

# SITE INFORMATION

Report Type: Closure Report      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:

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

## Official Communication:

<b>Name:</b>	Ike Tavarez		Clair Gonzales
<b>Company:</b>	COG Operating, LLC		Tetra Tech
<b>Address:</b>	One Concho Center		901 West Wall Street
	600 W. Illinois Ave.		Suite 100
<b>City:</b>	Midland Texas, 79701		Midland, Texas
<b>Phone number:</b>	(432) 686-3023		(432) 687-8110
<b>Fax:</b>	(432) 684-7137		
<b>Email:</b>	<a href="mailto:itavarez@concho.com">itavarez@concho.com</a>		<a href="mailto:Clair.Gonzales@tetrattech.com">Clair.Gonzales@tetrattech.com</a>

## Site Characterization

<b>Depth to Groundwater:</b>	225' below surface
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## Recommended Remedial Action Levels (RRALs)

<b>Benzene</b>	<b>Total BTEX</b>	<b>TPH (GRO+DRO)</b>	<b>TPH (GRO+DRO+MRO)</b>	<b>Chlorides</b>
10 mg/kg	50 mg/kg	1,000 mg/kg	2,500 mg/kg	20,000 mg/kg

**PGQ08-190809-C-1410**



**TETRA TECH**

August 8, 2019

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

**Re: Closure Report 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 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,

**Tetra Tech**

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

Tel 432.682.4559 Fax 432.682.3946 [www.tetratech.com](http://www.tetratech.com)



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 RRLs. 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).

### **Reclamation Activities**

All samples collected were below the Table 1 closure criteria and thus no remediation was performed at the site.

### Restoration and Reclamation

Based on the approved work plan, dated January 10, 2019, Tetra Tech personnel were onsite to perform and supervise the restoration and reclamation activities on June 25<sup>th</sup>-27<sup>th</sup>, 2019. The release areas in the pasture were excavated to between 2.0' and 4.0' below surface. A total of twenty (20) bottom hole samples (Bottom Hole-1 through Bottom Hole-20) and a total of sixteen (16) sidewall samples (WSW-1, NSW-1 through NSW-7, SSW-1 through SSW-7, and ESW-1) were collected. The area of Bottom Hole-20 was washed out to 2.0' below surface due to recent rains. Additionally, deeper bottom hole samples were collected below the excavation bottoms in order to ensure the top 4.0' of soils were below thresholds. Selected samples were 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 2. The sample locations and excavation depths are shown on Figure 4.

Referring to Table 2, none of the samples analyzed showed benzene, total BTEX, or TPH concentrations above the reclamation thresholds. The samples collected at bottom hole (Bottom Hole-18) showed a chloride concentration of 224 mg/kg at the 2.0' excavation bottom, 64.0 mg/kg at 1.0' below the excavation bottom, and 2,240 mg/kg at 2.0' below the excavation





bottom (4.0' below surface). Additionally, the area of bottom hole (Bottom Hole-20) showed a chloride concentration of 48.0 mg/kg at the 2.0' excavation bottom, 96.0 mg/kg at 1.0' below the excavation bottom, and 768 mg/kg at 2.0' below the excavation bottom (4.0' below surface). The areas of Bottom Holes 18 and Bottom Hole 20 showed chloride concentrations above 600 mg/kg at 4.0' below surface, however the top 4.0' of the soil profile shows chloride concentrations below the thresholds of 600 mg/kg. Additionally, none of the remaining confirmation samples collected showed any benzene, total BTEX, TPH, or chloride concentrations above the reclamation thresholds in top 4.0' in the soil profile.

Approximately 435 cubic yards of material were hauled for proper disposal. Once the excavation activities were completed, the areas were backfilled with clean material to surface grade.

Reseeding will be performed in June 2020 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**

Based on the restoration and reclamation activities performed, COG requests closure of this spill issue. 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, P.G.  
Project Manager

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

## Figures



**LEGEND**

● SITE LOCATION

**FIGURE 1**

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

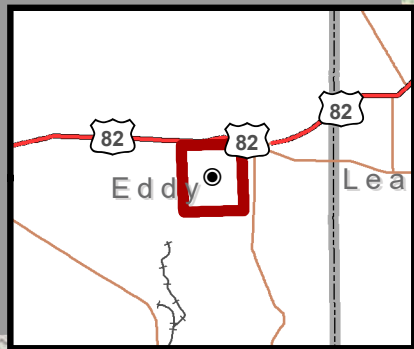
OVERVIEW MAP

EDDY COUNTY, NEW MEXICO

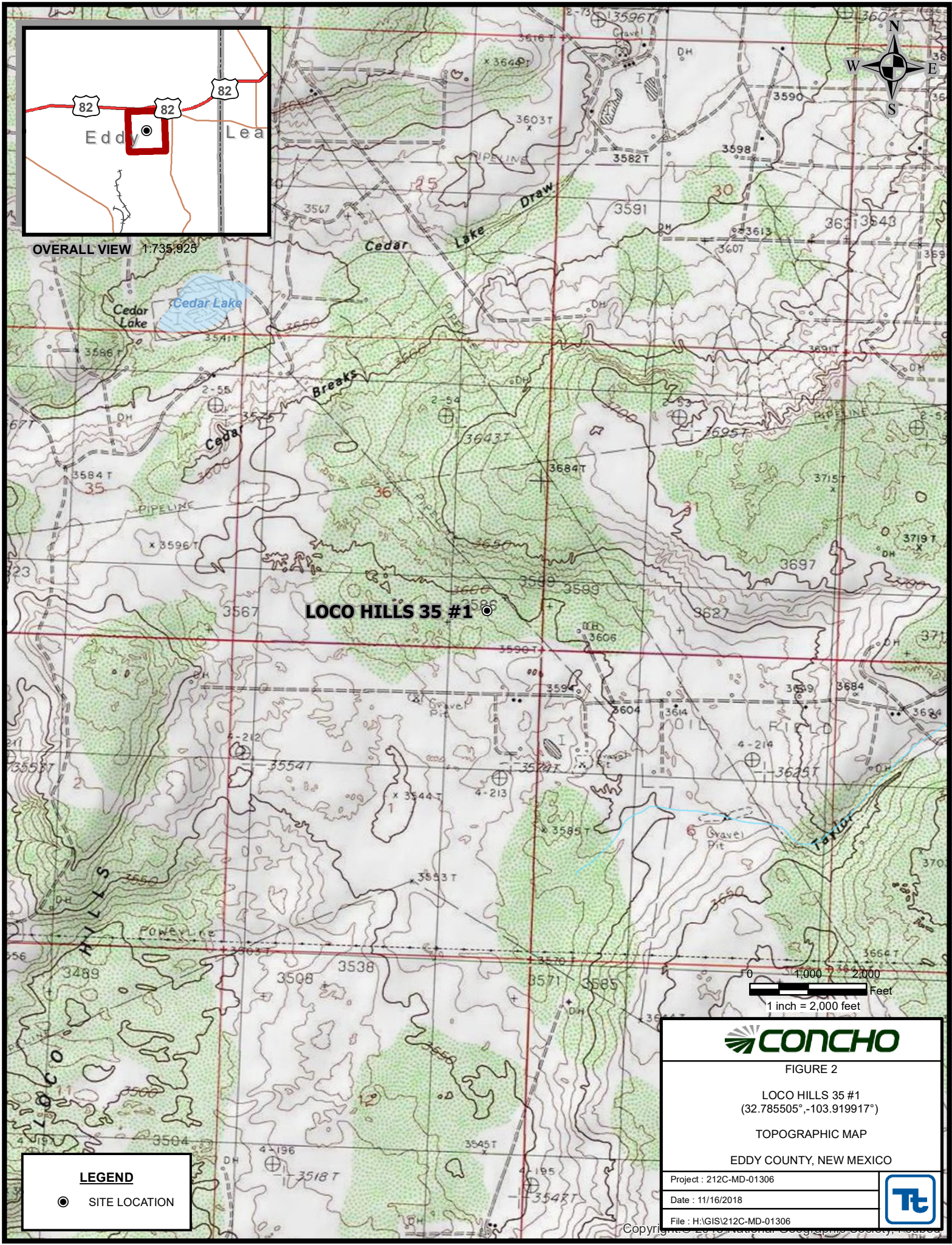
Project : 212C-MD-01464	
Date : 01/09/2018	
File : H:\GIS\212C-MD-01464	

Sources: Esri, HERE, Garmin, Japan, METI, Esri China (Hong Kong), Swatch, Bing, OpenStreetMap contributors, and the GIS User Community





OVERALL VIEW 1:735,925



**LOCO HILLS 35 #1**



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



**LEGEND**

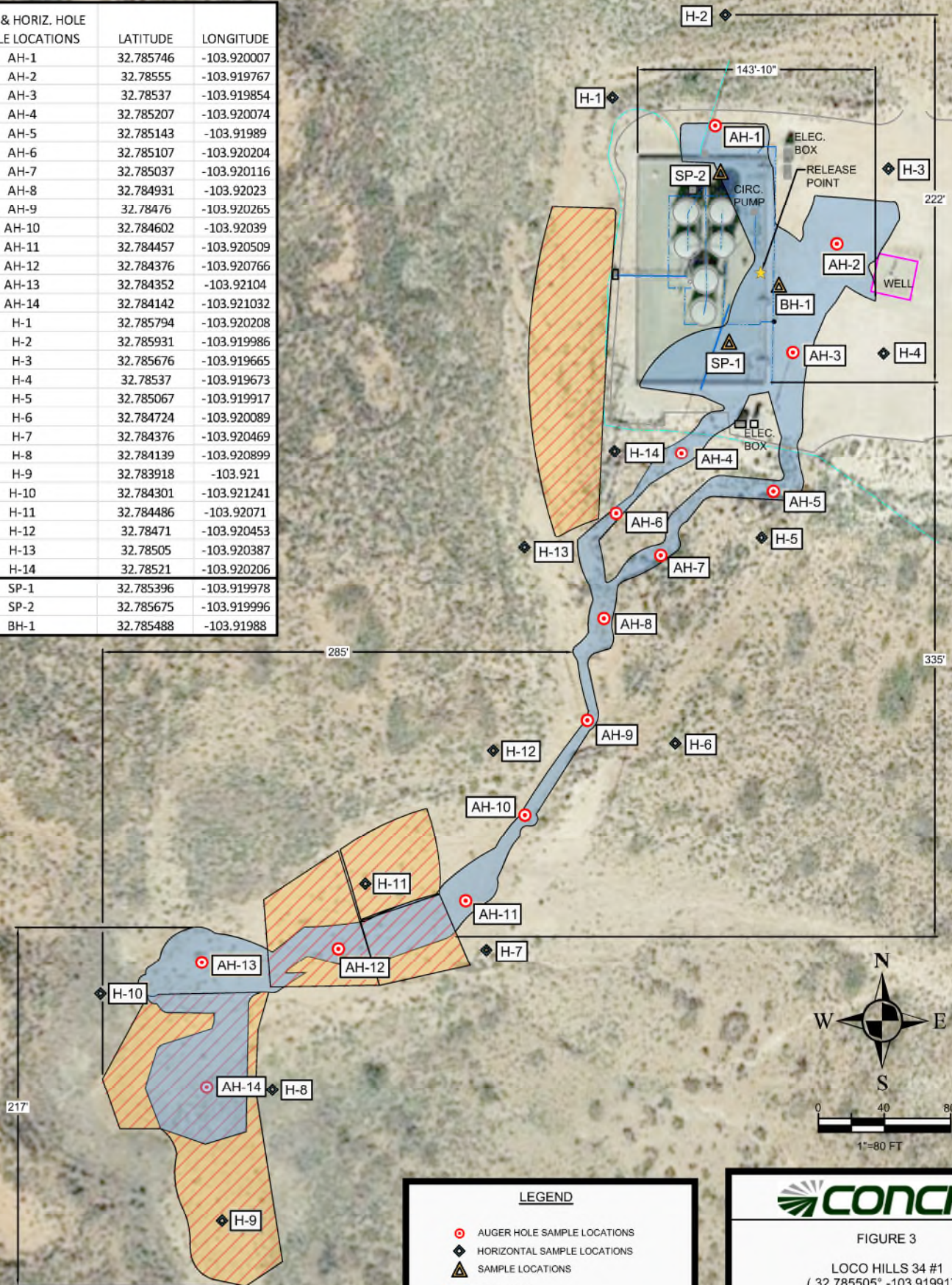
● SITE LOCATION



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



FIGURE 3

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

SPILL ASSESSMENT MAP  
EDDY COUNTY, NEW MEXICO

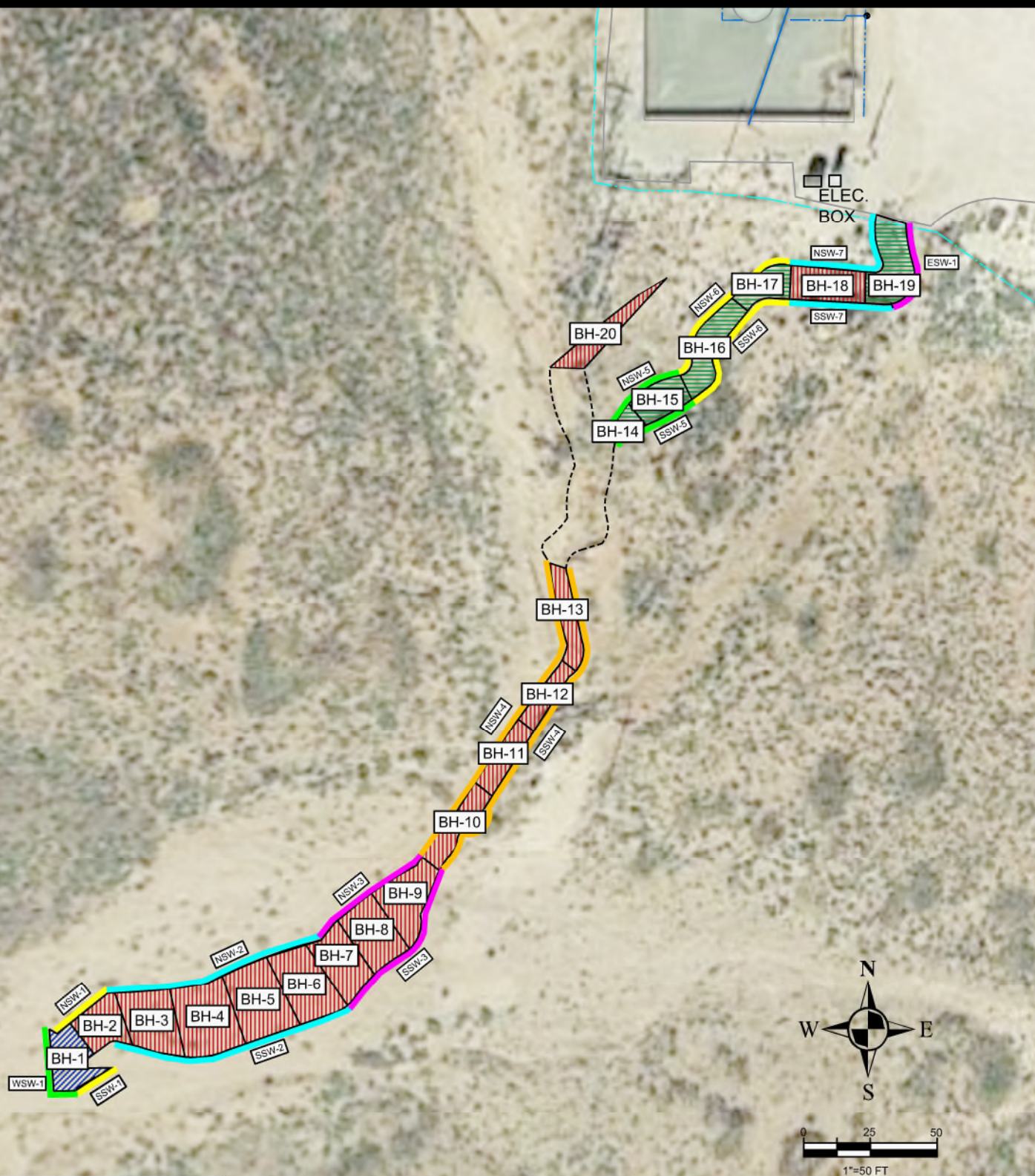
Project: 212C-MD-01464

Date: 01/09/2019

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#### LEGEND

BH = BOTTOM HOLES

2.0' EXCAVATED DEPTH AREAS

3.0' EXCAVATED DEPTH AREAS

4.0' EXCAVATED DEPTH AREAS

EQUIPMENT

EQUIPMENT

STEEL PIPE

SIDE WALL DESIGNATIONS



FIGURE 4

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

EXCAVATION AREA & DEPTH MAP  
EDDY COUNTY, NEW MEXICO

Project: 212C-MD-01815

Date: 08/08/2019

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



## 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						
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
<b>Facility Area</b>																
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
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
<b>Horizontal Delineation</b>																
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

BEB Below Excavation Bottom

( - ) Not Analyzed

  Proposed Excavation Depths

**Table 2**  
**COG**  
**Loco Hills SWD #1**  
**Eddy County, New Mexico**

[illegible]

**Table 2**  
**COG**  
**Loco Hills SWD #1**  
**Eddy County, New Mexico**

Sample ID	Sample Date	Sample Depth (ft)	Excavation Depth (ft)	Sample Depth Below Surface (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						
Bottom Hole-17	6/26/2019	0	4	4			<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	48.0
Bottom Hole-18	6/27/2019	0	2	2	X		<10.0	13.4	13.4	<10.0	13.4	<0.025	<0.025	<0.025	<0.075	<0.150	224
	6/27/2019	1	"	3	X												64.0
	6/27/2019	2	"	4	X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.025	<0.025	<0.025	<0.075	<0.150	2,240
Bottom Hole-19	6/27/2019	4	2	2	X												160
Bottom Hole-20	6/27/2019	0	2	2			<10.0	<10.0	<10.0	<10.0	<10.0	<0.025	<0.025	<0.025	<0.075	<0.150	48.0
	6/27/2019	1	"	3	X												96.0
	6/27/2019	2	"	4	X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.025	<0.025	<0.025	<0.075	<0.150	768
WSW-1	6/25/2019	3			X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	16.0
NSW-1	6/25/2019	3			X												16.0
NSW-2	6/25/2019	2			X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	16.0
NSW-3	6/26/2019	2			X												<16
NSW-4	6/26/2019	2			X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	64.0
NSW-5	6/26/2019	4			X												32.0
NSW-6	6/26/2019	4			X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	80.0
NSW-7	6/27/2019	4			X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.025	<0.025	<0.025	<0.075	<0.150	64.0
SSW-1	6/25/2019	3			X												16.0
SSW-2	6/25/2019	2			X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	48.0
SSW-3	6/26/2019	2			X												18.0
SSW-4	6/26/2019	2			X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	32.0
SSW-5	6/26/2019	4			X												128
SSW-6	6/26/2019	4			X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	96.0
SSW-7	6/25/2019	4			X												64.0
ESW-1	6/25/2019	4			X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.025	<0.025	<0.025	<0.075	<0.150	<16

BEB Below Excavation Bottom  
 ( - ) 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



TETRA TECH



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

Concho Loco Hills 35  
Eddy County, New Mexico



Facing West, viewing bottomhole-17 through bottomhole-19



Facing Southwest, viewing bottomhole-16 through bottomhole-14



Concho Loco Hills 35  
Eddy County, New Mexico



Facing East, viewing bottomhole-6 through bottomhole-9



Facing North, viewing bottomhole-10 through bottomhole-13

## Appendix A

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

State of New Mexico  
Energy Minerals and Natural  
Resources 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	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

### Location of Release Source

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

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)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Incident ID	
District RP	
Facility ID	
Application ID	

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

### Initial Response

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

<input type="checkbox"/> The source of the release has been stopped.	
<input type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> 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: _____	Title: _____
Signature: <u>Delann Grant</u>	Date: _____
email: _____	Telephone: _____
<b><u>OCD Only</u></b>	
Received by: _____	Date: _____

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?	_____ (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input type="checkbox"/> 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?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input type="checkbox"/> 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.

<p><b>Characterization Report Checklist:</b> <i>Each of the following items must be included in the report.</i></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.</li><li><input type="checkbox"/> Field data</li><li><input type="checkbox"/> Data table of soil contaminant concentration data</li><li><input type="checkbox"/> Depth to water determination</li><li><input type="checkbox"/> Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release</li><li><input type="checkbox"/> Boring or excavation logs</li><li><input type="checkbox"/> Photographs including date and GIS information</li><li><input type="checkbox"/> Topographic/Aerial maps</li><li><input type="checkbox"/> Laboratory data including chain of custody</li></ul>
--

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.



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: \_\_\_\_\_ Title: \_\_\_\_\_

Signature:  \_\_\_\_\_ Date: \_\_\_\_\_

email: \_\_\_\_\_ Telephone: \_\_\_\_\_

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

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: \_\_\_\_\_ Title: \_\_\_\_\_

Signature:  \_\_\_\_\_ Date: \_\_\_\_\_

email: \_\_\_\_\_ Telephone: \_\_\_\_\_

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

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

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	
District RP	
Facility ID	
Application ID	

## Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

**Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.***

- ☐ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☐ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☐ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☐ Description of remediation activities

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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

Signature:  \_\_\_\_\_ Date: \_\_\_\_\_

email: \_\_\_\_\_ Telephone: \_\_\_\_\_

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

## 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	13
19	20	21	22	23 dry	24
110	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
18	17	16	15	14 113	13 288
19	20	21	22	23 314	24 299
30	29	28	27	26	25
31	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	23	24
30	29 210	28	27 80	26	25
31	208	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	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
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	23	24
30	29	28	27	26	25
31	32	33	34	35	36

18 South			31 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15 98	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

**88** New Mexico State Engineers Well Reports

**105** USGS Well Reports

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

**34** NMOCD - Groundwater Data

**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 Q Q	Sec	Tws	Rng	X	Y	DepthWell	DepthWater	Water Column
<a href="#">RA 11914 POD1</a>		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

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

10/30/18 8:14 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER



[USGS Home](#)  
[Contact USGS](#)  
[Search USGS](#)

## National Water Information System: Web Interface

[USGS Water Resources](#)

Data Category:

Groundwater

Geographic Area:

New Mexico

GO

Click to hide News Bulletins

- [Please see news on new formats](#)
- **As of 10 a.m. Monday, October 29, approximately 9 percent of USGS streamgages are still not transmitting due to an issue with the telemetry system that records and transmits streamgage data. The USGS continues to work on prioritized streamgages, those in geographic areas expected to receive rainfall over the next few days, replacing the component that transmits the data as quickly as possible. The USGS is working hand-in-hand with the manufacturer to find a solution to the transmitter issue.**

**The data on the streamgages is being preserved for download and has not been lost. Read [more](#)**

- [Full News](#) 

Groundwater levels for New Mexico

Click to hide state-specific text

## Search Results -- 1 sites found

site\_no list =

- 324405103565801

**Minimum number of levels = 1**

[Save file of selected sites](#) to local disk for future upload

## USGS 324405103565801 18S.30E.22.2220

Available data for this site

Groundwater: Field measurements

GO

Eddy County, New Mexico

Hydrologic Unit Code --

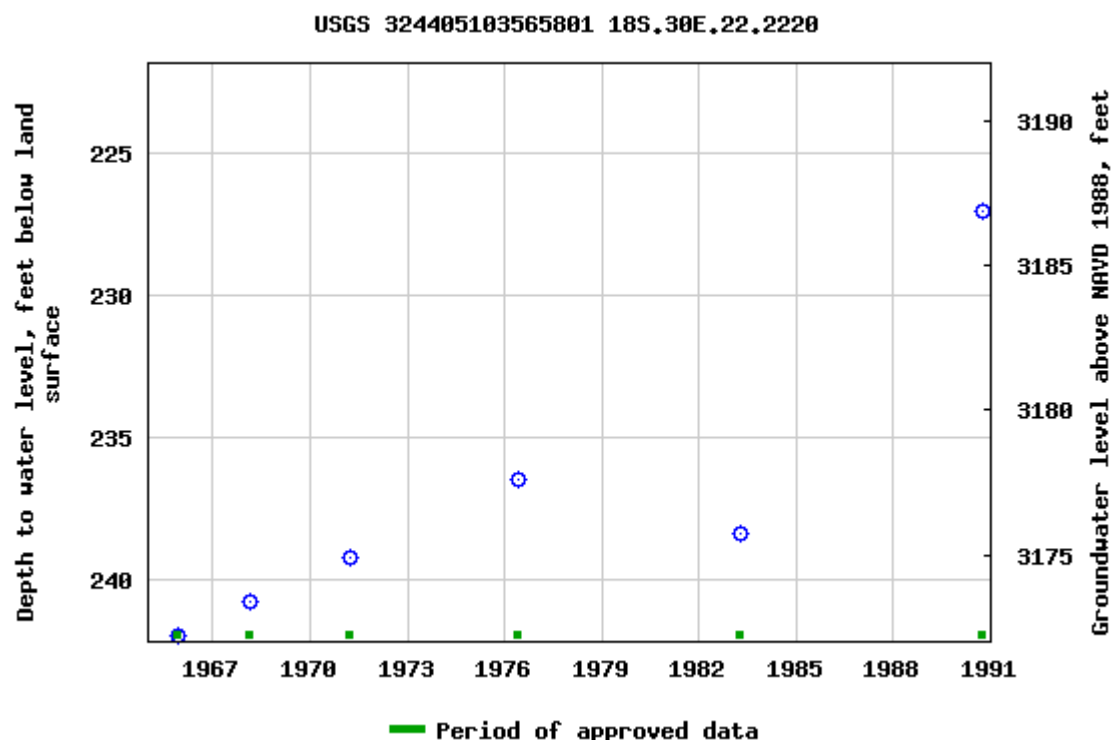
Latitude 32°44'05", Longitude 103°56'58" NAD27

Land-surface elevation 3,414 feet above NAVD88

This well is completed in the Chinle Formation (231CHNL) local aquifer.

### Output formats

<a href="#">Table of data</a>
<a href="#">Tab-separated data</a>
<a href="#">Graph of data</a>
<a href="#">Reselect period</a>



Breaks in the plot represent a gap of at least one year between field measurements.

[Download a presentation-quality graph](#)

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[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)

**Title: Groundwater for New Mexico: Water Levels**





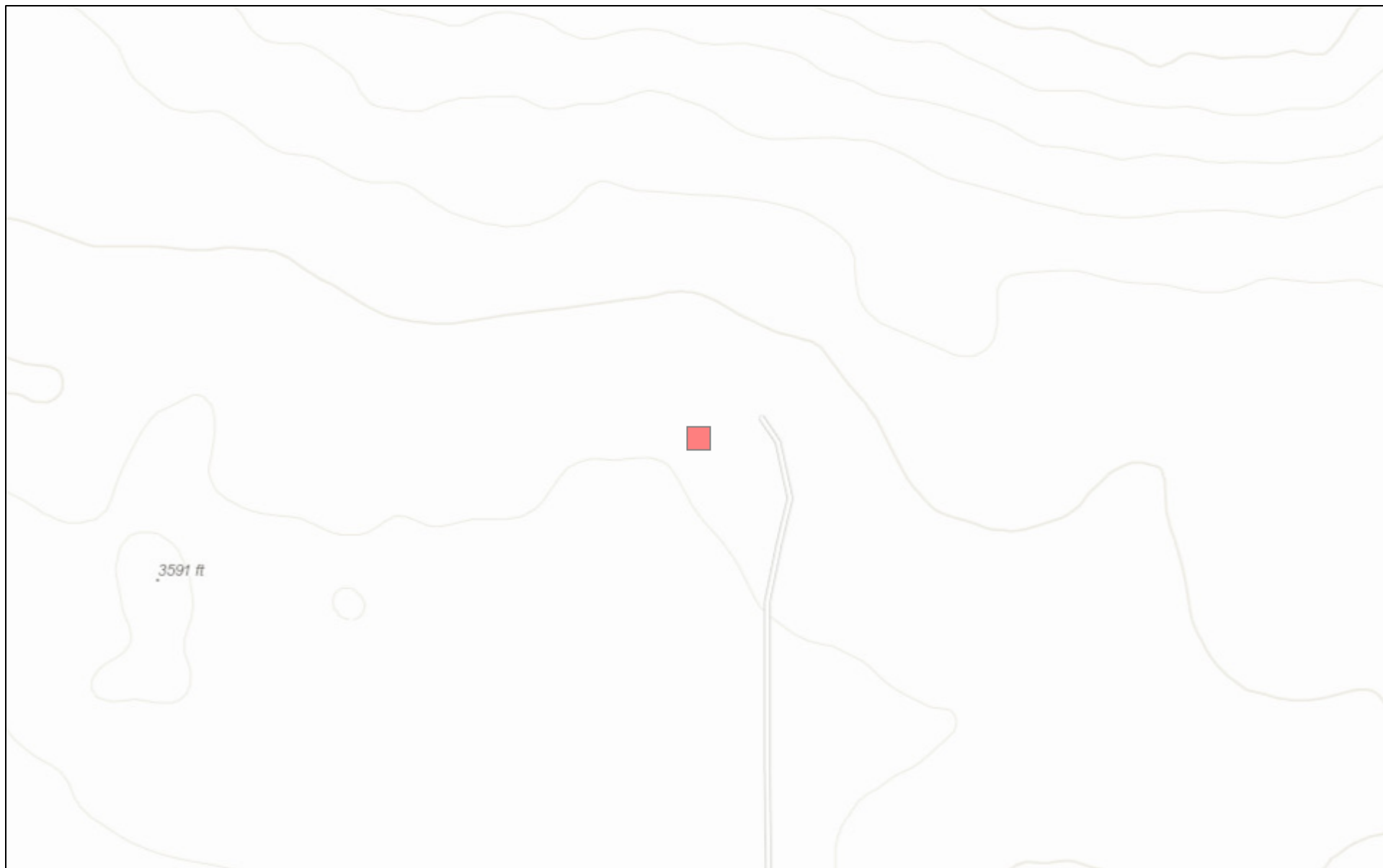
**URL: <https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?>**

Page Contact Information: [New Mexico Water Data Maintainer](#)

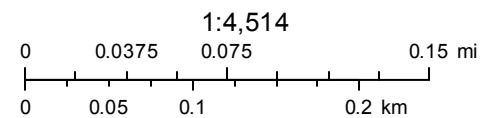
Page Last Modified: 2018-10-30 10:17:58 EDT

1.1 0.96 nadww01

# New Mexico NFHL Data



January 4, 2019



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

nmflood.org is made possible through a collaboration with NMDHSEM, EDAC, and FEMA  
This is a non-regulatory product for informational use only. Please consult your local floodplain administrator for further information.

Loco Hills SWD 35-1

**Legend**

- HIGH
- LOW
- MEDIUM

32.787549 -103.91988

Loco Hills 82

249  
Maljamar

529

Bluestem Rd

E 38

W Carlsbad Hwy

Google Earth

© 2018 Google



9 mi

## Appendix C





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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June 27, 2019

MIKE CARMONA

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: LOCO HILLS 35

Enclosed are the results of analyses for samples received by the laboratory on 06/26/19 16:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received:	06/26/2019	Sampling Date:	06/25/2019
Reported:	06/27/2019	Sampling Type:	Soil
Project Name:	LOCO HILLS 35	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 1 COMP 3' (H902194-01)**

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/27/2019	ND	1.80	90.2	2.00	2.40	
Toluene*	<0.100	0.100	06/27/2019	ND	1.79	89.5	2.00	2.48	
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.70	85.0	2.00	0.508	
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.15	85.8	6.00	0.0404	
Total BTEX	<0.350	0.350	06/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 125 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	06/27/2019	ND	400	100	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/27/2019	ND	199	99.7	200	5.39	
DRO >C10-C28*	<10.0	10.0	06/27/2019	ND	188	94.2	200	1.66	
EXT DRO >C28-C36	<10.0	10.0	06/27/2019	ND					

Surrogate: 1-Chlorooctane 84.4 % 41-142

Surrogate: 1-Chlorooctadecane 90.2 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/25/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BOTTOM HOLE - 2 COMP 2' (H902194-02)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	06/27/2019	ND	400	100	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/25/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BOTTOM HOLE - 3 COMP 2' (H902194-03)**

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/27/2019	ND	1.80	90.2	2.00	2.40	
Toluene*	<0.050	0.050	06/27/2019	ND	1.79	89.5	2.00	2.48	
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.70	85.0	2.00	0.508	
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.15	85.8	6.00	0.0404	
Total BTX	<0.300	0.300	06/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	06/27/2019	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/27/2019	ND	199	99.7	200	5.39	
DRO >C10-C28*	<10.0	10.0	06/27/2019	ND	188	94.2	200	1.66	
EXT DRO >C28-C36	<10.0	10.0	06/27/2019	ND					

Surrogate: 1-Chlorooctane 115 % 41-142

Surrogate: 1-Chlorooctadecane 119 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/25/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BOTTOM HOLE - 4 COMP 2' (H902194-04)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	06/27/2019	ND	400	100	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/25/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BOTTOM HOLE - 5 COMP 2' (H902194-05)**

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/27/2019	ND	1.80	90.2	2.00	2.40	
Toluene*	<0.050	0.050	06/27/2019	ND	1.79	89.5	2.00	2.48	
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.70	85.0	2.00	0.508	
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.15	85.8	6.00	0.0404	
Total BTX	<0.300	0.300	06/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	06/27/2019	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/27/2019	ND	199	99.7	200	5.39	
DRO >C10-C28*	<10.0	10.0	06/27/2019	ND	188	94.2	200	1.66	
EXT DRO >C28-C36	<10.0	10.0	06/27/2019	ND					

Surrogate: 1-Chlorooctane 120 % 41-142

Surrogate: 1-Chlorooctadecane 123 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received:	06/26/2019	Sampling Date:	06/26/2019
Reported:	06/27/2019	Sampling Type:	Soil
Project Name:	LOCO HILLS 35	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 6 COMP 2' (H902194-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	06/27/2019	ND	400	100	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/26/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BOTTOM HOLE - 7 COMP 2' (H902194-07)**

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/27/2019	ND	1.80	90.2	2.00	2.40		
Toluene*	<0.050	0.050	06/27/2019	ND	1.79	89.5	2.00	2.48		
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.70	85.0	2.00	0.508		
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.15	85.8	6.00	0.0404		
Total BTEx	<0.300	0.300	06/27/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	06/27/2019	ND	400	100	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/27/2019	ND	199	99.7	200	5.39	
DRO >C10-C28*	<10.0	10.0	06/27/2019	ND	188	94.2	200	1.66	
EXT DRO >C28-C36	<10.0	10.0	06/27/2019	ND					

Surrogate: 1-Chlorooctane 120 % 41-142

Surrogate: 1-Chlorooctadecane 123 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/26/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BOTTOM HOLE - 8 COMP 2' (H902194-08)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	06/27/2019	ND	400	100	400	0.00	

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received:	06/26/2019	Sampling Date:	06/26/2019
Reported:	06/27/2019	Sampling Type:	Soil
Project Name:	LOCO HILLS 35	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 9 COMP 2' (H902194-09)**

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/27/2019	ND	1.80	90.2	2.00	2.40	
Toluene*	<0.050	0.050	06/27/2019	ND	1.79	89.5	2.00	2.48	
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.70	85.0	2.00	0.508	
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.15	85.8	6.00	0.0404	
Total BTX	<0.300	0.300	06/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	06/27/2019	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/27/2019	ND	199	99.7	200	5.39	
DRO >C10-C28*	<10.0	10.0	06/27/2019	ND	188	94.2	200	1.66	
EXT DRO >C28-C36	<10.0	10.0	06/27/2019	ND					

Surrogate: 1-Chlorooctane 116 % 41-142

Surrogate: 1-Chlorooctadecane 120 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/26/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BOTTOM HOLE - 10 COMP 2' (H902194-10)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>176</b>	16.0	06/27/2019	ND	400	100	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received:	06/26/2019	Sampling Date:	06/26/2019
Reported:	06/27/2019	Sampling Type:	Soil
Project Name:	LOCO HILLS 35	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 11 COMP 2' (H902194-11)**

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/27/2019	ND	1.80	90.2	2.00	2.40		
Toluene*	<0.050	0.050	06/27/2019	ND	1.79	89.5	2.00	2.48		
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.70	85.0	2.00	0.508		
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.15	85.8	6.00	0.0404		
Total BTEx	<0.300	0.300	06/27/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	06/27/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/27/2019	ND	199	99.7	200	5.39	
DRO >C10-C28*	<10.0	10.0	06/27/2019	ND	188	94.2	200	1.66	
EXT DRO >C28-C36	<10.0	10.0	06/27/2019	ND					

Surrogate: 1-Chlorooctane 115 % 41-142

Surrogate: 1-Chlorooctadecane 119 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received:	06/26/2019	Sampling Date:	06/26/2019
Reported:	06/27/2019	Sampling Type:	Soil
Project Name:	LOCO HILLS 35	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 12 COMP 2' (H902194-12)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	06/27/2019	ND	416	104	400	0.00		

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received:	06/26/2019	Sampling Date:	06/26/2019
Reported:	06/27/2019	Sampling Type:	Soil
Project Name:	LOCO HILLS 35	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 13 COMP 2' (H902194-13)**

BTX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/27/2019	ND	1.80	90.2	2.00	2.40		
Toluene*	<0.050	0.050	06/27/2019	ND	1.79	89.5	2.00	2.48		
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.70	85.0	2.00	0.508		
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.15	85.8	6.00	0.0404		
Total BTX	<0.300	0.300	06/27/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	06/27/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/27/2019	ND	199	99.7	200	5.39	
DRO >C10-C28*	<10.0	10.0	06/27/2019	ND	188	94.2	200	1.66	
EXT DRO >C28-C36	<10.0	10.0	06/27/2019	ND					

Surrogate: 1-Chlorooctane 123 % 41-142

Surrogate: 1-Chlorooctadecane 127 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/26/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BOTTOM HOLE - 14 COMP 4' (H902194-14)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>64.0</b>	16.0	06/27/2019	ND	416	104	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 TETRA TECH  
 MIKE CARMONA  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received:	06/26/2019	Sampling Date:	06/26/2019
Reported:	06/27/2019	Sampling Type:	Soil
Project Name:	LOCO HILLS 35	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 15 COMP 4' (H902194-15)**

BTX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/27/2019	ND	2.04	102	2.00	0.644		
Toluene*	<0.050	0.050	06/27/2019	ND	2.08	104	2.00	0.380		
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.94	96.9	2.00	1.34		
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.95	99.1	6.00	1.78		
Total BTX	<0.300	0.300	06/27/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	06/27/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/27/2019	ND	199	99.7	200	5.39	
DRO >C10-C28*	<10.0	10.0	06/27/2019	ND	188	94.2	200	1.66	
EXT DRO >C28-C36	<10.0	10.0	06/27/2019	ND					

Surrogate: 1-Chlorooctane 123 % 41-142

Surrogate: 1-Chlorooctadecane 126 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/26/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BOTTOM HOLE - 16 COMP 4' (H902194-16)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	06/27/2019	ND	416	104	400	0.00	

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**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/26/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BOTTOM HOLE - 17 COMP 4' (H902194-17)**

BTEx 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/27/2019	ND	2.04	102	2.00	0.644		
Toluene*	<0.050	0.050	06/27/2019	ND	2.08	104	2.00	0.380		
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.94	96.9	2.00	1.34		
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.95	99.1	6.00	1.78		
Total BTEx	<0.300	0.300	06/27/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	06/27/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/27/2019	ND	197	98.3	200	1.94	
DRO >C10-C28*	<10.0	10.0	06/27/2019	ND	195	97.4	200	0.756	
EXT DRO >C28-C36	<10.0	10.0	06/27/2019	ND					

Surrogate: 1-Chlorooctane 70.6 % 41-142

Surrogate: 1-Chlorooctadecane 74.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/25/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: WSW - 1 COMP 3' (H902194-18)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/27/2019	ND	2.04	102	2.00	0.644	
Toluene*	<0.050	0.050	06/27/2019	ND	2.08	104	2.00	0.380	
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.94	96.9	2.00	1.34	
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	06/27/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/27/2019	ND	197	98.3	200	1.94	
DRO >C10-C28*	<10.0	10.0	06/27/2019	ND	195	97.4	200	0.756	
EXT DRO >C28-C36	<10.0	10.0	06/27/2019	ND					

Surrogate: 1-Chlorooctane 91.8 % 41-142

Surrogate: 1-Chlorooctadecane 96.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/25/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: NSW - 1 COMP 3' (H902194-19)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	06/27/2019	ND	416	104	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/25/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: NSW - 2 COMP 2' (H902194-20)**

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/27/2019	ND	2.04	102	2.00	0.644	
Toluene*	<0.050	0.050	06/27/2019	ND	2.08	104	2.00	0.380	
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.94	96.9	2.00	1.34	
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.95	99.1	6.00	1.78	
Total BTX	<0.300	0.300	06/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	06/27/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/27/2019	ND	197	98.3	200	1.94	
DRO >C10-C28*	<10.0	10.0	06/27/2019	ND	195	97.4	200	0.756	
EXT DRO >C28-C36	<10.0	10.0	06/27/2019	ND					

Surrogate: 1-Chlorooctane 83.8 % 41-142

Surrogate: 1-Chlorooctadecane 91.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/26/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: NSW - 3 COMP 2' (H902194-21)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	06/27/2019	ND	416	104	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/26/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: NSW - 4 COMP 2' (H902194-22)**

BTEx 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/27/2019	ND	2.04	102	2.00	0.644		
Toluene*	<0.050	0.050	06/27/2019	ND	2.08	104	2.00	0.380		
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.94	96.9	2.00	1.34		
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.95	99.1	6.00	1.78		
Total BTEX	<0.300	0.300	06/27/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	06/27/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/27/2019	ND	197	98.3	200	1.94	
DRO >C10-C28*	<10.0	10.0	06/27/2019	ND	195	97.4	200	0.756	
EXT DRO >C28-C36	<10.0	10.0	06/27/2019	ND					

Surrogate: 1-Chlorooctane 93.8 % 41-142

Surrogate: 1-Chlorooctadecane 99.3 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/26/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: NSW - 5 COMP 4' (H902194-23)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	06/27/2019	ND	416	104	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/26/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: NSW - 6 COMP 4' (H902194-24)**

BTEx 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/27/2019	ND	2.04	102	2.00	0.644	
Toluene*	<0.050	0.050	06/27/2019	ND	2.08	104	2.00	0.380	
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.94	96.9	2.00	1.34	
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.95	99.1	6.00	1.78	
Total BTEX	<0.300	0.300	06/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	06/27/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/27/2019	ND	197	98.3	200	1.94	
DRO >C10-C28*	<10.0	10.0	06/27/2019	ND	195	97.4	200	0.756	
EXT DRO >C28-C36	<10.0	10.0	06/27/2019	ND					

Surrogate: 1-Chlorooctane 81.4 % 41-142

Surrogate: 1-Chlorooctadecane 87.1 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/25/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SSW - 1 COMP 3' (H902194-25)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	06/27/2019	ND	416	104	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/25/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SSW - 2 COMP 2' (H902194-26)**

BTEx 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/27/2019	ND	2.04	102	2.00	0.644		
Toluene*	<0.050	0.050	06/27/2019	ND	2.08	104	2.00	0.380		
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.94	96.9	2.00	1.34		
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.95	99.1	6.00	1.78		
Total BTEX	<0.300	0.300	06/27/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	06/27/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/27/2019	ND	197	98.3	200	1.94	
DRO >C10-C28*	<10.0	10.0	06/27/2019	ND	195	97.4	200	0.756	
EXT DRO >C28-C36	<10.0	10.0	06/27/2019	ND					

Surrogate: 1-Chlorooctane 89.3 % 41-142

Surrogate: 1-Chlorooctadecane 95.1 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/26/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SSW - 3 COMP 2' (H902194-27)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>48.0</b>	16.0	06/27/2019	ND	416	104	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/26/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SSW - 4 COMP 2' (H902194-28)**

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/27/2019	ND	2.04	102	2.00	0.644	
Toluene*	<0.050	0.050	06/27/2019	ND	2.08	104	2.00	0.380	
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.94	96.9	2.00	1.34	
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.95	99.1	6.00	1.78	
Total BTX	<0.300	0.300	06/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	06/27/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/27/2019	ND	197	98.3	200	1.94	
DRO >C10-C28*	<10.0	10.0	06/27/2019	ND	195	97.4	200	0.756	
EXT DRO >C28-C36	<10.0	10.0	06/27/2019	ND					

Surrogate: 1-Chlorooctane 90.8 % 41-142

Surrogate: 1-Chlorooctadecane 97.7 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/26/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SSW - 5 COMP 4' (H902194-29)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>128</b>	16.0	06/27/2019	ND	416	104	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/26/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SSW - 6 COMP 4' (H902194-30)**

BTX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/27/2019	ND	2.04	102	2.00	0.644		
Toluene*	<0.050	0.050	06/27/2019	ND	2.08	104	2.00	0.380		
Ethylbenzene*	<0.050	0.050	06/27/2019	ND	1.94	96.9	2.00	1.34		
Total Xylenes*	<0.150	0.150	06/27/2019	ND	5.95	99.1	6.00	1.78		
Total BTX	<0.300	0.300	06/27/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	06/27/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/27/2019	ND	197	98.3	200	1.94	
DRO >C10-C28*	<10.0	10.0	06/27/2019	ND	195	97.4	200	0.756	
EXT DRO >C28-C36	<10.0	10.0	06/27/2019	ND					

Surrogate: 1-Chlorooctane 87.1 % 41-142

Surrogate: 1-Chlorooctadecane 92.8 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager

## Analysis Request of Chain of Custody Record



## Tetra Tech, Inc.

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

Client Name: Concho		Site Manager: Mike Carmo na	
Project Name: loco Hills 35		Project #:	
Project Location: (county, state) Eddy, NM		Project #:	
Invoice to: Ike Tavaroz		Sampler Signature:	
Receiving Laboratory: Cardinal		Sampler Signature:	
Comments: Attach devin.dominguez@TetraTech.com to Results Email			

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD				# CONTAINERS	FILTERED (Y/N)
		YEAR: 2018	2019	WATER	SOIL	HCL	HNO <sub>3</sub>	ICE	None		
		DATE	TIME								
1	Bottomhole-1 Comp 3'	6/25/19	—	X		X				1	
2	Bottomhole-2 Comp 3'		—	X		X				1	
3	Bottomhole-3 Comp 3'		—	X		X				1	
4	Bottomhole-4 Comp 3'		—	X		X				1	
5	Bottomhole-5 Comp 3'		—	X		X				1	
6	Bottomhole-6 Comp 3'	6/26/19	—	X		X				1	
7	Bottomhole-7 Comp 3'		—	X		X				1	
8	Bottomhole-8 Comp 3'		—	X		X				1	
9	Bottomhole-9 Comp 3'		—	X		X				1	
10	Bottomhole-10 Comp 3'		—	X		X				1	

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

ORIGINAL COPY

(Circle) HAND DELIVERED FEDEX UPS Tracking #: 3.4e

## Analysis Request of Chain of Custody Record



## Tetra Tech, Inc.

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

Client Name: <u>Doncho</u>		Site Manager: <u>Mike Carmona</u>	
Project Name: <u>Looco Hills 35</u>		Project #: <u>                    </u>	
Project Location: (county, state) <u>Eddy, NM</u>		Project #: <u>                    </u>	
Invoice to: <u>Ike Tavaraz</u>		Project #: <u>                    </u>	
Receiving Laboratory: <u>Cardinal</u>		Sampler Signature: <u>[Signature]</u>	
Comments: <u>Attach devin.dominguez@tetra.tech.com To Results</u>			

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD				# CONTAINERS	FILTERED (Y/N)	ANALYSIS REQUEST (Circle or Specify Method No.)	
		DATE	TIME	WATER	SOIL	HCL	HNO <sub>3</sub>	ICE	None				
													YEAR: 2018
11	Bottomhole-11 Comp 2'	6/26/19	—	X				X			1	X	BTEX 8021B BTEX 8260B
12	Bottomhole-12 Comp 2'		—	X				X			1	X	TPH TX1005 (Ext to C35)
13	Bottomhole-13 Comp 2'		—	X				X			1	X	TPH 8015M (GRO - DRO - ORO - MRO)
14	Bottomhole-14 Comp 4'		—	X				X			1	X	PAH 8270C
15	Bottomhole-15 Comp 4'		—	X				X			1	X	Total Metals Ag As Ba Cd Cr Pb Se Hg
16	Bottomhole-16 Comp 4'		—	X				X			1	X	TCLP Metals Ag As Ba Cd Cr Pb Se Hg
17	Bottomhole-17 Comp 4'		—	X				X			1	X	TCLP Volatiles
18	Bottomhole-18 Comp 3'	6/25/19	—	X				X			1	X	TCLP Semi Volatiles
19	Bottomhole-19 Comp 3'		—	X				X			1	X	RCI
20	Bottomhole-20 Comp 2'		—	X				X			1	X	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

Reinquired by: <u>[Signature]</u>	Date: <u>6/26/19</u>	Time: <u>1645</u>	Received by: <u>[Signature]</u>	Date: <u>6/26/19</u>	Time: <u>1645</u>
Reinquired by: <u>[Signature]</u>	Date: <u>6/26/19</u>	Time: <u>1645</u>	Received by: <u>[Signature]</u>	Date: <u>6/26/19</u>	Time: <u>1645</u>
Reinquired by: <u>[Signature]</u>	Date: <u>6/26/19</u>	Time: <u>1645</u>	Received by: <u>[Signature]</u>	Date: <u>6/26/19</u>	Time: <u>1645</u>

LAB USE ONLY	REMARKS:
<input type="checkbox"/> STANDARD <input checked="" type="checkbox"/> RUSH: Same Day (24 hr) 48 hr 72 hr <input type="checkbox"/> Rush Charges Authorized <input type="checkbox"/> Special Report Limits or TRRP Report	Sample Temperature: <u>#97</u> <u>3.22</u> (Circle) HAND DELIVERED FEDEX UPS Tracking #: <u>                    </u>

ORIGINAL COPY





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

Mike Carmona

Comments:

Attach devn.dominquez@TerraTech.com to results

**Hold**

Date: \_\_\_\_\_ Time: \_\_\_\_\_

2.

☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #

ORIGINAL COPY

June 27, 2019

MIKE CARMONA

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: LOCO HILLS 35

Enclosed are the results of analyses for samples received by the laboratory on 06/26/19 17:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/26/2019  
Reported: 06/27/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/25/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BOTTOMHOLE-1 3' BEB 1' (H902195-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	06/27/2019	ND	416	104	400	0.00		

**Sample ID: BOTTOMHOLE-2 2' BEB 1' (H902195-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	06/27/2019	ND	416	104	400	0.00		

**Sample ID: BOTTOMHOLE-2 2' BEB 2' (H902195-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	06/27/2019	ND	416	104	400	0.00		

**Sample ID: BOTTOMHOLE-3 2' BEB 1' (H902195-04)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	06/27/2019	ND	416	104	400	0.00		

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 TETRA TECH  
 MIKE CARMONA  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

 Received: 06/26/2019  
 Reported: 06/27/2019  
 Project Name: LOCO HILLS 35  
 Project Number: NONE GIVEN  
 Project Location: COG - EDDY CO NM

 Sampling Date: 06/25/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BOTTOMHOLE-3 2' BEB 2' (H902195-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	06/27/2019	ND	416	104	400	0.00	

**Sample ID: BOTTOMHOLE-4 2' BEB 1' (H902195-06)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	06/27/2019	ND	416	104	400	0.00	

**Sample ID: BOTTOMHOLE-4 2' BEB 2' (H902195-07)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	06/27/2019	ND	416	104	400	0.00	

**Sample ID: BOTTOMHOLE-5 2' BEB 1' (H902195-08)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	06/27/2019	ND	416	104	400	0.00	

**Sample ID: BOTTOMHOLE-5 2' BEB 2' (H902195-09)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	06/27/2019	ND	416	104	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received:	06/26/2019	Sampling Date:	06/26/2019
Reported:	06/27/2019	Sampling Type:	Soil
Project Name:	LOCO HILLS 35	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOMHOLE-6 2' BEB 1' (H902195-10)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/27/2019	ND	416	104	400	0.00	

**Sample ID: BOTTOMHOLE-6 2' BEB 2' (H902195-11)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/27/2019	ND	416	104	400	0.00	

**Sample ID: BOTTOMHOLE-7 2' BEB 1' (H902195-12)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	06/27/2019	ND	416	104	400	0.00	

**Sample ID: BOTTOMHOLE-7 2' BEB 2' (H902195-13)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	06/27/2019	ND	416	104	400	0.00	

**Sample ID: BOTTOMHOLE-8 2' BEB 1' (H902195-14)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	06/27/2019	ND	416	104	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 TETRA TECH  
 MIKE CARMONA  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received:	06/26/2019	Sampling Date:	06/26/2019
Reported:	06/27/2019	Sampling Type:	Soil
Project Name:	LOCO HILLS 35	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOMHOLE-8 2' BEB 2' (H902195-15)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	06/27/2019	ND	416	104	400	0.00		

**Sample ID: BOTTOMHOLE-9 2' BEB 1' (H902195-16)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	06/27/2019	ND	416	104	400	0.00	

**Sample ID: BOTTOMHOLE-9 2' BEB 2' (H902195-17)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	06/27/2019	ND	416	104	400	0.00		

**Sample ID: BOTTOMHOLE-11 2' BEB 1' (H902195-18)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	06/27/2019	ND	416	104	400	0.00	

**Sample ID: BOTTOMHOLE-11 2' BEB 2' (H902195-19)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	06/27/2019	ND	416	104	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 TETRA TECH  
 MIKE CARMONA  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received:	06/26/2019	Sampling Date:	06/26/2019
Reported:	06/27/2019	Sampling Type:	Soil
Project Name:	LOCO HILLS 35	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOMHOLE-12 2' BEB 1' (H902195-20)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	06/27/2019	ND	416	104	400	0.00		

**Sample ID: BOTTOMHOLE-12 2' BEB 2' (H902195-21)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	06/27/2019	ND	416	104	400	0.00	

**Sample ID: BOTTOMHOLE-13 2' BEB 1' (H902195-22)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	06/27/2019	ND	416	104	400	0.00		

**Sample ID: BOTTOMHOLE-13 2' BEB 2' (H902195-23)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	06/27/2019	ND	416	104	400	0.00	

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

<b>Company Name:</b> <u>Texra Tech</u>		<b>BILL TO</b>	
<b>Project Manager:</b> <u>Mike Carmona</u>		<b>P.O. #:</b>	
<b>Address:</b> <u>901 W Wall</u>		<b>Company:</b> <u>Concho</u>	
<b>City:</b> <u>Midland</u>		<b>Attn:</b> <u>Ike Tavares</u>	
<b>Phone #:</b> <u>432-661-6186</u>		<b>Address:</b> <u>600 W Illinois</u>	
<b>Project #:</b>		<b>City:</b> <u>Midland</u>	
<b>Project Name:</b> <u>Loce Hills 35</u>		<b>State:</b> <u>TX</u> <b>Zip:</b> <u>79701</u>	
<b>Project Location:</b> <u>Eddy, NM</u>		<b>Phone #:</b> <u>432-701-8630</u>	
<b>Sampler Name:</b> <u>Devin Dominguez</u>		<b>Fax #:</b>	

FOR LAB USE ONLY		ANALYSIS REQUEST	
Lab I.D.	Sample I.D.	DATE	TIME
<b>H902195</b>			
1	Bottomhole-1 3' BEB 1'		
2	Bottomhole-2 2' BEB 1'		
3	Bottomhole-3 2' BEB 2'		
4	Bottomhole-3 2' BEB 1'		
5	Bottomhole-3 2' BEB 2'		
6	Bottomhole-4 2' BEB 1'		
7	Bottomhole-4 2' BEB 2'		
8	Bottomhole-5 2' BEB 1'		
9	Bottomhole-5 2' BEB 2'		
10	Bottomhole-6 2' BEB 1'		

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<b>Relinquished By:</b> <u>[Signature]</u> <b>Date:</b> <u>6/26/19</u>	
<b>Received By:</b> <u>[Signature]</u> <b>Date:</b> <u>6/26/19</u>	
<b>Relinquished By:</b> <u>[Signature]</u> <b>Date:</b> <u>6/26/19</u>	
<b>Received By:</b> <u>[Signature]</u> <b>Date:</b> <u>6/26/19</u>	

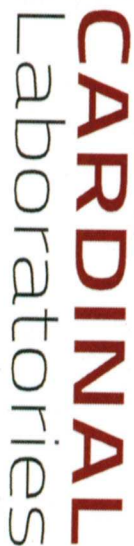
  

DELIVERED BY: (Circle One)		Sample Condition		CHECKED BY: (Initials)	
Delivered By: <u>UPS</u> - Bus - Other: <u>Other</u>	Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	<u>Devin Dominguez</u>

<b>REMARKS:</b> <u>Chlorides</u> <u>6/25/19</u> <u>6/26/19</u>	<b>Phone Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Add'l Phone #:</b> <b>Fax Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Add'l Fax #:</b>
---	--





## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST


101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

Company Name: Tetra Tech		<b>BILL TO</b>									
Project Manager: Mike Cammaro		ANALYSIS REQUEST									
Address: 901 W Wall		P.O. #:									
City: Midland		Company: Concho									
State: TX Zip: 79701		Attn: Ike Tavarez									
Phone #: 432-664-9163 Fax #:		Address: 600 W Illinois									
Project #: Project Owner:		City: Midland									
Project Name: LoCo Hills 35		State: TX Zip: 79701									
Project Location: Eddy, NM		Phone #: 432-701-6630									
Sampler Name: Devin Dominguez		Fax #:									


[illegible]

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Relinquished By:

Relinquished By: 

Time:	6/10/19
Date:	17:00

Received By: 

Priority Result:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Add'l Phone #:
Fax Result:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Add'l Fax #:
REMARKS:	devin.dominguez@tetrastech.com		

Delivered By: (Circle One)		Time:		
Sampler - UPS - Bus - Other:		Sample Condition		CHECKED BY:
D.O.C. #37		Cool	Intact	(Initials)
		<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	aa
		<input type="checkbox"/> No	<input type="checkbox"/> No	

to Results Email

Rush!!





## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 10 of 10

June 28, 2019

MIKE CARMONA

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: LOCO HILLS 35

Enclosed are the results of analyses for samples received by the laboratory on 06/27/19 16:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/27/2019  
Reported: 06/28/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/27/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BOTTOM HOLE - 18 COMP 2' (H902221-01)**

BTEX 8260B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.025	0.025	06/28/2019	ND	1.62	81.2	2.00	2.37	
Toluene*	<0.025	0.025	06/28/2019	ND	1.74	87.0	2.00	3.70	
Ethylbenzene*	<0.025	0.025	06/28/2019	ND	1.65	82.6	2.00	4.13	
Total Xylenes*	<0.075	0.075	06/28/2019	ND	5.56	92.6	6.00	4.23	
Total BTEX	<0.150	0.150	06/28/2019	ND					

Surrogate: Dibromofluoromethane 97.2 % 90.4-111

Surrogate: Toluene-d8 99.4 % 85.3-114

Surrogate: 4-Bromofluorobenzene 91.9 % 80.1-121

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	224	16.0	06/28/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/28/2019	ND	188	93.8	200	3.60	
<b>DRO &gt;C10-C28*</b>	<b>13.4</b>	10.0	06/28/2019	ND	193	96.4	200	2.70	
EXT DRO >C28-C36	<10.0	10.0	06/28/2019	ND					

Surrogate: 1-Chlorooctane 80.9 % 41-142

Surrogate: 1-Chlorooctadecane 89.3 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/27/2019  
Reported: 06/28/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/27/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BOTTOM HOLE - 18 2' BEB 1' (H902221-02)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>64.0</b>	16.0	06/28/2019	ND	432	108	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/27/2019  
Reported: 06/28/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/27/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BOTTOM HOLE - 18 2' BEB 2' (H902221-03)**

BTEx 8260B		mg / kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.025	0.025	06/28/2019	ND	1.62	81.2	2.00	2.37		
Toluene*	<0.025	0.025	06/28/2019	ND	1.74	87.0	2.00	3.70		
Ethylbenzene*	<0.025	0.025	06/28/2019	ND	1.65	82.6	2.00	4.13		
Total Xylenes*	<0.075	0.075	06/28/2019	ND	5.56	92.6	6.00	4.23		
Total BTEx	<0.150	0.150	06/28/2019	ND						

Surrogate: Dibromofluoromethane 97.7 % 90.4-111

Surrogate: Toluene-d8 99.4 % 85.3-114

Surrogate: 4-Bromofluorobenzene 91.5 % 80.1-121

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2240	16.0	06/28/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/28/2019	ND	188	93.8	200	3.60	
DRO >C10-C28*	<10.0	10.0	06/28/2019	ND	193	96.4	200	2.70	
EXT DRO >C28-C36	<10.0	10.0	06/28/2019	ND					

Surrogate: 1-Chlorooctane 76.7 % 41-142

Surrogate: 1-Chlorooctadecane 84.3 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/27/2019  
Reported: 06/28/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/27/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BOTTOM HOLE - 19 COMP 4' (H902221-04)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>160</b>	16.0	06/28/2019	ND	432	108	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/27/2019  
Reported: 06/28/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/27/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: BOTTOM HOLE - 20 COMP 2' (H902221-05)**

BTX 8260B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.025	0.025	06/28/2019	ND	1.62	81.2	2.00	2.37		
Toluene*	<0.025	0.025	06/28/2019	ND	1.74	87.0	2.00	3.70		
Ethylbenzene*	<0.025	0.025	06/28/2019	ND	1.65	82.6	2.00	4.13		
Total Xylenes*	<0.075	0.075	06/28/2019	ND	5.56	92.6	6.00	4.23		
Total BTX	<0.150	0.150	06/28/2019	ND						

Surrogate: Dibromofluoromethane 98.7 % 90.4-111

Surrogate: Toluene-d8 97.8 % 85.3-114

Surrogate: 4-Bromofluorobenzene 89.4 % 80.1-121

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/28/2019	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/28/2019	ND	188	93.8	200	3.60	
DRO >C10-C28*	<10.0	10.0	06/28/2019	ND	193	96.4	200	2.70	
EXT DRO >C28-C36	<10.0	10.0	06/28/2019	ND					

Surrogate: 1-Chlorooctane 75.5 % 41-142

Surrogate: 1-Chlorooctadecane 80.8 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received:	06/27/2019	Sampling Date:	06/27/2019
Reported:	06/28/2019	Sampling Type:	Soil
Project Name:	LOCO HILLS 35	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 20 2' BEB 1' (H902221-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	06/28/2019	ND	416	104	400	0.00		

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received:	06/27/2019	Sampling Date:	06/27/2019
Reported:	06/28/2019	Sampling Type:	Soil
Project Name:	LOCO HILLS 35	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 20 2' BEB 2' (H902221-07)**

BTX 8260B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.025	0.025	06/28/2019	ND	1.62	81.2	2.00	2.37		
Toluene*	<0.025	0.025	06/28/2019	ND	1.74	87.0	2.00	3.70		
Ethylbenzene*	<0.025	0.025	06/28/2019	ND	1.65	82.6	2.00	4.13		
Total Xylenes*	<0.075	0.075	06/28/2019	ND	5.56	92.6	6.00	4.23		
Total BTX	<0.150	0.150	06/28/2019	ND						

Surrogate: Dibromofluoromethane 100 % 90.4-111

Surrogate: Toluene-d8 97.9 % 85.3-114

Surrogate: 4-Bromofluorobenzene 90.9 % 80.1-121

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	768	16.0	06/28/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/28/2019	ND	188	93.8	200	3.60	
DRO >C10-C28*	<10.0	10.0	06/28/2019	ND	193	96.4	200	2.70	
EXT DRO >C28-C36	<10.0	10.0	06/28/2019	ND					

Surrogate: 1-Chlorooctane 75.7 % 41-142

Surrogate: 1-Chlorooctadecane 82.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/27/2019  
Reported: 06/28/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/27/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: NSW - 7 COMP 4' (H902221-08)**

BTEx 8260B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.025	0.025	06/28/2019	ND	1.62	81.2	2.00	2.37		
Toluene*	<0.025	0.025	06/28/2019	ND	1.74	87.0	2.00	3.70		
Ethylbenzene*	<0.025	0.025	06/28/2019	ND	1.65	82.6	2.00	4.13		
Total Xylenes*	<0.075	0.075	06/28/2019	ND	5.56	92.6	6.00	4.23		
Total BTEX	<0.150	0.150	06/28/2019	ND						

Surrogate: Dibromofluoromethane 98.6 % 90.4-111

Surrogate: Toluene-d8 101 % 85.3-114

Surrogate: 4-Bromofluorobenzene 91.3 % 80.1-121

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	06/28/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/28/2019	ND	188	93.8	200	3.60	
DRO >C10-C28*	<10.0	10.0	06/28/2019	ND	193	96.4	200	2.70	
EXT DRO >C28-C36	<10.0	10.0	06/28/2019	ND					

Surrogate: 1-Chlorooctane 78.3 % 41-142

Surrogate: 1-Chlorooctadecane 86.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/27/2019  
Reported: 06/28/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/27/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SSW - 7 COMP 4' (H902221-09)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>64.0</b>	16.0	06/28/2019	ND	416	104	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

TETRA TECH  
MIKE CARMONA  
901 WEST WALL STREET , STE 100  
MIDLAND TX, 79701  
Fax To: (432) 682-3946

Received: 06/27/2019  
Reported: 06/28/2019  
Project Name: LOCO HILLS 35  
Project Number: NONE GIVEN  
Project Location: COG - EDDY CO NM

Sampling Date: 06/27/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: ESW - 1 COMP 4' (H902221-10)**

BTEx 8260B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.025	0.025	06/28/2019	ND	1.62	81.2	2.00	2.37		
Toluene*	<0.025	0.025	06/28/2019	ND	1.74	87.0	2.00	3.70		
Ethylbenzene*	<0.025	0.025	06/28/2019	ND	1.65	82.6	2.00	4.13		
Total Xylenes*	<0.075	0.075	06/28/2019	ND	5.56	92.6	6.00	4.23		
Total BTEx	<0.150	0.150	06/28/2019	ND						

Surrogate: Dibromofluoromethane 98.8 % 90.4-111

Surrogate: Toluene-d8 98.7 % 85.3-114

Surrogate: 4-Bromofluorobenzene 91.0 % 80.1-121

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	06/28/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/28/2019	ND	188	93.8	200	3.60	
DRO >C10-C28*	<10.0	10.0	06/28/2019	ND	193	96.4	200	2.70	
EXT DRO >C28-C36	<10.0	10.0	06/28/2019	ND					

Surrogate: 1-Chlorooctane 80.3 % 41-142

Surrogate: 1-Chlorooctadecane 86.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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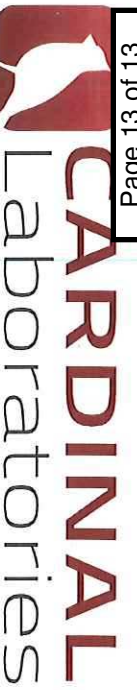
\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

**BILL TO**

**ANALYSIS REQUEST**

Company Name: <b>Tetra Tech</b>		P.O. #:
Project Manager: <b>Mike Cormora</b>		Company: <b>Concho</b>
Address: <b>901 W Wall</b>		Attn: <b>Ike Tovar</b>
City: <b>Midland</b>		Address: <b>600 W Illinois</b>
State: <b>TX</b> Zip: <b>79701</b>		City: <b>Midland</b>
Phone #: <b>432-664-8185</b> Fax #: <b>---</b>		State: <b>TX</b> Zip: <b>79701</b>
Project #: <b>---</b> Project Owner: <b>---</b>		Phone #: <b>432-701-8630</b>
Project Name: <b>Loce Hills 35</b>		Fax #: <b>---</b>
Project Location: <b>Eddy NM</b>		
Sampler Name: <b>Devin Dominguez</b>		

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					DATE	TIME										
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE			ACID/BASE:	ICE / COOL	OTHER :							
HQ00001	Bottomhole-18 Comp 3'	C	1	X										6/27/19						
	Bottomhole-18 2' BEB 1'	C	1	X																
	Bottomhole-18 2' BEB 2'	C	1	X																
	Bottomhole-19 Comp 4'	C	1	X																
	Bottomhole-20 Comp 3'	C	1	X																
	Bottomhole-20 2' BEB 1'	C	1	X																
	Bottomhole-20 2' BEB 2'	C	1	X																
	NSLO-7 Comp 4'	C	1	X																
	SSLO-7 Comp 4'	C	1	X																
	ESLO-1 Comp 4'	C	1	X																
<div>TPH</div> <div>BTEX</div> <div>Chlorides</div>																				

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Relinquished By:	Date: <b>6/27/19</b>	Received By:	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Time: <b>16:40</b>			Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By:	Date: <b>6/27/19</b>	Received By:	REMARKS:	
Time: <b>16:40</b>			Attach devin.dominguez@tetratech.com to Results Email	
Delivered By: (Circle One)		Sample Condition	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other:		Cool <input type="checkbox"/> Intact <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	
		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	

## Appendix D



# NMSLO Seed Mix

# Loamy (L)

## LOAMY (L) SITES SEED MIXTURE:

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

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

VNS = Variety Not Stated, PLS = Pure Live Seed

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



## 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