SITE INFORMATION

Report Type: Work Plan 2RP-5018

General Site Information:						
Site:	**Loco Hills 35 SWD #1**					
Company:	**COG Operating LLC**					
Section, Township and Range	**Unit P**	**Sec. 36**	**T 17S**	**R 30E**		
Lease Number:	**API No. 30-015-31635**					
County:	**Eddy County**					
GPS:	**32.785575**			**-103.919895**		
Surface Owner:	**State**					
Mineral Owner:	**State**					
Directions:	From the intersection of Lovington Hwy. and Shugart Rd., head south on Shugart Rd. for 2.38 miles, take a hard right (west-northwest) onto unnamed lease rd. and follow road for 0.72 miles, take a right (northwest) and go 0.17 miles, keep left at the bifurcation and go west for 1 mile (follow jog in the road to the right (northwest)) and continue west for 0.3 miles,Turn right (north) and go 0.56 miles to location.					

Release Data:	
Date Released:	10/13/2018
Type Release:	Produced Water
Source of Contamination:	Check Valve
Fluid Released:	200 bbl
Fluids Recovered:	56 bbls

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:	*225' below surface*

Recommended Remedial Action Levels (RRALs)				
Benzene	***Total BTEX***	***TPH (GRO+DRO)***	***TPH (GRO+DRO+MRO)***	***Chlorides***
10 mg/kg	*50 mg/kg*	*1,000 mg/kg*	*2,500 mg/kg*	*20,000 mg/kg*

TETRA TECH

January 10, 2019

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

Re: Work Plan – Site Reclamation for the COG Operating, LLC, Loco Hills 35 SWD #1, Unit P, Section 36, Township 17 South, Range 30 East, Eddy County, New Mexico.
2RP-5018

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating, LLC (COG) to assess a release that occurred at the Loco Hills SWD #1, Unit P, Section 36, Township 17 South, Range 30 East, Eddy County, New Mexico (Site). The spill site coordinates are 32.785575°, -103.919895°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on October 13, 2018, and released approximately 200 barrels of produced water due to a check valve blowout. Vacuum trucks were used to remove all freestanding fluids, recovering approximately 56 barrels of produced water. Under pressure, the release created a hole in the liner, impacting the areas under the liner, north, and east of the and then migrated into the adjacent pasture. The release impacted an area on the pad measuring approximately 180'x100' and migrated into the adjacent pasture impacting areas measuring approximately 350'x10', 115'x25', and 135'x55' in the pasture. The 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. Additionally, the site is located in a low karst potential area. No water wells were listed within Section 36 on the New Mexico Office of the State Engineer's (NMOSE) database, the Geology and Groundwater Resources

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

of Eddy County (Report 3), or the USGS National Water Information database. The nearest well is listed in Section 22 of Township 18 South, Range 30 East on the USGS database, approximately 3.7 miles south-southwest of the site, and has a reported depth to groundwater of 225' below surface. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is between 325' and 350' below surface. The groundwater data is shown in Appendix B.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, updated August 14, 2018. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the site characterization, the proposed RRAL for TPH is 1,000 mg/kg (GRO+DRO) and 2,500 mg/kg (GRO+DRO+ MRO). Additionally, the proposed RRAL for chlorides is 20,000 mg/kg.

Soil Assessment and Analytical Results

Pasture and Pad Area

On October 22, 2018, Tetra Tech personnel were onsite to evaluate and sample the release area. A total of fourteen (14) auger holes (AH-1 through AH-14) were installed in the release area to total depths ranging from 0-1' to 4-4.5' below surface. A total of fourteen (14) horizontal delineation samples (H-1 through H-14) were collected around the perimeter of the release footprint to total depths of 0-1' below surface. 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.

The areas in the pasture were previously remediated in 2014 to address two prior releases. During the 2014 remediation activities, a plastic liner was installed at 4' below ground surface in the areas of auger holes (AH-12 and AH-14).

Auger Holes

Referring to Table 1, all analyzed samples showed benzene and total BTEX below the laboratory reporting limits. The area of auger hole (AH-2) showed a TPH concentration of 38.1 mg/kg at 0-1' below surface. However, no other samples collected showed TPH concentrations above the laboratory reporting limits.

Additionally, none of the samples collected showed chloride concentrations above the 20,000 mg/kg RRAL. However, the areas of auger holes (AH-5, AH-6, AH-7, AH-9, AH-10, AH-11 and AH-12) showed chloride concentrations above 600 mg/kg in the shallow soils of the affected pasture.

Horizontals

Referring to Table 1, none of the samples collected showed benzene, total BTEX, or TPH concentrations above the laboratory reporting limits. Additionally, none of the samples showed any significant chloride concentrations, with concentrations ranging from below the laboratory reporting limits to 40.1 mg/kg.

Facility Area

In order to evaluate the soils underneath the lined facility and release point, Tetra Tech personnel returned to the site on December 19, 2018, and installed two sample points (SP-1 and SP-2) inside the lined facility using a hand auger to total depths ranging from 5'-5.5' and 6-6.5' below surface. Additionally, one borehole (BH-1) was installed outside the containment near the injection line and release point to a total depth of 14'-15' below surface. Selected 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.

Referring to Table 1, none of the samples analyzed showed benzene, total BTEX, or TPH concentrations above the RRALs. Additionally, no chloride concentrations above the 20,000 mg/kg threshold were detected with chloride highs of 1,210 mg/kg at 0-1' (SP-1), 6,960 mg/kg at 1-1.5' (SP-2) and 4,080 mg/kg at 0-1' (BH-1).

Remediation Plan

All samples collected were below the Table 1 closure criteria and thus no remediation will be performed.

Restoration and Reclamation

Based on the results of the investigation, COG proposes to excavate the areas of auger holes (AH-5, AH-6, AH-7, AH-9, AH-10, AH-11 and AH-12) up to four (4) feet below surface to address the shallow chloride concentrations detected in the pasture, as highlighted (green) on Table 1 and shown on Figure 4. Sidewall samples will be collected to ensure proper removal of the chloride impacted soils. Once the excavation is complete, the areas will be backfilled with clean material to surface grade. COG estimates approximately 1,300 cubic yards will be excavated, and the remediation to be implemented 90 days after the work plan is approved.

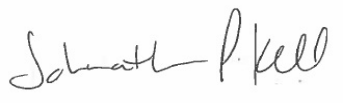
Reseeding will be performed in June 2019 to coincide with the rainy season in Southeastern New Mexico and aid in revegetation. Based on the soils at the site, the NMSLO Loamy (L) Sites Seed Mixture will be used and will be planted in the amount specified in the pounds pure live seed (PLS) per acre. The seed mixture will be spread by a drill equipped with a depth regulator or a handheld broadcaster and raked. If a hand-held broadcaster is used for dispersal, the pounds PLS per acre will be doubled.

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

Conclusion

Once the reclamation activities have been completed, a final report will be submitted. 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



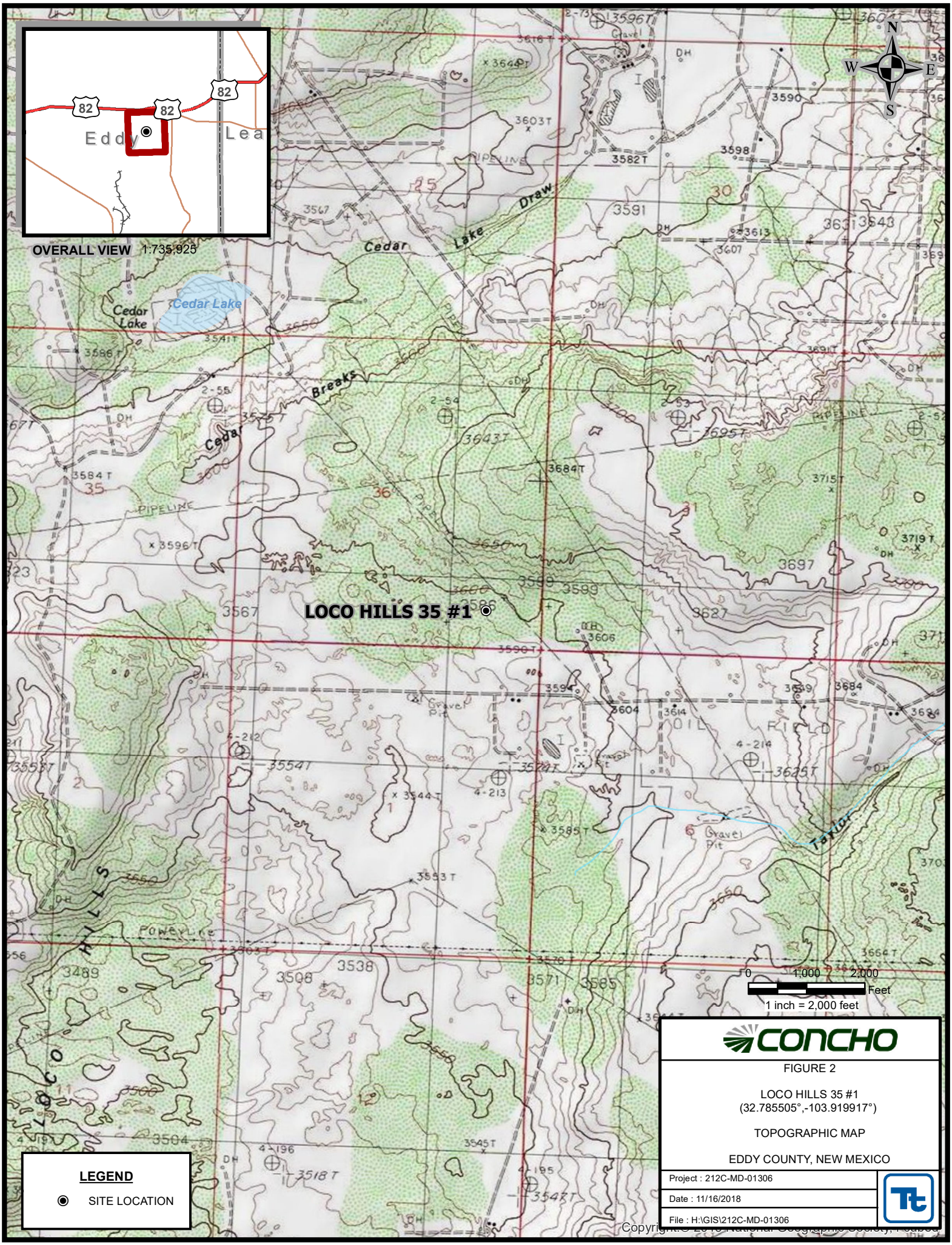
Clair Gonzales,
Project Manager

Johnathon Kell,
Geologist II

cc: Ike Tavarez - COG
Dakota Neel - COG
Rebecca Haskell - COG
Sheldon Hitchcock - COG
DeAnn Grant - COG
Ryan Mann - NMSLO

Figures

MAPPED BY: MISTI MORGAN



CONCHO

FIGURE 2

LOCO HILLS 35 #1
(32.785505°,-103.919917°)

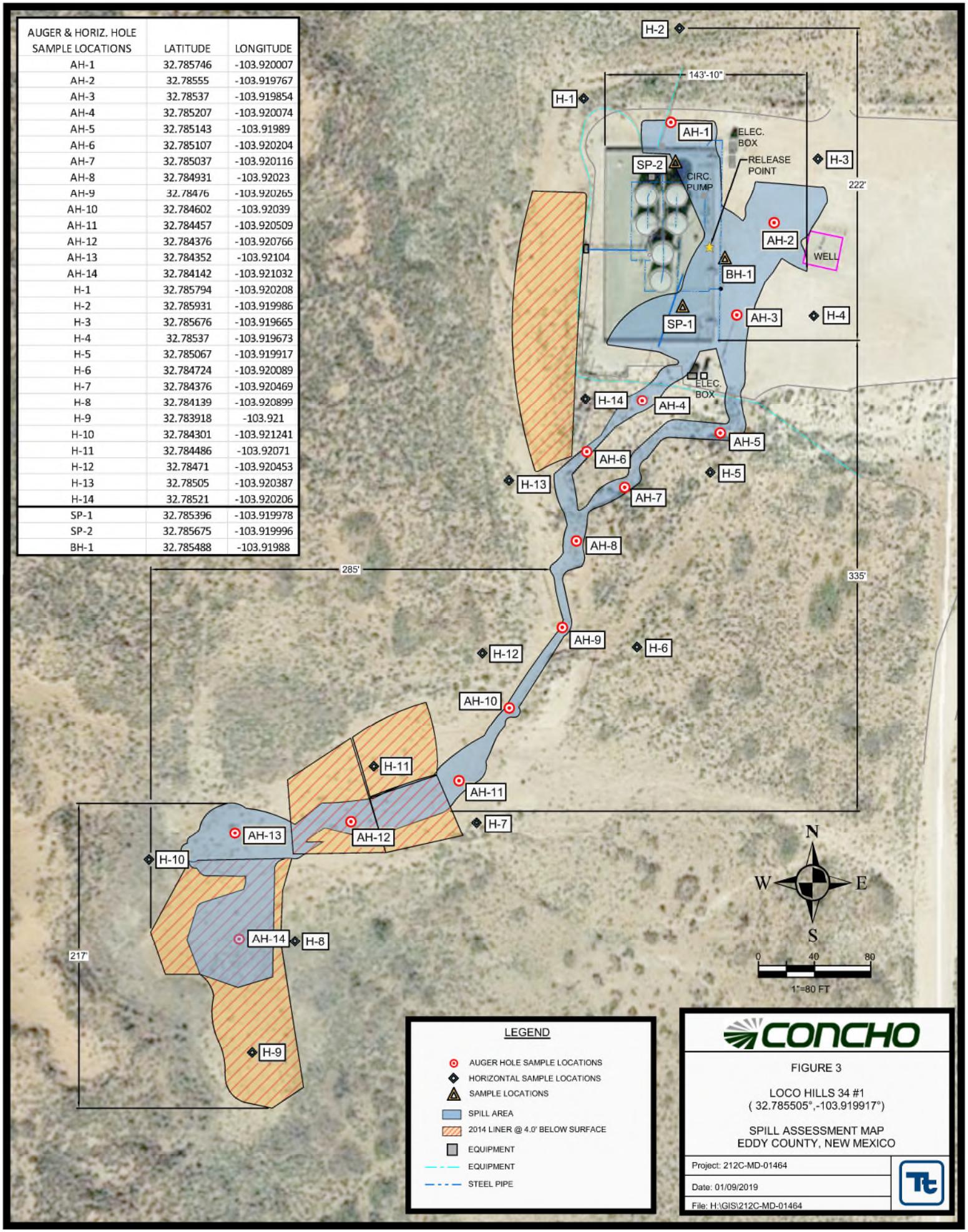
TOPOGRAPHIC MAP

EDDY COUNTY, NEW MEXICO

Project : 212C-MD-01306	
Date : 11/16/2018	
File : H:\GIS\212C-MD-01306	

MAPPED BY: MISTI MORGAN

AUGER & HORIZ. HOLE SAMPLE LOCATIONS	LATITUDE	LONGITUDE
AH-1	32.785746	-103.920007
AH-2	32.78555	-103.919767
AH-3	32.78537	-103.919854
AH-4	32.785207	-103.920074
AH-5	32.785143	-103.91989
AH-6	32.785107	-103.920204
AH-7	32.785037	-103.920116
AH-8	32.784931	-103.92023
AH-9	32.78476	-103.920265
AH-10	32.784602	-103.92039
AH-11	32.784457	-103.920509
AH-12	32.784376	-103.920766
AH-13	32.784352	-103.92104
AH-14	32.784142	-103.921032
H-1	32.785794	-103.920208
H-2	32.785931	-103.919986
H-3	32.785676	-103.919665
H-4	32.78537	-103.919673
H-5	32.785067	-103.919917
H-6	32.784724	-103.920089
H-7	32.784376	-103.920469
H-8	32.784139	-103.920899
H-9	32.783918	-103.921
H-10	32.784301	-103.921241
H-11	32.784486	-103.92071
H-12	32.78471	-103.920453
H-13	32.78505	-103.920387
H-14	32.78521	-103.920206
SP-1	32.785396	-103.919978
SP-2	32.785675	-103.919996
BH-1	32.785488	-103.91988



LEGEND

- AUGER HOLE SAMPLE LOCATIONS
- HORIZONTAL SAMPLE LOCATIONS
- SAMPLE LOCATIONS
- SPILL AREA
- 2014 LINER @ 4.0' BELOW SURFACE
- EQUIPMENT
- EQUIPMENT
- STEEL PIPE

CONCHO

FIGURE 3

LOCO HILLS 34 #1
(32.785505°,-103.919917°)

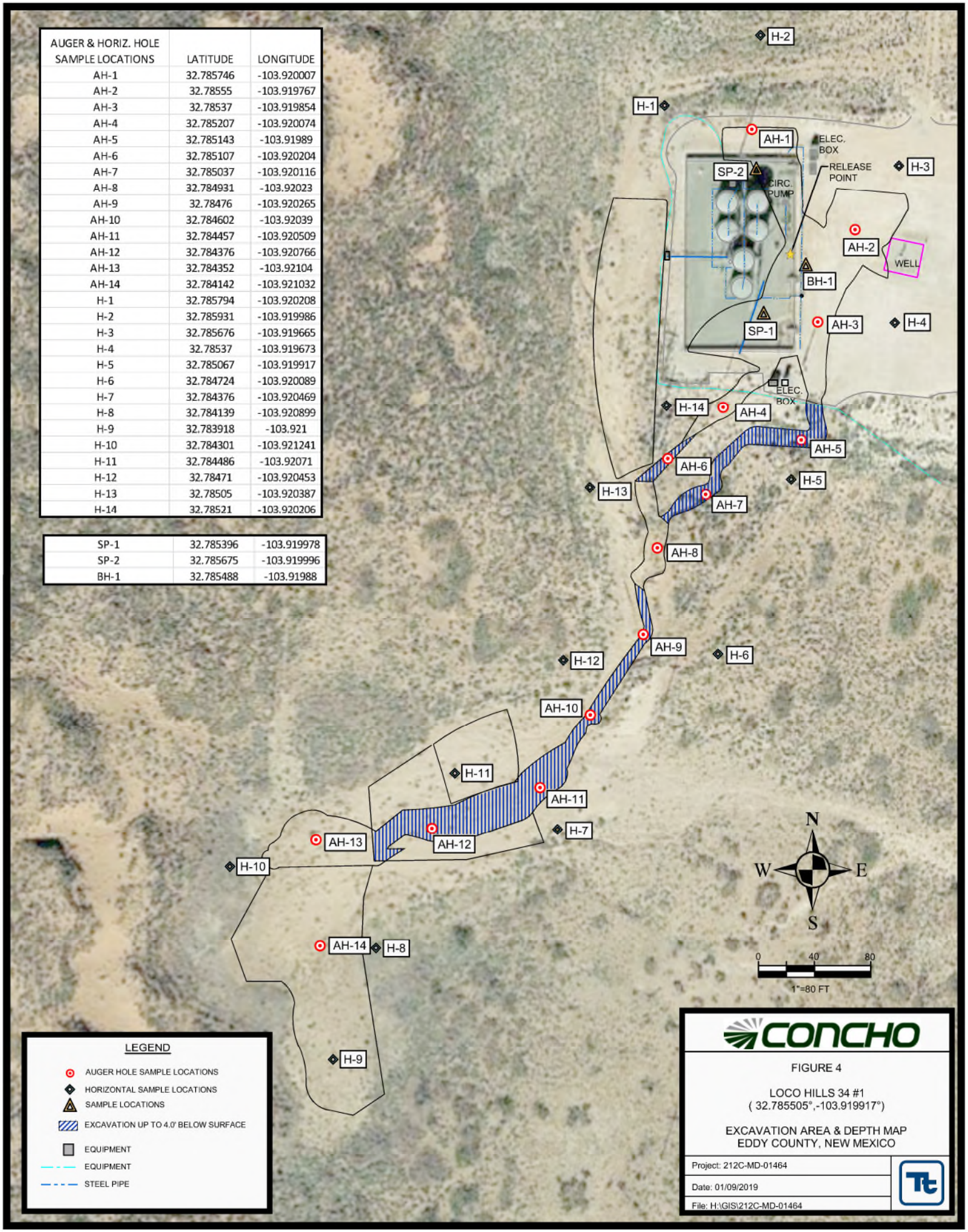
SPILL ASSESSMENT MAP
EDDY COUNTY, NEW MEXICO

Project: 212C-MD-01464

Date: 01/09/2019

File: H:\GIS\212C-MD-01464

Drawn By: MISTI MORGAN



AUGER & HORIZ. HOLE SAMPLE LOCATIONS	LATITUDE	LONGITUDE
AH-1	32.785746	-103.920007
AH-2	32.78555	-103.919767
AH-3	32.78537	-103.919854
AH-4	32.785207	-103.920074
AH-5	32.785143	-103.91989
AH-6	32.785107	-103.920204
AH-7	32.785037	-103.920116
AH-8	32.784931	-103.92023
AH-9	32.78476	-103.920265
AH-10	32.784602	-103.92039
AH-11	32.784457	-103.920509
AH-12	32.784376	-103.920766
AH-13	32.784352	-103.92104
AH-14	32.784142	-103.921032
H-1	32.785794	-103.920208
H-2	32.785931	-103.919986
H-3	32.785676	-103.919665
H-4	32.78537	-103.919673
H-5	32.785067	-103.919917
H-6	32.784724	-103.920089
H-7	32.784376	-103.920469
H-8	32.784139	-103.920899
H-9	32.783918	-103.921
H-10	32.784301	-103.921241
H-11	32.784486	-103.92071
H-12	32.78471	-103.920453
H-13	32.78505	-103.920387
H-14	32.78521	-103.920206

SP-1	32.785396	-103.919978
SP-2	32.785675	-103.919996
BH-1	32.785488	-103.91988

LEGEND

- AUGER HOLE SAMPLE LOCATIONS
- HORIZONTAL SAMPLE LOCATIONS
- SAMPLE LOCATIONS
- EXCAVATION UP TO 4.0' BELOW SURFACE
- EQUIPMENT
- EQUIPMENT
- STEEL PIPE

CONCHO

FIGURE 4

LOCO HILLS 34 #1
(32.785505°,-103.919917°)

EXCAVATION AREA & DEPTH MAP
EDDY COUNTY, NEW MEXICO

Project: 212C-MD-01464

Date: 01/09/2019

File: H:\GIS\212C-MD-01464

Drawn By: MISTI MORGAN

Tables

Table 1
COG
Loco Hills SWD #1
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (ft)	Soil Status		TPH (mg/kg)					Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	GRO+DRO	ORO	Total						
Pasture and Pad Area																
AH-1	10/22/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	2,220
	"	1-1.5	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	1,030
AH-2	10/22/2018	0-1	-	X		<15.0	38.1	38.1	<15.0	38.1	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	3,350
AH-3	10/22/2018	0-1	3	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	2,750
	"	1-1.5	3	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	231
AH-4	10/22/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	14.0
	"	1-1.5	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	177
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	-	45.0
AH-5	10/22/2018	0-1	-	X		<14.9	<14.9	<14.9	<14.9	<14.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	5,640
	"	1-1.5	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	7,100
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	-	7,110
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	-	-	4,020
AH-6	10/22/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	263
	"	1-1.5	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	2,320
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	-	1,200
AH-7	10/22/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	3,330
	"	1-1.5	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	7,070
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	-	516
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	-	-	962
AH-8	10/22/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	5.77
	"	1-1.5	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	11.0
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	-	<4.99
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	-	-	<4.96
	"	4-4.5	-	X		-	-	-	-	-	-	-	-	-	-	<4.96

Table 1
COG
Loco Hills SWD #1
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (ft)	Soil Status		TPH (mg/kg)					Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	GRO+DRO	ORO	Total						
AH-9	10/22/2018	0-1	1.5	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	4,420
	"	1-1.5	1.5	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	3,530
AH-10	10/22/2018	0-1	0.5	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	5,560
	"	1-1.5	0.5	X		<14.9	<14.9	<14.9	<14.9	<14.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	4,300
AH-11	10/22/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	9,420
	"	1-1.5	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	3,690
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	-	267
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	-	-	41.6
AH-12	10/22/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	5,210
	"	1-1.5	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	6,380
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	-	12,800
AH-13	10/22/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	5.91
	"	1-1.5	-	X		<14.9	<14.9	<14.9	<14.9	<14.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.95
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	-	<4.96
AH-14	10/22/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.99
	"	1-1.5	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<5.00
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	-	<5.00
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	-	-	6.79

Table 1
COG
Loco Hills SWD #1
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (ft)	Soil Status		TPH (mg/kg)					Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	GRO+DRO	ORO	Total						
H-1	10/23/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<5.01
H-2	10/23/2018	0-1	-	X		<14.9	<14.9	<14.9	<14.9	<14.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<5.01
H-3	10/23/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.99
H-4	10/23/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	40.1
H-5	10/23/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.99
H-6	10/23/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.96
H-7	10/23/2018	0-1	-	X		<14.9	<14.9	<14.9	<14.9	<14.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.99
H-8	10/23/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.97
H-9	10/23/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<5.01
H-10	10/23/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.95
H-11	10/23/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.95
H-12	10/23/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.96
H-13	10/23/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.96
H-14	10/23/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.95

Table 1
COG
Loco Hills SWD #1
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (ft)	Soil Status		TPH (mg/kg)					Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	GRO+DRO	ORO	Total						
Facility Area																
SP-1	12/19/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	1,210
	"	1-1.5	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	200
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	-	434
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	-	-	574
	"	4-4.5	-	X		-	-	-	-	-	-	-	-	-	-	423
	"	5-5.5	-	X		-	-	-	-	-	-	-	-	-	-	417
SP-2	12/19/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	6,610
	"	1-1.5	-	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	6,960
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	-	6,200
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	-	-	3,420
	"	4-4.5	-	X		-	-	-	-	-	-	-	-	-	-	3,540
	"	5-5.5	-	X		-	-	-	-	-	-	-	-	-	-	3,640
	"	6-6.5	-	X		-	-	-	-	-	-	-	-	-	-	451
BH-1	12/19/2018	0-1	-	X		<15.0	50.7	50.7	19.3	70.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	4,080
	"	2-3	-	X		<15.0	28.7	28.7	<15.0	28.7	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	2,990
	"	4-5	-	X		-	-	-	-	-	-	-	-	-	-	485
	"	6-7	-	X		-	-	-	-	-	-	-	-	-	-	2,310
	"	9-10	-	X		-	-	-	-	-	-	-	-	-	-	1,150
	"	14-15	-	X		-	-	-	-	-	-	-	-	-	-	830

(-) Not Analyzed

Proposed Excavation Depths

Photos

COG
Loco Hills SWD #1
Eddy County, New Mexico

View South – Area of AH-1

View West – Area of AH-2

COG
Loco Hills SWD #1
Eddy County, New Mexico

View Northwest – Area of AH-3

View North – Area of AH-4

COG
Loco Hills SWD #1
Eddy County, New Mexico

View North-northwest – Area of AH-5

View North-northeast – Area of AH-6

COG
Loco Hills SWD #1
Eddy County, New Mexico

View South-southwest – Area of AH-7

View North-northeast – Area of AH-8

COG
Loco Hills SWD #1
Eddy County, New Mexico

View Northeast – Area of AH-10

View Northeast – Area of AH-11

COG
Loco Hills SWD #1
Eddy County, New Mexico

View West – Area of AH-12

View North – Area of AH-13

COG
Loco Hills SWD #1
Eddy County, New Mexico

View Northwest – Area of AH-14

View North – Area of SP-1

COG
Loco Hills SWD #1
Eddy County, New Mexico

View South – Area of SP-2

View North – Area of SP-1

COG
Loco Hills SWD #1
Eddy County, New Mexico

View North – Area of BH-1

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

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 32.78549 Longitude -103.91988

(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Loco Hills SWD 35 #001	Site Type	Salt Water Disposal
Date Release Discovered	October 13, 2018	API# *(if applicable)*	30-015-31635

Unit Letter	Section	Township	Range	County
P	36	17S	30E	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)	Volume Recovered (bbls)
■ Produced Water	Volume Released (bbls) 200	Volume Recovered (bbls) 56
	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 the check valve blowing out. The check valve 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	
District RP	
Facility ID	
Application ID	

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? The volume released was greater than 25 barrels.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

Immediate notice was given by Dakota Neel via e-mail October 13, 2018 at 4:40 pm to Maria Pruett and Ryan Mann.

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: 10/16/2018

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

OCD Only

Received by: _____ Date: _____

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?	225 (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: 1/10/19

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: 1/10/19

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)
COG - Loco Hills SWD #1

16 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14 220 dry	13
19 110	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

16 South 30 East

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

16 South 31 East

6	5	4	3	2 290	1
7	8	9	10	11	12 288
18	17	16	15	14 113 314	13 299
19	20	21	22	23	24
30	29	28	27	26	25
31 290	32	33	34	35	36

17 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 76 80	23	24
30	29 210 208	28	27	26	25
31	32	33	34	35 153	36

17 South 30 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20 80	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

17 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34 271	35	36

18 South 29 East

6	5	4	3	2	1
7	8	9	10 95	11	12
18	17	16	15	14	13
19	20	21	22	23	24 158
30	29	28	27	26	25
31	32	33	34	35	36

18 South 30 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 225	23	24
30	29	28	27	26 184	25
31	32 161	33	34	35	36

18 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12 400
18	17	16	15 98	14 317	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35 261	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

121 Abandoned Waterwell (recently measured)

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
RA 11914 POD1		RA	ED	2	4	2	20	17S	30E	594801	3632002	85	80	5

Average Depth to Water: **80 feet**

Minimum Depth: **80 feet**

Maximum Depth: **80 feet**

Record Count: 1

PLSS Search:

Township: 17S **Range:** 30E

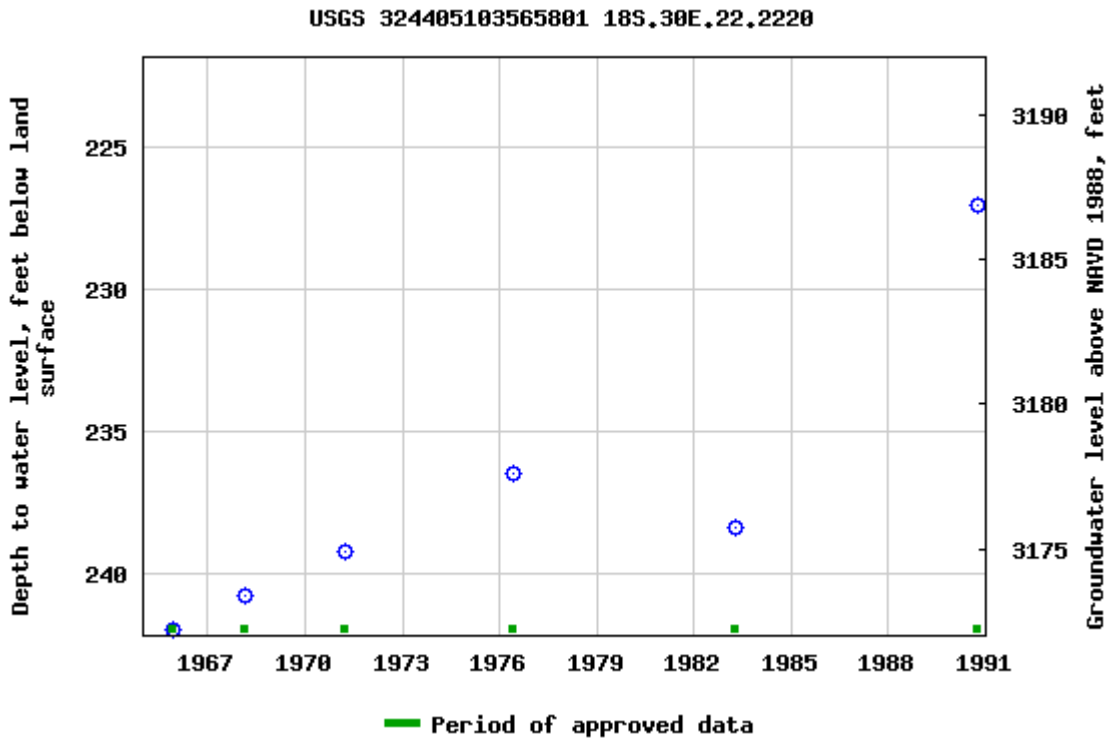
10/30/18 8:14 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

Latitude 32°44'05", Longitude 103°56'58" NAD27
Land-surface elevation 3,414 feet above NAVD88
This well is completed in the Chinle Formation (231CHNL) local aquifer.

Output formats

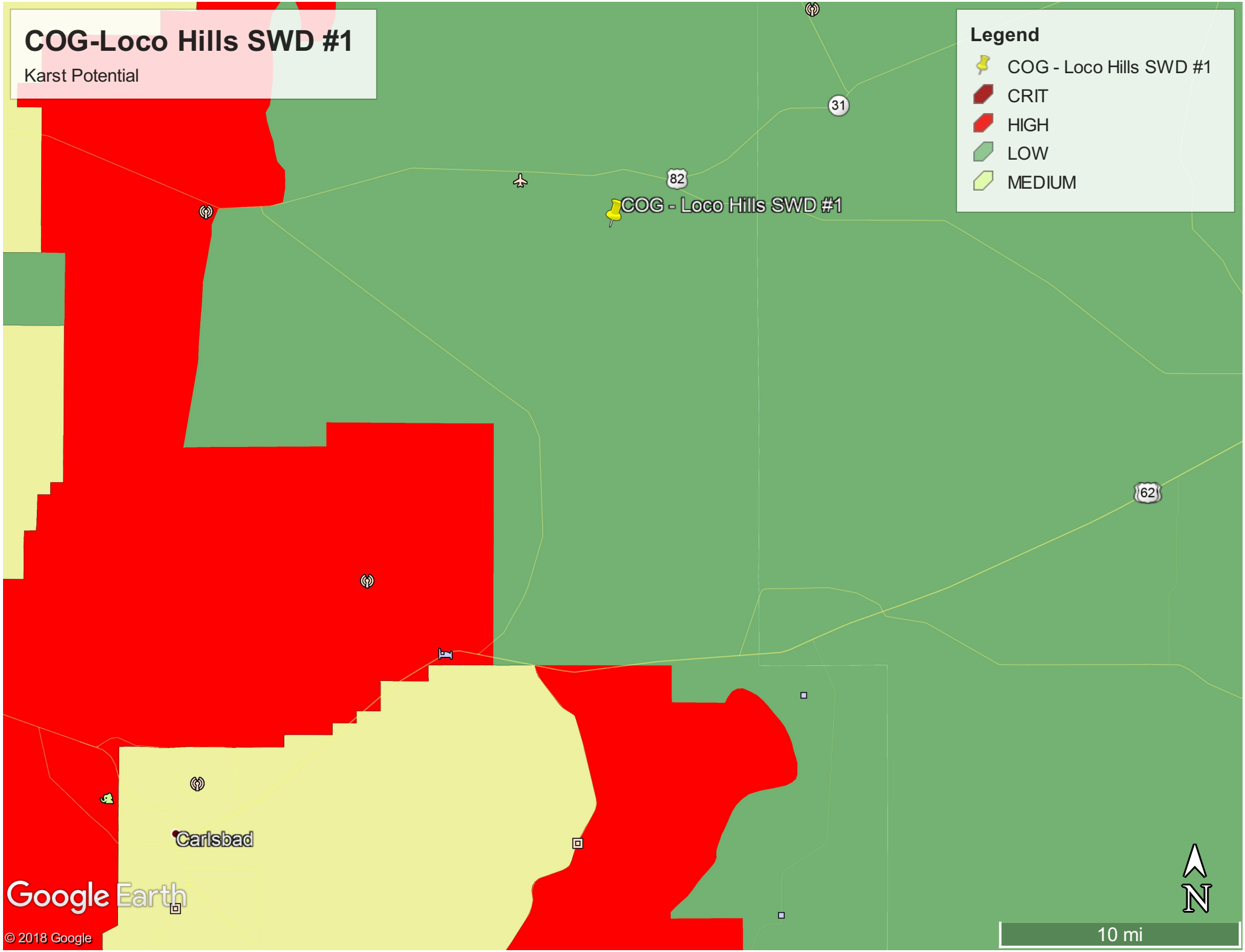
Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Title: Groundwater for New Mexico: Water Levels


COG-Loco Hills SWD #1
Karst Potential
Legend
COG - Loco Hills SWD #1
CRIT
HIGH
LOW
MEDIUM
31
82
62
COG - Loco Hills SWD #1
Carlsbad
Google Earth
© 2018 Google
N
10 mi

New Mexico NFHL Data

November 9, 2018

1:9,028

0 0.075 0.15 0.3 mi

0 0.1 0.2 0.4 km

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

Appendix C

Analytical Report 603185

for

Tetra Tech- Midland

Project Manager: Clair Gonzales

Loco Hills SWD #1

26-OCT-18

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)

26-OCT-18

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

Reference: XENCO Report No(s): **603185**
Loco Hills SWD #1
Project Address: Eddy CO, NM

Clair Gonzales:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 603185. 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. 603185 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 603185

Tetra Tech- Midland, Midland, TX

Loco Hills SWD #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH #1 (0-1')	S	10-22-18 00:00		603185-001
AH #1 (1-1.5')	S	10-22-18 00:00		603185-002
AH #2 (0-1')	S	10-22-18 00:00		603185-003
AH #3 (0-1') 3' BEB	S	10-22-18 00:00		603185-004
AH #3 (1-1.5') 3' BEB	S	10-22-18 00:00		603185-005
AH #4 (0-1')	S	10-22-18 00:00		603185-006
AH #4 (1-1.5')	S	10-22-18 00:00		603185-007
AH #4 (2-2.5')	S	10-22-18 00:00		603185-008
AH #5 (0-1')	S	10-22-18 00:00		603185-009
AH #5 (1-1.5')	S	10-22-18 00:00		603185-010
AH #5 (2-2.5')	S	10-22-18 00:00		603185-011
AH #5 (3-3.5')	S	10-22-18 00:00		603185-012
AH #6 (0-1')	S	10-22-18 00:00		603185-013
AH #6 (1-1.5')	S	10-22-18 00:00		603185-014
AH #6 (2-2.5')	S	10-22-18 00:00		603185-015
AH #7 (0-1')	S	10-22-18 00:00		603185-016
AH #7 (1-1.5')	S	10-22-18 00:00		603185-017
AH #7 (2-2.5')	S	10-22-18 00:00		603185-018
AH #7 (3-3.5')	S	10-22-18 00:00		603185-019
AH #8 (0-1')	S	10-22-18 00:00		603185-020
AH #8 (1-1.5')	S	10-22-18 00:00		603185-021
AH #8 (2-2.5')	S	10-22-18 00:00		603185-022
AH #8 (3-3.5')	S	10-22-18 00:00		603185-023
AH #8 (4.4.5')	S	10-22-18 00:00		603185-024
AH #9 (0-1') 1.5' BEB	S	10-22-18 00:00		603185-025
AH #9 (1-1.5') 1.5' BEB	S	10-22-18 00:00		603185-026
AH #10 (0-1') 6" BEB	S	10-22-18 00:00		603185-027
AH #10 (1-1.5') 6" BEB	S	10-22-18 00:00		603185-028
AH #11 (0-1')	S	10-22-18 00:00		603185-029
AH #11 (1-1.5')	S	10-22-18 00:00		603185-030
AH #11 (2-2.5')	S	10-22-18 00:00		603185-031
AH #11 (3-3.5')	S	10-22-18 00:00		603185-032
AH #12 (0-1')	S	10-22-18 00:00		603185-033
AH #12 (1-1.5')	S	10-22-18 00:00		603185-034
AH #12 (2-2.5')	S	10-22-18 00:00		603185-035
AH #13 (0.1')	S	10-22-18 00:00		603185-036
AH #13 (1-1.5')	S	10-22-18 00:00		603185-037
AH #13 (2-2.5')	S	10-22-18 00:00		603185-038
AH #14 (0-1')	S	10-22-18 00:00		603185-039
AH #14 (1-1.5')	S	10-22-18 00:00		603185-040
AH #14 (2-2.5')	S	10-22-18 00:00		603185-041
AH #14 (3-3.5')	S	10-22-18 00:00		603185-042

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3067437 Chloride by EPA 300
Lab Sample ID 603185-024 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 603185-001, -002, -003, -019, -020, -021, -022, -023, -024, -025, -026, -027, -028, -029.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3067536 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3067549 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3067712 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 603185

Tetra Tech- Midland, Midland, TX

Project Name: Loco Hills SWD #1

Project Id:
Contact: Clair Gonzales
Project Location: Eddy CO, NM

Date Received in Lab: Tue Oct-23-18 02:25 pm
Report Date: 26-OCT-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	603185-001		603185-002		603185-003		603185-004		603185-005		603185-006	
	Field Id:	AH #1 (0-1')		AH #1 (1-1.5')		AH #2 (0-1')		AH #3 (0-1') 3' BEB		AH #3 (1-1.5') 3' BEB		AH #4 (0-1')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00	
BTEX by EPA 8021B	***Extracted:***	Oct-24-18 13:00		Oct-24-18 13:00		Oct-24-18 13:00		Oct-24-18 13:00		Oct-24-18 13:00		Oct-24-18 13:00	
	Analyzed:	Oct-24-18 16:33		Oct-24-18 16:53		Oct-24-18 17:13		Oct-24-18 17:33		Oct-24-18 17:53		Oct-24-18 18:13	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
m,p-Xylenes		<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Total BTEX		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Chloride by EPA 300	***Extracted:***	Oct-24-18 11:00		Oct-24-18 11:00		Oct-24-18 11:00		Oct-24-18 10:30		Oct-24-18 10:30		Oct-24-18 10:30	
	Analyzed:	Oct-24-18 16:40		Oct-24-18 16:45		Oct-24-18 16:51		Oct-24-18 14:17		Oct-24-18 14:22		Oct-24-18 14:27	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		2220	24.9	1030	24.8	3350	25.0	2750	24.8	231	5.01	14.0	4.99
TPH by SW8015 Mod	***Extracted:***	Oct-24-18 09:00		Oct-24-18 09:00		Oct-24-18 09:00		Oct-24-18 09:00		Oct-24-18 09:00		Oct-24-18 09:00	
	Analyzed:	Oct-24-18 12:01		Oct-24-18 13:04		Oct-24-18 13:26		Oct-24-18 13:47		Oct-24-18 14:09		Oct-24-18 14:30	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	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	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	38.1	15.0	<15.0	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	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	38.1	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 603185

Tetra Tech- Midland, Midland, TX

Project Name: Loco Hills SWD #1

Project Id:
Contact: Clair Gonzales
Project Location: Eddy CO, NM

Date Received in Lab: Tue Oct-23-18 02:25 pm
Report Date: 26-OCT-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	603185-007		603185-008		603185-009		603185-010		603185-011		603185-012	
	Field Id:	AH #4 (1-1.5')		AH #4 (2-2.5')		AH #5 (0-1')		AH #5 (1-1.5')		AH #5 (2-2.5')		AH #5 (3-3.5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00	
BTEX by EPA 8021B	***Extracted:***	Oct-24-18 13:00				Oct-24-18 13:00		Oct-24-18 13:00					
	Analyzed:	Oct-24-18 18:33				Oct-24-18 18:53		Oct-24-18 19:13					
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL				
Benzene		<0.00200	0.00200			<0.00200	0.00200	<0.00200	0.00200				
Toluene		<0.00200	0.00200			<0.00200	0.00200	<0.00200	0.00200				
Ethylbenzene		<0.00200	0.00200			<0.00200	0.00200	<0.00200	0.00200				
m,p-Xylenes		<0.00400	0.00400			<0.00400	0.00400	<0.00400	0.00400				
o-Xylene		<0.00200	0.00200			<0.00200	0.00200	<0.00200	0.00200				
Total Xylenes		<0.00200	0.00200			<0.00200	0.00200	<0.00200	0.00200				
Total BTEX		<0.00200	0.00200			<0.00200	0.00200	<0.00200	0.00200				
Chloride by EPA 300	***Extracted:***	Oct-24-18 10:30		Oct-24-18 10:30		Oct-24-18 10:30		Oct-24-18 10:30		Oct-24-18 10:30		Oct-24-18 10:30	
	Analyzed:	Oct-24-18 14:33		Oct-24-18 14:38		Oct-24-18 14:59		Oct-24-18 15:05		Oct-24-18 15:20		Oct-24-18 15:26	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		177	4.99	45.0	4.98	5640	49.7	7100	50.0	7110	49.8	4020	25.0
TPH by SW8015 Mod	***Extracted:***	Oct-24-18 09:00				Oct-24-18 09:00		Oct-24-18 09:00					
	Analyzed:	Oct-24-18 14:51				Oct-24-18 15:12		Oct-24-18 15:33					
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0			<14.9	14.9	<15.0	15.0				
Diesel Range Organics (DRO)		<15.0	15.0			<14.9	14.9	<15.0	15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0			<14.9	14.9	<15.0	15.0				
Total TPH		<15.0	15.0			<14.9	14.9	<15.0	15.0				

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 603185

Tetra Tech- Midland, Midland, TX

Project Name: Loco Hills SWD #1

Project Id:
Contact: Clair Gonzales
Project Location: Eddy CO, NM

Date Received in Lab: Tue Oct-23-18 02:25 pm
Report Date: 26-OCT-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	603185-013		603185-014		603185-015		603185-016		603185-017		603185-018	
	Field Id:	AH #6 (0-1')		AH #6 (1-1.5')		AH #6 (2-2.5')		AH #7 (0-1')		AH #7 (1-1.5')		AH #7 (2-2.5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00	
BTEX by EPA 8021B	***Extracted:***	Oct-24-18 13:00		Oct-24-18 13:00				Oct-24-18 13:00		Oct-24-18 13:00			
	Analyzed:	Oct-24-18 19:33		Oct-24-18 20:52				Oct-24-18 21:33		Oct-24-18 21:53			
	Units/RL:	mg/kg	RL	mg/kg	RL			mg/kg	RL	mg/kg	RL		
Benzene		<0.00200	0.00200	<0.00200	0.00200			<0.00200	0.00200	<0.00200	0.00200		
Toluene		<0.00200	0.00200	<0.00200	0.00200			<0.00200	0.00200	<0.00200	0.00200		
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200			<0.00200	0.00200	<0.00200	0.00200		
m,p-Xylenes		<0.00400	0.00400	<0.00400	0.00400			<0.00400	0.00400	<0.00400	0.00400		
o-Xylene		<0.00200	0.00200	<0.00200	0.00200			<0.00200	0.00200	<0.00200	0.00200		
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200			<0.00200	0.00200	<0.00200	0.00200		
Total BTEX		<0.00200	0.00200	<0.00200	0.00200			<0.00200	0.00200	<0.00200	0.00200		
Chloride by EPA 300	***Extracted:***	Oct-24-18 10:30		Oct-24-18 10:30		Oct-24-18 10:30		Oct-24-18 10:30		Oct-24-18 10:30		Oct-24-18 10:30	
	Analyzed:	Oct-24-18 15:31		Oct-24-18 15:36		Oct-24-18 15:42		Oct-24-18 15:47		Oct-24-18 15:52		Oct-24-18 14:43	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		263	4.99	2320	24.8	1200	5.01	3330	24.9	7070	49.8	516	4.99
TPH by SW8015 Mod	***Extracted:***	Oct-24-18 09:00		Oct-24-18 09:00				Oct-24-18 09:00		Oct-24-18 09:00			
	Analyzed:	Oct-24-18 15:54		Oct-24-18 16:56				Oct-24-18 17:16		Oct-24-18 17:37			
	Units/RL:	mg/kg	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	<15.0	15.0		
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	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	<15.0	15.0		
Total TPH		<15.0	15.0	<15.0	15.0			<15.0	15.0	<15.0	15.0		

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 603185

Tetra Tech- Midland, Midland, TX

Project Name: Loco Hills SWD #1

Project Id:
Contact: Clair Gonzales
Project Location: Eddy CO, NM

Date Received in Lab: Tue Oct-23-18 02:25 pm
Report Date: 26-OCT-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	603185-019		603185-020		603185-021		603185-022		603185-023		603185-024	
	Field Id:	AH #7 (3-3.5')		AH #8 (0-1')		AH #8 (1-1.5')		AH #8 (2-2.5')		AH #8 (3-3.5')		AH #8 (4.4.5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00	
BTEX by EPA 8021B	***Extracted:***			Oct-24-18 13:00		Oct-24-18 13:00							
	Analyzed:			Oct-24-18 22:13		Oct-24-18 22:33							
	Units/RL:			mg/kg	RL	mg/kg	RL						
Benzene				<0.00200	0.00200	<0.00200	0.00200						
Toluene				<0.00200	0.00200	<0.00200	0.00200						
Ethylbenzene				<0.00200	0.00200	<0.00200	0.00200						
m,p-Xylenes				<0.00400	0.00400	<0.00400	0.00400						
o-Xylene				<0.00200	0.00200	<0.00200	0.00200						
Total Xylenes				<0.00200	0.00200	<0.00200	0.00200						
Total BTEX				<0.00200	0.00200	<0.00200	0.00200						
Chloride by EPA 300	***Extracted:***	Oct-24-18 11:00		Oct-24-18 11:00		Oct-24-18 11:00		Oct-24-18 11:00		Oct-24-18 11:00		Oct-24-18 11:00	
	Analyzed:	Oct-24-18 16:24		Oct-24-18 18:01		Oct-24-18 18:07		Oct-24-18 18:22		Oct-24-18 18:28		Oct-24-18 17:45	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		962	4.99	5.77	5.00	11.0	4.97	<4.99	4.99	<4.96	4.96	<4.96	4.96
TPH by SW8015 Mod	***Extracted:***			Oct-24-18 09:00		Oct-24-18 09:00							
	Analyzed:			Oct-24-18 17:57		Oct-24-18 18:18							
	Units/RL:			mg/kg	RL	mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)				<15.0	15.0	<15.0	15.0						
Diesel Range Organics (DRO)				<15.0	15.0	<15.0	15.0						
Motor Oil Range Hydrocarbons (MRO)				<15.0	15.0	<15.0	15.0						
Total TPH				<15.0	15.0	<15.0	15.0						

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 603185

Tetra Tech- Midland, Midland, TX

Project Name: Loco Hills SWD #1

Project Id:
Contact: Clair Gonzales
Project Location: Eddy CO, NM

Date Received in Lab: Tue Oct-23-18 02:25 pm
Report Date: 26-OCT-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	603185-025		603185-026		603185-027		603185-028		603185-029		603185-030	
	Field Id:	AH #9 (0-1') 1.5' BEB		AH #9 (1-1.5') 1.5' BEB		AH #10 (0-1') 6" BEB		AH #10 (1-1.5') 6" BEB		AH #11 (0-1')		AH #11 (1-1.5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00	
BTEX by EPA 8021B	***Extracted:***	Oct-24-18 13:00		Oct-24-18 13:00		Oct-24-18 13:00		Oct-24-18 13:00		Oct-25-18 17:00		Oct-25-18 17:00	
	Analyzed:	Oct-24-18 22:53		Oct-24-18 23:13		Oct-24-18 23:33		Oct-24-18 23:53		Oct-25-18 20:12		Oct-25-18 20:32	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
m,p-Xylenes		<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Total BTEX		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Chloride by EPA 300	***Extracted:***	Oct-24-18 11:00		Oct-24-18 11:00		Oct-24-18 11:00		Oct-24-18 11:00		Oct-24-18 11:00		Oct-24-18 17:00	
	Analyzed:	Oct-24-18 18:33		Oct-24-18 18:38		Oct-24-18 18:44		Oct-24-18 18:49		Oct-24-18 18:54		Oct-24-18 22:48	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		4420	49.5	3530	25.0	5560	50.0	4300	50.0	9420	100	3690	24.9
TPH by SW8015 Mod	***Extracted:***	Oct-24-18 09:00		Oct-24-18 09:00		Oct-24-18 09:00		Oct-24-18 09:00		Oct-24-18 09:00		Oct-24-18 16:00	
	Analyzed:	Oct-24-18 18:38		Oct-24-18 18:59		Oct-24-18 19:19		Oct-24-18 19:39		Oct-24-18 19:59		Oct-24-18 21:40	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	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	<14.9	14.9	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<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	<14.9	14.9	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 603185

Tetra Tech- Midland, Midland, TX

Project Name: Loco Hills SWD #1

Project Id:
Contact: Clair Gonzales
Project Location: Eddy CO, NM

Date Received in Lab: Tue Oct-23-18 02:25 pm
Report Date: 26-OCT-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	603185-031		603185-032		603185-033		603185-034		603185-035		603185-036	
	Field Id:	AH #11 (2-2.5')		AH #11 (3-3.5')		AH #12 (0-1')		AH #12 (1-1.5')		AH #12 (2-2.5')		AH #13 (0.1')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00	
BTEX by EPA 8021B	***Extracted:***					Oct-25-18 17:00		Oct-24-18 14:00				Oct-24-18 14:00	
	Analyzed:					Oct-25-18 20:53		Oct-25-18 03:12				Oct-25-18 03:32	
	Units/RL:					mg/kg	RL	mg/kg	RL			mg/kg	RL
Benzene						<0.00200	0.00200	<0.00200	0.00200			<0.00200	0.00200
Toluene						<0.00200	0.00200	<0.00200	0.00200			<0.00200	0.00200
Ethylbenzene						<0.00200	0.00200	<0.00200	0.00200			<0.00200	0.00200
m,p-Xylenes						<0.00400	0.00400	<0.00400	0.00400			<0.00400	0.00400
o-Xylene						<0.00200	0.00200	<0.00200	0.00200			<0.00200	0.00200
Total Xylenes						<0.00200	0.00200	<0.00200	0.00200			<0.00200	0.00200
Total BTEX						<0.00200	0.00200	<0.00200	0.00200			<0.00200	0.00200
Chloride by EPA 300	***Extracted:***	Oct-24-18 17:00		Oct-24-18 17:00		Oct-24-18 17:00		Oct-24-18 17:00		Oct-24-18 17:00		Oct-24-18 17:00	
	Analyzed:	Oct-24-18 22:53		Oct-24-18 23:09		Oct-24-18 23:14		Oct-24-18 23:19		Oct-25-18 09:27		Oct-24-18 23:30	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		267	4.95	41.6	4.97	5210	49.5	6380	49.8	12800	99.6	5.91	4.99
TPH by SW8015 Mod	***Extracted:***					Oct-24-18 16:00		Oct-24-18 16:00				Oct-24-18 16:00	
	Analyzed:					Oct-24-18 22:40		Oct-24-18 23:00				Oct-24-18 23:20	
	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)						<15.0	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						<15.0	15.0	<15.0	15.0			<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 603185

Tetra Tech- Midland, Midland, TX

Project Name: Loco Hills SWD #1

Project Id:
Contact: Clair Gonzales
Project Location: Eddy CO, NM

Date Received in Lab: Tue Oct-23-18 02:25 pm
Report Date: 26-OCT-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	603185-037		603185-038		603185-039		603185-040		603185-041		603185-042	
	Field Id:	AH #13 (1-1.5')		AH #13 (2-2.5')		AH #14 (0-1')		AH #14 (1-1.5')		AH #14 (2-2.5')		AH #14 (3-3.5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00		Oct-22-18 00:00	
BTEX by EPA 8021B	***Extracted:***	Oct-25-18 17:00				Oct-24-18 14:00		Oct-24-18 14:00					
	Analyzed:	Oct-25-18 21:13				Oct-25-18 03:52		Oct-25-18 02:52					
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL				
Benzene		<0.00200	0.00200			<0.00200	0.00200	<0.00200	0.00200				
Toluene		<0.00200	0.00200			<0.00200	0.00200	<0.00200	0.00200				
Ethylbenzene		<0.00200	0.00200			<0.00200	0.00200	<0.00200	0.00200				
m,p-Xylenes		<0.00400	0.00400			<0.00400	0.00400	<0.00400	0.00400				
o-Xylene		<0.00200	0.00200			<0.00200	0.00200	<0.00200	0.00200				
Total Xylenes		<0.00200	0.00200			<0.00200	0.00200	<0.00200	0.00200				
Total BTEX		<0.00200	0.00200			<0.00200	0.00200	<0.00200	0.00200				
Chloride by EPA 300	***Extracted:***	Oct-24-18 17:00		Oct-24-18 17:00		Oct-24-18 17:00		Oct-24-18 17:00		Oct-24-18 17:00		Oct-24-18 17:00	
	Analyzed:	Oct-24-18 23:35		Oct-24-18 23:51		Oct-24-18 23:57		Oct-25-18 00:12		Oct-25-18 00:18		Oct-25-18 00:23	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<4.95	4.95	<4.96	4.96	<4.99	4.99	<5.00	5.00	<5.00	5.00	6.79	5.00
TPH by SW8015 Mod	***Extracted:***	Oct-24-18 16:00				Oct-24-18 16:00		Oct-24-18 16:00					
	Analyzed:	Oct-24-18 23:41				Oct-25-18 00:01		Oct-25-18 00:21					
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9			<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		<14.9	14.9			<15.0	15.0	<15.0	15.0				
Motor Oil Range Hydrocarbons (MRO)		<14.9	14.9			<15.0	15.0	<15.0	15.0				
Total TPH		<14.9	14.9			<15.0	15.0	<15.0	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: Loco Hills SWD #1

Work Orders : 603185,

Project ID:

Lab Batch #: 3067456 **Sample:** 603185-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 12:01

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.1	99.7	89	70-135	
o-Terphenyl	46.7	49.9	94	70-135	

Lab Batch #: 3067456 **Sample:** 603185-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 13:04

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.6	99.8	83	70-135	
o-Terphenyl	43.5	49.9	87	70-135	

Lab Batch #: 3067456 **Sample:** 603185-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 13:26

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.1	99.8	83	70-135	
o-Terphenyl	43.8	49.9	88	70-135	

Lab Batch #: 3067456 **Sample:** 603185-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 13:47

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.0	99.9	85	70-135	
o-Terphenyl	44.8	50.0	90	70-135	

Lab Batch #: 3067456 **Sample:** 603185-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 14:09

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.7	99.7	80	70-135	
o-Terphenyl	40.6	49.9	81	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: Loco Hills SWD #1

Work Orders : 603185,

Project ID:

Lab Batch #: 3067456 **Sample:** 603185-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 14:30

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.0	100	81	70-135	
o-Terphenyl	42.5	50.0	85	70-135	

Lab Batch #: 3067456 **Sample:** 603185-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 14:51

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.3	99.8	83	70-135	
o-Terphenyl	44.2	49.9	89	70-135	

Lab Batch #: 3067456 **Sample:** 603185-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 15:12

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.8	99.6	85	70-135	
o-Terphenyl	44.7	49.8	90	70-135	

Lab Batch #: 3067456 **Sample:** 603185-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 15:33

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.5	99.9	86	70-135	
o-Terphenyl	44.0	50.0	88	70-135	

Lab Batch #: 3067456 **Sample:** 603185-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 15:54

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.6	99.9	87	70-135	
o-Terphenyl	44.0	50.0	88	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: Loco Hills SWD #1

Work Orders : 603185,

Project ID:

Lab Batch #: 3067536 **Sample:** 603185-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 16:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0346	0.0300	115	70-130	
4-Bromofluorobenzene	0.0315	0.0300	105	70-130	

Lab Batch #: 3067536 **Sample:** 603185-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 16:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0351	0.0300	117	70-130	
4-Bromofluorobenzene	0.0349	0.0300	116	70-130	

Lab Batch #: 3067456 **Sample:** 603185-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 16:56

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.0	99.7	86	70-135	
o-Terphenyl	44.8	49.9	90	70-135	

Lab Batch #: 3067536 **Sample:** 603185-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 17:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0352	0.0300	117	70-130	
4-Bromofluorobenzene	0.0340	0.0300	113	70-130	

Lab Batch #: 3067456 **Sample:** 603185-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 17:16

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.7	100	87	70-135	
o-Terphenyl	44.7	50.0	89	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: Loco Hills SWD #1

Work Orders : 603185,

Project ID:

Lab Batch #: 3067536 **Sample:** 603185-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 17:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0347	0.0300	116	70-130	
4-Bromofluorobenzene	0.0348	0.0300	116	70-130	

Lab Batch #: 3067456 **Sample:** 603185-017 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 17:37

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.2	99.8	89	70-135	
o-Terphenyl	46.7	49.9	94	70-135	

Lab Batch #: 3067536 **Sample:** 603185-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 17:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0344	0.0300	115	70-130	
4-Bromofluorobenzene	0.0354	0.0300	118	70-130	

Lab Batch #: 3067456 **Sample:** 603185-020 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 17:57

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.3	99.8	86	70-135	
o-Terphenyl	44.6	49.9	89	70-135	

Lab Batch #: 3067536 **Sample:** 603185-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 18:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0350	0.0300	117	70-130	
4-Bromofluorobenzene	0.0349	0.0300	116	70-130	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Loco Hills SWD #1

Work Orders : 603185,

Project ID:

Lab Batch #: 3067456 **Sample:** 603185-021 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 18:18

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.0	99.8	86	70-135	
o-Terphenyl	45.5	49.9	91	70-135	

Lab Batch #: 3067536 **Sample:** 603185-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 18:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0334	0.0300	111	70-130	
4-Bromofluorobenzene	0.0375	0.0300	125	70-130	

Lab Batch #: 3067456 **Sample:** 603185-025 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 18:38

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.4	99.9	89	70-135	
o-Terphenyl	46.3	50.0	93	70-135	

Lab Batch #: 3067536 **Sample:** 603185-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 18:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0350	0.0300	117	70-130	
4-Bromofluorobenzene	0.0339	0.0300	113	70-130	

Lab Batch #: 3067456 **Sample:** 603185-026 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 18:59

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.7	99.7	88	70-135	
o-Terphenyl	45.9	49.9	92	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: Loco Hills SWD #1

Work Orders : 603185,

Project ID:

Lab Batch #: 3067536 **Sample:** 603185-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 19:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0347	0.0300	116	70-130	
4-Bromofluorobenzene	0.0354	0.0300	118	70-130	

Lab Batch #: 3067456 **Sample:** 603185-027 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 19:19

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.0	99.7	84	70-135	
o-Terphenyl	44.6	49.9	89	70-135	

Lab Batch #: 3067536 **Sample:** 603185-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 19:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0348	0.0300	116	70-130	
4-Bromofluorobenzene	0.0355	0.0300	118	70-130	

Lab Batch #: 3067456 **Sample:** 603185-028 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 19:39

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.0	99.6	89	70-135	
o-Terphenyl	47.5	49.8	95	70-135	

Lab Batch #: 3067456 **Sample:** 603185-029 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 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	88.5	99.8	89	70-135	
o-Terphenyl	46.8	49.9	94	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: Loco Hills SWD #1

Work Orders : 603185,

Project ID:

Lab Batch #: 3067536 **Sample:** 603185-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 20:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0341	0.0300	114	70-130	
4-Bromofluorobenzene	0.0307	0.0300	102	70-130	

Lab Batch #: 3067536 **Sample:** 603185-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 21:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0350	0.0300	117	70-130	
4-Bromofluorobenzene	0.0354	0.0300	118	70-130	

Lab Batch #: 3067458 **Sample:** 603185-030 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 21:40

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.6	99.9	90	70-135	
o-Terphenyl	47.9	50.0	96	70-135	

Lab Batch #: 3067536 **Sample:** 603185-017 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 21:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0346	0.0300	115	70-130	
4-Bromofluorobenzene	0.0353	0.0300	118	70-130	

Lab Batch #: 3067536 **Sample:** 603185-020 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 22:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0351	0.0300	117	70-130	
4-Bromofluorobenzene	0.0376	0.0300	125	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: Loco Hills SWD #1

Work Orders : 603185,

Project ID:

Lab Batch #: 3067536 **Sample:** 603185-021 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 22:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0351	0.0300	117	70-130	
4-Bromofluorobenzene	0.0364	0.0300	121	70-130	

Lab Batch #: 3067458 **Sample:** 603185-033 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 22:40

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.6	99.7	94	70-135	
o-Terphenyl	49.0	49.9	98	70-135	

Lab Batch #: 3067536 **Sample:** 603185-025 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 22:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0347	0.0300	116	70-130	
4-Bromofluorobenzene	0.0356	0.0300	119	70-130	

Lab Batch #: 3067458 **Sample:** 603185-034 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 23:00

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.1	99.9	91	70-135	
o-Terphenyl	47.6	50.0	95	70-135	

Lab Batch #: 3067536 **Sample:** 603185-026 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 23:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0351	0.0300	117	70-130	
4-Bromofluorobenzene	0.0352	0.0300	117	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: Loco Hills SWD #1

Work Orders : 603185,

Project ID:

Lab Batch #: 3067458 **Sample:** 603185-036 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 23:20

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.6	99.8	91	70-135	
o-Terphenyl	47.9	49.9	96	70-135	

Lab Batch #: 3067536 **Sample:** 603185-027 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 23:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0352	0.0300	117	70-130	
4-Bromofluorobenzene	0.0349	0.0300	116	70-130	

Lab Batch #: 3067458 **Sample:** 603185-037 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 23:41

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.7	99.6	89	70-135	
o-Terphenyl	44.4	49.8	89	70-135	

Lab Batch #: 3067536 **Sample:** 603185-028 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 23:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0351	0.0300	117	70-130	
4-Bromofluorobenzene	0.0366	0.0300	122	70-130	

Lab Batch #: 3067458 **Sample:** 603185-039 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/18 00:01

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.9	99.8	90	70-135	
o-Terphenyl	46.5	49.9	93	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: Loco Hills SWD #1

Work Orders : 603185,

Project ID:

Lab Batch #: 3067458 **Sample:** 603185-040 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/18 00:21

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.3	99.7	90	70-135	
o-Terphenyl	47.6	49.9	95	70-135	

Lab Batch #: 3067549 **Sample:** 603185-040 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/18 02:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0343	0.0300	114	70-130	
4-Bromofluorobenzene	0.0319	0.0300	106	70-130	

Lab Batch #: 3067549 **Sample:** 603185-034 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/18 03:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0354	0.0300	118	70-130	
4-Bromofluorobenzene	0.0348	0.0300	116	70-130	

Lab Batch #: 3067549 **Sample:** 603185-036 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/18 03:32

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0355	0.0300	118	70-130	
4-Bromofluorobenzene	0.0359	0.0300	120	70-130	

Lab Batch #: 3067549 **Sample:** 603185-039 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/18 03:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0346	0.0300	115	70-130	
4-Bromofluorobenzene	0.0348	0.0300	116	70-130	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Loco Hills SWD #1

Work Orders : 603185,

Project ID:

Lab Batch #: 3067712 **Sample:** 603185-029 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/18 20:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0326	0.0300	109	70-130	
4-Bromofluorobenzene	0.0254	0.0300	85	70-130	

Lab Batch #: 3067712 **Sample:** 603185-030 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/18 20:32

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0332	0.0300	111	70-130	
4-Bromofluorobenzene	0.0273	0.0300	91	70-130	

Lab Batch #: 3067712 **Sample:** 603185-033 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/18 20:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0328	0.0300	109	70-130	
4-Bromofluorobenzene	0.0281	0.0300	94	70-130	

Lab Batch #: 3067712 **Sample:** 603185-037 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/18 21:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0323	0.0300	108	70-130	
4-Bromofluorobenzene	0.0252	0.0300	84	70-130	

Lab Batch #: 3067456 **Sample:** 7664787-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/24/18 10:58

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.8	100	92	70-135	
o-Terphenyl	48.1	50.0	96	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: Loco Hills SWD #1

Work Orders : 603185,

Project ID:

Lab Batch #: 3067536 **Sample:** 7664848-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/24/18 16:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0338	0.0300	113	70-130	
4-Bromofluorobenzene	0.0289	0.0300	96	70-130	

Lab Batch #: 3067458 **Sample:** 7664788-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/24/18 20:40

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.3	100	95	70-135	
o-Terphenyl	50.1	50.0	100	70-135	

Lab Batch #: 3067549 **Sample:** 7664854-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/25/18 02:32

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0344	0.0300	115	70-130	
4-Bromofluorobenzene	0.0315	0.0300	105	70-130	

Lab Batch #: 3067712 **Sample:** 7664946-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/25/18 19:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0343	0.0300	114	70-130	
4-Bromofluorobenzene	0.0312	0.0300	104	70-130	

Lab Batch #: 3067456 **Sample:** 7664787-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/24/18 11:19

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	54.2	50.0	108	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Loco Hills SWD #1

Work Orders : 603185,

Project ID:

Lab Batch #: 3067536 **Sample:** 7664848-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/24/18 14:32

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	70-130	
4-Bromofluorobenzene	0.0286	0.0300	95	70-130	

Lab Batch #: 3067458 **Sample:** 7664788-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/24/18 21:00

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	100	128	70-135	
o-Terphenyl	51.4	50.0	103	70-135	

Lab Batch #: 3067549 **Sample:** 7664854-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/25/18 00:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	70-130	
4-Bromofluorobenzene	0.0283	0.0300	94	70-130	

Lab Batch #: 3067712 **Sample:** 7664946-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/25/18 17:51

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0272	0.0300	91	70-130	
4-Bromofluorobenzene	0.0266	0.0300	89	70-130	

Lab Batch #: 3067456 **Sample:** 7664787-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/24/18 11:40

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	55.3	50.0	111	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Loco Hills SWD #1

Work Orders : 603185,

Project ID:

Lab Batch #: 3067536 **Sample:** 7664848-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/24/18 14:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	70-130	
4-Bromofluorobenzene	0.0293	0.0300	98	70-130	

Lab Batch #: 3067458 **Sample:** 7664788-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/24/18 21:20

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	54.0	50.0	108	70-135	

Lab Batch #: 3067549 **Sample:** 7664854-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/25/18 01:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	70-130	
4-Bromofluorobenzene	0.0282	0.0300	94	70-130	

Lab Batch #: 3067712 **Sample:** 7664946-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/25/18 18:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	70-130	
4-Bromofluorobenzene	0.0266	0.0300	89	70-130	

Lab Batch #: 3067456 **Sample:** 603185-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 12:22

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.8	129	70-135	
o-Terphenyl	49.8	49.9	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: Loco Hills SWD #1

Work Orders : 603185,

Project ID:

Lab Batch #: 3067536 **Sample:** 603185-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 15:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	70-130	
4-Bromofluorobenzene	0.0290	0.0300	97	70-130	

Lab Batch #: 3067458 **Sample:** 603185-030 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 22:00

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	53.4	50.0	107	70-135	

Lab Batch #: 3067549 **Sample:** 603185-040 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/18 01:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	70-130	
4-Bromofluorobenzene	0.0291	0.0300	97	70-130	

Lab Batch #: 3067712 **Sample:** 602545-007 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/18 18:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	70-130	
4-Bromofluorobenzene	0.0283	0.0300	94	70-130	

Lab Batch #: 3067456 **Sample:** 603185-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 12:43

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	99.6	121	70-135	
o-Terphenyl	46.6	49.8	94	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: Loco Hills SWD #1

Work Orders : 603185,

Project ID:

Lab Batch #: 3067536 **Sample:** 603185-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 15:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	70-130	
4-Bromofluorobenzene	0.0282	0.0300	94	70-130	

Lab Batch #: 3067458 **Sample:** 603185-030 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 22:20

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	99.9	128	70-135	
o-Terphenyl	53.3	50.0	107	70-135	

Lab Batch #: 3067549 **Sample:** 603185-040 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/18 01:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	70-130	
4-Bromofluorobenzene	0.0286	0.0300	95	70-130	

Lab Batch #: 3067712 **Sample:** 602545-007 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/18 18:51

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	70-130	
4-Bromofluorobenzene	0.0281	0.0300	94	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: Loco Hills SWD #1

Work Order #: 603185 **Project ID:**

Analyst: ALJ **Date Prepared:** 10/24/2018 **Date Analyzed:** 10/24/2018

Lab Batch ID: 3067536 **Sample:** 7664848-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.100	0.106	106	0.100	0.0936	94	12	70-130	35	
Toluene	<0.00200	0.100	0.106	106	0.100	0.0916	92	15	70-130	35	
Ethylbenzene	<0.00200	0.100	0.111	111	0.100	0.0952	95	15	70-130	35	
m,p-Xylenes	<0.00400	0.200	0.213	107	0.200	0.182	91	16	70-130	35	
o-Xylene	<0.00200	0.100	0.105	105	0.100	0.0905	91	15	70-130	35	

Analyst: ALJ **Date Prepared:** 10/24/2018 **Date Analyzed:** 10/25/2018

Lab Batch ID: 3067549 **Sample:** 7664854-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.100	0.0848	85	0.100	0.0837	84	1	70-130	35	
Toluene	<0.00200	0.100	0.0846	85	0.100	0.0851	85	1	70-130	35	
Ethylbenzene	<0.00200	0.100	0.0864	86	0.100	0.0867	87	0	70-130	35	
m,p-Xylenes	<0.00400	0.200	0.167	84	0.200	0.169	85	1	70-130	35	
o-Xylene	<0.00200	0.100	0.0852	85	0.100	0.0856	86	0	70-130	35	

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

BS / BSD Recoveries

Project Name: Loco Hills SWD #1

Work Order #: 603185 **Project ID:**

Analyst: JUM **Date Prepared:** 10/25/2018 **Date Analyzed:** 10/25/2018

Lab Batch ID: 3067712 **Sample:** 7664946-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.100	0.0956	96	0.100	0.0962	96	1	70-130	35	
Toluene	<0.00200	0.100	0.0956	96	0.100	0.0959	96	0	70-130	35	
Ethylbenzene	<0.00200	0.100	0.0983	98	0.100	0.0985	99	0	70-130	35	
m,p-Xylenes	<0.00400	0.200	0.188	94	0.200	0.190	95	1	70-130	35	
o-Xylene	<0.00200	0.100	0.0911	91	0.100	0.0925	93	2	70-130	35	

Analyst: CHE **Date Prepared:** 10/24/2018 **Date Analyzed:** 10/24/2018

Lab Batch ID: 3067434 **Sample:** 7664760-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	261	104	250	270	108	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: Loco Hills SWD #1

Work Order #: 603185 **Project ID:**

Analyst: CHE **Date Prepared:** 10/24/2018 **Date Analyzed:** 10/24/2018

Lab Batch ID: 3067437 **Sample:** 7664761-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	271	108	250	271	108	0	90-110	20	

Analyst: CHE **Date Prepared:** 10/24/2018 **Date Analyzed:** 10/24/2018

Lab Batch ID: 3067460 **Sample:** 7664792-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	273	109	250	270	108	1	90-110	20	

Analyst: ARM **Date Prepared:** 10/24/2018 **Date Analyzed:** 10/24/2018

Lab Batch ID: 3067456 **Sample:** 7664787-1-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	988	99	1000	952	95	4	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1010	101	1000	960	96	5	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

BS / BSD Recoveries

Project Name: Loco Hills SWD #1

Work Order #: 603185 **Project ID:**

Analyst: ARM **Date Prepared:** 10/24/2018 **Date Analyzed:** 10/24/2018

Lab Batch ID: 3067458 **Sample:** 7664788-1-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	989	99	1000	1040	104	5	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1000	100	1000	1060	106	6	70-135	20	

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

Form 3 - MS / MSD Recoveries

Project Name: Loco Hills SWD #1

Work Order # : 603185 **Project ID:**

Lab Batch ID: 3067536 **QC- Sample ID:** 603185-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/24/2018 **Date Prepared:** 10/24/2018 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.100	0.0863	86	0.100	0.0848	85	2	70-130	35	
Toluene	<0.00200	0.100	0.0829	83	0.100	0.0795	80	4	70-130	35	
Ethylbenzene	<0.00200	0.100	0.0816	82	0.100	0.0752	75	8	70-130	35	
m,p-Xylenes	<0.00400	0.200	0.158	79	0.200	0.145	73	9	70-130	35	
o-Xylene	<0.00200	0.100	0.0779	78	0.100	0.0714	71	9	70-130	35	

Lab Batch ID: 3067549 **QC- Sample ID:** 603185-040 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/25/2018 **Date Prepared:** 10/24/2018 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.100	0.0887	89	0.100	0.0844	84	5	70-130	35	
Toluene	<0.00200	0.100	0.0886	89	0.100	0.0839	84	5	70-130	35	
Ethylbenzene	<0.00200	0.100	0.0900	90	0.100	0.0853	85	5	70-130	35	
m,p-Xylenes	<0.00400	0.200	0.174	87	0.200	0.164	82	6	70-130	35	
o-Xylene	<0.00200	0.100	0.0874	87	0.100	0.0827	83	6	70-130	35	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: Loco Hills SWD #1

Work Order # : 603185 **Project ID:**

Lab Batch ID: 3067712 **QC- Sample ID:** 602545-007 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/25/2018 **Date Prepared:** 10/25/2018 **Analyst:** JUM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.100	0.0775	78	0.100	0.0841	84	8	70-130	35	
Toluene	<0.00200	0.100	0.0789	79	0.100	0.0841	84	6	70-130	35	
Ethylbenzene	<0.00200	0.100	0.0813	81	0.100	0.0871	87	7	70-130	35	
m,p-Xylenes	<0.00400	0.200	0.157	79	0.200	0.169	85	7	70-130	35	
o-Xylene	<0.00200	0.100	0.0773	77	0.100	0.0833	83	7	70-130	35	

Lab Batch ID: 3067434 **QC- Sample ID:** 603032-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/24/2018 **Date Prepared:** 10/24/2018 **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	405	249	660	102	249	652	99	1	90-110	20	

Lab Batch ID: 3067434 **QC- Sample ID:** 603185-018 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/24/2018 **Date Prepared:** 10/24/2018 **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	516	250	748	93	250	749	93	0	90-110	20	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: Loco Hills SWD #1

Work Order # : 603185 **Project ID:**

Lab Batch ID: 3067437 **QC- Sample ID:** 603185-019 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/24/2018 **Date Prepared:** 10/24/2018 **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	962	250	1170	83	250	1160	79	1	90-110	20	X

Lab Batch ID: 3067437 **QC- Sample ID:** 603185-024 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/24/2018 **Date Prepared:** 10/24/2018 **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	<0.852	248	271	109	248	267	108	1	90-110	20	

Lab Batch ID: 3067460 **QC- Sample ID:** 603185-037 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/24/2018 **Date Prepared:** 10/24/2018 **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	<0.850	248	272	110	248	270	109	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: Loco Hills SWD #1

Work Order # : 603185 **Project ID:**

Lab Batch ID: 3067460 **QC- Sample ID:** 603392-008 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/24/2018 **Date Prepared:** 10/24/2018 **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	<0.897	261	283	108	261	283	108	0	90-110	20	

Lab Batch ID: 3067456 **QC- Sample ID:** 603185-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/24/2018 **Date Prepared:** 10/24/2018 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	1000	100	996	951	95	5	70-135	20	
Diesel Range Organics (DRO)	<8.11	998	1020	102	996	969	97	5	70-135	20	

Lab Batch ID: 3067458 **QC- Sample ID:** 603185-030 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/24/2018 **Date Prepared:** 10/24/2018 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	973	97	999	1010	101	4	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	988	99	999	1020	102	3	70-135	20	

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

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

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

Analysis Request of Chain of Custody Record

603185

Tetra Tech, Inc.

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

Client Name: COG	**Site Manager:** Clair Gonzales
Project Name: Loco Hills SWD #1	
Project Location: (county, state) Eddy CO, NM	**Project #:** TBD 212C-MD-
Invoice to: COG- Ike Taverez	
Receiving Laboratory: Xenco	**Sampler Signature:** Conner Moehring

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

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B	BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - 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
	AH #1 (0-1')	10/22/2018			X			X		1	N	X		X													X						
	AH #1 (1-1.5')	10/22/2018			X			X		1	N	X		X													X						
	AH #2 (0-1')	10/22/2018			X			X		1	N	X		X													X						
	AH #3 (0-1') 3' BEB	10/22/2018			X			X		1	N	X		X													X						
	AH #3 (1-1.5') 3' BEB	10/22/2018			X			X		1	N	X		X													X						
	AH #4 (0-1')	10/22/2018			X			X		1	N	X		X													X						
	AH #4 (1-1.5')	10/22/2018			X			X		1	N	X		X													X						
	AH #4 (2-2.5')	10/22/2018			X			X		1	N																X						
	AH #5 (0-1')	10/22/2018			X			X		1	N	X		X													X						
	AH #5 (1-1.5')	10/22/2018			X			X		1	N	X		X													X						

ANALYSIS REQUEST
(Circle or Specify Method No.)

Page 37 of 42

Final 1.000

Relinquished by: J. Keel	Date: 10.23.18	Time: 1425	Received by: [signature]
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Date: 10/23/18 Time: 1425

Date: Time:

Date: Time:

LAB USE ONLY

Sample Temperature 0.3/0.0

REMARKS:

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

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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Analysis Request of Chain of Custody Record

603185

Tetra Tech, Inc.

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

Client Name: COG	**Site Manager:** Clair Gonzales
Project Name: Loco Hills SWD #1	
Project Location: (county, state) Eddy CO, NM	**Project #:** 212C-MD-
Invoice to: COG- Ike Taverez	
Receiving Laboratory: Xenco	**Sampler Signature:** Conner Moehring
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2018 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B	BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - 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
	AH #5 (2-2.5')	10/22/2018			X			X		1	N																X				
	AH #5 (3-3.5')	10/22/2018			X			X		1	N																X				
	AH #6 (0-1')	10/22/2018			X			X		1	N																X				
	AH #6 (1-1.5')	10/22/2018			X			X		1	N	X		X													X				
	AH #6 (2-2.5')	10/22/2018			X			X		1	N	X		X													X				
	AH #7 (0-1')	10/22/2018			X			X		1	N																X				
	AH #7 (1-1.5')	10/22/2018			X			X		1	N	X		X													X				
	AH #7 (2-2.5')	10/22/2018			X			X		1	N	X		X													X				
	AH #7 (3-3.5')	10/22/2018			X			X		1	N																X				
	AH #8 (0-1')	10/22/2018			X			X		1	N																X				
												X		X													X				

Final 1.000

Relinquished by: J. Kell	Date: 10-23-18	Time: 1425
Relinquished by:	Date:	Time:
Relinquished by:	Date:	Time:

Received by:	Date: 10/23/18	Time: 1425
Received by:	Date:	Time:
Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature 0.8/0.0 4/18

REMARKS:

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

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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Analysis Request of Chain of Custody Record

603185

Tetra Tech, Inc.

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

Client Name: COG	**Site Manager:** Clair Gonzales
Project Name: Loco Hills SWD #1	
Project Location: (county, state) Eddy CO, NM	**Project #:** 212C-MD-
Invoice to: COG- Ike Taverez	
Receiving Laboratory: Xenco	**Sampler Signature:** Conner Moehring
Comments:	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - 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
	AH #8 (1-1.5')	10/22/2018			X			X		1	N	X		X												X				
	AH #8 (2-2.5')	10/22/2018			X			X		1	N															X				
	AH #8 (3-3.5')	10/22/2018			X			X		1	N															X				
	AH #8 (4-4.5')	10/22/2018			X			X		1	N															X				
	AH #9 (0-1') 1.5' BEB	10/22/2018			X			X		1	N	X		X												X				
	AH #9 (1-1.5') 1.5' BEB	10/22/2018			X			X		1	N	X		X												X				
	AH #10 (0-1') 6" BEB	10/22/2018			X			X		1	N	X		X												X				
	AH #10 (1-1.5') 6"BEB	10/22/2018			X			X		1	N	X		X												X				
	AH #11 (0-1')	10/22/2018			X			X		1	N	X		X												X				
	AH #11 (1-1.5')	10/22/2018			X			X		1	N	X		X												X				

Relinquished by: J. Hall	Date: 10.23.18	Time: 1425	Received by: [signature]
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB USE ONLY
Sample Temperature
0.3/0.0
1/8

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

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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Analysis Request of Chain of Custody Record

1003185

Tetra Tech, Inc.

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

Client Name: COG	**Site Manager:** Clair Gonzales
Project Name: Loco Hills SWD #1	
Project Location: (county, state) Eddy CO, NM	**Project #:** 212C-MD-
Invoice to: COG- Ike Taverez	
Receiving Laboratory: Xenco	**Sampler Signature:** Conner Moehring
Comments:	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2018 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - 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
	AH# 11 (2-2.5')	10/22/2018			X			X		1	N														X					
	AH #11 (3-3.5')	10/22/2018			X			X		1	N														X					
	AH #12 (0-1')	10/22/2018			X			X		1	N	X		X											X					
	AH #12 (1-1.5')	10/22/2018			X			X		1	N	X		X											X					
	AH #12 (2-2.5')	10/22/2018			X			X		1	N														X					
	AH #13 (0-1')	10/22/2018			X			X		1	N	X		X											X					
	AH #13 (1-1.5')	10/22/2018			X			X		1	N	X		X											X					
	AH #13 (2-2.5')	10/22/2018			X			X		1	N														X					
	AH #14 (0-1')	10/22/2018			X			X		1	N	X		X											X					
	AH #14 (1-1.5')	10/22/2018			X			X		1	N	X		X											X					

Relinquished by: J Kell	Date: 10.23.18	Time: 1425	Received by: [signature]
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB USE ONLY
Sample Temperature
0.3/0.0
ICB

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

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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Analysis Request of Chain of Custody Record

(003185

Tetra Tech, Inc.

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

Client Name: COG	**Site Manager:** Clair Gonzales
Project Name: Loco Hills SWD #1	
Project Location: (county, state) Eddy CO, NM	**Project #:** 212C-MD-
Invoice to: COG- Ike Taverez	
Receiving Laboratory: Xenco	**Sampler Signature:** Conner Moehring
Comments:	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2018 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	# CONTAINERS	FILTERED (Y/N)
	AH #14 (2-2.5')	10/22/2018			X				X		1	N
	AH #14 (3-3.5')	10/22/2018			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						

Relinquished by: J. Keel	Date: 10.23.18	Time: 1425	Received by: Brian 10/23/18
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

Time: 1425

LAB USE ONLY

Sample Temperature

C-3/0.0 KB

REMARKS:

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

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 10/23/2018 02:25:00 PM

Work Order #: 603185

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 *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: 10/23/2018
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 10/24/2018
Jessica Kramer

Analytical Report 603360

for

Tetra Tech- Midland

Project Manager: Clair Gonzales

Loco Hills SWD #1

212C-MD-01464

29-OCT-18

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)

29-OCT-18

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

Reference: XENCO Report No(s): **603360**
Loco Hills SWD #1
Project Address: Eddy Co, NM

Clair Gonzales:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 603360. 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. 603360 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 603360

Tetra Tech- Midland, Midland, TX

Loco Hills SWD #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
H-1 (0-1')	S	10-23-18 00:00		603360-001
H-2 (0-1')	S	10-23-18 00:00		603360-002
H-3 (0-1')	S	10-23-18 00:00		603360-003
H-4 (0-1')	S	10-23-18 00:00		603360-004
H-5 (0-1')	S	10-23-18 00:00		603360-005
H-6 (0-1')	S	10-23-18 00:00		603360-006
H-7 (0-1')	S	10-23-18 00:00		603360-007
H-8 (0-1')	S	10-23-18 00:00		603360-008
H-9 (0-1')	S	10-23-18 00:00		603360-009
H-10 (0-1')	S	10-23-18 00:00		603360-010
H-11 (0-1')	S	10-23-18 00:00		603360-011
H-12 (0-1')	S	10-23-18 00:00		603360-012
H-13 (0-1')	S	10-23-18 00:00		603360-013
H-14 (0-1')	S	10-23-18 00:00		603360-014

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3067540 BTEX by EPA 8021B

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

Certificate of Analysis Summary 603360

Tetra Tech- Midland, Midland, TX

Project Name: Loco Hills SWD #1

Project Id: 212C-MD-01464
Contact: Clair Gonzales
Project Location: Eddy Co, NM

Date Received in Lab: Wed Oct-24-18 02:18 pm
Report Date: 29-OCT-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	603360-001		603360-002		603360-003		603360-004		603360-005		603360-006	
	Field Id:	H-1 (0-1')		H-2 (0-1')		H-3 (0-1')		H-4 (0-1')		H-5 (0-1')		H-6 (0-1')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-23-18 00:00		Oct-23-18 00:00		Oct-23-18 00:00		Oct-23-18 00:00		Oct-23-18 00:00		Oct-23-18 00:00	
BTEX by EPA 8021B	***Extracted:***	Oct-24-18 16:00		Oct-24-18 16:00		Oct-24-18 16:00		Oct-24-18 16:00		Oct-24-18 16:00		Oct-24-18 16:00	
	Analyzed:	Oct-24-18 18:43		Oct-24-18 19:05		Oct-24-18 19:27		Oct-24-18 19:48		Oct-24-18 20:08		Oct-24-18 20:30	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
m,p-Xylenes		<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Total BTEX		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Chloride by EPA 300	***Extracted:***	Oct-25-18 09:00		Oct-25-18 09:00		Oct-25-18 11:45		Oct-25-18 11:45		Oct-25-18 11:45		Oct-25-18 11:45	
	Analyzed:	Oct-25-18 12:43		Oct-25-18 12:48		Oct-25-18 14:13		Oct-25-18 13:57		Oct-25-18 14:18		Oct-25-18 14:23	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<5.01	5.01	<5.01	5.01	<4.99	4.99	40.1	5.00	<4.99	4.99	<4.96	4.96
TPH by SW8015 Mod	***Extracted:***	Oct-26-18 17:00		Oct-26-18 17:00		Oct-26-18 17:00		Oct-26-18 17:00		Oct-26-18 17:00		Oct-26-18 17:00	
	Analyzed:	Oct-27-18 10:29		Oct-27-18 11:24		Oct-27-18 11:42		Oct-27-18 12:00		Oct-27-18 12:19		Oct-27-18 12:38	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 603360

Tetra Tech- Midland, Midland, TX

Project Name: Loco Hills SWD #1

Project Id: 212C-MD-01464
Contact: Clair Gonzales
Project Location: Eddy Co, NM

Date Received in Lab: Wed Oct-24-18 02:18 pm
Report Date: 29-OCT-18
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	603360-007		603360-008		603360-009		603360-010		603360-011		603360-012	
	Field Id:	H-7 (0-1')		H-8 (0-1')		H-9 (0-1')		H-10 (0-1')		H-11 (0-1')		H-12 (0-1')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-23-18 00:00		Oct-23-18 00:00		Oct-23-18 00:00		Oct-23-18 00:00		Oct-23-18 00:00		Oct-23-18 00:00	
BTEX by EPA 8021B	***Extracted:***	Oct-24-18 16:00		Oct-24-18 16:00		Oct-24-18 16:00		Oct-24-18 16:00		Oct-24-18 16:00		Oct-24-18 16:00	
	Analyzed:	Oct-24-18 20:51		Oct-24-18 21:12		Oct-24-18 21:33		Oct-24-18 21:55		Oct-24-18 22:59		Oct-24-18 23:20	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
m,p-Xylenes		<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Total BTEX		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Chloride by EPA 300	***Extracted:***	Oct-25-18 11:45		Oct-25-18 11:45		Oct-25-18 11:45		Oct-25-18 11:45		Oct-25-18 11:45		Oct-25-18 11:45	
	Analyzed:	Oct-25-18 14:29		Oct-25-18 14:45		Oct-25-18 14:50		Oct-25-18 14:55		Oct-25-18 15:00		Oct-25-18 15:06	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<4.98	4.98	<4.97	4.97	<5.01	5.01	<4.95	4.95	<4.95	4.95	<4.96	4.96
TPH by SW8015 Mod	***Extracted:***	Oct-26-18 17:00		Oct-26-18 17:00		Oct-26-18 17:00		Oct-24-18 15:00		Oct-24-18 15:00		Oct-24-18 15:00	
	Analyzed:	Oct-27-18 12:56		Oct-27-18 13:15		Oct-27-18 13:34		Oct-24-18 18:25		Oct-24-18 18:44		Oct-24-18 19:03	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 603360

Tetra Tech- Midland, Midland, TX

Project Name: Loco Hills SWD #1

Project Id: 212C-MD-01464
Contact: Clair Gonzales
Project Location: Eddy Co, NM

Date Received in Lab: Wed Oct-24-18 02:18 pm
Report Date: 29-OCT-18
Project Manager: Jessica Kramer

Analysis Requested								
	Lab Id:	603360-013		603360-014				
	Field Id:	H-13 (0-1')		H-14 (0-1')				
	Depth:							
	Matrix:	SOIL		SOIL				
	Sampled:	Oct-23-18 00:00		Oct-23-18 00:00				
BTEX by EPA 8021B	***Extracted:***	Oct-24-18 16:00		Oct-24-18 16:00				
	Analyzed:	Oct-24-18 23:41		Oct-25-18 00:03				
	Units/RL:	mg/kg	RL	mg/kg	RL			
Benzene		<0.00200	0.00200	<0.00200	0.00200			
Toluene		<0.00200	0.00200	<0.00200	0.00200			
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200			
m,p-Xylenes		<0.00400	0.00400	<0.00400	0.00400			
o-Xylene		<0.00200	0.00200	<0.00200	0.00200			
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200			
Total BTEX		<0.00200	0.00200	<0.00200	0.00200			
Chloride by EPA 300	***Extracted:***	Oct-25-18 11:45		Oct-25-18 11:45				
	Analyzed:	Oct-25-18 15:27		Oct-25-18 15:32				
	Units/RL:	mg/kg	RL	mg/kg	RL			
Chloride		<4.96	4.96	<4.95	4.95			
TPH by SW8015 Mod	***Extracted:***	Oct-24-18 15:00		Oct-24-18 15:00				
	Analyzed:	Oct-24-18 19:22		Oct-24-18 19:41				
	Units/RL:	mg/kg	RL	mg/kg	RL			
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0			
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0			
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0			
Total TPH		<15.0	15.0	<15.0	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: Loco Hills SWD #1

Work Orders : 603360,

Project ID: 212C-MD-01464

Lab Batch #: 3067454 **Sample:** 603360-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 18:25

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.8	109	70-135	
o-Terphenyl	55.3	49.9	111	70-135	

Lab Batch #: 3067540 **Sample:** 603360-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 18:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0342	0.0300	114	70-130	
4-Bromofluorobenzene	0.0337	0.0300	112	70-130	

Lab Batch #: 3067454 **Sample:** 603360-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 18:44

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.8	99.9	99	70-135	
o-Terphenyl	50.0	50.0	100	70-135	

Lab Batch #: 3067454 **Sample:** 603360-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 19:03

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	99.8	99	70-135	
o-Terphenyl	49.7	49.9	100	70-135	

Lab Batch #: 3067540 **Sample:** 603360-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 19:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0348	0.0300	116	70-130	
4-Bromofluorobenzene	0.0346	0.0300	115	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: Loco Hills SWD #1

Work Orders : 603360,

Project ID: 212C-MD-01464

Lab Batch #: 3067454 **Sample:** 603360-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 19:22

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.7	103	70-135	
o-Terphenyl	51.9	49.9	104	70-135	

Lab Batch #: 3067540 **Sample:** 603360-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 19:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	70-130	
4-Bromofluorobenzene	0.0349	0.0300	116	70-130	

Lab Batch #: 3067454 **Sample:** 603360-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 19:41

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.6	99.9	100	70-135	
o-Terphenyl	50.5	50.0	101	70-135	

Lab Batch #: 3067540 **Sample:** 603360-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 19:48

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	70-130	
4-Bromofluorobenzene	0.0346	0.0300	115	70-130	

Lab Batch #: 3067540 **Sample:** 603360-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 20:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0329	0.0300	110	70-130	
4-Bromofluorobenzene	0.0342	0.0300	114	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: Loco Hills SWD #1

Work Orders : 603360,

Project ID: 212C-MD-01464

Lab Batch #: 3067540 **Sample:** 603360-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 20:30

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	70-130	
4-Bromofluorobenzene	0.0351	0.0300	117	70-130	

Lab Batch #: 3067540 **Sample:** 603360-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 20:51

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0349	0.0300	116	70-130	
4-Bromofluorobenzene	0.0340	0.0300	113	70-130	

Lab Batch #: 3067540 **Sample:** 603360-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 21:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0343	0.0300	114	70-130	
4-Bromofluorobenzene	0.0356	0.0300	119	70-130	

Lab Batch #: 3067540 **Sample:** 603360-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 21:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0350	0.0300	117	70-130	
4-Bromofluorobenzene	0.0347	0.0300	116	70-130	

Lab Batch #: 3067540 **Sample:** 603360-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 21:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0341	0.0300	114	70-130	
4-Bromofluorobenzene	0.0346	0.0300	115	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: Loco Hills SWD #1

Work Orders : 603360,

Project ID: 212C-MD-01464

Lab Batch #: 3067540 **Sample:** 603360-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 22:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0348	0.0300	116	70-130	
4-Bromofluorobenzene	0.0352	0.0300	117	70-130	

Lab Batch #: 3067540 **Sample:** 603360-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 23:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0345	0.0300	115	70-130	
4-Bromofluorobenzene	0.0371	0.0300	124	70-130	

Lab Batch #: 3067540 **Sample:** 603360-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 23:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0348	0.0300	116	70-130	
4-Bromofluorobenzene	0.0365	0.0300	122	70-130	

Lab Batch #: 3067540 **Sample:** 603360-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/25/18 00:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0341	0.0300	114	70-130	
4-Bromofluorobenzene	0.0357	0.0300	119	70-130	

Lab Batch #: 3067861 **Sample:** 603360-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/27/18 10:29

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.9	101	70-135	
o-Terphenyl	53.1	50.0	106	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Loco Hills SWD #1

Work Orders : 603360,

Project ID: 212C-MD-01464

Lab Batch #: 3067861 **Sample:** 603360-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/27/18 11:24

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.6	102	70-135	
o-Terphenyl	51.7	49.8	104	70-135	

Lab Batch #: 3067861 **Sample:** 603360-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/27/18 11:42

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.8	102	70-135	
o-Terphenyl	52.4	49.9	105	70-135	

Lab Batch #: 3067861 **Sample:** 603360-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/27/18 12:00

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.8	109	70-135	
o-Terphenyl	56.5	49.9	113	70-135	

Lab Batch #: 3067861 **Sample:** 603360-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/27/18 12:19

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.8	99.7	97	70-135	
o-Terphenyl	49.8	49.9	100	70-135	

Lab Batch #: 3067861 **Sample:** 603360-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/27/18 12:38

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.4	99.9	92	70-135	
o-Terphenyl	46.8	50.0	94	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: Loco Hills SWD #1

Work Orders : 603360,

Project ID: 212C-MD-01464

Lab Batch #: 3067861 **Sample:** 603360-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/27/18 12:56

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.8	99.6	91	70-135	
o-Terphenyl	47.8	49.8	96	70-135	

Lab Batch #: 3067861 **Sample:** 603360-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/27/18 13:15

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.4	99.7	94	70-135	
o-Terphenyl	48.5	49.9	97	70-135	

Lab Batch #: 3067861 **Sample:** 603360-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/27/18 13:34

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.2	99.9	87	70-135	
o-Terphenyl	42.7	50.0	85	70-135	

Lab Batch #: 3067454 **Sample:** 7664784-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/24/18 11:13

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.0	100	93	70-135	
o-Terphenyl	48.2	50.0	96	70-135	

Lab Batch #: 3067540 **Sample:** 7664851-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/24/18 18:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0349	0.0300	116	70-130	
4-Bromofluorobenzene	0.0323	0.0300	108	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: Loco Hills SWD #1

Work Orders : 603360,

Project ID: 212C-MD-01464

Lab Batch #: 3067861 **Sample:** 7665037-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/27/18 09:35

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	55.8	50.0	112	70-135	

Lab Batch #: 3067454 **Sample:** 7664784-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/24/18 11:33

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	52.4	50.0	105	70-135	

Lab Batch #: 3067540 **Sample:** 7664851-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/24/18 16:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0241	0.0300	80	70-130	
4-Bromofluorobenzene	0.0289	0.0300	96	70-130	

Lab Batch #: 3067861 **Sample:** 7665037-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/27/18 09:53

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	56.5	50.0	113	70-135	

Lab Batch #: 3067454 **Sample:** 7664784-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/24/18 11:52

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	50.7	50.0	101	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: Loco Hills SWD #1

Work Orders : 603360,

Project ID: 212C-MD-01464

Lab Batch #: 3067540 **Sample:** 7664851-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/24/18 16:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0263	0.0300	88	70-130	
4-Bromofluorobenzene	0.0257	0.0300	86	70-130	

Lab Batch #: 3067861 **Sample:** 7665037-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/27/18 10:11

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	100	128	70-135	
o-Terphenyl	55.6	50.0	111	70-135	

Lab Batch #: 3067454 **Sample:** 602982-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 12:32

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.7	115	70-135	
o-Terphenyl	47.2	49.9	95	70-135	

Lab Batch #: 3067540 **Sample:** 603360-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 17:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	70-130	
4-Bromofluorobenzene	0.0386	0.0300	129	70-130	

Lab Batch #: 3067861 **Sample:** 603360-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/27/18 10:47

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	55.5	50.0	111	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Loco Hills SWD #1

Work Orders : 603360,

Project ID: 212C-MD-01464

Lab Batch #: 3067454 **Sample:** 602982-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/24/18 12:52

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	99.7	130	70-135	
o-Terphenyl	62.8	49.9	126	70-135	

Lab Batch #: 3067861 **Sample:** 603360-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/27/18 11:05

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	99.8	121	70-135	
o-Terphenyl	53.0	49.9	106	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: Loco Hills SWD #1

Work Order #: 603360 **Project ID:** 212C-MD-01464

Analyst: ALJ **Date Prepared:** 10/24/2018 **Date Analyzed:** 10/24/2018

Lab Batch ID: 3067540 **Sample:** 7664851-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.100	0.118	118	0.100	0.114	114	3	70-130	35	
Toluene	<0.00200	0.100	0.100	100	0.100	0.0937	94	7	70-130	35	
Ethylbenzene	<0.00200	0.100	0.117	117	0.100	0.113	113	3	70-130	35	
m,p-Xylenes	<0.00400	0.200	0.223	112	0.200	0.240	120	7	70-130	35	
o-Xylene	<0.00200	0.100	0.111	111	0.100	0.109	109	2	70-130	35	

Analyst: CHE **Date Prepared:** 10/25/2018 **Date Analyzed:** 10/25/2018

Lab Batch ID: 3067559 **Sample:** 7664807-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	271	108	250	270	108	0	90-110	20	

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

BS / BSD Recoveries

Project Name: Loco Hills SWD #1

Work Order #: 603360 **Project ID:** 212C-MD-01464

Analyst: CHE **Date Prepared:** 10/25/2018 **Date Analyzed:** 10/25/2018

Lab Batch ID: 3067614 **Sample:** 7664831-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	268	107	250	270	108	1	90-110	20	

Analyst: ARM **Date Prepared:** 10/24/2018 **Date Analyzed:** 10/24/2018

Lab Batch ID: 3067454 **Sample:** 7664784-1-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	957	96	1000	977	98	2	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1060	106	1000	1060	106	0	70-135	20	

Analyst: ARM **Date Prepared:** 10/26/2018 **Date Analyzed:** 10/27/2018

Lab Batch ID: 3067861 **Sample:** 7665037-1-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	1120	112	1000	1090	109	3	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1140	114	1000	1120	112	2	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 Recoveries

Project Name: Loco Hills SWD #1

Work Order #: 603360

Lab Batch #: 3067540 **Project ID:** 212C-MD-01464

Date Analyzed: 10/24/2018 **Date Prepared:** 10/24/2018 **Analyst:** ALJ

QC- Sample ID: 603360-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Benzene	<0.00200	0.100	0.0895	90	70-130	
Toluene	<0.00200	0.100	0.0746	75	70-130	
Ethylbenzene	<0.00200	0.100	0.0842	84	70-130	
m,p-Xylenes	<0.00400	0.200	0.173	87	70-130	
o-Xylene	<0.00200	0.100	0.0850	85	70-130	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: Loco Hills SWD #1

Work Order # : 603360 **Project ID:** 212C-MD-01464

Lab Batch ID: 3067559 **QC- Sample ID:** 603144-006 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/25/2018 **Date Prepared:** 10/25/2018 **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	<0.922	269	288	107	269	281	104	2	90-110	20	

Lab Batch ID: 3067559 **QC- Sample ID:** 603232-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/25/2018 **Date Prepared:** 10/25/2018 **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	37.9	248	296	104	248	294	103	1	90-110	20	

Lab Batch ID: 3067614 **QC- Sample ID:** 603127-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/25/2018 **Date Prepared:** 10/25/2018 **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	173	248	434	105	248	437	106	1	90-110	20	

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

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

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: Loco Hills SWD #1

Work Order # : 603360 **Project ID:** 212C-MD-01464

Lab Batch ID: 3067614 **QC- Sample ID:** 603360-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/25/2018 **Date Prepared:** 10/25/2018 **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	40.1	250	301	104	250	299	104	1	90-110	20	

Lab Batch ID: 3067454 **QC- Sample ID:** 602982-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/24/2018 **Date Prepared:** 10/24/2018 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<7.98	997	925	93	997	1030	103	11	70-135	20	
Diesel Range Organics (DRO)	9.06	997	968	96	997	1070	106	10	70-135	20	

Lab Batch ID: 3067861 **QC- Sample ID:** 603360-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/27/2018 **Date Prepared:** 10/26/2018 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1060	106	998	1030	103	3	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1110	111	998	1090	109	2	70-135	20	

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

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

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

Analysis Request of Chain of Custody Record

603360

Tetra Tech, Inc.

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

Client Name: COG	**Site Manager:** Clair Gonzales
Project Name: Loco Hills SWD #1	
Project Location: (county, state) Eddy CO, NM	**Project #:** 212C-MD-01464
Invoice to: COG- Ike Taverez	
Receiving Laboratory: Xenco	**Sampler Signature:** Conner Moehring
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		# 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
	H-1 (0-1')	10/23/2018			X				X			1	N	X		X												X							
	H-2 (0-1')	10/23/2018			X				X			1	N	X		X												X							
	H-3 (0-1')	10/23/2018			X				X			1	N	X		X												X							
	H-4 (0-1')	10/23/2018			X				X			1	N	X		X												X							
	H-5 (0-1')	10/23/2018			X				X			1	N	X		X												X							
	H-6 (0-1')	10/23/2018			X				X			1	N	X		X												X							
	H-7 (0-1')	10/23/2018			X				X			1	N	X		X												X							
	H-8 (0-1')	10/23/2018			X				X			1	N	X		X												X							
	H-9 (0-1')	10/23/2018			X				X			1	N	X		X												X							
	H-10 (0-1')	10/23/2018			X				X			1	N	X		X												X							

ANALYSIS REQUEST
(Circle or Specify Method No.)

Final 1.000

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Relinquished by: Conner Moehring	Date: 10/24/18	Time:	Received by:	Date: 10/24/18	Time: 1418
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature 1.2/0.0 RA

REMARKS:

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

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Analysis Request of Chain of Custody Record

1003360

Tetra Tech, Inc.

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

Client Name: COG	**Site Manager:** Clair Gonzales
Project Name: Loco Hills SWD #1	
Project Location: (county, state) Eddy CO, NM	**Project #:** 212C-MD-01464
Invoice to: COG- Ike Taverez	
Receiving Laboratory: Xenco	**Sampler Signature:** Conner Moehring
Comments:	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2018 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - 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
	H-11 (0-1')	10/23/2018			X			X		1	N	X		X												X								
	H-12 (0-1')	10/23/2018			X			X		1	N	X		X												X								
	H-13 (0-1')	10/23/2018			X			X		1	N	X		X												X								
	H-14 (0-1')	10/23/2018			X			X		1	N	X		X												X								

Relinquished by: Conner Moehring Date: 10/24/18 Time:
Received by: Date: 10/24/18 Time: 1418

Relinquished by: Date: Time:
Received by: Date: Time:

Relinquished by: Date: Time:
Received by: Date: Time:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB USE ONLY
Sample Temperature 1.2/0.0 KB

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

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Final 1.000

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 10/24/2018 02:18:00 PM

Work Order #: 603360

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.2
#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: 10/24/2018

Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 10/25/2018

Jessica Kramer

Appendix D

Eddy Area, New Mexico

KM—Kermit-Berino fine sands, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1w4q
Elevation: 3,100 to 4,200 feet
Mean annual precipitation: 10 to 14 inches
Mean annual air temperature: 60 to 64 degrees F
Frost-free period: 190 to 230 days
Farmland classification: Not prime farmland

Map Unit Composition

Kermit and similar soils: 50 percent
Berino and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kermit

Setting

Landform: Alluvial fans, plains
Landform position (three-dimensional): Talf, rise
Down-slope shape: Linear, convex
Across-slope shape: Linear
Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 7 inches: fine sand
H2 - 7 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very high (20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: Deep Sand (R042XC005NM)
Hydric soil rating: No

Description of Berino

Setting

Landform: Fan piedmonts, plains
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 17 inches: fine sand
H2 - 17 to 50 inches: fine sandy loam
H3 - 50 to 58 inches: loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: Loamy Sand (R042XC003NM)
Hydric soil rating: No

Minor Components

Active dune land

Percent of map unit:
Hydric soil rating: No

Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 14, Sep 12, 2018