	-	-	-	-	-	**1,510**
	"	14-15	-	X		-	-	-	-	-	-	-	-	-	-	**911**
	"	19-20	-	X		-	-	-	-	-	-	-	-	-	-	**1,160**
	"	24-25	-	X		-	-	-	-	-	-	-	-	-	-	366
	"	29-30	-	X		-	-	-	-	-	-	-	-	-	-	171
S-3	11/15/2018	Surface	-	X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.025	-	-	-	<0.150	**1,220**
	"	1	-	X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.025	-	-	-	<0.150	176
S-4	1/24/2019	Surface	-	X		<10.0	1,020	**1,020**	254	**1,274**	<0.025	-	-	-	<0.150	**2,480**
	"	1	-	X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.025	-	-	-	0.184	208
S-5	11/15/2018	Surface	-	X		<10.0	213	**213**	50.3	**263**	<0.025	-	-	-	<0.150	32.0
S-5A	1/24/2019	0-1	-	X		<15.0	15.1	15.1	<15.0	15.1	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	179
	"	1-1.5	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	18.4
	"	2-2.5	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	38.1

Table 1
COG
SRO State Com #10H
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (in)	Soil Status		TPH (mg/kg)					Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	GRO+DRO	ORO	Total						
North	11/15/2018	-	-	X		<10.0	2,220	**2,220**	517	**2,737**	<0.025	-	-	-	<0.150	**896**
North	1/24/2019	-	-	X		<15.0	16.7	16.7	<15.0	16.7	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	70.5
East	11/15/2018	-	-	X		<10.0	10.0	10.0	<10.0	10.0	<0.025	-	-	-	<0.150	**19,600**
East	1/24/2019	-	-	X		<15.0	22.4	22.4	<15.0	22.4	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	6.11
South	11/15/2018	-	-	X		<10.0	676	**676**	251	**927**	<0.025	-	-	-	<0.150	480
South	1/24/2019	-	-	X		<15.0	354	**354**	52.8	**407**	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	52.5
West	11/15/2018	-	-	X		<10.0	28.1	28.1	15.6	43.7	<0.025	-	-	-	<0.150	240
Background	1/24/2019	0-1	-	X		-	-	-	-	-	-	-	-	-	-	<4.98
	"	2-3	-	X		-	-	-	-	-	-	-	-	-	-	153
	"	4-5	-	X		-	-	-	-	-	-	-	-	-	-	102
	"	6-7	-	X		-	-	-	-	-	-	-	-	-	-	424
	"	9-10	-	X		-	-	-	-	-	-	-	-	-	-	**768**
	"	14-15	-	X		-	-	-	-	-	-	-	-	-	-	310
	"	19-20	-	X		-	-	-	-	-	-	-	-	-	-	405
	"	24-25	-	X		-	-	-	-	-	-	-	-	-	-	73.6
	"	29-30	-	X		-	-	-	-	-	-	-	-	-	-	8.22

(-) Not Analyzed

Proposed Excavation Depths

Client:	**COG**			
Site Name	SRO State Com #10H			
Boring/Well:	**Background**			
GPS	**32.077276, -104.083675**			
Project #:	**212C-MD-01581**			
Total Depth	**29'-30'**			
Date Installed:	**1/24/2019**			

DEPTH (Ft)	Lithology/Sample Description	NOTES	Chloride(ppm)	Titration (ppm)
0-1	*Brown soil*	*No Stain or Odor*	*106*	-
2-3	"	*No Stain or odor*	*546*	-
4-5	*Redish-Brown Sand w/ ~15% red gypsum*	*No Stain or odor*	*1050*	-
6-7	"	*No Stain or odor*	*1040*	*800*
9-10	*Reddish-Brown clay (fiable) w/~15% Gypsum*	*No Stain or odor*	*1020*	*600*
14-15	"	*No Stain or odor*	*886*	-
19-20	*Reddish-Browm silty clay w/ ~10-15% Gypsum*	*No Stain or odor*	*590*	-
24-25	*Reddish-Brown silty sand w/ ~40% gypsum*	*No Stain or odor*	*800*	*200*
29-30	"		*800.00*	-

Client:	**COG**			
Site Name	SRO State Com #10H			
Boring/Well:	**BH-1**			
GPS	**32.077165, -104.082744**			
Project #:	**212C-MD-01581**			
Total Depth	**29'-30'**			
Date Installed:	**1/24/2019**			

DEPTH (Ft)	Lithology/Sample Description	NOTES	Chloride(ppm)	Titration (ppm)
0-1	*Yellow Brown Sand w/ ~60-70% gravel*	*No Stain or Odor*	*2,850*	-
2-3	*"*	*No Stain or odor*	*3020*	-
4-5	*Redish-Brown Sand w/ ~20-30% gravel*	*No Stain or odor*	*1290*	-
6-7	*"w/ ~5-15% gypsum*	*No Stain or odor*	*1460*	-
9-10	*"w/ clay nodules (soft) w/ ~20-30% gypsum*	*No Stain or odor*	*2,010*	-
14-15	*Redish-Brown sandy clay w/ ~20% gypsum*	*No Stain or odor*	*1,220*	*840*
19-20	*"*	*No Stain or odor*	*1,100*	*620*
24-25	*Reddish-Brown vf-f silty sand w/ ~5% gypsum*	*No Stain or odor*	*800*	*280*
29-30	*Reddish-Brown vf-f silty sand*		*349.00*	*160*

Figures

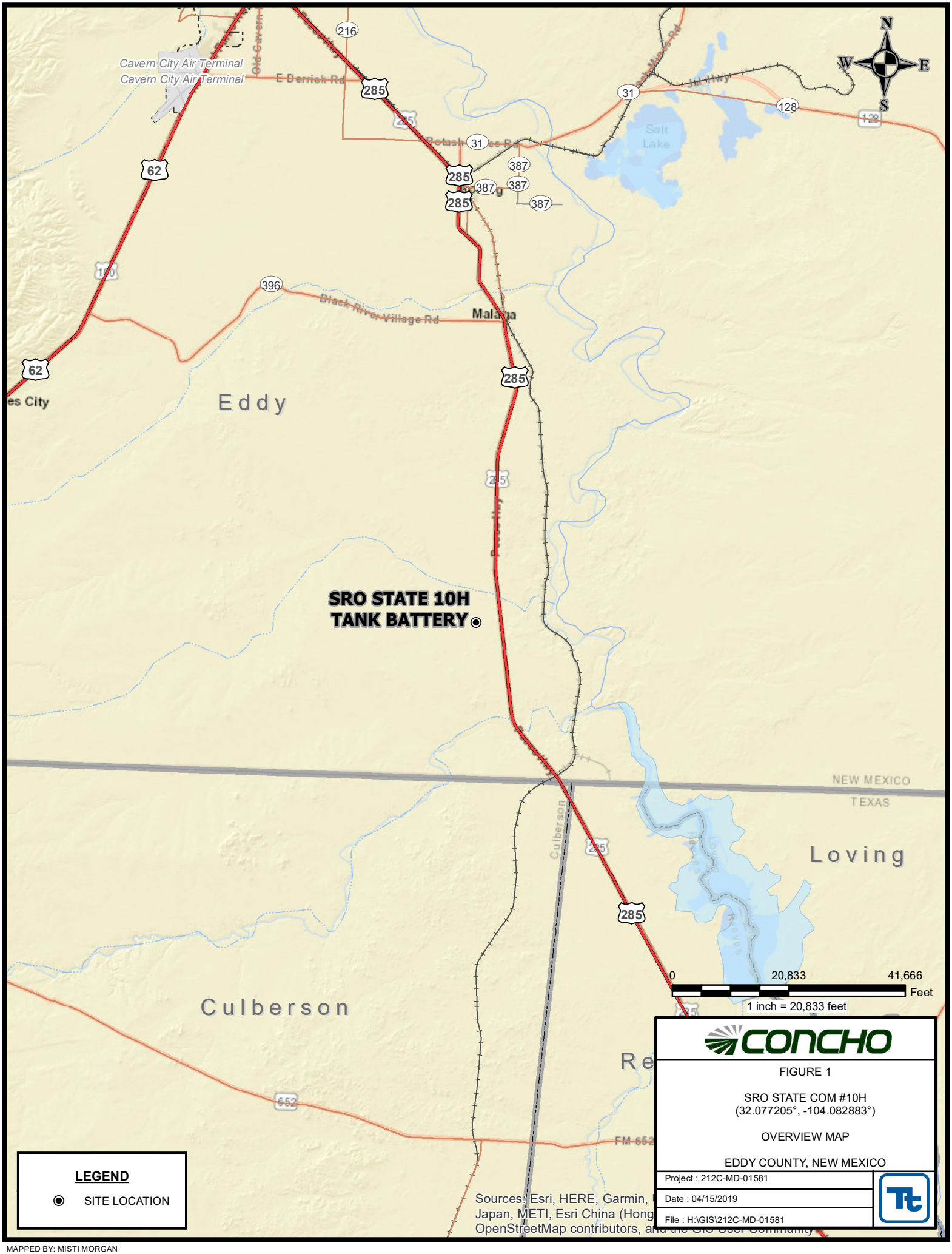

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FIGURE 1

SRO STATE COM #10H
(32.077205°, -104.082883°)

OVERVIEW MAP

EDDY COUNTY, NEW MEXICO

Project : 212C-MD-01581	
Date : 04/15/2019	
File : H:\GIS\212C-MD-01581	

MAPPED BY: MISTI MORGAN

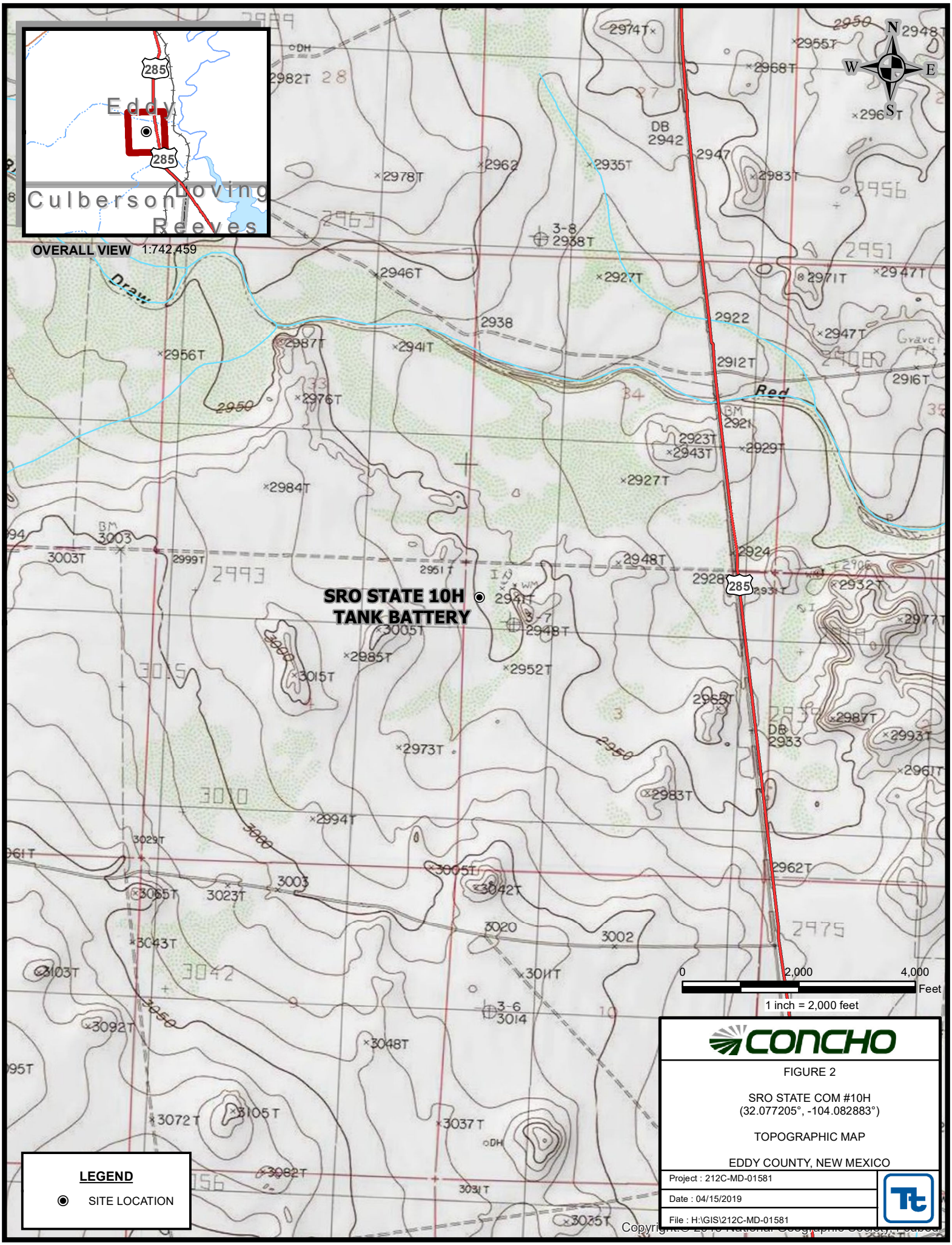

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FIGURE 2

SRO STATE COM #10H
(32.077205°, -104.082883°)

TOPOGRAPHIC MAP

EDDY COUNTY, NEW MEXICO

Project : 212C-MD-01581

Date : 04/15/2019

File : H:\GIS\212C-MD-01581

MAPPED BY: MISTI MORGAN

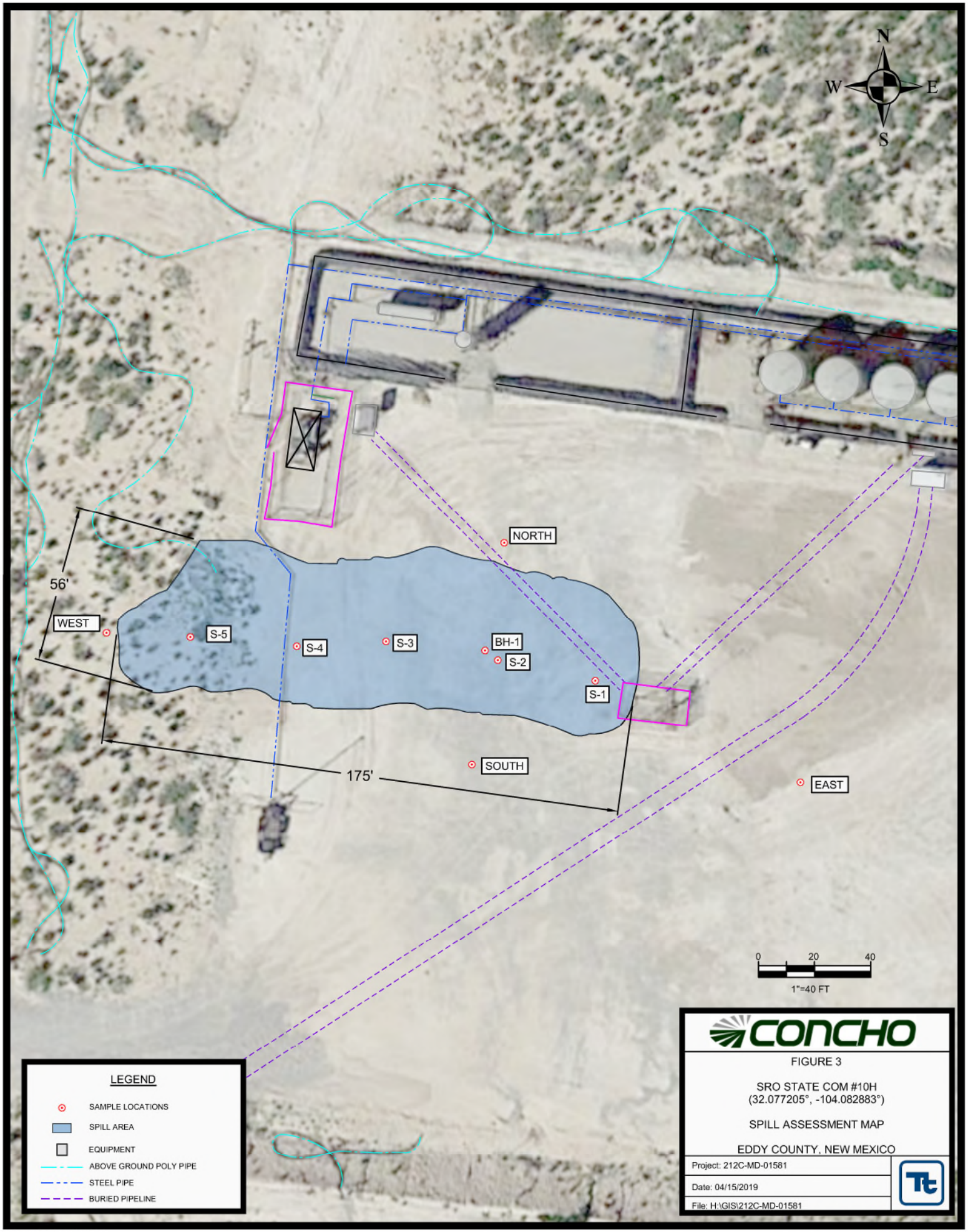

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FIGURE 3

SRO STATE COM #10H
(32.077205°, -104.082883°)

SPILL ASSESSMENT MAP

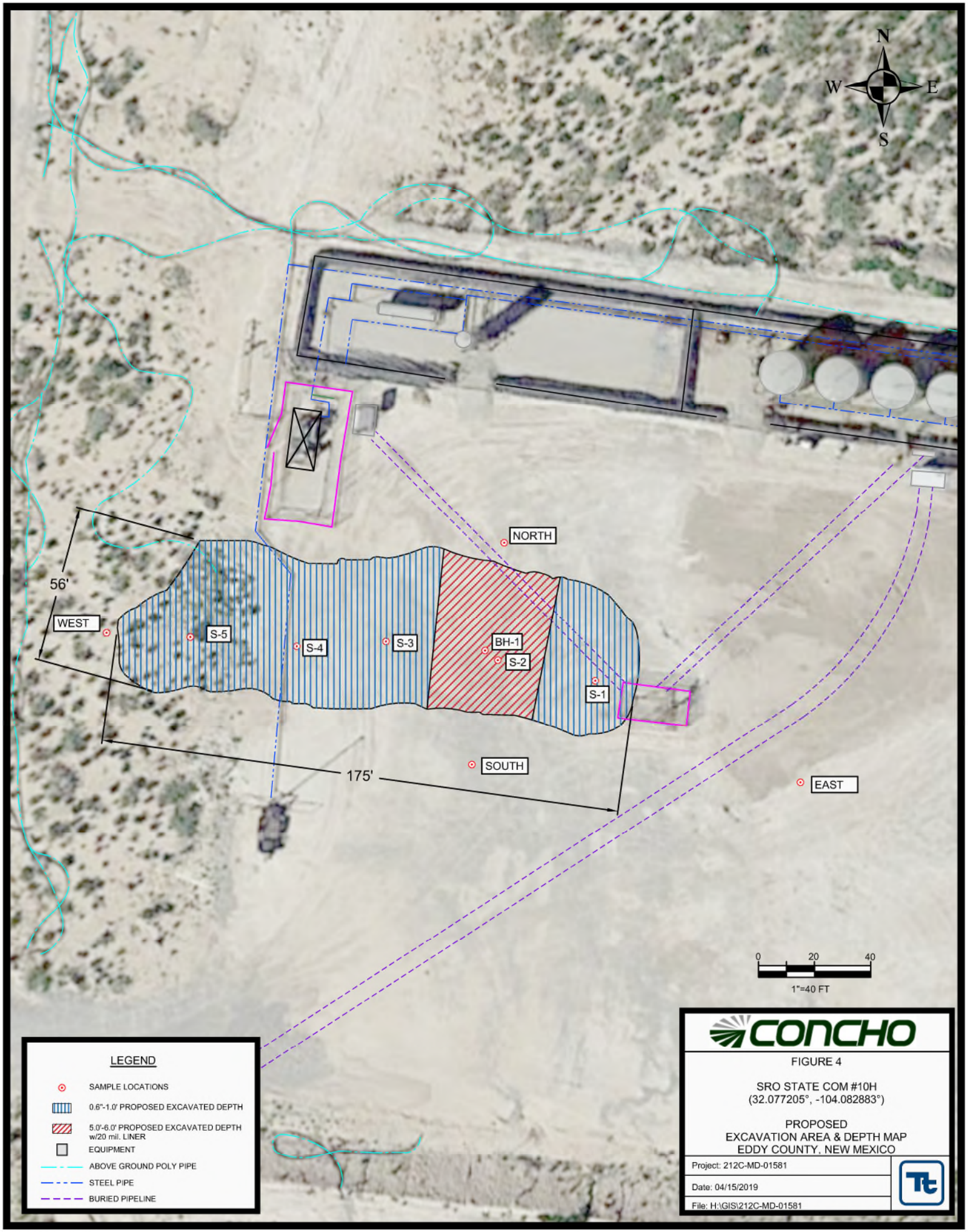
EDDY COUNTY, NEW MEXICO

Project: 212C-MD-01581

Date: 04/15/2019

File: H:\GIS\212C-MD-01581

Drawn By: MISTI MORGAN



Drawn By: MISTI MORGAN

Photos

COG
SRO State Com #10H
Eddy County, New Mexico

Area of BH-1 – View to Northeast

Area of Background – View North

Appendix A

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

NM Oil Conservation Div.
Dist. II - Artesia
Received
11/06/2018

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NAB1831230353
District RP	2RP-5041
Facility ID	
Application ID	pAB1831229849

Release Notification

Responsible Party

Responsible Party	COG Operating, LLC	OGRID	229137
Contact Name	Robert McNeill	Contact Telephone	(432) 683-7443
Contact email	RMcNeill@concho.com	Incident # *(assigned by OCD)*	
Contact mailing address	600 West Illinois Avenue, Midland, Texas 79701		

Location of Release Source

Latitude 32.07710 Longitude -104.08255

(NAD 83 in decimal degrees to 5 decimal places)

Site Name	SRO State Com #010H	Site Type	Flowline
Date Release Discovered	October 23, 2018	API# *(if applicable)*	30-015-38072

Unit Letter	Section	Township	Range	County
D	03	26S	28E	Eddy

Surface Owner: ■ State ☐ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

■ Crude Oil	Volume Released (bbls) 4	Volume Recovered (bbls) 4
■ Produced Water	Volume Released (bbls) 10	Volume Recovered (bbls) 6
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	■ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

The release was caused by a corroded flowline. The flowline is being replaced.
The release was on location and in the pasture. A vacuum truck was dispatched to remove all freestanding fluids. Concho will evaluate the site to determine if we may commence remediation immediately or delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

State of New Mexico
Oil Conservation Division

Incident ID	NAB1831230353
District RP	2RP-5041
Facility ID	
Application ID	pAB1831229849

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ■ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

- ■ The source of the release has been stopped.
- ■ The impacted area has been secured to protect human health and the environment.
- ■ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
- ■ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: DeAnn Grant Title: HSE Administrative Assistant

Signature: DeAnn Grant Date: 10/29/2018

email: agrant@concho.com Telephone: (432) 253-4513

OCD Only

Received by: Date: 11/08/2018

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	120 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☑ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☑ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☑ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☑ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☑ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☑ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☑ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☑ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☑ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☑ Yes ☐ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☑ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☑ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

- ☑ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☐ Field data
- ☑ Data table of soil contaminant concentration data
- ☑ Depth to water determination
- ☑ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☑ Boring or excavation logs
- ☑ Photographs including date and GIS information
- ☑ Topographic/Aerial maps
- ☑ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: Ike Tavarez Title: Senior HSE Supervisor

Signature:  Date: 4/22/19

email: itavarez@concho.com Telephone: 432-685-2573

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- ☑ Detailed description of proposed remediation technique
- ☑ Scaled sitemap with GPS coordinates showing delineation points
- ☑ Estimated volume of material to be remediated
- ☑ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☑ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: Ike Tavarez Title: Senior HSE Supervisor

Signature:  Date: 4/22/19

email: itavarez@concho.com Telephone: 432-685-2573

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
SRO State Com #010H
Eddy County, New Mexico

25 South 27 East

6	5	4	3	2	1
7	8	9	10	11	12 92
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33 19	34	35	36

25 South 28 East

6	5 59	4 35	3 32	2	1 Site
7	8	9	10	11	12
18 67	17	16	15 48 49	14	13
19	20 96	21	22	23	24
30	29 15	28 90	27	26 40	25
31	32	33	34	35	36 40

25 South 29 East

6 40	5	4	3	2	1
7	8	9	10 40	11	12
18	17	16	15 60	14	13
19	20	21	22	23	24
30 30	29	28	27	26	25
31	32 115	33	34	35	36

26 South 27 East

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

26 South 28 East

6	5	4	3 Site	2 120	1
7	8	9	10	11	12 100
18	17	16	15	14 120	13 56
19	20	21	22 120	23	24
30	29	28	27	26	25
31	32	33	34	35	36

26 South 29 East

6	5 78	4	3	2	1
7	8	9	10	11	12
18	17	16 125	15	14	13
19	20	21	22 57 69	23	24
30	29	28	27	26	25
31	32	33	34	35	36

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

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

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

34 NMOCD - Groundwater Data

123 Tetra Tech installed temporary wells and field water level

143 NMOCD Groundwater map well location

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

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

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y		Depth Well	Depth Water	Water Column
C 01668		CUB	ED		3	3	12	26S	28E	589957	3546554*		250	100	150
C 02160		CUB	ED	4	1	2	14	26S	28E	589243	3546044*		300	120	180
C 02160 S		CUB	ED	1	1	2	14	26S	28E	589043	3546244*		300	120	180
C 02160 S2		CUB	ED	1	1	2	14	26S	28E	589043	3546244*		300	120	180
C 02160 S3		CUB	ED	2	2	1	14	26S	28E	588834	3546241*		300	120	180
C 02160 S4		CUB	ED	2	2	1	14	26S	28E	588834	3546241*		300	120	180
C 02160 S5		CUB	ED	1	1	1	14	26S	28E	588225	3546237*		300	120	180
C 02160 S6		CUB	ED	3	3	1	14	26S	28E	588232	3545635*		300	120	180
C 02160 S7		CUB	ED	3	3	1	22	26S	28E	586638	3543998*		300	120	180
C 02160 S8		CUB	ED	2	3	3	12	26S	28E	590056	3546653*		200	120	80
C 02160 S9		CUB	ED	3	3	2	02	26S	28E	589020	3548868*		300	120	180
C 02477		CUB	ED		1	1	03	26S	28E	586687	3549347*		150		
C 02478		CUB	ED		2	1	05	26S	28E	583848	3549325*		100		
C 02479		CUB	ED		4	4	10	26S	28E	587909	3546534*		200		
C 02480		CUB	ED		4	4	10	26S	28E	587909	3546534*		150		
C 02481		CUB	ED		1	1	14	26S	28E	588326	3546138*		200		
C 02894		C	ED	2	2	3	12	26S	28E	590458	3547061*		240		
C 02924		C	ED	1	3	2	11	26S	28E	589032	3547451*				
C 04022 POD1		CUB	ED	4	4	2	15	26S	28E	588082	3545647		220	175	45
C 04022 POD2		CUB	ED	2	2	2	27	26S	28E	588106	3543082		250	145	105

Average Depth to Water: **124 feet**

Minimum Depth: **100 feet**

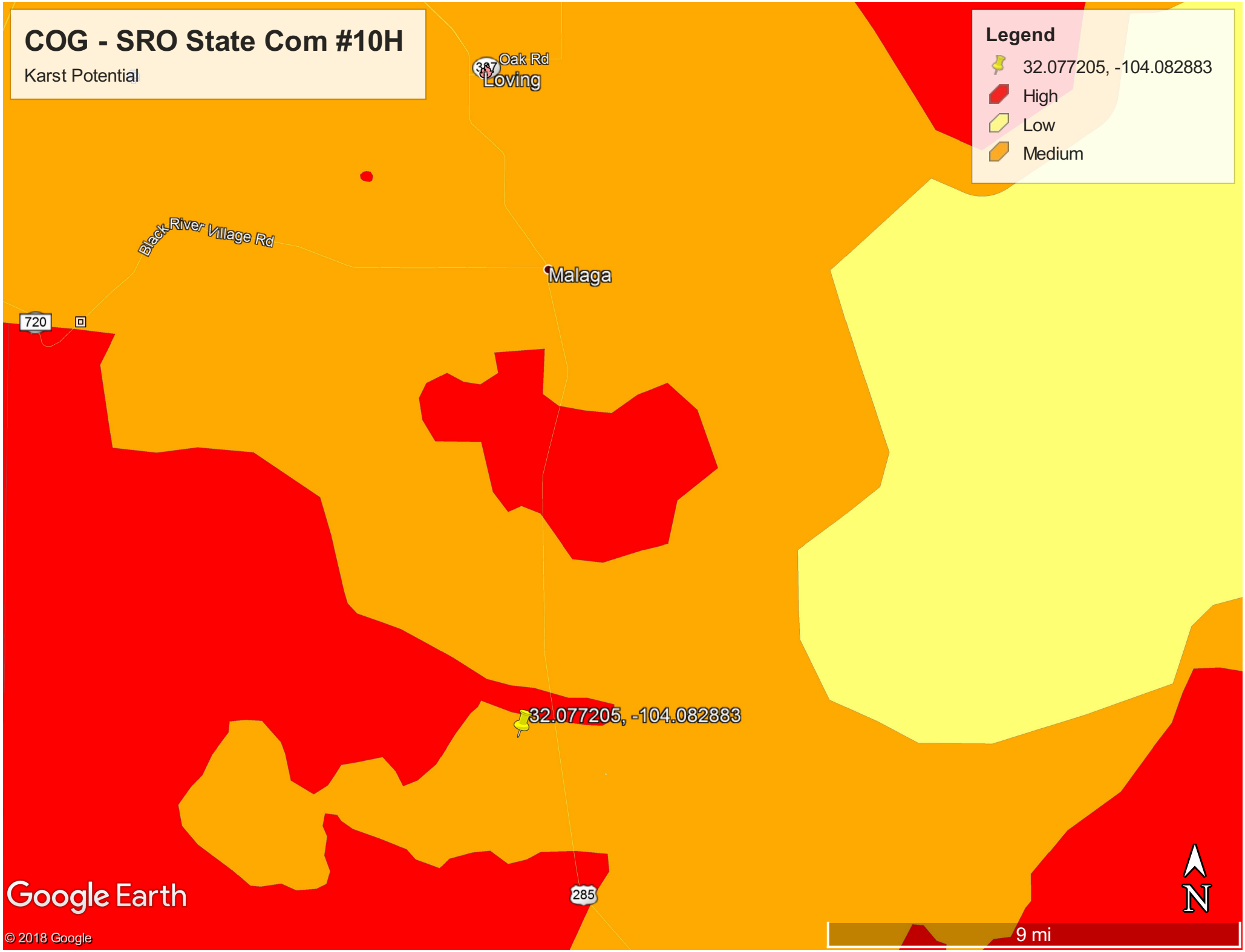
Maximum Depth: **175 feet**

Record Count: 20

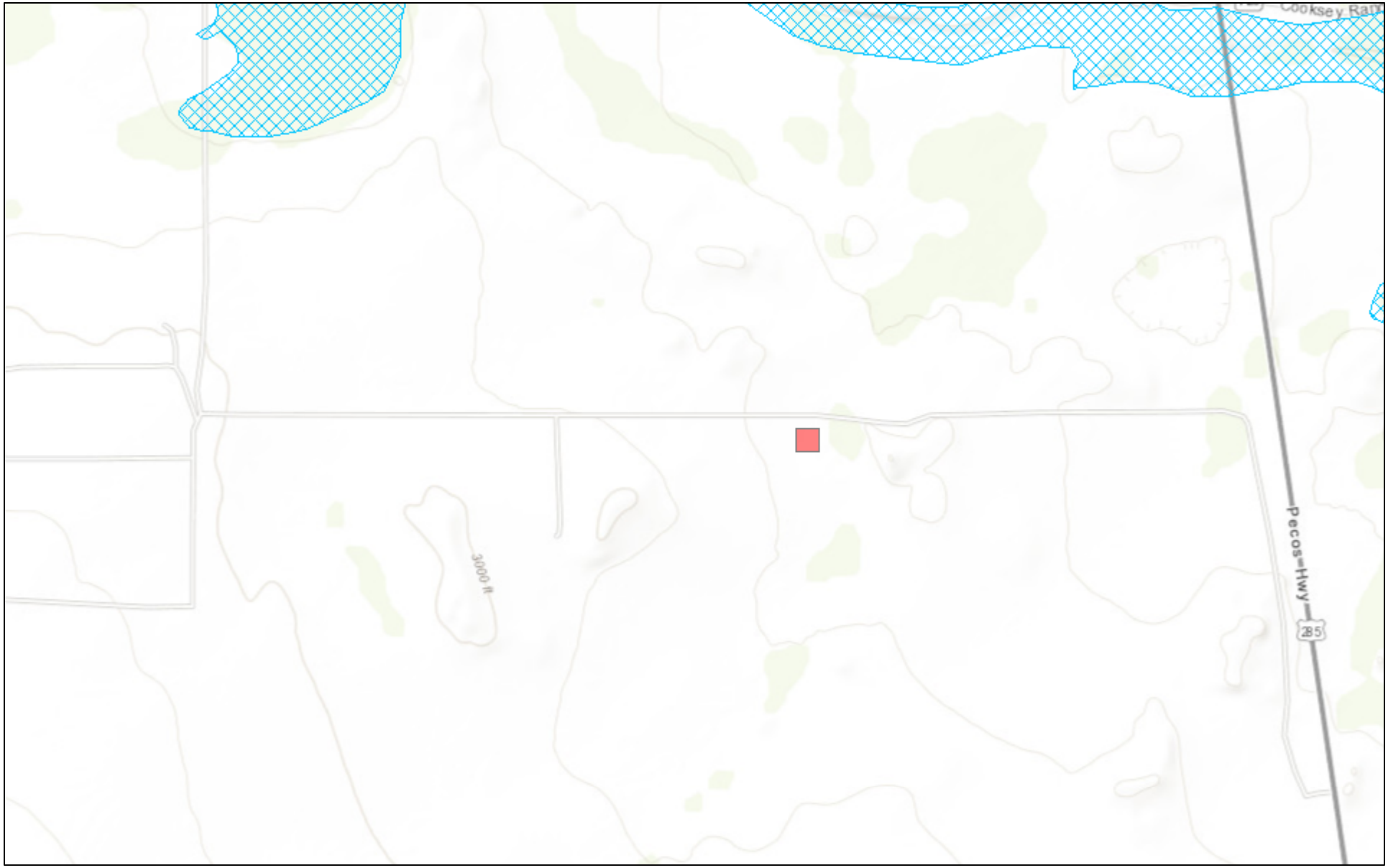
PLSS Search:

Township: 26S **Range:** 28E

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


COG - SRO State Com #10H
Karst Potential
Legend
32.077205, -104.082883
High
Low
Medium
Oak Rd
Loving
Black River Village Rd
Malaga
720
32.077205, -104.082883
285
Google Earth
© 2018 Google
N
9 mi

New Mexico NFHL Data



April 8, 2019

1:18,056

0 0.15 0.3 0.6 mi

0 0.25 0.5 1 km

FEMA
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

Appendix C

Analytical Report 612598

for

Tetra Tech- Midland

Project Manager: Clair Gonzales

SRO State Com #10H (10-23-18)

212C-MD-01581

08-FEB-19

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

08-FEB-19

Project Manager: **Clair Gonzales**
Tetra Tech- Midland
901 West Wall ST
Midland, TX 79701

Reference: XENCO Report No(s): **612598**
SRO State Com #10H (10-23-18)
Project Address: Eddy County, New Mexico

Clair Gonzales:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 612598. 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. 612598 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,

Kalei Stout
Midland Laboratory Director

Sample Cross Reference 612598

Tetra Tech- Midland, Midland, TX

SRO State Com #10H (10-23-18)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH-1 (0-1')	S	01-24-19 00:00		612598-001
BH-1 (2'-3')	S	01-24-19 00:00		612598-002
BH-1 (4'-5")	S	01-24-19 00:00		612598-003
BH-1 (6'-7')	S	01-24-19 00:00		612598-004
BH-1 (9-10')	S	01-24-19 00:00		612598-005
BH-1 (14'-15')	S	01-24-19 00:00		612598-006
BH-1 (19'-20')	S	01-24-19 00:00		612598-007
BH-1 (24'-25")	S	01-24-19 00:00		612598-008
BH-1 (29'-30')	S	01-24-19 00:00		612598-009
Background (0-1)	S	01-24-19 00:00		612598-010
Background (2'-3')	S	01-24-19 00:00		612598-011
Background (4'-5')	S	01-24-19 00:00		612598-012
Background (6'-7')	S	01-24-19 00:00		612598-013
Background (9'-10')	S	01-24-19 00:00		612598-014
Background (14'-15')	S	01-24-19 00:00		612598-015
Backrground (19'-20')	S	01-24-19 00:00		612598-016
Background (24'-25')	S	01-24-19 00:00		612598-017
Background (29'-30')	S	01-24-19 00:00		612598-018
S-5A (0-1')	S	01-24-19 00:00		612598-019
S-5A (1'-1.5')	S	01-24-19 00:00		612598-020
S-5A (2'-2.5')	S	01-24-19 00:00		612598-021

Sample receipt non conformances and comments:

02/08/19: revised report to include TPH data for samples 003-005 per client request-KLS.

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3077529 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 612598-001.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3077562 TPH by SW8015 Mod
Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 612598-001.

Certificate of Analysis Summary 612598

Tetra Tech- Midland, Midland, TX

Project Name: SRO State Com #10H (10-23-18)

Project Id: 212C-MD-01581
Contact: Clair Gonzales
Project Location: Eddy County, New Mexico

Date Received in Lab: Fri Jan-25-19 02:23 pm
Report Date: 08-FEB-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	612598-001		612598-002		612598-003		612598-004		612598-005		612598-006	
	Field Id:	BH-1 (0-1')		BH-1 (2'-3')		BH-1 (4'-5")		BH-1 (6'-7')		BH-1 (9-10')		BH-1 (14'-15')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-24-19 00:00		Jan-24-19 00:00		Jan-24-19 00:00		Jan-24-19 00:00		Jan-24-19 00:00		Jan-24-19 00:00	
BTEX by EPA 8021B	***Extracted:***	Jan-29-19 17:15		Jan-29-19 17:15									
	Analyzed:	Jan-30-19 17:25		Jan-30-19 11:21									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Benzene		<0.00201	0.00201	<0.00199	0.00199								
Toluene		0.00328	0.00201	<0.00199	0.00199								
Ethylbenzene		<0.00201	0.00201	<0.00199	0.00199								
m,p-Xylenes		<0.00402	0.00402	<0.00398	0.00398								
o-Xylene		0.0124	0.00201	0.00588	0.00199								
Total Xylenes		0.0124	0.00201	0.00588	0.00199								
Total BTEX		0.0157	0.00201	0.00588	0.00199								
Chloride by EPA 300	***Extracted:***	Jan-31-19 13:00		Jan-31-19 13:00		Jan-31-19 13:00		Jan-31-19 13:00		Jan-31-19 13:00		Jan-31-19 13:00	
	Analyzed:	Feb-01-19 02:08		Feb-01-19 02:14		Feb-01-19 02:35		Feb-01-19 02:42		Feb-01-19 02:48		Feb-01-19 02:54	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1430	24.8	1810	24.8	1020	25.0	471	49.5	1510	49.9	911	25.1
TPH by SW8015 Mod	***Extracted:***	Jan-30-19 15:00		Jan-30-19 15:00		Feb-07-19 16:00		Feb-07-19 16:00		Feb-07-19 16:00			
	Analyzed:	Jan-30-19 22:58		Jan-30-19 23:18		Feb-08-19 03:51		Feb-08-19 04:11		Feb-08-19 04:31			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		60.1	15.0	25.2	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0		
Diesel Range Organics (DRO)		3720	15.0	1800	15.0	984	15.0	114	14.9	38.2	15.0		
Motor Oil Range Hydrocarbons (MRO)		465	15.0	258	15.0	122	15.0	<14.9	14.9	<15.0	15.0		
Total TPH		4250	15.0	2080	15.0	1110	15.0	114	14.9	38.2	15.0		

Kalei Stout
Midland Laboratory Director

Certificate of Analysis Summary 612598

Tetra Tech- Midland, Midland, TX

Project Name: SRO State Com #10H (10-23-18)

Project Id: 212C-MD-01581
Contact: Clair Gonzales
Project Location: Eddy County, New Mexico

Date Received in Lab: Fri Jan-25-19 02:23 pm
Report Date: 08-FEB-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	612598-007		612598-008		612598-009		612598-010		612598-011		612598-012	
	Field Id:	BH-1 (19'-20')		BH-1 (24'-25")		BH-1 (29'-30')		Background (0-1)		Background (2'-3')		Background (4'-5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-24-19 00:00		Jan-24-19 00:00		Jan-24-19 00:00		Jan-24-19 00:00		Jan-24-19 00:00		Jan-24-19 00:00	
Chloride by EPA 300	***Extracted:***	Jan-31-19 13:00		Jan-31-19 13:00		Jan-31-19 13:00		Jan-31-19 17:00		Jan-31-19 17:00		Jan-31-19 17:00	
	Analyzed:	Feb-01-19 03:00		Feb-01-19 03:06		Feb-01-19 03:12		Feb-01-19 03:53		Feb-01-19 04:11		Feb-01-19 04:17	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1160	24.9	366	4.99	171	4.95	<4.98	4.98	153	4.98	102	25.0

Kalei Stout
Midland Laboratory Director

Certificate of Analysis Summary 612598

Tetra Tech- Midland, Midland, TX

Project Name: SRO State Com #10H (10-23-18)

Project Id: 212C-MD-01581
Contact: Clair Gonzales
Project Location: Eddy County, New Mexico

Date Received in Lab: Fri Jan-25-19 02:23 pm
Report Date: 08-FEB-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	612598-013		612598-014		612598-015		612598-016		612598-017		612598-018	
	Field Id:	Background (6'-7')		Background (9'-10')		Background (14'-15')		Backrground (19'-20')		Background (24'-25')		Background (29'-30')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-24-19 00:00		Jan-24-19 00:00		Jan-24-19 00:00		Jan-24-19 00:00		Jan-24-19 00:00		Jan-24-19 00:00	
Chloride by EPA 300	***Extracted:***	Jan-31-19 17:00		Jan-31-19 17:00		Jan-31-19 17:00		Jan-31-19 17:00		Jan-31-19 17:00		Jan-31-19 17:00	
	Analyzed:	Feb-01-19 04:24		Feb-01-19 04:30		Feb-01-19 04:51		Feb-01-19 04:57		Feb-01-19 05:04		Feb-01-19 05:10	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		424	24.8	768	24.9	310	4.97	405	25.1	73.6	5.01	8.22	4.95

Kalei Stout
Midland Laboratory Director

Certificate of Analysis Summary 612598

Tetra Tech- Midland, Midland, TX

Project Name: SRO State Com #10H (10-23-18)

Project Id: 212C-MD-01581
Contact: Clair Gonzales
Project Location: Eddy County, New Mexico

Date Received in Lab: Fri Jan-25-19 02:23 pm
Report Date: 08-FEB-19
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	612598-019		612598-020		612598-021			
	Field Id:	S-5A (0-1')		S-5A (1'-1.5')		S-5A (2'-2.5')			
	Depth:								
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Jan-24-19 00:00		Jan-24-19 00:00		Jan-24-19 00:00			
BTEX by EPA 8021B	***Extracted:***	Jan-29-19 17:15		Jan-29-19 17:15		Jan-29-19 17:15			
	Analyzed:	Jan-30-19 11:40		Jan-30-19 11:59		Jan-30-19 12:18			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202		
Toluene		<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202		
Ethylbenzene		<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202		
m,p-Xylenes		<0.00402	0.00402	<0.00400	0.00400	<0.00403	0.00403		
o-Xylene		<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202		
Total Xylenes		<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202		
Total BTEX		<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202		
Chloride by EPA 300	***Extracted:***	Jan-31-19 17:00		Jan-31-19 17:00		Jan-31-19 17:00			
	Analyzed:	Feb-01-19 05:16		Feb-01-19 05:22		Feb-01-19 05:41			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		179	5.00	18.4	4.95	38.1	4.95		
TPH by SW8015 Mod	***Extracted:***	Jan-30-19 15:00		Jan-30-19 15:00		Jan-30-19 15:00			
	Analyzed:	Jan-31-19 00:17		Jan-31-19 00:37		Jan-31-19 01:37			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0		
Diesel Range Organics (DRO)		15.1	15.0	<15.0	15.0	<15.0	15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0		
Total TPH		15.1	15.0	<15.0	15.0	<15.0	15.0		

Kalei Stout
Midland Laboratory Director

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: SRO State Com #10H (10-23-18)

Work Orders : 612598,

Project ID: 212C-MD-01581

Lab Batch #: 3077529 **Sample:** 612598-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/19 11:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0320	0.0300	107	70-130	
4-Bromofluorobenzene	0.0374	0.0300	125	70-130	

Lab Batch #: 3077529 **Sample:** 612598-019 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/19 11:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0338	0.0300	113	70-130	
4-Bromofluorobenzene	0.0335	0.0300	112	70-130	

Lab Batch #: 3077529 **Sample:** 612598-020 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/19 11:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0338	0.0300	113	70-130	
4-Bromofluorobenzene	0.0333	0.0300	111	70-130	

Lab Batch #: 3077529 **Sample:** 612598-021 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/19 12:18

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0335	0.0300	112	70-130	
4-Bromofluorobenzene	0.0337	0.0300	112	70-130	

Lab Batch #: 3077529 **Sample:** 612598-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/19 17:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	70-130	
4-Bromofluorobenzene	0.0458	0.0300	153	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: SRO State Com #10H (10-23-18)

Work Orders : 612598,

Project ID: 212C-MD-01581

Lab Batch #: 3077562 **Sample:** 612598-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/19 22:58

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	99.7	113	70-135	
o-Terphenyl	81.8	49.9	164	70-135	**

Lab Batch #: 3077562 **Sample:** 612598-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/19 23:18

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.9	103	70-135	
o-Terphenyl	63.8	50.0	128	70-135	

Lab Batch #: 3077562 **Sample:** 612598-019 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/31/19 00:17

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.0	99.9	97	70-135	
o-Terphenyl	48.8	50.0	98	70-135	

Lab Batch #: 3077562 **Sample:** 612598-020 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/31/19 00:37

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.3	99.8	99	70-135	
o-Terphenyl	50.1	49.9	100	70-135	

Lab Batch #: 3077562 **Sample:** 612598-021 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/31/19 01:37

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.2	99.9	99	70-135	
o-Terphenyl	49.9	50.0	100	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: SRO State Com #10H (10-23-18)

Work Orders : 612598,

Project ID: 212C-MD-01581

Lab Batch #: 3078443 **Sample:** 612598-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/08/19 03:51

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.4	99.9	98	70-135	
o-Terphenyl	64.1	50.0	128	70-135	

Lab Batch #: 3078443 **Sample:** 612598-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/08/19 04:11

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.8	99.6	96	70-135	
o-Terphenyl	48.8	49.8	98	70-135	

Lab Batch #: 3078443 **Sample:** 612598-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/08/19 04:31

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.0	99.8	96	70-135	
o-Terphenyl	48.3	49.9	97	70-135	

Lab Batch #: 3077529 **Sample:** 7670751-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/30/19 11:02

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	70-130	
4-Bromofluorobenzene	0.0275	0.0300	92	70-130	

Lab Batch #: 3077562 **Sample:** 7670775-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/30/19 19:59

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	54.3	50.0	109	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: SRO State Com #10H (10-23-18)

Work Orders : 612598,

Project ID: 212C-MD-01581

Lab Batch #: 3078443 **Sample:** 7671316-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/07/19 20:57

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	100	98	70-135	
o-Terphenyl	49.5	50.0	99	70-135	

Lab Batch #: 3077529 **Sample:** 7670751-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/30/19 09:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0323	0.0300	108	70-130	
4-Bromofluorobenzene	0.0308	0.0300	103	70-130	

Lab Batch #: 3077562 **Sample:** 7670775-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/30/19 20:19

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	100	130	70-135	
o-Terphenyl	62.2	50.0	124	70-135	

Lab Batch #: 3078443 **Sample:** 7671316-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/07/19 21:17

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	58.8	50.0	118	70-135	

Lab Batch #: 3077529 **Sample:** 7670751-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/30/19 09:48

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0322	0.0300	107	70-130	
4-Bromofluorobenzene	0.0306	0.0300	102	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: SRO State Com #10H (10-23-18)

Work Orders : 612598,

Project ID: 212C-MD-01581

Lab Batch #: 3077562 **Sample:** 7670775-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/30/19 20:38

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	60.6	50.0	121	70-135	

Lab Batch #: 3078443 **Sample:** 7671316-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/07/19 21:37

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	100	123	70-135	
o-Terphenyl	63.2	50.0	126	70-135	

Lab Batch #: 3077529 **Sample:** 612598-021 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/19 10:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0322	0.0300	107	70-130	
4-Bromofluorobenzene	0.0312	0.0300	104	70-130	

Lab Batch #: 3077562 **Sample:** 612644-021 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/19 21:18

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	52.6	50.0	105	70-135	

Lab Batch #: 3078443 **Sample:** 612618-076 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/07/19 22:16

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	99.9	126	70-135	
o-Terphenyl	60.5	50.0	121	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: SRO State Com #10H (10-23-18)

Work Orders : 612598,

Project ID: 212C-MD-01581

Lab Batch #: 3077529 **Sample:** 612598-021 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/19 10:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0322	0.0300	107	70-130	
4-Bromofluorobenzene	0.0308	0.0300	103	70-130	

Lab Batch #: 3077562 **Sample:** 612644-021 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/19 21:38

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	99.9	119	70-135	
o-Terphenyl	54.5	50.0	109	70-135	

Lab Batch #: 3078443 **Sample:** 612618-076 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/07/19 22:35

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	61.7	49.9	124	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: SRO State Com #10H (10-23-18)

Work Order #: 612598 **Project ID:** 212C-MD-01581

Analyst: SCM **Date Prepared:** 01/29/2019 **Date Analyzed:** 01/30/2019

Lab Batch ID: 3077529 **Sample:** 7670751-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000386	0.100	0.109	109	0.0998	0.103	103	6	70-130	35	
Toluene	<0.000457	0.100	0.0963	96	0.0998	0.0916	92	5	70-130	35	
Ethylbenzene	<0.000566	0.100	0.0910	91	0.0998	0.0865	87	5	70-130	35	
m,p-Xylenes	<0.00102	0.200	0.177	89	0.200	0.168	84	5	70-130	35	
o-Xylene	<0.000345	0.100	0.0903	90	0.0998	0.0864	87	4	70-130	35	

Analyst: SCM **Date Prepared:** 01/31/2019 **Date Analyzed:** 02/01/2019

Lab Batch ID: 3077813 **Sample:** 7670914-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.858	250	236	94	250	242	97	3	90-110	20	

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

BS / BSD Recoveries

Project Name: SRO State Com #10H (10-23-18)

Work Order #: 612598 **Project ID:** 212C-MD-01581

Analyst: SCM **Date Prepared:** 01/31/2019 **Date Analyzed:** 02/01/2019

Lab Batch ID: 3077815 **Sample:** 7670915-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.858	250	253	101	250	245	98	3	90-110	20	

Analyst: ARM **Date Prepared:** 01/30/2019 **Date Analyzed:** 01/30/2019

Lab Batch ID: 3077562 **Sample:** 7670775-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	946	95	1000	951	95	1	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1080	108	1000	1080	108	0	70-135	20	

Analyst: ARM **Date Prepared:** 02/07/2019 **Date Analyzed:** 02/07/2019

Lab Batch ID: 3078443 **Sample:** 7671316-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	876	88	1000	872	87	0	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	964	96	1000	976	98	1	70-135	20	

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

Form 3 - MS / MSD Recoveries

Project Name: SRO State Com #10H (10-23-18)

Work Order # : 612598 **Project ID:** 212C-MD-01581

Lab Batch ID: 3077529 **QC- Sample ID:** 612598-021 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/30/2019 **Date Prepared:** 01/29/2019 **Analyst:** SCM

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	<0.000383	0.0996	0.0851	85	0.100	0.0876	88	3	70-130	35	
Toluene	<0.000454	0.0996	0.0760	76	0.100	0.0773	77	2	70-130	35	
Ethylbenzene	<0.000563	0.0996	0.0710	71	0.100	0.0722	72	2	70-130	35	
m,p-Xylenes	<0.00101	0.199	0.139	70	0.200	0.141	71	1	70-130	35	
o-Xylene	<0.000343	0.0996	0.0719	72	0.100	0.0723	72	1	70-130	35	

Lab Batch ID: 3077813 **QC- Sample ID:** 612813-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/01/2019 **Date Prepared:** 01/31/2019 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.857	250	245	98	250	258	103	5	90-110	20	

Lab Batch ID: 3077813 **QC- Sample ID:** 612924-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/01/2019 **Date Prepared:** 01/31/2019 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	938	252	1150	84	252	1140	80	1	90-110	20	X

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: SRO State Com #10H (10-23-18)

Work Order # : 612598 **Project ID:** 212C-MD-01581

Lab Batch ID: 3077815 **QC- Sample ID:** 612598-010 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/01/2019 **Date Prepared:** 01/31/2019 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.855	249	264	106	249	270	108	2	90-110	20	

Lab Batch ID: 3077815 **QC- Sample ID:** 612598-020 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/01/2019 **Date Prepared:** 01/31/2019 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	18.4	248	284	107	248	279	105	2	90-110	20	

Lab Batch ID: 3077562 **QC- Sample ID:** 612644-021 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/30/2019 **Date Prepared:** 01/30/2019 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	820	82	999	832	83	1	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	937	94	999	953	95	2	70-135	20	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: SRO State Com #10H (10-23-18)

Work Order # : 612598 **Project ID:** 212C-MD-01581

Lab Batch ID: 3078443 **QC- Sample ID:** 612618-076 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/07/2019 **Date Prepared:** 02/07/2019 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	856	86	998	830	83	3	70-135	20	
Diesel Range Organics (DRO)	<8.12	999	957	96	998	925	93	3	70-135	20	

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

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

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

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

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

Analysis Request of Chain of Custody Record

L017598

Tetra Tech, Inc.

901 West Wall, Suite 100
Midland,Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: Concho	**Site Manager:** Clair Gonzales
Project Name: SRO State Com #10H (10-23-18)	
Project Location: (county, state) Eddy County, New Mexico	**Project #:** 212C-MD-01581
Invoice to: COG- Ike Tavarez	
Receiving Laboratory: Xenco Lab	**Sampler Signature:** Mike Carmona
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				Hold
	BH-1 (0-1')	1/24/2019			X				X		1	N	X		X												X							
	BH-1 (2'-3')	1/24/2019			X				X		1	N	X		X												X							
	BH-1 (4'-5')	1/24/2019			X				X		1	N															X							
	BH-1 (6'-7')	1/24/2019			X				X		1	N															X							
	BH-1 (9'-10')	1/24/2019			X				X		1	N															X							
	BH-1 (14'-15')	1/24/2019			X				X		1	N															X							
	BH-1 (19'-20')	1/24/2019			X				X		1	N															X							
	BH-1 (24'-25')	1/24/2019			X				X		1	N															X							
	BH-1 (29'-30')	1/24/2019			X				X		1	N															X							
	Background (0-1')	1/24/2019			X				X		1	N															X							

Relinquished by:	Date: 1-25-19	Time: 1422	Received by: Date: 1/25/19 Time: 1423
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

LAB USE ONLY

Sample Temperature
3.3/3.2
-0.1/.2

REMARKS:

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

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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Page 21 of 23

Analysis Request of Chain of Custody Record

6127598

Tetra Tech, Inc.

901 West Wall, Suite 100
Midland,Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: Concho	**Site Manager:** Clair Gonzales
Project Name: SRO State Com #10H (10-23-18)	
Project Location: (county, state) Eddy County, New Mexico	**Project #:** 212C-MD-01581
Invoice to: COG- Ike Tavarez	
Receiving Laboratory: Xenco Lab	**Sampler Signature:** Mike Carmona
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None		# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				Hold
	Background (2'-3')	1/24/2019			X				X			1	N															X							
	Background (4'-5')	1/24/2019			X				X			1	N															X							
	Background (6'-7')	1/24/2019			X				X			1	N															X							
	Background (9'-10')	1/24/2019			X				X			1	N															X							
	Background (14'-15')	1/24/2019			X				X			1	N															X							
	Background (19'-20')	1/24/2019			X				X			1	N															X							
	Background (24'-25')	1/24/2019			X				X			1	N															X							
	Backgorund (29'-30')	1/24/2019			X				X			1	N															X							
	S-5A (0-1')	1/24/2019			X				X			1	N	X		X												X							
	S-5A (1'-1.5')	1/24/2019			X				X			1	N	X		X												X							
	S-5A (2'-2.5')	1/24/2019			X				X			1	N	X		X												X							

Relinquished by:	Date: 1-25-19	Time: 1427	Received by: Date: 1/25/19 Time: 1423
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

LAB USE ONLY

Sample Temperature
3.3/3.2
-0.1/RE

REMARKS:

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

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 01/25/2019 02:23:00 PM

Work Order #: 612598

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 01/25/2019

Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 01/25/2019

Jessica Kramer

Analytical Report 612604

for

Tetra Tech- Midland

Project Manager: Clair Gonzales

SRO State Com #10H (10-23-18)

212C-MD-01581

04-FEB-19

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

04-FEB-19

Project Manager: **Clair Gonzales**
Tetra Tech- Midland
901 West Wall ST
Midland, TX 79701

Reference: XENCO Report No(s): **612604**
SRO State Com #10H (10-23-18)
Project Address: Eddy County, New Mexico

Clair Gonzales:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 612604. 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. 612604 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,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 612604

Tetra Tech- Midland, Midland, TX

SRO State Com #10H (10-23-18)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Horizontal North	S	01-24-19 00:00		612604-001
Horizontal South	S	01-24-19 00:00		612604-002
Horizontal East	S	01-24-19 00:00		612604-003

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3077529 BTEX by EPA 8021B

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

Certificate of Analysis Summary 612604

Tetra Tech- Midland, Midland, TX

Project Name: SRO State Com #10H (10-23-18)

Project Id: 212C-MD-01581
Contact: Clair Gonzales
Project Location: Eddy County, New Mexico

Date Received in Lab: Fri Jan-25-19 02:23 pm
Report Date: 04-FEB-19
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	612604-001		612604-002		612604-003				
	Field Id:	Horizontal North		Horizontal South		Horizontal East				
	Depth:									
	Matrix:	SOIL		SOIL		SOIL				
	Sampled:	Jan-24-19 00:00		Jan-24-19 00:00		Jan-24-19 00:00				
BTEX by EPA 8021B	***Extracted:***	Jan-29-19 17:15		Jan-29-19 17:15		Jan-29-19 17:15				
	Analyzed:	Jan-30-19 13:34		Jan-30-19 13:53		Jan-30-19 14:12				
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Benzene		<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199			
Toluene		<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199			
Ethylbenzene		<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199			
m,p-Xylenes		<0.00400	0.00400	<0.00403	0.00403	<0.00398	0.00398			
o-Xylene		<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199			
Total Xylenes		<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199			
Total BTEX		<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199			
Chloride by EPA 300	***Extracted:***	Feb-01-19 11:45		Feb-01-19 11:45		Feb-01-19 11:45				
	Analyzed:	Feb-01-19 14:15		Feb-01-19 14:21		Feb-02-19 10:47				
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Chloride		70.5	5.00	52.5	24.9	6.11	4.97			
TPH by SW8015 Mod	***Extracted:***	Jan-29-19 16:00		Jan-29-19 16:00		Jan-29-19 16:00				
	Analyzed:	Jan-30-19 05:26		Jan-30-19 05:46		Jan-30-19 06:06				
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0			
Diesel Range Organics (DRO)		16.7	15.0	354	15.0	22.4	15.0			
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	52.8	15.0	<15.0	15.0			
Total TPH		16.7	15.0	407	15.0	22.4	15.0			

Jessica Kramer
Project Assistant

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: SRO State Com #10H (10-23-18)

Work Orders : 612604,

Project ID: 212C-MD-01581

Lab Batch #: 3077483 **Sample:** 612604-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/19 05:26

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.8	99.7	96	70-135	
o-Terphenyl	47.5	49.9	95	70-135	

Lab Batch #: 3077483 **Sample:** 612604-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/19 05:46

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.9	99.7	92	70-135	
o-Terphenyl	49.3	49.9	99	70-135	

Lab Batch #: 3077483 **Sample:** 612604-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/19 06:06

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.5	99.9	97	70-135	
o-Terphenyl	46.9	50.0	94	70-135	

Lab Batch #: 3077529 **Sample:** 612604-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/19 13:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0333	0.0300	111	70-130	
4-Bromofluorobenzene	0.0339	0.0300	113	70-130	

Lab Batch #: 3077529 **Sample:** 612604-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/19 13:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0331	0.0300	110	70-130	
4-Bromofluorobenzene	0.0340	0.0300	113	70-130	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: SRO State Com #10H (10-23-18)

Work Orders : 612604,

Project ID: 212C-MD-01581

Lab Batch #: 3077529 **Sample:** 612604-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/19 14:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0335	0.0300	112	70-130	
4-Bromofluorobenzene	0.0334	0.0300	111	70-130	

Lab Batch #: 3077483 **Sample:** 7670692-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/29/19 21:47

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	53.0	50.0	106	70-135	

Lab Batch #: 3077529 **Sample:** 7670751-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/30/19 11:02

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	70-130	
4-Bromofluorobenzene	0.0275	0.0300	92	70-130	

Lab Batch #: 3077483 **Sample:** 7670692-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/29/19 22:07

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	57.6	50.0	115	70-135	

Lab Batch #: 3077529 **Sample:** 7670751-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/30/19 09:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0323	0.0300	108	70-130	
4-Bromofluorobenzene	0.0308	0.0300	103	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: SRO State Com #10H (10-23-18)

Work Orders : 612604,

Project ID: 212C-MD-01581

Lab Batch #: 3077483 **Sample:** 7670692-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/29/19 22:27

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	58.8	50.0	118	70-135	

Lab Batch #: 3077529 **Sample:** 7670751-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/30/19 09:48

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0322	0.0300	107	70-130	
4-Bromofluorobenzene	0.0306	0.0300	102	70-130	

Lab Batch #: 3077483 **Sample:** 612806-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/29/19 23:07

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	57.1	50.0	114	70-135	

Lab Batch #: 3077529 **Sample:** 612598-021 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/19 10:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0322	0.0300	107	70-130	
4-Bromofluorobenzene	0.0312	0.0300	104	70-130	

Lab Batch #: 3077483 **Sample:** 612806-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/29/19 23:27

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	99.7	127	70-135	
o-Terphenyl	58.9	49.9	118	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: SRO State Com #10H (10-23-18)

Work Orders : 612604, **Project ID:** 212C-MD-01581

Lab Batch #: 3077529 **Sample:** 612598-021 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/19 10:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0322	0.0300	107	70-130	
4-Bromofluorobenzene	0.0308	0.0300	103	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: SRO State Com #10H (10-23-18)

Work Order #: 612604 **Project ID:** 212C-MD-01581

Analyst: SCM **Date Prepared:** 01/29/2019 **Date Analyzed:** 01/30/2019

Lab Batch ID: 3077529 **Sample:** 7670751-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000386	0.100	0.109	109	0.0998	0.103	103	6	70-130	35	
Toluene	<0.000457	0.100	0.0963	96	0.0998	0.0916	92	5	70-130	35	
Ethylbenzene	<0.000566	0.100	0.0910	91	0.0998	0.0865	87	5	70-130	35	
m,p-Xylenes	<0.00102	0.200	0.177	89	0.200	0.168	84	5	70-130	35	
o-Xylene	<0.000345	0.100	0.0903	90	0.0998	0.0864	87	4	70-130	35	

Analyst: CHE **Date Prepared:** 02/01/2019 **Date Analyzed:** 02/01/2019

Lab Batch ID: 3077835 **Sample:** 7670922-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.858	250	234	94	250	230	92	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: SRO State Com #10H (10-23-18)

Work Order #: 612604 **Project ID:** 212C-MD-01581

Analyst: ARM **Date Prepared:** 01/29/2019 **Date Analyzed:** 01/29/2019

Lab Batch ID: 3077483 **Sample:** 7670692-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	924	92	1000	930	93	1	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1040	104	1000	1050	105	1	70-135	20	

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

Form 3 - MS / MSD Recoveries

Project Name: SRO State Com #10H (10-23-18)

Work Order # : 612604 **Project ID:** 212C-MD-01581

Lab Batch ID: 3077529 **QC- Sample ID:** 612598-021 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/30/2019 **Date Prepared:** 01/29/2019 **Analyst:** SCM

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	<0.000383	0.0996	0.0851	85	0.100	0.0876	88	3	70-130	35	
Toluene	<0.000454	0.0996	0.0760	76	0.100	0.0773	77	2	70-130	35	
Ethylbenzene	<0.000563	0.0996	0.0710	71	0.100	0.0722	72	2	70-130	35	
m,p-Xylenes	<0.00101	0.199	0.139	70	0.200	0.141	71	1	70-130	35	
o-Xylene	<0.000343	0.0996	0.0719	72	0.100	0.0723	72	1	70-130	35	

Lab Batch ID: 3077835 **QC- Sample ID:** 612603-008 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/01/2019 **Date Prepared:** 02/01/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	278	248	522	98	251	552	109	6	90-110	20	

Lab Batch ID: 3077835 **QC- Sample ID:** 612644-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/01/2019 **Date Prepared:** 02/01/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	290	249	524	94	250	517	91	1	90-110	20	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: SRO State Com #10H (10-23-18)

Work Order # : 612604 **Project ID:** 212C-MD-01581

Lab Batch ID: 3077483 **QC- Sample ID:** 612806-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/29/2019 **Date Prepared:** 01/29/2019 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	999	884	88	997	911	91	3	70-135	20	
Diesel Range Organics (DRO)	<8.12	999	888	89	997	933	94	5	70-135	20	

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

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

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

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

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

Analysis Request of Chain of Custody Record

10/21/2019

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Tetra Tech, Inc.

901 West Wall, Suite 100
Midland,Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

Client Name:	Concho	**Site Manager:**	Clair Gonzales
Project Name:	SRO State Com #10H (10-23-18)		
Project Location: (county, state)	Eddy County, New Mexico	**Project #:**	212C-MD-01581
Invoice to:	COG- Ike Tavarez		
Receiving Laboratory:	Xenco Lab	**Sampler Signature:**	Mike Carmona
Comments:			

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	MATRIX:	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: None	PRESERVATIVE METHOD:	# CONTAINERS	FILTERED (Y/N)
	Horizontal North	1/24/2019			X				X			1	N
	Horizontal South	1/24/2019			X				X			1	N
	Horizontal East	1/24/2019			X				X			1	N

ANALYSIS REQUEST
(Circle or Specify Method No.)

BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				Hold
X		X												X							
X		X												X							
X		X												X							

Final 1.000

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Relinquished by:	Date:	Time:	Received by:	Date:	Time:
	1-25-19	1422		1/25/19	1423
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature

3.3 / 3.2
-0.1 / NR

REMARKS:

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

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 01/25/2019 02:23:00 PM

Work Order #: 612604

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 01/25/2019

Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 01/25/2019

Jessica Kramer

Appendix D