

SITE INFORMATION

Report Type: Closure Report 2RP-4494

General Site Information:

Site:	SRO SWD #103					
Company:	COG Operating LLC					
Section, Township and Range	Unit M	Sec. 17	T 26S	R 28E		
Lease Number:	API No. 30-015-24462					
County:	Eddy County					
GPS:	32.0369301			-104.1160126		
Surface Owner:	State					
Mineral Owner:	State					
Directions:	From the intersection of Highway 285 and Whites City Road, travel west on Whites City Road for approximately 3.05 miles. Turn left (south) onto unnamed lease road and travel approximately 1.87 miles. Turn left (east) onto lease road. Site is located at the end of the pad approximately 0.12 miles.					

Release Data:

Date Released:	11/13/2017
Type Release:	Oil and Produced Water
Source of Contamination:	Main Line failure
Fluid Released:	10 bbl oil / 1,390 bbls produced water
Fluids Recovered:	7 bbls oil / 413 bbls produced water

Official Communication:

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

Site Characterization

Depth to Groundwater:	> 100 feet
Karst Potential:	High

Recommended Remedial Action Levels (RRALs)

Benzene	Total BTEX	TPH (GRO+DRO+MRO)	Chlorides
10 mg/kg	50 mg/kg	100 mg/kg	600 mg/kg



April 15, 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, SRO SWD #103, Unit M, Section 17, Township 26 South, Range 28 East, Eddy County, New Mexico. 2RP-4494

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating, LLC (COG) to assess a release that occurred at the SRO SWD #103, Unit M, Section 17, Township 26 South, Range 28 East, Eddy County, New Mexico (Site). The spill site coordinates are 32.0369301°, -104.1160126°. 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 November 13, 2017, and released approximately 10 barrels (bbls) of oil and 1,390 bbls of produced water due to a parted coupling before the auto inlet valve. The release overfilled the lined containment and flowed in the pasture following a pipeline right-of-way (ROW) for approximately 1/5th of a mile.

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. However, the site is located in a high karst potential area. No water wells were listed within Section 17 on the New Mexico Office of the State Engineer's (NMOSE) database. The nearest reported water well is located in Section 15 with a depth to groundwater of 175' below surface. No water wells are listed in the Geology and Groundwater Resources of Eddy County (Report 3), or the USGS National Water Information database. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is approximately 50' below surface. The groundwater data is shown in Appendix B.

Tetra Tech

901 West Wall, Suite 100, Midland, TX 79701

Tel 432.682.4559

Fax 432.682.3946

www.tetratech.com



Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills, and Releases, updated August 14, 2018. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene, and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in the 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, and the area being a high karst potential the proposed RRAL for TPH is 100 mg/kg (GRO+DRO+MRO). Additionally, the proposed RRAL for chlorides is 600 mg/kg.

Soil Assessment and Remediation Activities

Initial Sampling

On January 9, 2018, Tetra Tech personnel were onsite to evaluate the release. A total of eleven (11) bore holes (BH-1 through BH-11) and two (2) background samples (BG-1 and BG-2) were installed in the pasture and pad portions of the release area to total depths ranging from 7' to 20' below surface. The 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 D. The results of the sampling are summarized in Table 1. The sample location is shown on Figure 3.

Referring to Table 1, none of the samples analyzed showed benzene or total BTEX above their respective RRALs. The area of BH-10 showed concentrations of TPH exceeding the RRAL in the 0-1' and 2-3' intervals but was below laboratory detection limits in the following intervals of 4-5' and 6-7'. All of the bore hole sample locations showed chloride concentrations greater than 600 mg/kg in the release area. The areas of BH-2, BH-3, BH-5, BH-6, BH-7, BH-8, BH-9, and BH-10 had reported chloride concentrations exceeding 600 mg/kg in the 2-3' sample interval but were below the RRAL in deeper sample intervals. The areas of BH-1 and BH-4 showed chloride concentrations were vertically delineated at 6' below the surface, and BH-11 demonstrated chloride delineation at 9' below the surface.

Pasture Remediation

In July 2018, COG personnel were onsite to remediate the pasture portion of the release portion according to the NMOCD and State Land Office approved the work plan on June 11, 2018. A total of eight (8) excavation bottom samples (Bottom 2 through Bottom 9) and sixteen (16) sidewall samples (SW-2 East through SW-9 East and SW-2 West through SW-9 West) were composited in the release area to a total depth of 4.0' below surface. The 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 D. The results of the sampling are summarized in Table 2. The sample location is shown on Figure 4a.

**TETRA TECH**

Referring to Table 2, all of the samples analyzed showed benzene, TPH, and total BTEX below the laboratory reporting limits. The areas of Bottom 3 and 5 showed chloride concentrations above 600 mg/kg, but a 20-mil liner was installed at the bottom of the excavation to prevent further vertical migration of the chloride concentrations. None of the remaining bottom hole or sidewall samples collected showed chloride concentrations above the 600 mg/kg RRAL.

Pad Remediation

Following the decommission of the tank battery, Tetra Tech personnel were onsite from January 15 – 19, 2019, to remediate the pad portion of the release portion according to the approved work plan. A total of six (6) excavation bottom samples (Bottom Hole #1 through Bottom Hole #6) and ten (10) sidewall samples (ESW-1, ESW-2, ESW-3, ESW-4, WSW-1, WSW-2, WSW-3, WSW-4, NSW-1, and SSW-1) were composited in the release area to a total depth ranging from 2.0' to 4.0' below surface. The area excavated to 4.0' below surface. The 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 D. The results of the sampling are summarized in Table 2. The sample location is shown on Figure 4b.

Referring to Table 2, all of the samples analyzed showed benzene, TPH, and total BTEX below the laboratory reporting limits. Additionally, none of the bottom hole or sidewall samples collected showed chloride concentrations above the 600 mg/kg RRAL, except for Bottom Hole #1. However, a 20-mil liner was installed in this area to prevent chloride vertical migration.

The excavated soil was transported offsite for proper disposal and the areas were backfilled with clean material to surface grade.

Revegetation

Reseeding of the pasture area was completed in July 2017, and the pad area will be performed in June 2019 following reclamation activities and to coincide with the rainy season in Southeastern New Mexico and aid in revegetation. Based on the soils at the site, the BLM Seed Mixture 1 for Loamy Sites (3.1) 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 BLM will be contacted to determine an effective method for eradication. If the site does not show revegetation after one growing season, the area will be reseeded as appropriate. The BLM seed mixture details and corresponding pounds PLS Per acre are included in Appendix C.



TETRA TECH

Conclusion

Based on the remediation activities performed and laboratory data, COG requests closure of this spill issue. The final C-141 is attached in Appendix A. If you have any questions or comments concerning the assessment or remediation activities for this site, please call at (432) 682-4559.

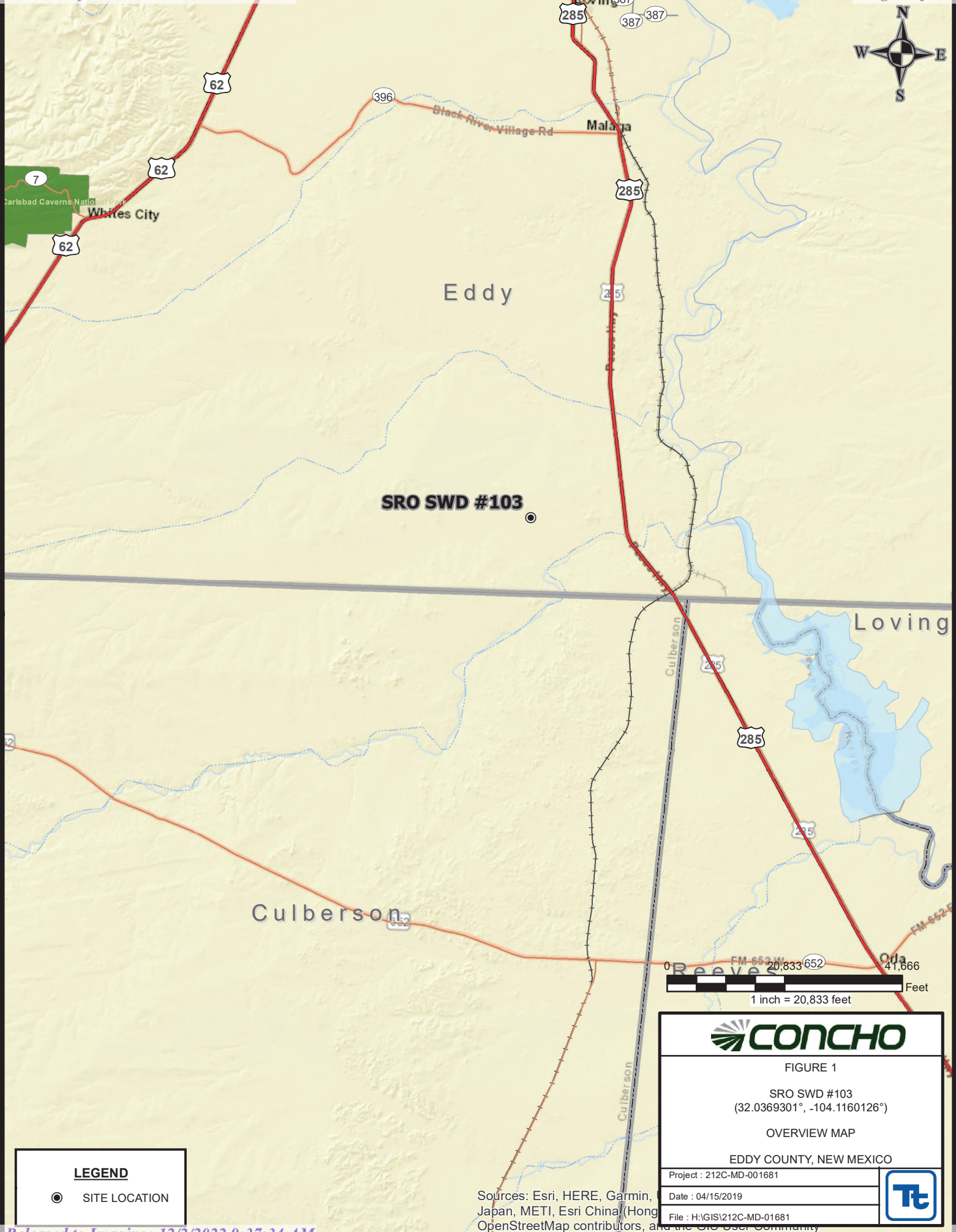
Respectfully submitted,
TETRA TECH

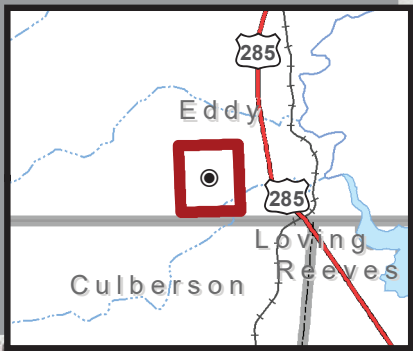
Clair Gonzales,
Project Manager

Kayla Taylor,
Geologist

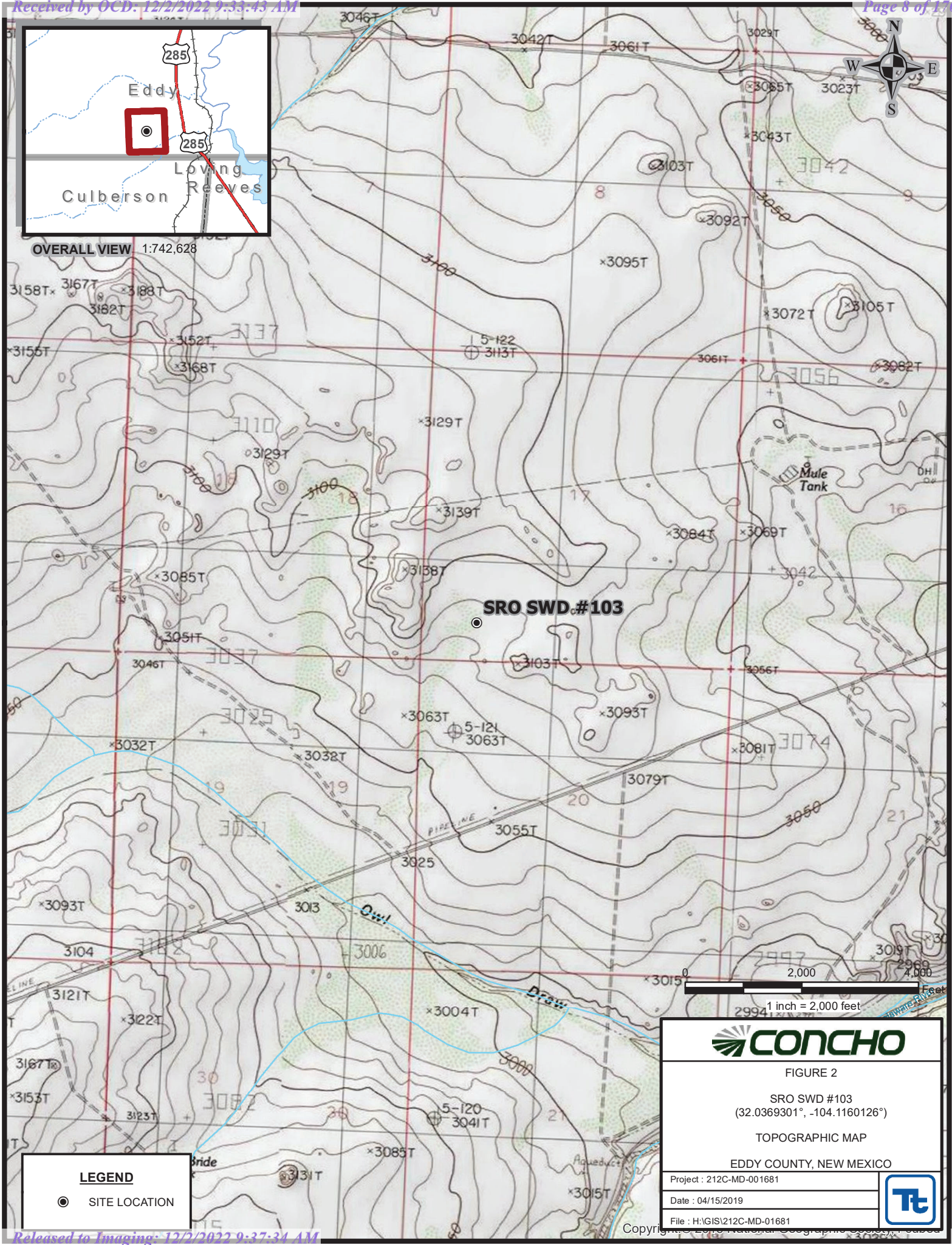
cc: Ike Tavaréz - COG
Dakota Neel - COG
Rebecca Haskell - COG
Sheldon Hitchcock - COG
DeAnn Grant - COG

Figures





OVERALL VIEW 1:742,628



LEGEND

● SITE LOCATION





FIGURE 2

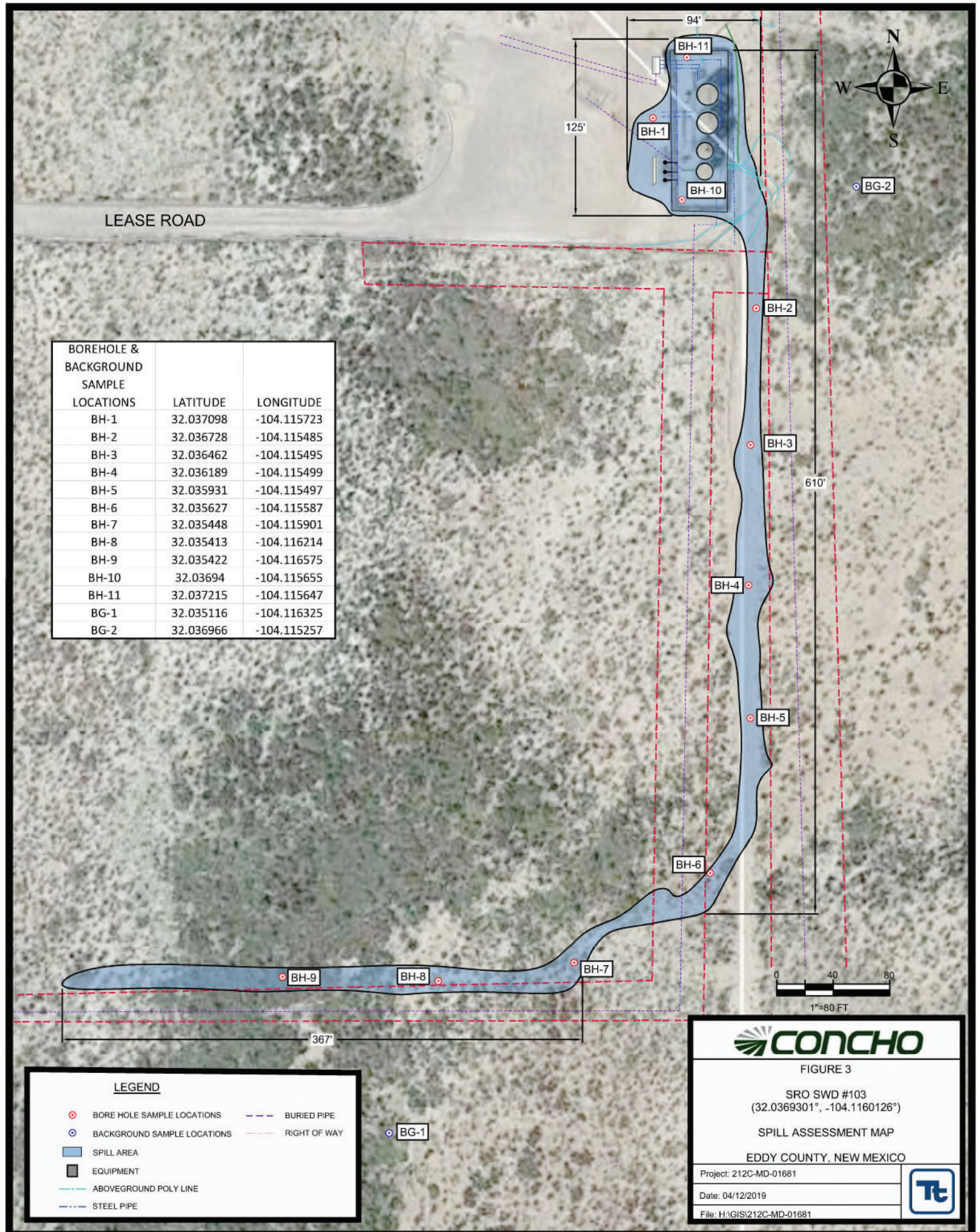
SRO SWD #103
(32.0369301°, -104.1160126°)

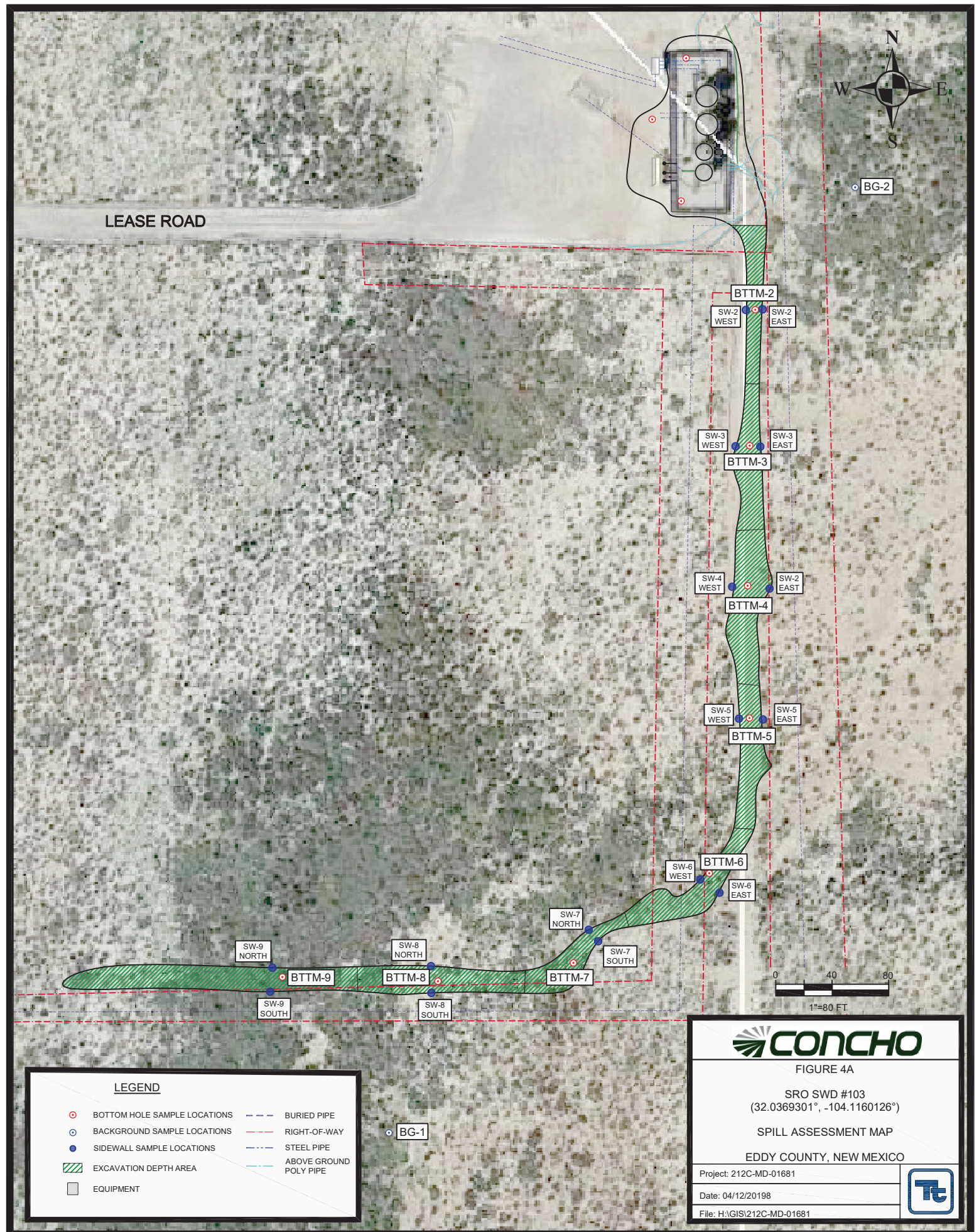
TOPOGRAPHIC MAP

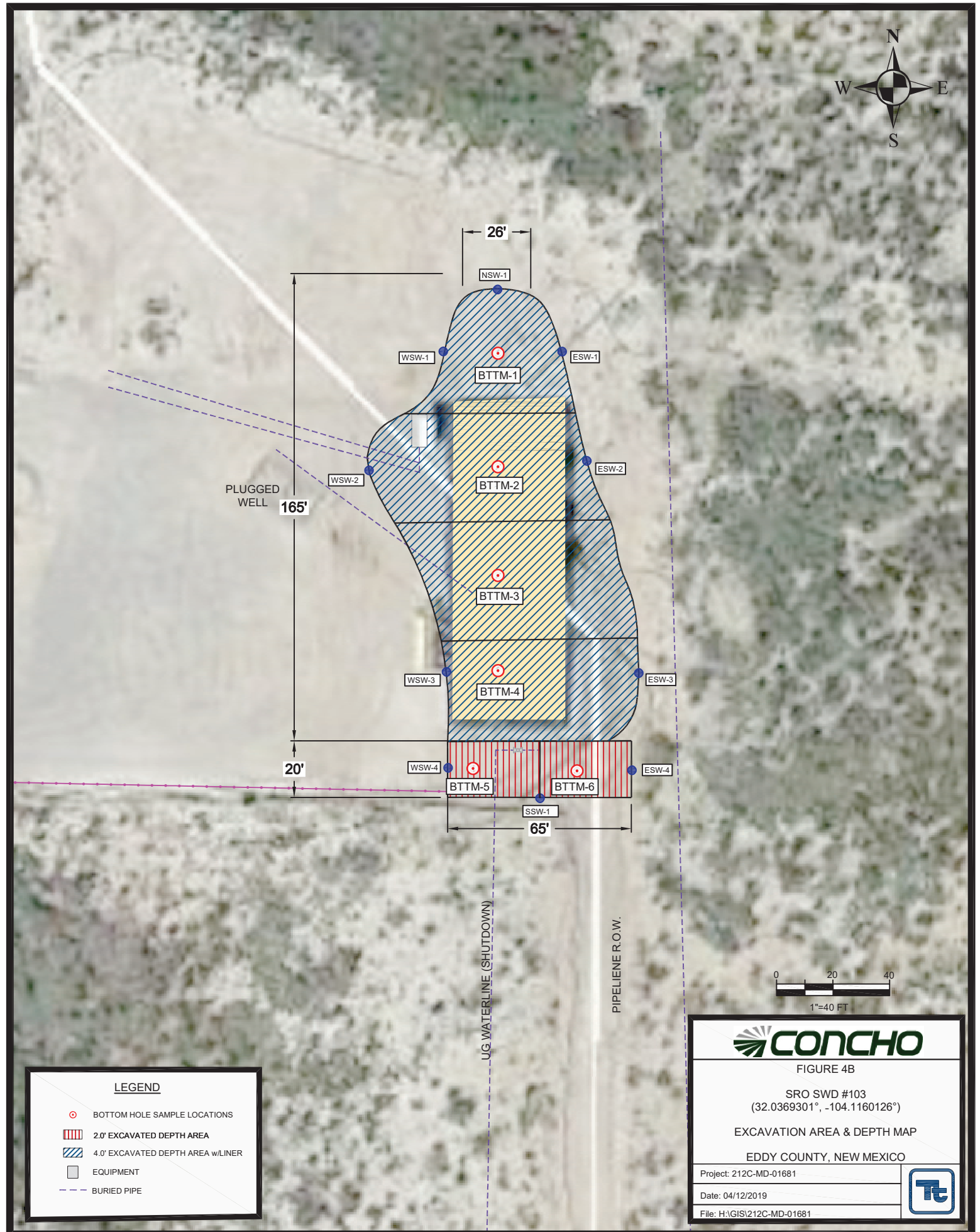
EDDY COUNTY, NEW MEXICO

Project : 212C-MD-001681
Date : 04/15/2019
File : H:\GIS\212C-MD-01681









Tables

Table 1
COG Operating LLC.
SRO #103 SWD
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)					Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	C6-C10	C10-C28	C28-C35	Total							
BH-1	1/9/2018	0-1		X	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	389
	"	2-3		X	<15.0	19.3	<15.0	19.3	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	591
	"	4-5		X	-	-	-	-	-	-	-	-	-	-	871
	"	6-7	X		-	-	-	-	-	-	-	-	-	-	132
	"	9-10	X		-	-	-	-	-	-	-	-	-	-	95.8
	"	14-15	X			-	-	-	-	-	-	-	-	-	184
BH-2	1/9/2018	0-1		X	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	852
	"	2-3		X	<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	832
	"	4-5		X	-	-	-	-	-	-	-	-	-	-	10.4
	"	6-7	X		-	-	-	-	-	-	-	-	-	-	139
	"	9-10	X		-	-	-	-	-	-	-	-	-	-	28.9
	"	14-15	X			-	-	-	-	-	-	-	-	-	195
BH-3	1/9/2018	0-1		X	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	1240
	"	2-3		X	<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	2290
	"	4-5		X	-	-	-	-	-	-	-	-	-	-	139
	"	6-7	X		-	-	-	-	-	-	-	-	-	-	275
	"	9-10	X		-	-	-	-	-	-	-	-	-	-	148
	"	14-15	X			-	-	-	-	-	-	-	-	-	474
BH-4	1/10/2018	0-1		X	<15.0	<15.0	<15.0	<15.0	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	4920
	"	2-3		X	<15.0	<15.0	<15.0	<15.0	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	3600
	"	4-5		X	-	-	-	-	-	-	-	-	-	-	1310
	"	6-7	X		-	-	-	-	-	-	-	-	-	-	116
	"	9-10	X		-	-	-	-	-	-	-	-	-	-	268
	"	14-15	X			-	-	-	-	-	-	-	-	-	413
BH-5	1/10/2018	0-1		X	<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	5170
	"	2-3		X	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	1320
	"	4-5		X	-	-	-	-	-	-	-	-	-	-	393
	"	6-7	X		-	-	-	-	-	-	-	-	-	-	237
BH-6	1/10/2018	0-1		X	<15.0	<15.0	<15.0	<15.0	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	27400
	"	2-3		X	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	5020
	"	4-5		X	-	-	-	-	-	-	-	-	-	-	194
	"	6-7	X		-	-	-	-	-	-	-	-	-	-	6.21
	"	9-10	X		-	-	-	-	-	-	-	-	-	-	6.59

Table 1
COG Operating LLC.
SRO #103 SWD
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)					Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	C6-C10	C10-C28	C28-C35	Total							
BH-7	1/10/2018	0-1		X	<15.0	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	5340
	"	2-3		X	<15.0	19.7	<15.0	19.7	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	7460
	"	4-5		X	-	-	-	-	-	-	-	-	-	-	310
	"	6-7	X		-	-	-	-	-	-	-	-	-	-	63.1
BH-8	1/10/2018	0-1		X	<15.0	<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	3160
	"	2-3		X	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	10300
	"	4-5		X	-	-	-	-	-	-	-	-	-	-	180
	"	6-7	X		-	-	-	-	-	-	-	-	-	-	66.2
BH-9	1/10/2018	0-1		X	<15.0	<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	12700
	"	2-3		X	<15.0	<15.0	<15.0	<15.0	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	11100
	"	4-5		X	-	-	-	-	-	-	-	-	-	-	66.6
	"	6-7	X		-	-	-	-	-	-	-	-	-	-	15.2
BH-10	1/18/2018	0-1		X	655	7,080	3,300	11,000	<0.00201	0.0123	<0.00201	0.0970	0.109	0.138	944
	"	2-3		X	20.2	86.7	19.7	127	0.00216	<0.00200	0.0220	0.114	0.138	0.138	652
	"	4-5	X		<15.0	<15.0	<15.0	<15.0	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	70.3
	"	6-7	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	32.4
	"	9-10	X		-	-	-	-	-	-	-	-	-	-	103
BH-11	1/18/2018	0-1		X	<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	2,760
	"	2-3		X	<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	1,710
	"	4-5		X	-	-	-	-	-	-	-	-	-	-	1,670
	"	6-7	X		-	-	-	-	-	-	-	-	-	-	1,670
	"	9-10	X		-	-	-	-	-	-	-	-	-	-	174
BG-1	1/10/2018	0-1	X		-	-	-	-	-	-	-	-	-	-	12.6
	"	5	X		-	-	-	-	-	-	-	-	-	-	225
	"	10	X		-	-	-	-	-	-	-	-	-	-	<4.93
BG-2	1/10/2018	0-1	X		-	-	-	-	-	-	-	-	-	-	11.5
	"	5	X		-	-	-	-	-	-	-	-	-	-	<4.93
	"	10	X		-	-	-	-	-	-	-	-	-	-	36.1
	"	15	X		-	-	-	-	-	-	-	-	-	-	274
	"	20	X		-	-	-	-	-	-	-	-	-	-	238

(-) Not Analyzed
 Excavation Depths

Table 2
COG
SRO SWD 103
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)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	ORO	Total						
Tank Battery Area															
ESW-1	1/15/2019	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	192
ESW-2	1/15/2019	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	208
ESW-3	1/15/2019	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	176
ESW-4	1/21/2019	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	224
WSW-1	1/21/2019	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	64.0
WSW-2	1/21/2019	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	80.0
WSW-3	1/15/2019	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	528
WSW-4	1/21/2019	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	48.0
SSW-1	1/21/2019	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	64.0
NSW-1	1/21/2019	-	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	80.0
Bottom Hole #1	1/15/2019	-	4	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	1,310
Bottom Hole #2	1/15/2019	-	4	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	544
Bottom Hole #3	1/15/2019	-	4	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	192
Bottom Hole #4	1/15/2019	-	4	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	320
Bottom Hole #5	1/21/2019	-	2	X		<10.0	36.7	43.1	79.8	<0.050	<0.050	<0.050	<0.150	<0.300	64.0
Bottom Hole #6	1/21/2019	-	2	X		<10.0	14.4	12.7	27.1	<0.050	<0.050	<0.050	<0.150	<0.300	32.0

Table 2
COG
SRO SWD 103
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	ORO						
Tank Battery Area													
ESW-1	1/15/2019	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	192
ESW-2	1/15/2019	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	208
ESW-3	1/15/2019	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	176
ESW-4	1/21/2019	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	224
WSW-1	1/21/2019	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	64.0
WSW-2	1/21/2019	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	80.0
WSW-3	1/15/2019	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	528
WSW-4	1/21/2019	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	48.0
SSW-1	1/21/2019	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	64.0
NSW-1	1/21/2019	-	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	80.0
Bottom Hole #1	1/15/2019	4	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	1,310
Bottom Hole #2	1/15/2019	4	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	544
Bottom Hole #3	1/15/2019	4'	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	192
Bottom Hole #4	1/15/2019	4'	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	320
Bottom Hole #5	1/21/2019	2'	X		<10.0	36.7	43.1	<0.050	<0.050	<0.050	<0.150	<0.300	64.0
Bottom Hole #6	1/21/2019	2'	X		<10.0	14.4	12.7	<0.050	<0.050	<0.050	<0.150	<0.300	32.0

Table 2
COG
SRO SWD 103
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	ORO	Total						
Pasture Area														
SW-2 East	7/19/2018	-		X	-	-	-	-	-	-	-	-	-	1,040
	7/27/2018	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	144
SW-2 West	7/19/2018	-		X	-	-	-	-	-	-	-	-	-	7,600
	7/27/2018	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	128
Bottom 2	7/19/2018	4'	X		-	-	-	-	-	-	-	-	-	240
SW-3 East	7/19/2018	-		X	-	-	-	-	-	-	-	-	-	848
	7/27/2018	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	80.0
SW-3 West	7/19/2018	-		X	-	-	-	-	-	-	-	-	-	1,580
	7/27/2018	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	128
Bottom 3	7/19/2018	4'	X		-	-	-	-	-	-	-	-	-	1,410
SW-4 East	7/19/2018	-		X	-	-	-	-	-	-	-	-	-	5,680
	7/27/2018	-		X	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	784
	8/2/2018	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	288
SW-4 West	7/19/2018	-	X		-	-	-	-	-	-	-	-	-	144
Bottom 4	7/19/2018	4'	X		-	-	-	-	-	-	-	-	-	2,600
SW-5 East	7/19/2018	-		X	-	-	-	-	-	-	-	-	-	2,160
	7/27/2018	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	32.0
SW-5 West	7/19/2018	-		X	-	-	-	-	-	-	-	-	-	2,000
	7/27/2018	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	32.0
Bottom 5	7/19/2018	4'	X		-	-	-	-	-	-	-	-	-	1,840
SW-6 East	7/19/2018	-	X		-	-	-	-	-	-	-	-	-	32.0
SW-6 West	7/19/2018	-	X		-	-	-	-	-	-	-	-	-	224
Bottom 6	7/19/2018	4'	X		-	-	-	-	-	-	-	-	-	544

Table 2
COG
SRO SWD 103
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	ORO	Total						
SW-7 North	7/19/2018	-		X	-	-	-	-	-	-	-	-	-	9,860
	7/27/2018	-	X		<10.0	10.6	<10.0	10.6	<0.050	<0.050	<0.050	<0.150	<0.300	144
SW-7 South	7/19/2018	-	X		-	-	-	-	-	-	-	-	-	432
Bottom 7	7/19/2018	-		X	-	-	-	-	-	-	-	-	-	6,720
	7/27/2018	4'	X		<10.0	14.4	10.6	25.0	<0.050	<0.050	<0.050	<0.150	<0.300	128
SW-8 North	7/19/2018	-	X		-	-	-	-	-	-	-	-	-	80.0
SW-8 South	7/19/2018	-	X		-	-	-	-	-	-	-	-	-	80.0
Bottom 8	7/19/2018	4'	X		-	-	-	-	-	-	-	-	-	368
SW-9 North	7/19/2018	-	X		-	-	-	-	-	-	-	-	-	576
SW-9 South	7/19/2018	-	X		-	-	-	-	-	-	-	-	-	288
SW-9 West	7/27/2018	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	16.0
Bottom 9	7/19/2018	4'	X		-	-	-	-	-	-	-	-	-	576

(-) Not Analyzed
 Excavation Depths
— Liner Installation

Photos

COG
SRO SWD #103
Eddy County, New Mexico



View North – Area of Bottom Areas 2 through 5



View West– Area of Bottom Areas 6 through 9

COG
SRO SWD #103
Eddy County, New Mexico



TETRA TECH



View Northeast – Area of Bottom Hole 4 and 5



View Southwest– Area of Bottom Hole 1 through 3

COG
SRO SWD #103
Eddy County, New Mexico



View East – Area of Bottom Hole 5 and 6



View North– Area of Bottom Hole 1 through 4

Appendix A

Incident ID	
District RP	2RP-4494
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: Ike Tavaréz Title: Senior HSE Supervisor
Signature:  Date: 4/15/2019
email: itavarez@concho.com Telephone: 432-685-2573

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: 12/2/2022
Printed Name: Brittany Hall Title: Environmental Specialist

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG- SRO SWD #103
Eddy County, New Mexico

24 South 27 East

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

24 South 28 East

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

24 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
160	17 4	16	15	14	13
18	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

25 South 27 East

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

25 South 28 East

6	5	4 35	3 32	2	1
7	8	9	10	11	12
18	17	16	15 48	14	13
19	20	21	22	23	24
30	29 20	28	27	26 40	25
31	32	33	34	35 55	36

25 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	23	24
30	29	28	27	26	25
31	32 115	33	34	35	36

26 South 27 East

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

26 South 28 East

6	5	4	3	2 120	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

26 South 29 East

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

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

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

34 NMOCD - Groundwater Data

123 Tetra Tech installed temporary wells and field water level

143 NMOCD Groundwater map well location



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 02475	CUB	ED		2	4	13	26S	27E		581450	3545252*	2061	100		
C 02476	CUB	ED		4	1	24	26S	27E		580653	3544032*	2942	150		
C 02160 S7		ED		3	3	1	22	26S	28E	586638	3543998*	3280	300	120	180
C 02478	CUB	ED		2	1	05	26S	28E		583848	3549325*	4473	100		
C 04022 POD1	CUB	ED		4	4	2	15	26S	28E	588082	3545647	4672	220	175	45
C 02479	CUB	ED		4	4	10	26S	28E		587909	3546534*	4737	200		
C 02480	CUB	ED		4	4	10	26S	28E		587909	3546534*	4737	150		
C 02160 S6		ED		3	3	1	14	26S	28E	588232	3545635*	4818	300	120	180
C 02160 S5		ED		1	1	1	14	26S	28E	588225	3546237*	4943	300	120	180
C 04022 POD2	CUB	ED		2	2	2	27	26S	28E	588106	3543082	4963	250	145	105

Average Depth to Water: **136 feet**

Minimum Depth: **120 feet**

Maximum Depth: **175 feet**

Record Count: 10

Basin/County Search:

County: Eddy

UTMNAD83 Radius Search (in meters):

Easting (X): 583475

Northing (Y): 3544867

Radius: 5000

*UTM location was derived from PLSS - see Help

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

3/7/18 12:41 PM

Page 1 of 1

WATER COLUMN/ AVERAGE
DEPTH TO WATER



COG SRO SWD #103

earst Potential

Legend

- High
- Low
- Medium
- SRO SWD #103

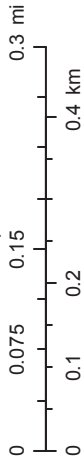
32.0369301, -104.1160126

New Mexico NFHL Data



April 10, 2019

1:9,028



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.

Appendix C

(26)

BLM SERIAL #:

COMPANY REFERENCE:

3.1 Seed Mixture 1, for Loamy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains lovegrass (<i>Eragrostis intermedia</i>)	0.5
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sideoats grama (<i>Bouteloua curtipendula</i>)	5.0
Plains bristlegrass (<i>Setaria macrostachya</i>)	2.0

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

Map Unit Description: Reagan-Upton association, 0 to 9 percent slopes---Eddy Area, New Mexico

SRO SWD #103

Eddy Area, New Mexico

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

Map Unit Setting

National map unit symbol: 1w5d

Elevation: 1,100 to 5,400 feet

Mean annual precipitation: 6 to 14 inches

Mean annual air temperature: 60 to 64 degrees F

Frost-free period: 180 to 240 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Reagan and similar soils: 70 percent

Upton and similar soils: 25 percent

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

Description of Reagan

Setting

Landform: Alluvial fans, fan remnants

Landform position (three-dimensional): Rise

Down-slope shape: Linear, convex

Across-slope shape: Linear

Parent material: Alluvium and/or eolian deposits

Typical profile

H1 - 0 to 8 inches: loam

H2 - 8 to 60 inches: loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Well drained

Runoff class: Low

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

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

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 40 percent

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

Sodium adsorption ratio, maximum in profile: 1.0

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

Interpretive groups

Land capability classification (irrigated): 2e

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: B

Ecological site: Loamy (R070DY153NM)

Map Unit Description: Reagan-Upton association, 0 to 9 percent slopes---Eddy Area, New Mexico

SRO SWD #103

Hydric soil rating: No

Description of Upton

Setting

Landform: Ridges, fans

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

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Residuum weathered from limestone

Typical profile

H1 - 0 to 9 inches: gravelly loam

H2 - 9 to 13 inches: gravelly loam

H3 - 13 to 21 inches: cemented

H4 - 21 to 60 inches: very gravelly loam

Properties and qualities

Slope: 0 to 9 percent

Depth to restrictive feature: 7 to 20 inches to petrocalcic

Natural drainage class: Well drained

Runoff class: High

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

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 75 percent

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

Sodium adsorption ratio, maximum in profile: 1.0

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

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D

Ecological site: Shallow Loamy (R070DY159NM)

Hydric soil rating: No

Minor Components

Pima

Percent of map unit:

Ecological site: Bottomland (R042XC017NM)

Hydric soil rating: No

Atoka

Percent of map unit:

Ecological site: Loamy (R042XC007NM)

Map Unit Description: Reagan-Upton association, 0 to 9 percent slopes---Eddy Area, New Mexico

SRO SWD #103

Hydric soil rating: No

Data Source Information

Soil Survey Area: Eddy Area, New Mexico

Survey Area Data: Version 14, Sep 12, 2018

Appendix D

Analytical Report 573367

for
Tetra Tech- Midland

Project Manager: Ike Tavaréz

SRO SWD #103

212C-MD-01056.200

18-JAN-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):

Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)

Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



18-JAN-18

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

Reference: XENCO Report No(s): **573367**
SRO SWD #103
Project Address: Eddy County, NM

Ike Tavaréz:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 573367. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 573367 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads 'Kelsey Brooks'.

Kelsey Brooks

Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



Sample Cross Reference 573367

Tetra Tech- Midland, Midland, TX

SRO SWD #103

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH-1 0-1	S	01-09-18 00:00		573367-001
BH-1 2-3	S	01-09-18 00:00		573367-002
BH-1 4-5	S	01-09-18 00:00		573367-003
BH-1 6-7	S	01-09-18 00:00		573367-004
BH-1 9-10	S	01-09-18 00:00		573367-005
BH-1 14-15	S	01-09-18 00:00		573367-006
BH-2 0-1	S	01-09-18 00:00		573367-008
BH-2 2-3	S	01-09-18 00:00		573367-009
BH-2 4-5	S	01-09-18 00:00		573367-010
BH-2 6-7	S	01-09-18 00:00		573367-011
BH-2 9-10	S	01-09-18 00:00		573367-012
BH-2 14-15	S	01-09-18 00:00		573367-013
BH-3 0-1	S	01-09-18 00:00		573367-015
BH-3 2-3	S	01-09-18 00:00		573367-016
BH-3 4-5	S	01-09-18 00:00		573367-017
BH-3 6-7	S	01-09-18 00:00		573367-018
BH-3 9-10	S	01-09-18 00:00		573367-019
BH-3 14-15	S	01-09-18 00:00		573367-020
BH-4 0-1	S	01-10-18 00:00		573367-022
BH-4 2-3	S	01-10-18 00:00		573367-023
BH-4 4-5	S	01-10-18 00:00		573367-024
BH-4 6-7	S	01-10-18 00:00		573367-025
BH-4 9-10	S	01-10-18 00:00		573367-026
BH-4 14-15	S	01-10-18 00:00		573367-027
BH-5 0-1'	S	01-10-18 00:00		573367-028
BH-5 2-3	S	01-10-18 00:00		573367-029
BH-5 6-7	S	01-10-18 00:00		573367-030
BH-6 0-1	S	01-10-18 00:00		573367-033
BH-6 2-3	S	01-10-18 00:00		573367-034
BH-6 4-5	S	01-10-18 00:00		573367-035
BH-6 6-7	S	01-10-18 00:00		573367-036
BH-6 9-10	S	01-10-18 00:00		573367-037
BH-7 0-1	S	01-10-18 00:00		573367-039
BH-7 2-3	S	01-10-18 00:00		573367-040
BH-7 4-5	S	01-10-18 00:00		573367-041
BH-7 6-7	S	01-10-18 00:00		573367-042
BH-8 0-1	S	01-10-18 00:00		573367-044
BH-8 2-3	S	01-10-18 00:00		573367-045
BH-8 4-5	S	01-10-18 00:00		573367-046
BH-8 6-7	S	01-10-18 00:00		573367-047
BH-9 0-1	S	01-10-18 00:00		573367-049
BH-9 2-3	S	01-10-18 00:00		573367-050
BH-9 4-5	S	01-10-18 00:00		573367-051



Sample Cross Reference 573367

Tetra Tech- Midland, Midland, TX

SRO SWD #103

BH-9 6-7	S	01-10-18 00:00	573367-052
BG-1 0-1	S	01-10-18 00:00	573367-054
BG-1 5	S	01-10-18 00:00	573367-055
BG-1 10	S	01-10-18 00:00	573367-056
BG-2 0-1	S	01-10-18 00:00	573367-057
BG-2 5	S	01-10-18 00:00	573367-058
BG-2 10	S	01-10-18 00:00	573367-059
BG-2 15	S	01-10-18 00:00	573367-060
BG-2 20	S	01-10-18 00:00	573367-061
BG-2 4-5	S	01-10-18 00:00	573367-062
BH-1 19-20	S	01-09-18 00:00	Not Analyzed
BH-2 19-20	S	01-09-18 00:00	Not Analyzed
BH-3 19-20	S	01-09-18 00:00	Not Analyzed
BH-5 9-10	S	01-10-18 00:00	Not Analyzed
BH-5 14-15	S	01-10-18 00:00	Not Analyzed
BH-6 14-15	S	01-10-18 00:00	Not Analyzed
BH-7 9-10	S	01-10-18 00:00	Not Analyzed
BH-8 9-10	S	01-10-18 00:00	Not Analyzed
BH-9 9-10	S	01-10-18 00:00	Not Analyzed

**CASE NARRATIVE****Client Name: Tetra Tech- Midland****Project Name: SRO SWD #103**Project ID: 212C-MD-01056.200
Work Order Number(s): 573367Report Date: 18-JAN-18
Date Received: 01/11/2018**Sample receipt non conformances and comments:**Client added sample 062- BH-5 4-5
ss 01/12/18**Sample receipt non conformances and comments per sample:**

None

Analytical non conformances and comments:

Batch: LBA-3038360 BTEX by EPA 8021B

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

Batch: LBA-3038373 BTEX by EPA 8021B

Lab Sample ID 573367-049 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Benzene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 573367-049.

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

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

Batch: LBA-3038388 Chloride by EPA 300

Lab Sample ID 573367-009 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 573367-001, -002, -003, -004, -005, -006, -008, -009, -010, -011, -012, -013, -015, -016.

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

Nitrate as N, Nitrite as N Relative Percent Difference (RPD) between matrix spike and duplicate were above quality control limits.

Samples in the analytical batch are: 573367-001, -002, -003, -004, -005, -006, -008, -009, -010, -011, -012, -013, -015, -016

**CASE NARRATIVE****Client Name: Tetra Tech- Midland****Project Name: SRO SWD #103**

Project ID: 212C-MD-01056.200
Work Order Number(s): 573367

Report Date: 18-JAN-18
Date Received: 01/11/2018

Batch: LBA-3038412 BTEX by EPA 8021B

Lab Sample ID 573367-029 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 573367-001, -002, -008, -009, -015, -016, -022, -023, -028, -029, -050.

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

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



Project Id: 212C-MD-01056.200
Contact: Ike Tavaraz
Project Location: Eddy County, NM

Certificate of Analysis Summary 573367

Tetra Tech- Midland, Midland, TX

Project Name: SRO SWD #103



Date Received in Lab: Thu Jan-11-18 04:14 pm
Report Date: 18-JAN-18
Project Manager: Kelsey Brooks

Analysis Requested		Lab Id: Field Id: Depth: Matrix: Sampled:	573367-001 BH-1 0-1 SOIL Jan-09-18 00:00	573367-002 BH-1 2-3 SOIL Jan-09-18 00:00	573367-003 BH-1 4-5 SOIL Jan-09-18 00:00	573367-004 BH-1 6-7 SOIL Jan-09-18 00:00	573367-005 BH-1 9-10 SOIL Jan-09-18 00:00	573367-006 BH-1 14-15 SOIL Jan-09-18 00:00
BTEX by EPA 8021B		Extracted: Analyzed: Units/RL:	Jan-16-18 08:00 Jan-16-18 17:02 mg/kg RL <0.00202 0.00202 <0.00202 0.00202 <0.00202 0.00202 <0.00403 0.00403 <0.00202 0.00202 <0.00202 0.00202 <0.00202 0.00202 <0.00202 0.00202	Jan-16-18 08:00 Jan-16-18 17:22 mg/kg RL <0.00200 0.00200 <0.00200 0.00200 <0.00200 0.00200 <0.00401 0.00401 <0.00200 0.00200 <0.00200 0.00200 <0.00200 0.00200				
Benzene								
Toluene								
Ethylbenzene								
m,p-Xylenes								
o-Xylene								
Total Xylenes								
Total BTEX								
Chloride by EPA 300		Extracted: Analyzed: Units/RL:	Jan-16-18 11:45 Jan-16-18 14:14 mg/kg RL 389 25.0	Jan-16-18 11:45 Jan-16-18 14:21 mg/kg RL 591 25.0	Jan-16-18 11:45 Jan-16-18 14:28 mg/kg RL 871 24.9	Jan-16-18 11:45 Jan-16-18 14:56 mg/kg RL 132 24.8	Jan-16-18 11:45 Jan-16-18 15:17 mg/kg RL 95.8 49.2	Jan-16-18 11:45 Jan-16-18 15:24 mg/kg RL 184 49.2
Chloride								
TPH by SW8015 Mod		Extracted: Analyzed: Units/RL:	Jan-12-18 12:00 Jan-13-18 17:35 mg/kg RL <15.0 15.0	Jan-12-18 12:00 Jan-13-18 17:58 mg/kg RL <15.0 15.0				
Gasoline Range Hydrocarbons (GRO)								
Diesel Range Organics (DRO)								
Oil Range Hydrocarbons (ORO)								
Total TPH								

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

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

Kelsey Brooks

Kelsey Brooks
Project Manager



Project Id: 212C-MD-01056.200
Contact: Ike Tavaraz
Project Location: Eddy County, NM

Certificate of Analysis Summary 573367

Tetra Tech- Midland, Midland, TX

Project Name: SRO SWD #103



Date Received in Lab: Thu Jan-11-18 04:14 pm
Report Date: 18-JAN-18
Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	573367-008	573367-009	573367-010	573367-011	573367-012	573367-013
	<i>Field Id:</i>	BH-2 0-1	BH-2 2-3	BH-2 4-5	BH-2 6-7	BH-2 9-10	BH-2 14-15
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-09-18 00:00	Jan-09-18 00:00	Jan-09-18 00:00	Jan-09-18 00:00	Jan-09-18 00:00	Jan-09-18 00:00
BTEX by EPA 8021B	<i>Extracted:</i>	Jan-16-18 08:00	Jan-16-18 08:00				
	<i>Analyzed:</i>	Jan-16-18 17:41	Jan-16-18 18:01				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
	Benzene	<0.00200 0.00200	<0.00199 0.00199				
	Toluene	<0.00200 0.00200	<0.00199 0.00199				
	Ethylbenzene	<0.00200 0.00200	<0.00199 0.00199				
Chloride by EPA 300	m,p-Xylenes	<0.00399 0.00399	<0.00398 0.00398				
	o-Xylene	<0.00200 0.00200	<0.00199 0.00199				
	Total Xylenes	<0.00200 0.00200	<0.00199 0.00199				
	Total BTEX	<0.00200 0.00200	<0.00199 0.00199				
Chloride	<i>Extracted:</i>	Jan-16-18 11:45	Jan-16-18 11:45	Jan-16-18 11:45	Jan-16-18 11:45	Jan-16-18 11:45	Jan-16-18 11:45
	<i>Analyzed:</i>	Jan-16-18 12:45	Jan-16-18 14:35	Jan-16-18 14:39	Jan-16-18 15:38	Jan-17-18 14:46	Jan-16-18 15:52
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
		852 4.99	832 4.91	10.4 4.91	139 49.2	28.9 5.00	195 25.0
TPH by SW8015 Mod	<i>Extracted:</i>	Jan-12-18 12:00	Jan-12-18 12:00				
	<i>Analyzed:</i>	Jan-13-18 18:20	Jan-13-18 18:43				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
	Gasoline Range Hydrocarbons (GRO)	<15.0 15.0	<15.0 15.0				
	Diesel Range Organics (DRO)	<15.0 15.0	<15.0 15.0				
	Oil Range Hydrocarbons (ORO)	<15.0 15.0	<15.0 15.0				
	Total TPH	<15.0 15.0	<15.0 15.0				

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

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

Kelsey Brooks
Project Manager



Project Id: 212C-MD-01056.200
Contact: Ike Tavaraz
Project Location: Eddy County, NM

Certificate of Analysis Summary 573367

Tetra Tech- Midland, Midland, TX

Project Name: SRO SWD #103



Date Received in Lab: Thu Jan-11-18 04:14 pm
Report Date: 18-JAN-18
Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	573367-015	573367-016	573367-017	573367-018	573367-019	573367-020
	<i>Field Id:</i>	BH-3 0-1	BH-3 2-3	BH-3 4-5	BH-3 6-7	BH-3 9-10	BH-3 14-15
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jan-09-18 00:00 Jan-16-18 08:00 Jan-16-18 14:20 mg/kg RL <0.00200 0.00200 <0.00200 0.00200 <0.00200 0.00200 <0.00399 0.00399 <0.00399 0.00399 <0.00200 0.00200 <0.00200 0.00200 <0.00200 0.00200 <0.00200 0.00200	Jan-09-18 00:00 Jan-16-18 08:00 Jan-16-18 14:39 mg/kg RL <0.00199 0.00199 <0.00199 0.00199 <0.00199 0.00199 <0.00398 0.00398 <0.00199 0.00199 <0.00199 0.00199 <0.00199 0.00199 <0.00199 0.00199	Jan-09-18 00:00 Jan-16-18 08:00 Jan-16-18 14:00 mg/kg RL <0.00199 0.00199 <0.00199 0.00199 <0.00199 0.00199 <0.00199 0.00199 <0.00199 0.00199 <0.00199 0.00199	Jan-09-18 00:00 Jan-16-18 08:00 Jan-16-18 14:00 mg/kg RL <0.00199 0.00199 <0.00199 0.00199 <0.00199 0.00199 <0.00199 0.00199 <0.00199 0.00199 <0.00199 0.00199	Jan-09-18 00:00 Jan-16-18 14:00 Jan-17-18 00:28 mg/kg RL <0.00199 0.00199 <0.00199 0.00199 <0.00199 0.00199 <0.00199 0.00199 <0.00199 0.00199 <0.00199 0.00199	Jan-09-18 00:00 Jan-16-18 14:00 Jan-17-18 00:35 mg/kg RL <0.00199 0.00199 <0.00199 0.00199 <0.00199 0.00199 <0.00199 0.00199 <0.00199 0.00199 <0.00199 0.00199
BTEX by EPA 8021B	<i>Extracted:</i>						
	<i>Analyzed:</i>						
	<i>Units/RL:</i>						
	Benzene						
	Toluene						
Chloride by EPA 300	<i>Extracted:</i>						
	<i>Analyzed:</i>						
	<i>Units/RL:</i>						
	Chloride						
TPH by SW8015 Mod	<i>Extracted:</i>						
	<i>Analyzed:</i>						
	<i>Units/RL:</i>						
	Gasoline Range Hydrocarbons (GRO)						
	Diesel Range Organics (DRO)						
Total TPH	<i>Extracted:</i>						
	<i>Analyzed:</i>						
	<i>Units/RL:</i>						

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

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

Kelsey Brooks

Kelsey Brooks
Project Manager



Project Id: 212C-MD-01056.200
Contact: Ike Tavaraz
Project Location: Eddy County, NM

Certificate of Analysis Summary 573367

Tetra Tech- Midland, Midland, TX

Project Name: SRO SWD #103



Date Received in Lab: Thu Jan-11-18 04:14 pm
Report Date: 18-JAN-18
Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	573367-022	573367-023	573367-024	573367-025	573367-026	573367-027
	Extracted:	Field Id:	Depth:	Matrix:	Sampled:	573367-022	573367-023	573367-024	573367-025	573367-026	573367-027
	Analyzed:	Field Id:	Depth:	Matrix:	Sampled:	573367-022	573367-023	573367-024	573367-025	573367-026	573367-027
	Units/RL:	Field Id:	Depth:	Matrix:	Sampled:	573367-022	573367-023	573367-024	573367-025	573367-026	573367-027
	Units/RL:	Field Id:	Depth:	Matrix:	Sampled:	573367-022	573367-023	573367-024	573367-025	573367-026	573367-027
BTEX by EPA 8021B											
Benzene											
Toluene											
Ethylbenzene											
m,p-Xylenes											
o-Xylene											
Total Xylenes											
Total BTEX											
Chloride by EPA 300											
Extracted:											
Analyzed:											
Units/RL:											
Chloride											
TPH by SW8015 Mod											
Extracted:											
Analyzed:											
Units/RL:											
Gasoline Range Hydrocarbons (GRO)											
Diesel Range Organics (DRO)											
Oil Range Hydrocarbons (ORO)											
Total TPH											

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

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

Kelsey Brooks

Kelsey Brooks
Project Manager



Project Id: 212C-MD-01056.200
Contact: Ike Tavaraz
Project Location: Eddy County, NM

Certificate of Analysis Summary 573367

Tetra Tech- Midland, Midland, TX

Project Name: SRO SWD #103



Date Received in Lab: Thu Jan-11-18 04:14 pm
Report Date: 18-JAN-18
Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	573367-028	<i>Field Id:</i>	BH-5 0-1'	<i>Depth:</i>		<i>Matrix:</i>	SOIL	<i>Sampled:</i>	Jan-10-18 00:00	<i>573367-029</i>	BH-5 2-3	<i>SOIL</i>	Jan-10-18 00:00	<i>573367-030</i>	BH-5 6-7	<i>SOIL</i>	Jan-10-18 00:00	<i>573367-033</i>	BH-6 0-1	<i>SOIL</i>	Jan-10-18 00:00	<i>573367-034</i>	BH-6 2-3	<i>SOIL</i>	Jan-10-18 00:00	<i>573367-035</i>	BH-6 4-5	<i>SOIL</i>	Jan-10-18 00:00
	<i>Extracted:</i>	Jan-16-18 08:00	<i>Analyzed:</i>	Jan-16-18 19:03	<i>Units/RL:</i>	mg/kg RL				Jan-16-18 08:00	Jan-16-18 08:00	Jan-16-18 12:44	mg/kg RL		Jan-13-18 08:00	Jan-13-18 15:55	mg/kg RL		Jan-13-18 08:00	Jan-13-18 15:55	mg/kg RL		Jan-13-18 08:00	Jan-13-18 15:55	mg/kg RL		Jan-13-18 08:00	Jan-13-18 15:55	mg/kg RL	
	Benzene	<0.00201	0.00201							<0.00200	0.00200				<0.00202	0.00202			<0.00202	0.00202			<0.00200	0.00200			<0.00200	0.00200		
	Toluene	<0.00201	0.00201							<0.00200	0.00200				<0.00202	0.00202			<0.00202	0.00202			<0.00200	0.00200			<0.00200	0.00200		
	Ethylbenzene	<0.00201	0.00201							<0.00200	0.00200				<0.00202	0.00202			<0.00202	0.00202			<0.00200	0.00200			<0.00200	0.00200		
Chloride by EPA 300	m,p-Xylenes	<0.00402	0.00402							<0.00401	0.00401				<0.00403	0.00403			<0.00403	0.00403			<0.00401	0.00401			<0.00401	0.00401		
	o-Xylene	<0.00201	0.00201							<0.00200	0.00200				<0.00202	0.00202			<0.00202	0.00202			<0.00200	0.00200			<0.00200	0.00200		
	Total Xylenes	<0.00201	0.00201							<0.00200	0.00200				<0.00202	0.00202			<0.00202	0.00202			<0.00200	0.00200			<0.00200	0.00200		
	Total BTX	<0.00201	0.00201							<0.00200	0.00200				<0.00202	0.00202			<0.00202	0.00202			<0.00200	0.00200			<0.00200	0.00200		
TPH by SW8015 Mod	<i>Extracted:</i>	Jan-16-18 14:00	<i>Analyzed:</i>	Jan-17-18 01:52	<i>Units/RL:</i>	mg/kg RL				Jan-16-18 14:00	Jan-16-18 14:00	Jan-17-18 01:59	mg/kg RL		Jan-16-18 14:00	Jan-17-18 02:20	mg/kg RL		Jan-16-18 14:00	Jan-17-18 02:27	mg/kg RL		Jan-16-18 14:00	Jan-17-18 02:34	mg/kg RL		Jan-16-18 14:00	Jan-17-18 01:31	mg/kg RL	
	Chloride	5170	49.0							1320	24.9				237	4.97			27400	250			5020	99.2			194	4.99		
	<i>Extracted:</i>	Jan-12-18 12:00	<i>Analyzed:</i>	Jan-13-18 21:18	<i>Units/RL:</i>	mg/kg RL				Jan-12-18 12:00	Jan-12-18 12:00	Jan-13-18 21:40	mg/kg RL		Jan-12-18 12:00	Jan-14-18 01:54	mg/kg RL		Jan-12-18 12:00	Jan-14-18 02:15	mg/kg RL		Jan-12-18 12:00	Jan-14-18 02:15	mg/kg RL		Jan-12-18 12:00	Jan-14-18 02:15	mg/kg RL	
	Gasoline Range Hydrocarbons (GRO)	<15.0	15.0							<15.0	15.0				<15.0	15.0			<15.0	15.0			<15.0	15.0			<15.0	15.0		
	Diesel Range Organics (DRO)	<15.0	15.0							<15.0	15.0				<15.0	15.0			<15.0	15.0			<15.0	15.0			<15.0	15.0		
Oil Range Hydrocarbons (ORO)	Oil Range Hydrocarbons (ORO)	<15.0	15.0							<15.0	15.0				<15.0	15.0			<15.0	15.0			<15.0	15.0			<15.0	15.0		
	Total TPH	<15.0	15.0							<15.0	15.0				<15.0	15.0			<15.0	15.0			<15.0	15.0			<15.0	15.0		

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

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

Kelsey Brooks

Kelsey Brooks
Project Manager



Project Id: 212C-MD-01056.200
Contact: Ike Tavaréz
Project Location: Eddy County, NM

Certificate of Analysis Summary 573367

Tetra Tech- Midland, Midland, TX

Project Name: SRO SWD #103



Date Received in Lab: Thu Jan-11-18 04:14 pm
Report Date: 18-JAN-18
Project Manager: Kelsey Brooks

Analysis Requested		Lab Id:	573367-036	573367-037	573367-039	573367-040	573367-041	573367-042
		Field Id:	BH-6 6-7	BH-6 9-10	BH-7 0-1	BH-7 2-3	BH-7 4-5	BH-7 6-7
		Depth:						
		Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Sampled:	Jan-10-18 00:00	Jan-10-18 00:00	Jan-10-18 00:00	Jan-10-18 00:00	Jan-10-18 00:00	Jan-10-18 00:00
BTEX by EPA 8021B		Extracted:			Jan-13-18 08:00	Jan-13-18 08:00		
		Analyzed:			Jan-13-18 16:14	Jan-13-18 16:34		
		Units/RL:			mg/kg RL	mg/kg RL		
		Benzene			<0.00200 0.00200	<0.00199 0.00199		
		Toluene			<0.00200 0.00200	<0.00199 0.00199		
		Ethylbenzene			<0.00200 0.00200	<0.00199 0.00199		
		m,p-Xylenes			<0.00399 0.00399	<0.00398 0.00398		
		o-Xylene			<0.00200 0.00200	<0.00199 0.00199		
		Total Xylenes			<0.00200 0.00200	<0.00199 0.00199		
		Total BTEX			<0.00200 0.00200	<0.00199 0.00199		
Chloride by EPA 300		Extracted:	Jan-16-18 14:00	Jan-16-18 14:00	Jan-16-18 14:00	Jan-16-18 17:00	Jan-16-18 17:00	
		Analyzed:	Jan-17-18 12:47	Jan-17-18 12:54	Jan-17-18 03:02	Jan-17-18 03:43	Jan-17-18 04:04	
		Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		6.21 4.99	6.59 4.97	5340 49.7	7460 99.6	310 4.90	63.1 5.00	
TPH by SW8015 Mod		Extracted:			Jan-12-18 12:00	Jan-12-18 12:00		
		Analyzed:			Jan-14-18 02:36	Jan-14-18 02:57		
		Units/RL:			mg/kg RL	mg/kg RL		
		Gasoline Range Hydrocarbons (GRO)			<15.0 15.0	<15.0 15.0		
		Diesel Range Organics (DRO)			<15.0 15.0	19.7 15.0		
Oil Range Hydrocarbons (ORO)			<15.0 15.0	<15.0 15.0				
Total TPH			<15.0 15.0	19.7 15.0				

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

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

Kelsey Brooks

Kelsey Brooks
Project Manager



Project Id: 212C-MD-01056.200
Contact: Ike Tavaraz
Project Location: Eddy County, NM

Certificate of Analysis Summary 573367

Tetra Tech- Midland, Midland, TX

Project Name: SRO SWD #103



Date Received in Lab: Thu Jan-11-18 04:14 pm
Report Date: 18-JAN-18
Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	Field Id:	Depth:	Matrix:	Sampled:	573367-044	573367-045	573367-046	573367-047	573367-049	573367-050
	Extracted:	Field Id:	Depth:	Matrix:	Sampled:	573367-044	573367-045	573367-046	573367-047	573367-049	573367-050
	Analyzed:	Field Id:	Depth:	Matrix:	Sampled:	573367-044	573367-045	573367-046	573367-047	573367-049	573367-050
	Units/RL:	Field Id:	Depth:	Matrix:	Sampled:	573367-044	573367-045	573367-046	573367-047	573367-049	573367-050
	Units/RL:	Field Id:	Depth:	Matrix:	Sampled:	573367-044	573367-045	573367-046	573367-047	573367-049	573367-050
BTEX by EPA 8021B											
Benzene											
Toluene											
Ethylbenzene											
m,p-Xylenes											
o-Xylene											
Total Xylenes											
Total BTEX											
Chloride by EPA 300											
Extracted:											
Analyzed:											
Units/RL:											
Chloride											
TPH by SW8015 Mod											
Extracted:											
Analyzed:											
Units/RL:											
Gasoline Range Hydrocarbons (GRO)											
Diesel Range Organics (DRO)											
Oil Range Hydrocarbons (ORO)											
Total TPH											

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

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

Kelsey Brooks

Kelsey Brooks
Project Manager



Project Id: 212C-MD-01056.200
Contact: Ike Tavaréz
Project Location: Eddy County, NM

Certificate of Analysis Summary 573367

Tetra Tech- Midland, Midland, TX

Project Name: SRO SWD #103



Date Received in Lab: Thu Jan-11-18 04:14 pm
Report Date: 18-JAN-18
Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	573367-051	573367-052	573367-054	573367-055	573367-056	573367-057
	<i>Field Id:</i>	BH-9 4-5	BH-9 6-7	BG-1 0-1	BG-1 5	BG-1 10	BG-2 0-1
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Chloride by EPA 300	<i>Sampled:</i>	Jan-10-18 00:00	Jan-10-18 00:00	Jan-10-18 00:00	Jan-10-18 00:00	Jan-10-18 00:00	Jan-10-18 00:00
	<i>Extracted:</i>	Jan-16-18 17:00	Jan-16-18 17:00	Jan-16-18 17:00	Jan-16-18 17:00	Jan-16-18 17:00	Jan-16-18 17:00
	<i>Analyzed:</i>	Jan-17-18 05:07	Jan-17-18 13:01	Jan-17-18 05:21	Jan-17-18 05:42	Jan-17-18 13:08	Jan-17-18 06:10
	<i>Units/RL:</i>	mg/kg RL 66.6 4.90	mg/kg RL 15.2 4.90	mg/kg RL 12.6 4.97	mg/kg RL 225 5.00	mg/kg RL <4.93 4.93	mg/kg RL 11.5 5.00
Chloride							

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

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

Kelsey Brooks
Project Manager



Project Id: 212C-MD-01056.200
Contact: Ike Tavaréz
Project Location: Eddy County, NM

Certificate of Analysis Summary 573367

Tetra Tech- Midland, Midland, TX

Project Name: SRO SWD #103



Date Received in Lab: Thu Jan-11-18 04:14 pm
Report Date: 18-JAN-18
Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	573367-058	573367-059	573367-060	573367-061	573367-062
	<i>Field Id:</i>	BG-2 5	BG-2 10	BG-2 15	BG-2 20	BG-2 4-5
	<i>Depth:</i>					
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL
Chloride by EPA 300	<i>Sampled:</i>	Jan-10-18 00:00	Jan-10-18 00:00	Jan-10-18 00:00	Jan-10-18 00:00	Jan-10-18 00:00
	<i>Extracted:</i>	Jan-16-18 17:00	Jan-16-18 17:00	Jan-16-18 17:00	Jan-16-18 17:00	Jan-16-18 17:00
	<i>Analyzed:</i>	Jan-17-18 13:15	Jan-17-18 13:22	Jan-17-18 06:31	Jan-17-18 06:38	Jan-17-18 06:45
	<i>Units/RL:</i>	mg/kg RL <4.93 4.93	mg/kg RL 36.1 5.00	mg/kg RL 274 24.6	mg/kg RL 238 24.7	mg/kg RL 393 4.99
Chloride						

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

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

Kelsey Brooks
Project Manager



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - San Antonio - Atlanta - Midland/Odessa - Tampa/Lakeland - Phoenix - Latin America

4147 Greenbriar Dr, Stafford, TX 77477
 9701 Harry Hines Blvd, Dallas, TX 75220
 5332 Blackberry Drive, San Antonio TX 78238
 1211 W Florida Ave, Midland, TX 79701
 2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: SRO SWD #103

Work Orders : 573367,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038360

Sample: 573367-033 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/13/18 15:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0303	0.0300	101	80-120	

Lab Batch #: 3038360

Sample: 573367-034 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/13/18 15:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0360	0.0300	120	80-120	

Lab Batch #: 3038360

Sample: 573367-039 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/13/18 16:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 3038360

Sample: 573367-040 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/13/18 16:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0263	0.0300	88	80-120	

Lab Batch #: 3038360

Sample: 573367-044 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/13/18 16:51

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0327	0.0300	109	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: SRO SWD #103

Work Orders : 573367,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038360

Sample: 573367-045 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/13/18 17:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0330	0.0300	110	80-120	
4-Bromofluorobenzene	0.0327	0.0300	109	80-120	

Lab Batch #: 3038399

Sample: 573367-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/13/18 17:35

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	88.5	100	89	70-135	
o-Terphenyl	45.5	50.0	91	70-135	

Lab Batch #: 3038399

Sample: 573367-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/13/18 17:58

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	83.6	100	84	70-135	
o-Terphenyl	43.2	50.0	86	70-135	

Lab Batch #: 3038399

Sample: 573367-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/13/18 18:20

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	89.1	100	89	70-135	
o-Terphenyl	46.2	50.0	92	70-135	

Lab Batch #: 3038399

Sample: 573367-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/13/18 18:43

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	98.2	100	98	70-135	
o-Terphenyl	51.1	50.0	102	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: SRO SWD #103

Work Orders : 573367,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038399

Sample: 573367-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/13/18 19:06

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.5	100	91	70-135	
o-Terphenyl	46.9	50.0	94	70-135	

Lab Batch #: 3038399

Sample: 573367-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/13/18 19:28

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.1	100	91	70-135	
o-Terphenyl	47.4	50.0	95	70-135	

Lab Batch #: 3038399

Sample: 573367-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/13/18 19:51

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.6	100	85	70-135	
o-Terphenyl	44.3	50.0	89	70-135	

Lab Batch #: 3038399

Sample: 573367-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/13/18 20:56

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.1	100	86	70-135	
o-Terphenyl	45.5	50.0	91	70-135	

Lab Batch #: 3038399

Sample: 573367-028 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/13/18 21:18

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.2	100	90	70-135	
o-Terphenyl	47.4	50.0	95	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: SRO SWD #103

Work Orders : 573367,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038399

Sample: 573367-029 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/13/18 21:40

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.1	100	93	70-135	
o-Terphenyl	48.8	50.0	98	70-135	

Lab Batch #: 3038408

Sample: 573367-033 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/14/18 01:54

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.4	100	84	70-135	
o-Terphenyl	46.2	50.0	92	70-135	

Lab Batch #: 3038408

Sample: 573367-034 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/14/18 02:15

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.9	100	85	70-135	
o-Terphenyl	45.3	50.0	91	70-135	

Lab Batch #: 3038408

Sample: 573367-039 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/14/18 02:36

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.6	100	88	70-135	
o-Terphenyl	44.9	50.0	90	70-135	

Lab Batch #: 3038408

Sample: 573367-040 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/14/18 02:57

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.2	100	80	70-135	
o-Terphenyl	43.0	50.0	86	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: SRO SWD #103

Work Orders : 573367,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038408

Sample: 573367-044 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/14/18 03:18

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.3	100	88	70-135	
o-Terphenyl	44.3	50.0	89	70-135	

Lab Batch #: 3038408

Sample: 573367-045 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/14/18 03:39

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.8	100	88	70-135	
o-Terphenyl	45.6	50.0	91	70-135	

Lab Batch #: 3038408

Sample: 573367-049 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/14/18 04:00

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.0	100	86	70-135	
o-Terphenyl	45.3	50.0	91	70-135	

Lab Batch #: 3038408

Sample: 573367-050 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/14/18 05:02

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.9	100	92	70-135	
o-Terphenyl	47.8	50.0	96	70-135	

Lab Batch #: 3038373

Sample: 573367-049 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/16/18 01:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: SRO SWD #103

Work Orders : 573367,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038412

Sample: 573367-029 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/16/18 12:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

Lab Batch #: 3038412

Sample: 573367-015 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/16/18 14:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

Lab Batch #: 3038412

Sample: 573367-016 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/16/18 14:39

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

Lab Batch #: 3038412

Sample: 573367-050 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/16/18 15:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 3038412

Sample: 573367-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/16/18 17:02

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: SRO SWD #103

Work Orders : 573367,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038412

Sample: 573367-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/16/18 17:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0275	0.0300	92	80-120	

Lab Batch #: 3038412

Sample: 573367-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/16/18 17:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0285	0.0300	95	80-120	

Lab Batch #: 3038412

Sample: 573367-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/16/18 18:01

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

Lab Batch #: 3038412

Sample: 573367-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/16/18 18:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0267	0.0300	89	80-120	

Lab Batch #: 3038412

Sample: 573367-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/16/18 18:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0275	0.0300	92	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: SRO SWD #103

Work Orders : 573367,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038412

Sample: 573367-028 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/16/18 19:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 3038360

Sample: 7637495-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/13/18 10:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0257	0.0300	86	80-120	

Lab Batch #: 3038399

Sample: 7637445-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/13/18 14:32

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	71.2	100	71	70-135	
o-Terphenyl	35.1	50.0	70	70-135	

Lab Batch #: 3038408

Sample: 7637446-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/14/18 00:51

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	72.3	100	72	70-135	
o-Terphenyl	36.2	50.0	72	70-135	

Lab Batch #: 3038373

Sample: 7637512-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/16/18 01:30

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: SRO SWD #103

Work Orders : 573367,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038412

Sample: 7637559-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/16/18 12:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

Lab Batch #: 3038360

Sample: 7637495-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/13/18 08:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 3038399

Sample: 7637445-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/13/18 14:54

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.6	100	71	70-135	
o-Terphenyl	42.2	50.0	84	70-135	

Lab Batch #: 3038408

Sample: 7637446-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/14/18 01:12

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.6	100	72	70-135	
o-Terphenyl	36.2	50.0	72	70-135	

Lab Batch #: 3038373

Sample: 7637512-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/15/18 23:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: SRO SWD #103

Work Orders : 573367,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038412

Sample: 7637559-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/16/18 10:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	

Lab Batch #: 3038360

Sample: 7637495-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/13/18 09:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

Lab Batch #: 3038399

Sample: 7637445-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/13/18 15:17

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.4	100	73	70-135	
o-Terphenyl	38.8	50.0	78	70-135	

Lab Batch #: 3038408

Sample: 7637446-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/14/18 01:33

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.6	100	74	70-135	
o-Terphenyl	37.3	50.0	75	70-135	

Lab Batch #: 3038373

Sample: 7637512-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/15/18 23:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0321	0.0300	107	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: SRO SWD #103

Work Orders : 573367,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038412

Sample: 7637559-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/16/18 10:48

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 3038399

Sample: 573366-055 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/13/18 16:02

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.1	100	82	70-135	
o-Terphenyl	41.2	50.0	82	70-135	

Lab Batch #: 3038360

Sample: 573366-047 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/13/18 18:28

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 3038408

Sample: 573367-049 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/14/18 04:21

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.2	100	86	70-135	
o-Terphenyl	53.6	50.0	107	70-135	

Lab Batch #: 3038373

Sample: 573367-049 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/16/18 00:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0312	0.0300	104	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: SRO SWD #103

Work Orders : 573367,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038412

Sample: 573367-029 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/16/18 11:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 3038360

Sample: 573366-047 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/13/18 09:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0317	0.0300	106	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 3038399

Sample: 573366-055 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/13/18 16:25

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.6	100	71	70-135	
o-Terphenyl	36.2	50.0	72	70-135	

Lab Batch #: 3038408

Sample: 573367-049 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/14/18 04:41

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.0	100	86	70-135	
o-Terphenyl	45.7	50.0	91	70-135	

Lab Batch #: 3038373

Sample: 573367-049 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/16/18 00:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: SRO SWD #103

Work Orders : 573367,

Project ID: 212C-MD-01056.200

Lab Batch #: 3038412

Sample: 573367-029 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/16/18 11:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Work Order #: 573367

Analyst: ALJ

Lab Batch ID: 3038360

Units: mg/kg

Sample: 7637495-1-BKS

Date Prepared: 01/13/2018

Batch #: 1

Project ID: 212C-MD-01056.200

Date Analyzed: 01/13/2018

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	<0.00200	0.0998	0.104	104	0.100	0.104	104	0	70-130	35	
Toluene	<0.00200	0.0998	0.103	103	0.100	0.103	103	0	70-130	35	
Ethylbenzene	<0.00200	0.0998	0.101	101	0.100	0.101	101	0	71-129	35	
m,p-Xylenes	<0.00399	0.200	0.203	102	0.200	0.203	102	0	70-135	35	
o-Xylene	<0.00200	0.0998	0.100	100	0.100	0.101	101	1	71-133	35	

Date Prepared: 01/15/2018

Date Analyzed: 01/15/2018

Analyst: ALJ

Lab Batch ID: 3038373

Units: mg/kg

Sample: 7637512-1-BKS

Batch #: 1

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	<0.00201	0.100	0.0906	91	0.101	0.0933	92	3	70-130	35	
Toluene	<0.00201	0.100	0.0869	87	0.101	0.0896	89	3	70-130	35	
Ethylbenzene	<0.00201	0.100	0.0832	83	0.101	0.0857	85	3	71-129	35	
m,p-Xylenes	<0.00402	0.201	0.166	83	0.202	0.171	85	3	70-135	35	
o-Xylene	<0.00201	0.100	0.0845	85	0.101	0.0869	86	3	71-133	35	

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



Work Order #: 573367

Analyst: ALJ

Lab Batch ID: 3038412

Units: mg/kg

Sample: 7637559-1-BKS

Date Prepared: 01/16/2018

Batch #: 1

Project ID: 212C-MD-01056.200

Date Analyzed: 01/16/2018

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
BTEX by EPA 8021B											
Benzene	<0.00200	0.100	0.0943	94	0.100	0.0924	92	2	70-130	35	
Toluene	<0.00200	0.100	0.0915	92	0.100	0.0898	90	2	70-130	35	
Ethylbenzene	<0.00200	0.100	0.0872	87	0.100	0.0874	87	0	71-129	35	
m,p-Xylenes	<0.00400	0.200	0.174	87	0.201	0.176	88	1	70-135	35	
o-Xylene	<0.00200	0.100	0.0864	86	0.100	0.0878	88	2	71-133	35	

Date Prepared: 01/16/2018

Date Analyzed: 01/16/2018

Analyst: OJS

Sample: 7637550-1-BKS

Batch #: 1

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride by EPA 300											
Chloride	<5.00	250	273	109	250	275	110	1	90-110	20	

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



Work Order #: 573367

Analyst: OJS

Lab Batch ID: 3038483

Units: mg/kg

Sample: 7637553-1-BKS

Date Prepared: 01/16/2018

Batch #: 1

Project ID: 212C-MD-01056.200

Date Analyzed: 01/16/2018

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
mg/kg												
Units:	Analytes	Chloride by EPA 300										
		Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Chloride	<5.00	250	256	102	250	257	103	0	90-110	20	

Date Prepared: 01/16/2018

Batch #: 1

Date Analyzed: 01/17/2018

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
mg/kg											
Units:	Chloride by EPA 300										
	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<5.00	250	264	106	250	261	104	1	90-110	20	

Date Prepared: 01/12/2018

Batch #: 1

Date Analyzed: 01/13/2018

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
TPH by SW8015 Mod		Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes												
Gasoline Range Hydrocarbons (GRO)		<15.0	1000	860	86	1000	918	92	7	70-135	35	
Diesel Range Organics (DRO)		<15.0	1000	819	82	1000	860	86	5	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes

Work Order #: 573367

Analyst: ALJ

Lab Batch ID: 3038408

Units: mg/kg

Sample: 7637446-1-BKS

Date Prepared: 01/12/2018

Batch #: 1

Project ID: 212C-MD-01056.200

Date Analyzed: 01/14/2018

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
mg/kg												
Units:												
TPH by SW8015 Mod		Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes												
Gasoline Range Hydrocarbons (GRO)		<15.0	1000	747	75	1000	781	78	4	70-135	35	
Diesel Range Organics (DRO)		<15.0	1000	904	90	1000	939	94	4	70-135	35	

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

Form 3 - MS / MSD Recoveries

Project Name: SRO SWD #103



Work Order #: 573367
Lab Batch ID: 3038360
Date Analyzed: 01/13/2018
Reporting Units: mg/kg
Project ID: 212C-MD-01056.200
QC- Sample ID: 573366-047 S
Batch #: 1
Matrix: Soil
Date Prepared: 01/13/2018
Analyst: ALJ

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00202	0.101	0.0970	96	0.100	0.0819	82	17	70-130	35	
Toluene	<0.00202	0.101	0.0883	87	0.100	0.0736	74	18	70-130	35	
Ethylbenzene	<0.00202	0.101	0.0742	73	0.100	0.0662	66	11	71-129	35	X
m,p-Xylenes	<0.00403	0.202	0.145	72	0.201	0.132	66	9	70-135	35	X
o-Xylene	<0.00202	0.101	0.0742	73	0.100	0.0661	66	12	71-133	35	X

Lab Batch ID: 3038373
Date Analyzed: 01/16/2018
Reporting Units: mg/kg
QC- Sample ID: 573367-049 S
Batch #: 1
Matrix: Soil
Date Prepared: 01/15/2018
Analyst: ALJ

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00199	0.0996	0.0748	75	0.100	0.0662	66	12	70-130	35	X
Toluene	<0.00199	0.0996	0.0683	69	0.100	0.0594	59	14	70-130	35	X
Ethylbenzene	<0.00199	0.0996	0.0583	59	0.100	0.0514	51	13	71-129	35	X
m,p-Xylenes	<0.00398	0.199	0.110	55	0.200	0.0985	49	11	70-135	35	X
o-Xylene	<0.00199	0.0996	0.0590	59	0.100	0.0520	52	13	71-133	35	X

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
 Relative Percent Difference $RPD = 200 \times [(C-F)/(C+F)]$
 ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
 N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Work Order #: 573367
 Lab Batch ID: 3038412
 Date Analyzed: 01/16/2018
 Reporting Units: mg/kg

Project ID: 212C-MD-01056.200
 QC-Sample ID: 573367-029 S
 Date Prepared: 01/16/2018
 Batch #: 1
 Matrix: Soil
 Analyst: ALJ

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes												
Benzene		<0.00200	0.100	0.0657	66	0.0998	0.0612	61	7	70-130	35	X
Toluene		<0.00200	0.100	0.0617	62	0.0998	0.0570	57	8	70-130	35	X
Ethylbenzene		<0.00200	0.100	0.0566	57	0.0998	0.0516	52	9	71-129	35	X
m,p-Xylenes		<0.00401	0.200	0.112	56	0.200	0.102	51	9	70-135	35	X
o-Xylene		<0.00200	0.100	0.0581	58	0.0998	0.0529	53	9	71-133	35	X

Lab Batch ID: 3038388
 Date Analyzed: 01/16/2018
 Reporting Units: mg/kg

QC-Sample ID: 573367-008 S
 Date Prepared: 01/16/2018
 Batch #: 1
 Matrix: Soil
 Analyst: OJS

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes												
Chloride		852	250	1040	75	250	1050	79	1	90-110	20	X

Lab Batch ID: 3038388
 Date Analyzed: 01/16/2018
 Reporting Units: mg/kg

QC-Sample ID: 573367-009 S
 Date Prepared: 01/16/2018
 Batch #: 1
 Matrix: Soil
 Analyst: OJS

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes												
Chloride		832	246	1010	72	246	1070	97	6	90-110	20	X

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
 Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$
 ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
 N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

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



Work Order #: 573367
 Lab Batch ID: 3038483
 Date Analyzed: 01/17/2018
 Reporting Units: mg/kg

Project ID: 212C-MD-01056.200
 QC-Sample ID: 573367-026 S
 Date Prepared: 01/16/2018
 Batch #: 1
 Matrix: Soil
 Analyst: OJS

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	268	250	510	97	250	506	95	1	90-110	20	

Lab Batch ID: 3038483
 Date Analyzed: 01/17/2018
 Reporting Units: mg/kg

QC-Sample ID: 573367-035 S
 Date Prepared: 01/16/2018
 Batch #: 1
 Matrix: Soil
 Analyst: OJS

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	194	250	451	103	250	446	101	1	90-110	20	

Lab Batch ID: 3038486
 Date Analyzed: 01/17/2018
 Reporting Units: mg/kg

QC-Sample ID: 573367-041 S
 Date Prepared: 01/16/2018
 Batch #: 1
 Matrix: Soil
 Analyst: OJS

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	310	245	548	97	245	546	96	0	90-110	20	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
 Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$
 ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
 N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

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



Work Order #: 573367
 Lab Batch ID: 3038486
 Date Analyzed: 01/17/2018
 Reporting Units: mg/kg

QC- Sample ID: 573367-054 S
 Date Prepared: 01/16/2018
 Batch #: 1
 Matrix: Soil
 Analyst: OJS

Project ID: 212C-MD-01056.200

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	12.6	249	274	105	249	276	106	1	90-110	20	

Lab Batch ID: 3038399
 Date Analyzed: 01/13/2018
 Reporting Units: mg/kg
 QC- Sample ID: 573366-055 S
 Date Prepared: 01/12/2018
 Batch #: 1
 Matrix: Soil
 Analyst: ALJ

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Gasoline Range Hydrocarbons (GRO)	<15.0	500	476	95	500	525	105	10	70-135	35	
Diesel Range Organics (DRO)	<15.0	500	499	100	500	557	111	11	70-135	35	

Lab Batch ID: 3038408
 Date Analyzed: 01/14/2018
 Reporting Units: mg/kg
 QC- Sample ID: 573367-049 S
 Date Prepared: 01/12/2018
 Batch #: 1
 Matrix: Soil
 Analyst: ALJ

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	805	81	1000	773	77	4	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	804	80	1000	772	77	4	70-135	35	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
 Relative Percent Difference $RPD = 200 \times [(C-F)/(C+F)]$
 ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
 N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

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



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

Page 1 of 7

Client Name:		COG		Site Manager:		Ike Tavaréz			
Project Name:		SRO SWD #103							
Project Location: (county, state)		Eddy County, NM		Project #:		212C-MD-01056.200			
Invoice to:		COG							
Receiving Laboratory:		Xenco		Sampler Signature:		Clair Gonzales			
Comments:		Run deeper samples if TPH exceeds 100 mg/kg. Run deeper samples if benzene exceeds 10 mg/kg, or total BTEX exceeds 50 mg/kg.							
LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)		
		YEAR:	DATE					TIME	
	BH-1 0-1		01/09/18		X		1		
	BH-1 2-3		01/09/18		X		1		
	BH-1 4-5		01/09/18		X		1		
	BH-1 6-7		01/09/18		X		1		
	BH-1 9-10		01/09/18		X		1		
	BH-1 14-15		01/09/18		X		1		
	BH-1 19-20		01/09/18		X		1		
	BH-2 0-1		01/09/18		X		1		
	BH-2 2-3		01/09/18		X		1		
	BH-2 4-5		01/09/18		X		1		
Retinquished by:		Date:		Time:		Date:		Time:	
Retinquished by:		Date:		Time:		Date:		Time:	
Retinquished by:		Date:		Time:		Date:		Time:	
Received by:		Date:		Time:		Date:		Time:	

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

BTEX 8021B BTEX 8260B	
TPH TX1005 (Ext to C35)	
TPH 8015M (GRO - DRO - ORO)	
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	

ANALYSIS REQUEST
(Circle or Specify Method No.)

573367

ORIGINAL COPY

Temp: 0.4
CF: (0-6: -0.2°C)

IR ID: R-8

Corrected Temp: 17.7

Analysis Request of Chain of Custody Record



Tetra Tech, Inc.

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

Page 2 of 7

Client Name:		COG						Site Manager:		Ike Tavaréz							
Project Name:		SRO SWD #103															
Project Location: (county, state)		Eddy County, NM						Project #:		212C-MD-01056.200							
Invoice to:		COG															
Receiving Laboratory:		Xenco						Sampler Signature:		Clair Gonzales							
Comments:		Run deeper samples if TPH exceeds 100 mg/kg. Run deeper samples if benzene exceeds 10 mg/kg, or total BTEX exceeds 50 mg/kg.															
LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD				# CONTAINERS		FILTERED (Y/N)					
		YEAR:															
	BH-2 6-7	DATE	TIME	WATER	SOIL	HCL	HNO ₃	ICE									
	BH-2 9-10	01/09/18		X			X					1					
	BH-2 14-15	01/09/18		X			X					1					
	BH-2 19-20	01/09/18		X			X					1					
	BH-3 0-1	01/09/18		X			X					1					
	BH-3 2-3	01/09/18		X			X					1					
	BH-3 4-5	01/09/18		X			X					1					
	BH-3 6-7	01/09/18		X			X					1					
	BH-3 9-10	01/09/18		X			X					1					
	BH-3 14-15	01/09/18		X			X					1					
Relinquished by:		Date:	Time:	Received by:		Date:	Time:										
Relinquished by:		Date:	Time:	Received by:		Date:	Time:										
Relinquished by:		Date:	Time:	Received by:		Date:	Time:										

ANALYSIS REQUEST
(Circle or Specify Method No.)

573307

[illegible]

ORIGINAL COPY

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

Page 3 of 7

Client Name:

COG

Site Manager:

Ike Tavarez

Project Name:

SRO SWD #103

Project Location:

Eddy County, NM

Project #:

212C-MD-01056.200

Invoice to:

COG

Receiving Laboratory:

Xenco

Sampler Signature:

Clair Gonzales

Comments:

Run deeper samples if TPH exceeds 100 mg/kg.
Run deeper samples if benzene exceeds 10 mg/kg, or total BTEX exceeds 50 mg/kg.

LAB #

(LAB USE ONLY)

SAMPLE IDENTIFICATION

SAMPLING

MATRIX

YEAR:

DATE

TIME

WATER

SOIL

HCL

HNO₃

ICE

CONTAINERS

FILTERED (Y/N)

BTEX 8021B

TPH TX1005 (Ext to C35)

TPH 8015M (GRO - DRO - ORO)

PAH 8270C

Total Metals Ag As Ba Cd Cr Pb Se Hg

TCLP Metals Ag As Ba Cd Cr Pb Se Hg

TCLP Volatiles

TCLP Semi Volatiles

RCI

GC/MS Vol. 8260B / 624

GC/MS Semi. Vol. 8270C/625

PCB's 8082 / 608

NORM

PLM (Asbestos)

Chloride

Chloride Sulfate TDS

General Water Chemistry (see attached list)

Anion/Cation Balance

Hold

X

Relinquished by:

Date: Time:

Received by:

Date: Time:

Relinquished by:

Date: Time:

Received by:

Date: Time:

Relinquished by:

Date: Time:

Received by:

Date: Time:

LAB USE ONLY

REMARKS:

☐ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

ANALYSIS REQUEST
(Circle or Specify Method No.)

573347

ORIGINAL COPY

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:		COG		Site Manager:		Ike Tavaraz	
Project Name:		SRO SWD #103		Project #:		212C-MD-01056.200	
Project Location: (county, state)		Eddy County, NM		Project #:		212C-MD-01056.200	
Invoice to:		COG		Sampler Signature:		Clair Gonzales	
Receiving Laboratory:		Xenco		Sampler Signature:		Clair Gonzales	
Comments:		Run deeper samples if TPH exceeds 100 mg/kg. Run deeper samples if benzene exceeds 10 mg/kg, or total BTEX exceeds 50 mg/kg.					
LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)
		YEAR:	DATE				
	BH-5 9-10		01/10/18		X	1	
	BH-5 14-15		01/10/18		X	1	
	BH-6 0-1		01/10/18		X	1	
	BH-6 2-3		01/10/18		X	1	
	BH-6 4-5		01/10/18		X	1	
	BH-6 6-7		01/10/18		X	1	
	BH-6 9-10		01/10/18		X	1	
	BH-6 14-15		01/10/18		X	1	
	BH-7 0-1		01/10/18		X	1	
	BH-7 2-3		01/10/18		X	1	
Relinquished by:		Date:		Time:		Received by:	
Relinquished by:		Date:		Time:		Received by:	
Relinquished by:		Date:		Time:		Received by:	
Relinquished by:		Date:		Time:		Received by:	

ORIGINAL COPY

573367

ANALYSIS REQUEST
(Circle or Specify Method No.)

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

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

Page 5 of 7

[illegible]

ORIGINAL COPY

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

Page 6 of 7

Client Name:		COG		Site Manager:		Ike Tavaréz													
Project Name:				SRO SWD #103															
Project Location:				Eddy County, NM		Project #:													
(county, state)						212C-MD-01056.200													
Invoice to:																			
Receiving Laboratory:				COG															
Xenco				Sampler Signature:		Clair Gonzales													
Comments:																			
Run deeper samples if TPH exceeds 100 mg/Kg. Run deeper samples if benzene exceeds 10 mg/kg, or total BTEX exceeds 50 mg/kg.																			
LAB # (LAB USE ONLY)		SAMPLE IDENTIFICATION		SAMPLING		MATRIX		PRESERVATIVE METHOD		# CONTAINERS		FILTERED (Y/N)							
				YEAR:															
				DATE		TIME		WATER		SOIL		HCL		HNO ₃		ICE			
BH-9 4-5				01/10/18				X				X						1	
BH-9 6-7				01/10/18				X				X						1	
BH-9 9-10				01/10/18				X				X						1	
BG-1 0-1				01/10/18				X				X						1	
BG-1 5				01/10/18				X				X						1	
BG-1 10				01/10/18				X				X						1	
BG-2 0-1				01/10/18				X				X						1	
BG-2 5				01/10/18				X				X						1	
BG-2 10				01/10/18				X				X						1	
BG-2 15				01/10/18				X				X						1	
Relinquished by:				Date:		Time:		Received by:				Date:		Time:					
Clair Gonzales				11/10		414		M. Tavaréz				11-18		10:14					
Relinquished by:				Date:		Time:		Received by:				Date:		Time:					
Relinquished by:				Date:		Time:		Received by:				Date:		Time:					

ANALYSIS REQUEST
(Circle or Specify Method No.)

573367

[illegible]

ORIGINAL COPY

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

[illegible]Page 7 of 7

ORIGINAL COPY

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

Page 1 of 7

[illegible]

(Circle or Specify Method No.)

573367

LAB USE ONLY

REMARKS:

Standard

☐ **RUSH:** Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

ND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY

Temp: 0.4
CF: (0-6: -0.2°C)

IR ID: B-8

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

Page

2 of

7

Client Name:		COG		Site Manager:		Ike Tavaréz	
Project Name:		SRO SWD #103		Project #:		212C-MD-01056.200	
Project Location: (county, state)		Eddy County, NM		Project #:		212C-MD-01056.200	
Invoice to:		COG		Sampler Signature:		Clair Gonzales	
Receiving Laboratory:		Xenco		Sampler Signature:		Clair Gonzales	
Comments:		Run deeper samples if TPH exceeds 100 mg/kg. Run deeper samples if benzene exceeds 10 mg/kg, or total BTEx exceeds 50 mg/kg.					
LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR:	DATE	TIME	MATRIX WATER SOIL	PRESERVATIVE METHOD HCL HNO ₃ ICE	# CONTAINERS FILTERED (Y/N)
	BH-2 6-7		01/09/18		X		1
	BH-2 9-10		01/09/18		X		1
	BH-2 14-15		01/09/18		X		1
	BH-2 19-20		01/09/18		X		1
	BH-3 0-1		01/09/18		X		1
	BH-3 2-3		01/09/18		X		1
	BH-3 4-5		01/09/18		X		1
	BH-3 6-7		01/09/18		X		1
	BH-3 9-10		01/09/18		X		1
	BH-3 14-15		01/09/18		X		1
Relinquished by:		Date:		Time:		Date:	
Relinquished by:		Date:		Time:		Date:	
Relinquished by:		Date:		Time:		Date:	
Received by:		Date:		Time:		Date:	
Received by:		Date:		Time:		Date:	
Received by:		Date:		Time:		Date:	
Sample Temperature		LAB USE ONLY		REMARKS:		<input type="checkbox"/> RUSH: Same Day 24 hr 48 hr 72 hr <input type="checkbox"/> Rush Charges Authorized <input type="checkbox"/> Special Report Limits or TRRP Report	
Sample Temperature		LAB USE ONLY		REMARKS:		<input type="checkbox"/> RUSH: Same Day 24 hr 48 hr 72 hr <input type="checkbox"/> Rush Charges Authorized <input type="checkbox"/> Special Report Limits or TRRP Report	

(Circle or Specify Method No.)

573367

ORIGINAL COPY

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

Page 4 of 7[illegible]

ORIGINAL COPY

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

Page 5 of 7

S73367

Client Name:		COG		Site Manager:		Ike Tavaréz	
Project Name:		SRO SWD #103		Project #:		212C-MD-01056.200	
Project Location: (county, state)		Eddy County, NM		Project #:		212C-MD-01056.200	
Invoice to:		COG		Sampler Signature:		Clair Gonzales	
Receiving Laboratory:		Xenco		Sampler Signature:		Clair Gonzales	
Comments:		Run deeper samples if TPH exceeds 100 mg/kg. Run deeper samples if benzene exceeds 10 mg/kg, or total BTEX exceeds 50 mg/kg.					
LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)
		YEAR:	DATE				
	BH-7 4-5		01/10/18		X	1	
	BH-7 6-7		01/10/18		X	1	
	BH-7 9-10		01/10/18		X	1	
	BH-8 0-1		01/10/18		X	1	
	BH-8 2-3		01/10/18		X	1	
	BH-8 4-5		01/10/18		X	1	
	BH-8 6-7		01/10/18		X	1	
	BH-8 9-10		01/10/18		X	1	
	BH-9 0-1		01/10/18		X	1	
	BH-9 2-3		01/10/18		X	1	
Relinquished by:		Date:		Time:		Received by:	
Relinquished by:		Date:		Time:		Received by:	
Relinquished by:		Date:		Time:		Received by:	
Relinquished by:		Date:		Time:		Received by:	

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

ANALYSIS REQUEST (Circle or Specify Method No.)	
BTEX 8021B BTEX 8260B	
TPH TX1005 (Ext to C35)	
TPH 8015M (GRO - DRO - ORO)	
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

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

Page 6 of 7

[illegible]

ORIGINAL COPY

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

Page 7 of 7[illegible]

ORIGINAL COPY



Client: Tetra Tech- Midland

Date/ Time Received: 01/11/2018 04:14:00 PM

Work Order #: 573367

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

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

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Shawnee Smith

Date: 01/12/2018

Checklist reviewed by:

Kelsey Brooks

Date: 01/12/2018

Analytical Report 574085

for
Tetra Tech- Midland

Project Manager: Ike Tavaréz

SRO SWD #103

29-JAN-18

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):

Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)

Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



29-JAN-18

Project Manager: **Ike Tavaréz**

Tetra Tech- Midland

4000 N. Big Spring Suite 401

Midland, TX 79705

Reference: XENCO Report No(s): **574085**

SRO SWD #103

Project Address: Eddy County, NM

Ike Tavaréz:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 574085. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 574085 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink, appearing to read 'Kelsey Brooks', written over a horizontal line.

Kelsey Brooks

Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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



Sample Cross Reference 574085

Tetra Tech- Midland, Midland, TX

SRO SWD #103

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH-10 0-1	S	01-18-18 00:00		574085-001
BH-10 2-3	S	01-18-18 00:00		574085-002
BH-10 4-5	S	01-18-18 00:00		574085-003
BH-10 6-7	S	01-18-18 00:00		574085-004
BH-10 9-10	S	01-18-18 00:00		574085-005
BH-11 0-1	S	01-18-18 00:00		574085-008
BH-11 2-3	S	01-18-18 00:00		574085-009
BH-11 4-5	S	01-18-18 00:00		574085-010
BH-11 6-7	S	01-18-18 00:00		574085-011
BH-11 9-10	S	01-18-18 00:00		574085-012
BH-10 14-15	S	01-18-18 00:00		Not Analyzed
BH-10 19-20	S	01-18-18 00:00		Not Analyzed
BH-11 14-15	S	01-18-18 00:00		Not Analyzed



CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: SRO SWD #103

Project ID:

Work Order Number(s): 574085

Report Date: 29-JAN-18

Date Received: 01/19/2018

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3038956 BTEX by EPA 8021B

Lab Sample ID 574085-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Ethylbenzene recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 574085-001, -002, -003, -004, -008, -009.

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

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



Certificate of Analysis Summary 574085

Tetra Tech- Midland, Midland, TX

Project Name: SRO SWD #103



Project Id: Ike Tavaréz
Contact: Eddy County, NM
Project Location:

Date Received in Lab: Fri Jan-19-18 03:00 pm
Report Date: 29-JAN-18
Project Manager: Kelsey Brooks

<i>Analysis Requested</i>		<i>Lab Id:</i>	<i>Field Id:</i>	<i>Depth:</i>	<i>Matrix:</i>	<i>Sampled:</i>	<i>574085-001</i>	<i>574085-002</i>	<i>574085-003</i>	<i>574085-004</i>	<i>574085-005</i>	<i>574085-008</i>
BTEX by EPA 8021B		<i>Extracted:</i>	Jan-22-18 09:00		SOIL	Jan-18-18 00:00	Jan-22-18 09:00	Jan-22-18 09:00	Jan-22-18 09:00	Jan-18-18 00:00	Jan-18-18 00:00	Jan-18-18 00:00
		<i>Analyzed:</i>	Jan-22-18 12:21		SOIL	Jan-18-18 00:00	Jan-22-18 12:41	Jan-22-18 13:00	Jan-22-18 13:19	Jan-18-18 00:00	Jan-18-18 00:00	Jan-22-18 09:00
		<i>Units/RL:</i>	mg/kg RL		SOIL	Jan-18-18 00:00	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene			<0.00201	0.00201			0.00216	<0.00198	<0.00199	<0.00199	<0.00199	<0.00199
Toluene			0.0123	0.00201			<0.00200	<0.00198	<0.00199	<0.00199	<0.00199	<0.00199
Ethylbenzene			<0.00201	0.00201			0.0220	<0.00198	<0.00199	<0.00199	<0.00199	<0.00199
m,p-Xylenes			0.0970	0.00402			0.0907	<0.00397	<0.00398	<0.00398	<0.00398	<0.00398
o-Xylene			<0.00201	0.00201			0.0234	<0.00198	<0.00199	<0.00199	<0.00199	<0.00199
Total Xylenes			0.0970	0.00201			0.114	<0.00198	<0.00199	<0.00199	<0.00199	<0.00199
Total BTEX			0.109	0.00201			0.138	<0.00198	<0.00199	<0.00199	<0.00199	<0.00199
Chloride by EPA 300		<i>Extracted:</i>	Jan-23-18 16:45				Jan-24-18 13:00	Jan-24-18 13:00	Jan-25-18 09:00	Jan-25-18 09:00	Jan-25-18 09:00	Jan-25-18 09:00
		<i>Analyzed:</i>	Jan-23-18 23:20				Jan-25-18 11:47	Jan-25-18 11:54	Jan-26-18 11:31	Jan-25-18 21:14	Jan-25-18 21:21	Jan-25-18 21:21
		<i>Units/RL:</i>	mg/kg RL				mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride			944	4.94			652	70.3	32.4	103	2760	24.9
TPH By SW8015 Mod		<i>Extracted:</i>	Jan-23-18 14:00				Jan-23-18 14:00	Jan-23-18 14:00	Jan-23-18 14:00	Jan-23-18 14:00	Jan-23-18 14:00	Jan-23-18 14:00
		<i>Analyzed:</i>	Jan-24-18 08:57				Jan-24-18 07:17	Jan-24-18 07:38	Jan-24-18 07:58	Jan-24-18 08:18	Jan-24-18 08:18	Jan-24-18 08:18
		<i>Units/RL:</i>	mg/kg RL				mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)			655	74.8			20.2	<15.0	<15.0	<15.0	<15.0	<15.0
Diesel Range Organics (DRO)			7080	74.8			86.7	<15.0	<15.0	<15.0	<15.0	<15.0
Oil Range Hydrocarbons (ORO)			3300	74.8			19.7	<15.0	<15.0	<15.0	<15.0	<15.0
Total TPH			11000	74.8			127	<15.0	<15.0	<15.0	<15.0	<15.0

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

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

Kelsey Brooks

Kelsey Brooks
Project Manager



Tetra Tech-Midland, Midland, TX

Project Name: SRO SWD #103

Project Id:		Date Received in Lab:	Fri Jan-19-18 03:00 pm
Contact:	Ike Tavaraz	Report Date:	29-JAN-18
Project Location:	Eddy County,NM	Project Manager:	Kelsey Brooks

Analysis Requested					Lab Id:	574085-009	574085-010	574085-011	574085-012
	Field Id:	Depth:	Matrix:		BH-11 2-3	BH-11 4-5	BH-11 6-7	BH-11 9-10	
					SOIL	SOIL	SOIL	SOIL	
	Sampled:				Jan-18-18 00:00	Jan-18-18 00:00	Jan-18-18 00:00	Jan-18-18 00:00	
BTEX by EPA 8021B	Extracted:	Jan-22-18 09:00							
	Analyzed:	Jan-22-18 16:28							
	Units/RL:	mg/kg RL							
		<0.00200 0.00200							
	Benzene								
	Toluene	<0.00200 0.00200							
	Ethylbenzene	<0.00200 0.00200							
	m,p-Xylenes	<0.00401 0.00401							
	o-Xylene	<0.00200 0.00200							
	Total Xylenes	<0.00200 0.00200							
Total BTEX					<0.00200 0.00200				
Chloride by EPA 300	Extracted:	Jan-25-18 09:00	Jan-25-18 09:00	Jan-25-18 09:00	Jan-25-18 09:00	Jan-25-18 09:00	Jan-25-18 09:00	Jan-25-18 09:00	
	Analyzed:	Jan-25-18 21:28	Jan-25-18 21:35	Jan-25-18 21:42	Jan-25-18 21:49	Jan-25-18 21:49	Jan-25-18 21:49	Jan-25-18 21:49	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		1710 25.0	1670 50.0	1670 25.0	174 49.0	174 49.0	174 49.0	174 49.0	
TPH By SW8015 Mod	Extracted:	Jan-23-18 14:00							
	Analyzed:	Jan-24-18 08:37							
	Units/RL:	mg/kg RL							
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0							
Diesel Range Organics (DRO)		<15.0 15.0							
Oil Range Hydrocarbons (ORO)		<15.0 15.0							
Total TPH		<15.0 15.0							

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

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

Wm. H. Beach

Kelsey Brooks
Project Manager



Flagging Criteria



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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - San Antonio - Atlanta - Midland/Odessa - Tampa/Lakeland - Phoenix - Latin America

4147 Greenbriar Dr, Stafford, TX 77477
 9701 Harry Hines Blvd, Dallas, TX 75220
 5332 Blackberry Drive, San Antonio TX 78238
 1211 W Florida Ave, Midland, TX 79701
 2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	



Form 2 - Surrogate Recoveries

Project Name: SRO SWD #103

Work Orders : 574085,

Lab Batch #: 3038956

Sample: 574085-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/22/18 12:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0331	0.0300	110	80-120	

Lab Batch #: 3038956

Sample: 574085-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/22/18 12:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0330	0.0300	110	80-120	

Lab Batch #: 3038956

Sample: 574085-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/22/18 13:00

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0249	0.0300	83	80-120	

Lab Batch #: 3038956

Sample: 574085-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/22/18 13:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 3038956

Sample: 574085-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/22/18 16:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: SRO SWD #103

Work Orders : 574085,

Lab Batch #: 3038956

Sample: 574085-009 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/22/18 16:28

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0263	0.0300	88	80-120	

Lab Batch #: 3039135

Sample: 574085-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/24/18 07:17

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	89.9	100	90	70-135	
o-Terphenyl	45.9	50.0	92	70-135	

Lab Batch #: 3039135

Sample: 574085-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/24/18 07:38

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	99.9	103	70-135	
o-Terphenyl	51.9	50.0	104	70-135	

Lab Batch #: 3039135

Sample: 574085-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/24/18 07:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	93.5	99.7	94	70-135	
o-Terphenyl	47.7	49.9	96	70-135	

Lab Batch #: 3039135

Sample: 574085-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/24/18 08:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	102	99.9	102	70-135	
o-Terphenyl	51.3	50.0	103	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: SRO SWD #103

Work Orders : 574085,

Lab Batch #: 3039135

Sample: 574085-009 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/24/18 08:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.8	100	70-135	
o-Terphenyl	50.6	49.9	101	70-135	

Lab Batch #: 3039135

Sample: 574085-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/24/18 08:57

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.0	99.7	98	70-135	
o-Terphenyl	52.3	49.9	105	70-135	

Lab Batch #: 3038956

Sample: 7637845-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/22/18 11:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0242	0.0300	81	80-120	

Lab Batch #: 3039135

Sample: 7637989-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/24/18 01:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	50.9	50.0	102	70-135	

Lab Batch #: 3038956

Sample: 7637845-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/22/18 09:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0340	0.0300	113	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: SRO SWD #103

Work Orders : 574085,

Lab Batch #: 3039135

Sample: 7637989-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/24/18 01:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	51.7	50.0	103	70-135	

Lab Batch #: 3038956

Sample: 7637845-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/22/18 10:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0358	0.0300	119	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	

Lab Batch #: 3039135

Sample: 7637989-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 01/24/18 02:14

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	57.7	50.0	115	70-135	

Lab Batch #: 3038956

Sample: 574085-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/22/18 10:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0259	0.0300	86	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 3039135

Sample: 573941-046 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/24/18 02:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.9	111	70-135	
o-Terphenyl	64.1	50.0	128	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Form 2 - Surrogate Recoveries

Project Name: SRO SWD #103

Work Orders : 574085,

Lab Batch #: 3038956

Sample: 574085-001 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/22/18 11:01

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0260	0.0300	87	80-120	
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	

Lab Batch #: 3039135

Sample: 573941-046 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 01/24/18 03:13

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	119	99.8	119	70-135	
o-Terphenyl	62.0	49.9	124	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Work Order #: 574085

Analyst: ALJ

Lab Batch ID: 3038956

Units: mg/kg

Sample: 7637845-1-BKS

Batch #: 1

Date Prepared: 01/22/2018

Project ID:

Date Analyzed: 01/22/2018

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00199	0.0996	0.0737	74	0.100	0.0722	72	2	70-130	35	
Toluene	<0.00199	0.0996	0.0765	77	0.100	0.0739	74	3	70-130	35	
Ethylbenzene	<0.00199	0.0996	0.0793	80	0.100	0.0791	79	0	71-129	35	
m,p-Xylenes	<0.00398	0.199	0.156	78	0.200	0.156	78	0	70-135	35	
o-Xylene	<0.00199	0.0996	0.0800	80	0.100	0.0807	81	1	71-133	35	

Date Prepared: 01/23/2018

Date Analyzed: 01/23/2018

Analyst: OJS

Lab Batch ID: 3039235

Sample: 7637929-1-BKS

Units: mg/kg

Batch #: 1

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride by EPA 300	<5.00	250	261	104	250	252	101	4	90-110	20	

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

Work Order #: 574085

Analyst: OJS

Lab Batch ID: 3039225

Units: mg/kg

Sample: 7637985-1-BKS

Date Prepared: 01/24/2018

Batch #: 1

Project ID:

Date Analyzed: 01/24/2018

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
mg/kg											
Units:	Chloride by EPA 300										
	Analytes										
	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	<5.00	250	274	110	250	274	110	0	90-110	20	

Date Prepared: 01/25/2018

Batch #: 1

Date Analyzed: 01/25/2018

Matrix: Solid

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

Date Prepared: 01/23/2018

Batch #: 1

Date Analyzed: 01/24/2018

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Units: mg/kg											
Analytes	TPH By SW8015 Mod										
	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Gasoline Range Hydrocarbons (GRO)										
	<15.0	1000	842	84	1000	828	83	2	70-135	35	
	Diesel Range Organics (DRO)										
	<15.0	1000	971	97	1000	931	93	4	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



Work Order #: 574085
 Lab Batch ID: 3038956
 Date Analyzed: 01/22/2018
 Reporting Units: mg/kg

Project ID:

QC- Sample ID: 574085-001 S Batch #: 1 Matrix: Soil
 Date Prepared: 01/22/2018 Analyst: ALJ

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes												
Benzene		<0.00202	0.101	0.0464	46	0.100	0.0414	41	11	70-130	35	X
Toluene		0.0123	0.101	0.0537	41	0.100	0.0453	33	17	70-130	35	X
Ethylbenzene		<0.00202	0.101	0.0772	76	0.100	0.0627	63	21	71-129	35	X
m,p-Xylenes		0.0970	0.202	0.142	22	0.200	0.116	10	20	70-135	35	X
o-Xylene		<0.00202	0.101	0.0522	52	0.100	0.0432	43	19	71-133	35	X

Lab Batch ID: 3039225 QC- Sample ID: 574308-003 S Batch #: 1 Matrix: Soil
 Date Analyzed: 01/24/2018 Date Prepared: 01/24/2018 Analyst: OJS

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes												
Chloride		5.65	250	285	112	250	289	113	1	90-110	20	X

Lab Batch ID: 3039225 QC- Sample ID: 574309-001 S Batch #: 1 Matrix: Soil
 Date Analyzed: 01/24/2018 Date Prepared: 01/24/2018 Analyst: OJS

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes												
Chloride		12.7	250	274	105	250	277	106	1	90-110	20	

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

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

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



Work Order #: 574085
 Lab Batch ID: 3039235
 Date Analyzed: 01/23/2018
 Reporting Units: mg/kg

Project ID:

QC- Sample ID: 573941-046 S Batch #: 1 Matrix: Soil
 Date Prepared: 01/23/2018 Analyst: OJS

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<5.02	251	262	104	251	271	108	3	90-110	20	

Lab Batch ID: 3039235
 Date Analyzed: 01/23/2018
 Reporting Units: mg/kg

QC- Sample ID: 573970-001 S Batch #: 1 Matrix: Soil
 Date Prepared: 01/23/2018 Analyst: OJS

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	910	249	1180	108	249	1140	92	3	90-110	20	

Lab Batch ID: 3039275
 Date Analyzed: 01/25/2018
 Reporting Units: mg/kg

QC- Sample ID: 574401-009 S Batch #: 1 Matrix: Soil
 Date Prepared: 01/25/2018 Analyst: OJS

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<4.94	247	260	105	247	249	101	4	90-110	20	

Matrix Spike Percent Recovery $[D] = 100 \times (C-A)/B$
 Relative Percent Difference $RPD = 200 \times |(C-F)/(C+F)|$
 ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
 N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

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



Work Order #: 574085
 Lab Batch ID: 3039275
 Date Analyzed: 01/25/2018
 Reporting Units: mg/kg

Project ID:

QC- Sample ID: 574401-010 S Batch #: 1 Matrix: Soil
 Date Prepared: 01/25/2018 Analyst: OJS

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<4.95	248	251	101	248	250	101	0	90-110	20	

Lab Batch ID: 3039135 QC- Sample ID: 573941-046 S Batch #: 1 Matrix: Soil

Date Analyzed: 01/24/2018 Date Prepared: 01/23/2018 Analyst: ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Gasoline Range Hydrocarbons (GRO)	<15.0	999	925	93	998	981	98	6	70-135	35	
Diesel Range Organics (DRO)	<15.0	999	1040	104	998	1080	108	4	70-135	35	

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

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

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



Analysis Request of Chain of Custody Record

Page 1 of 2



Tetra Tech, Inc.

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

574085

Client Name: COG

Site Manager: Ike Tavaréz

Project Name:

SRO SWD #103

Project Location:
(county, state) Eddy County, NM

Project #: 212C-MD-01056.200

Invoice to:

COG

Receiving Laboratory:

Xenco

Sampler Signature:

Clair Gonzales

Comments:

 Run deeper samples if TPH exceeds 100 mg/kg.
 Run deeper samples if benzene exceeds 10 mg/kg, or total BTEX exceeds 50 mg/kg.

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD				# CONTAINERS	FILTERED (Y/N)	LAB USE ONLY	REMARKS:
		YEAR:	DATE	TIME	WATER	SOIL	HCL	HNO ₃	ICE				
	BH-10 0-1		01/18/18		X			X			1		
	BH-10 2-3		01/18/18		X			X			1		
	BH-10 4-5		01/18/18		X			X			1		
	BH-10 6-7		01/18/18		X			X			1		
	BH-10 9-10		01/18/18		X			X			1		
	BH-10 14-15		01/18/18		X			X			1		
	BH-10 19-20		01/18/18		X			X			1		
	BH-11 0-1		01/18/18		X			X			1		
	BH-11 2-3		01/18/18		X			X			1		
	BH-11 4-5		01/18/18		X			X			1		
Relinquished by:	Date: 12-14-18	Time: 3:00	Received by:	Date: 1-19-18	Time: 3:00								
Relinquished by:	Date:	Time:	Received by:	Date:	Time:								

 ANALYSIS REQUEST
 (Circle or Specify Method No.)

 LAB USE ONLY
☐ RUSH: Same Day 24 hr 48 hr 72 hr
☐ Rush Charges Authorized
☐ Special Report Limits or TRRP Report

(Circle) HAND DE

 Temp: 2.70e IR ID: R-8
 CF: (0-6: -0.2°C)
 (6-23: +0.2°C)
 Corrected Temp: 2.50e

Analysis Request of Chain of Custody Record



Tetra Tech, Inc.

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

574085

Page 2 of 2

Client Name:		COG		Site Manager:		Ike Tavares							
Project Name:		SRO SWD #103											
Project Location: (county, state)		Eddy County, NM		Project #:		212C-MD-01056.200							
Invoice to:		COG											
Receiving Laboratory:		Xenco		Sampler Signature:		Clair Gonzales							
Comments:		Run deeper samples if TPH exceeds 100 mg/kg. Run deeper samples if benzene exceeds 10 mg/kg, or total BTEX exceeds 50 mg/kg.											
LAB # (LAB USE ONLY)		SAMPLE IDENTIFICATION		SAMPLING		MATRIX		PRESERVATIVE METHOD		# CONTAINERS		FILTERED (Y/N)	
				YEAR:									
				DATE		TIME		WATER		SOIL			
		BH-11 6-7		01/18/18				X		X		1	
		BH-11 9-10		01/18/18				X		X		1	
		BH-11 14-15		01/18/18				X		X		1	
Relinquished by:		Date: Time:		Received by:		Date: Time:							
Relinquished by:		Date: Time:		Received by:		Date: Time:							
Relinquished by:		Date: Time:		Received by:		Date: Time:							

ANALYSIS REQUEST

(Circle or Specify Method No.)

BTEX 8021B BTEX 8260B
TPH TX1005 (Ext to C35)
TPH 8015M (GRO - DRO - ORO -)
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

Final 1.000

REMARKS:

LAB USE ONLY

☐ **RUSH:** Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

(Circle) HAN

Temp: 21 °C IR ID: R-8
CF: (0-6: -0.2 °C)

Corrected Temp: 2.500

ORIGINAL COPY



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 01/19/2018 03:00:00 PM

Work Order #: 574085

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist**Comments**

#1 *Temperature of cooler(s)?	2.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Shawnee Smith

Date: 01/19/2018

Checklist reviewed by:

Kelsey Brooks

Date: 01/19/2018



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

July 20, 2018

LUPE CARRASCO

HRL COMPLIANCE SOLUTIONS, INC.

2385 F 1/2 ROAD

GRAND JUNCTION, CO 81505

RE: SRO #103

Enclosed are the results of analyses for samples received by the laboratory on 07/19/18 15:30.

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.

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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

HRL COMPLIANCE SOLUTIONS, INC.
 LUPE CARRASCO
 2385 F 1/2 ROAD
 GRAND JUNCTION CO, 81505
 Fax To:

Received: 07/19/2018
 Reported: 07/20/2018
 Project Name: SRO #103
 Project Number: NONE GIVEN
 Project Location: COG

Sampling Date: 07/19/2018
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SW 5 - EAST (H801978-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2160	16.0	07/20/2018	ND	432	108	400	3.77		

Sample ID: SW 5 - WEST (H801978-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2000	16.0	07/20/2018	ND	432	108	400	3.77	

Sample ID: BOTTOM 5 (H801978-03)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1840	16.0	07/20/2018	ND	432	108	400	3.77	

Sample ID: SW 6 - EAST (H801978-04)

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	07/20/2018	ND	432	108	400	3.77	

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

HRL COMPLIANCE SOLUTIONS, INC.
 LUPE CARRASCO
 2385 F 1/2 ROAD
 GRAND JUNCTION CO, 81505
 Fax To:

Received: 07/19/2018
 Reported: 07/20/2018
 Project Name: SRO #103
 Project Number: NONE GIVEN
 Project Location: COG

Sampling Date: 07/19/2018
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SW 6 - WEST (H801978-05)

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	07/20/2018	ND	432	108	400	3.77		

Sample ID: BOTTOM 6 (H801978-06)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	544	16.0	07/20/2018	ND	432	108	400	3.77		

Sample ID: SW 7 - NORTH (H801978-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	9860	16.0	07/20/2018	ND	432	108	400	3.77		

Sample ID: SW 7 - SOUTH (H801978-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	432	16.0	07/20/2018	ND	432	108	400	3.77		

Sample ID: BOTTOM 7 (H801978-09)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	6720	16.0	07/20/2018	ND	432	108	400	3.77		

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

HRL COMPLIANCE SOLUTIONS, INC.
 LUPE CARRASCO
 2385 F 1/2 ROAD
 GRAND JUNCTION CO, 81505
 Fax To:

Received: 07/19/2018
 Reported: 07/20/2018
 Project Name: SRO #103
 Project Number: NONE GIVEN
 Project Location: COG

Sampling Date: 07/19/2018
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SW 2 - EAST (H801978-10)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1040	16.0	07/20/2018	ND	432	108	400	3.77		

Sample ID: SW 2 - WEST (H801978-11)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	7600	16.0	07/20/2018	ND	432	108	400	3.77		

Sample ID: BOTTOM 2 (H801978-12)

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	07/20/2018	ND	432	108	400	3.77		

Sample ID: SW 3 - EAST (H801978-13)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	848	16.0	07/20/2018	ND	432	108	400	3.77		

Sample ID: SW 3 - WEST (H801978-14)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1580	16.0	07/20/2018	ND	432	108	400	3.77		

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

HRL COMPLIANCE SOLUTIONS, INC.
 LUPE CARRASCO
 2385 F 1/2 ROAD
 GRAND JUNCTION CO, 81505
 Fax To:

Received: 07/19/2018
 Reported: 07/20/2018
 Project Name: SRO #103
 Project Number: NONE GIVEN
 Project Location: COG

Sampling Date: 07/19/2018
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: BOTTOM 3 (H801978-15)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1410	16.0	07/20/2018	ND	432	108	400	3.77		

Sample ID: SW 4 - EAST (H801978-16)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5680	16.0	07/20/2018	ND	432	108	400	3.77		

Sample ID: SW 4 - WEST (H801978-17)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	07/20/2018	ND	432	108	400	3.77		

Sample ID: BOTTOM 4 (H801978-18)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2600	16.0	07/20/2018	ND	432	108	400	3.77		

Sample ID: SW 8 - NORTH (H801978-19)

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	07/20/2018	ND	432	108	400	3.77		

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

HRL COMPLIANCE SOLUTIONS, INC.
 LUPE CARRASCO
 2385 F 1/2 ROAD
 GRAND JUNCTION CO, 81505
 Fax To:

Received: 07/19/2018
 Reported: 07/20/2018
 Project Name: SRO #103
 Project Number: NONE GIVEN
 Project Location: COG

Sampling Date: 07/19/2018
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SW 8 - SOUTH (H801978-20)

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	07/20/2018	ND	432	108	400	3.77		

Sample ID: BOTTOM 8 (H801978-21)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	368	16.0	07/20/2018	ND	432	108	400	3.77		

Sample ID: SW 9 - NORTH (H801978-22)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	576	16.0	07/20/2018	ND	432	108	400	3.77		

Sample ID: SW 9 - SOUTH (H801978-23)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	07/20/2018	ND	432	108	400	3.77	

Sample ID: BOTTOM 9 (H801978-24)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	576	16.0	07/20/2018	ND	432	108	400	3.77		

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

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

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

1043

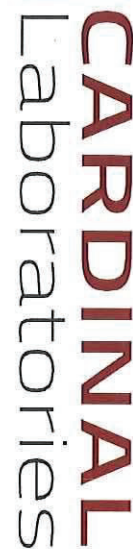
101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: <u>Concho</u>		P.O. #:		BILL TO												ANALYSIS REQUEST																									
Project Manager: <u>Dakota Neal</u>		Company: <u>Concho</u>																																							
Address:		Attn:																																							
City:		Address:																																							
Phone #:		City:																																							
Project #:		State:																																							
Project Name: <u>SR0 #103</u>		Zip:																																							
Project Location:		Phone #:																																							
Sampler Name: <u>John</u>		Fax #:																																							
FOR LAB USE ONLY																																									
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER:		ACID/BASE:		ICE / COOL		OTHER:		DATE		TIME													
<u>HS01978</u>		<u>SCJ5 - East</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>7-19-18</u>		<u>CL</u>													
<u>2</u>		<u>SCJ5 - West</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>													
<u>3</u>		<u>Bottom 5</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>													
<u>4</u>		<u>SCJ6 - East</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>													
<u>5</u>		<u>SCJ6 - West</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>													
<u>6</u>		<u>Bottom 6</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>													
<u>7</u>		<u>SCJ7 - North</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>													
<u>8</u>		<u>SCJ7 - South</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>													
<u>9</u>		<u>Bottom 7</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>		<u>1</u>													

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: <u>[Signature]</u>		Date: <u>7/19/18</u>		Received By: <u>[Signature]</u>		Date: <u>7/19/18</u>		Phone 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: <u>Concho to Concho - Dakota Neal</u>	
Delivered By: (Circle One) <u>34.3c</u>		Sample Condition		CHECKED BY: (Initials) <u>7-19-18</u>													
Sampler - UPS - Bus - Other: <u>Concho 34.3c</u>		Cool <input type="checkbox"/> Intact <input type="checkbox"/>															
		Yes <input type="checkbox"/> No <input type="checkbox"/>															
		Yes <input type="checkbox"/> No <input type="checkbox"/>															

+ Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

27

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

[illegible]



CARDINAL
Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Wof

BILL TO

ANALYSIS REQUEST

[illegible]



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

August 06, 2018

DAKOTA NEEL

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: SRO SWD #103

Enclosed are the results of analyses for samples received by the laboratory on 07/30/18 13:50.

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.

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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
 DAKOTA NEEL
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received: 07/30/2018
 Reported: 08/06/2018
 Project Name: SRO SWD #103
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 07/27/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SW2 - WEST (H802069-01)

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	08/03/2018	ND	1.95	97.6	2.00	3.41	
Toluene*	<0.050	0.050	08/03/2018	ND	2.02	101	2.00	3.06	
Ethylbenzene*	<0.050	0.050	08/03/2018	ND	2.05	102	2.00	2.64	
Total Xylenes*	<0.150	0.150	08/03/2018	ND	5.98	99.7	6.00	2.87	
Total BTEX	<0.300	0.300	08/03/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	07/31/2018	ND	400	100	400	7.69		

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	07/31/2018	ND	188	94.2	200	0.119	
DRO >C10-C28*	<10.0	10.0	07/31/2018	ND	190	94.8	200	6.04	
EXT DRO >C28-C36	<10.0	10.0	07/31/2018	ND					

Surrogate: 1-Chlorooctane 92.1 % 41-142

Surrogate: 1-Chlorooctadecane 85.4 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
 DAKOTA NEEL
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received: 07/30/2018
 Reported: 08/06/2018
 Project Name: SRO SWD #103
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 07/27/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SW2 - EAST (H802069-02)

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	08/03/2018	ND	1.95	97.6	2.00	3.41	
Toluene*	<0.050	0.050	08/03/2018	ND	2.02	101	2.00	3.06	
Ethylbenzene*	<0.050	0.050	08/03/2018	ND	2.05	102	2.00	2.64	
Total Xylenes*	<0.150	0.150	08/03/2018	ND	5.98	99.7	6.00	2.87	
Total BTEX	<0.300	0.300	08/03/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.0 % 69.8-142

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	07/31/2018	ND	400	100	400	7.69	

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	07/31/2018	ND	188	94.2	200	0.119	
DRO >C10-C28*	<10.0	10.0	07/31/2018	ND	190	94.8	200	6.04	
EXT DRO >C28-C36	<10.0	10.0	07/31/2018	ND					

Surrogate: 1-Chlorooctane 94.7 % 41-142

Surrogate: 1-Chlorooctadecane 84.0 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
 DAKOTA NEEL
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received: 07/30/2018
 Reported: 08/06/2018
 Project Name: SRO SWD #103
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 07/27/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SW3 - WEST (H802069-03)

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	08/03/2018	ND	1.95	97.6	2.00	3.41		
Toluene*	<0.050	0.050	08/03/2018	ND	2.02	101	2.00	3.06		
Ethylbenzene*	<0.050	0.050	08/03/2018	ND	2.05	102	2.00	2.64		
Total Xylenes*	<0.150	0.150	08/03/2018	ND	5.98	99.7	6.00	2.87		
Total BTX	<0.300	0.300	08/03/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.9 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	07/31/2018	ND	400	100	400	7.69		

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	07/31/2018	ND	188	94.2	200	0.119	
DRO >C10-C28*	<10.0	10.0	07/31/2018	ND	190	94.8	200	6.04	
EXT DRO >C28-C36	<10.0	10.0	07/31/2018	ND					

Surrogate: 1-Chlorooctane 89.7 % 41-142

Surrogate: 1-Chlorooctadecane 79.3 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
 DAKOTA NEEL
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received: 07/30/2018
 Reported: 08/06/2018
 Project Name: SRO SWD #103
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 07/27/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SW3 - EAST (H802069-04)

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	08/03/2018	ND	1.95	97.6	2.00	3.41	
Toluene*	<0.050	0.050	08/03/2018	ND	2.02	101	2.00	3.06	
Ethylbenzene*	<0.050	0.050	08/03/2018	ND	2.05	102	2.00	2.64	
Total Xylenes*	<0.150	0.150	08/03/2018	ND	5.98	99.7	6.00	2.87	
Total BTX	<0.300	0.300	08/03/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 69.8-142

Chloride, SM4500CI-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	07/31/2018	ND	400	100	400	7.69		

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	07/31/2018	ND	188	94.2	200	0.119	
DRO >C10-C28*	<10.0	10.0	07/31/2018	ND	190	94.8	200	6.04	
EXT DRO >C28-C36	<10.0	10.0	07/31/2018	ND					

Surrogate: 1-Chlorooctane 93.4 % 41-142

Surrogate: 1-Chlorooctadecane 82.7 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
 DAKOTA NEEL
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received: 07/30/2018
 Reported: 08/06/2018
 Project Name: SRO SWD #103
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 07/27/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SW4 - EAST (H802069-05)

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	08/03/2018	ND	1.95	97.6	2.00	3.41	
Toluene*	<0.050	0.050	08/03/2018	ND	2.02	101	2.00	3.06	
Ethylbenzene*	<0.050	0.050	08/03/2018	ND	2.05	102	2.00	2.64	
Total Xylenes*	<0.150	0.150	08/03/2018	ND	5.98	99.7	6.00	2.87	
Total BTEX	<0.300	0.300	08/03/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	784	16.0	07/31/2018	ND	400	100	400	7.69		

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	07/31/2018	ND	188	94.2	200	0.119	
DRO >C10-C28*	<10.0	10.0	07/31/2018	ND	190	94.8	200	6.04	
EXT DRO >C28-C36	<10.0	10.0	07/31/2018	ND					

Surrogate: 1-Chlorooctane 91.4 % 41-142

Surrogate: 1-Chlorooctadecane 80.1 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
 DAKOTA NEEL
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received: 07/30/2018
 Reported: 08/06/2018
 Project Name: SRO SWD #103
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 07/27/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SW5 - WEST (H802069-06)

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	08/03/2018	ND	1.95	97.6	2.00	3.41		
Toluene*	<0.050	0.050	08/03/2018	ND	2.02	101	2.00	3.06		
Ethylbenzene*	<0.050	0.050	08/03/2018	ND	2.05	102	2.00	2.64		
Total Xylenes*	<0.150	0.150	08/03/2018	ND	5.98	99.7	6.00	2.87		
Total BTEx	<0.300	0.300	08/03/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 69.8-142

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	07/31/2018	ND	400	100	400	7.69		

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	07/31/2018	ND	188	94.2	200	0.119	
DRO >C10-C28*	<10.0	10.0	07/31/2018	ND	190	94.8	200	6.04	
EXT DRO >C28-C36	<10.0	10.0	07/31/2018	ND					

Surrogate: 1-Chlorooctane 97.9 % 41-142

Surrogate: 1-Chlorooctadecane 85.3 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
 DAKOTA NEEL
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received: 07/30/2018
 Reported: 08/06/2018
 Project Name: SRO SWD #103
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 07/27/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SW5 - EAST (H802069-07)

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	08/03/2018	ND	1.95	97.6	2.00	3.41		
Toluene*	<0.050	0.050	08/03/2018	ND	2.02	101	2.00	3.06		
Ethylbenzene*	<0.050	0.050	08/03/2018	ND	2.05	102	2.00	2.64		
Total Xylenes*	<0.150	0.150	08/03/2018	ND	5.98	99.7	6.00	2.87		
Total BTEx	<0.300	0.300	08/03/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 69.8-142

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	07/31/2018	ND	400	100	400	7.69		

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	08/01/2018	ND	190	95.2	200	4.97	
DRO >C10-C28*	<10.0	10.0	08/01/2018	ND	204	102	200	1.15	
EXT DRO >C28-C36	<10.0	10.0	08/01/2018	ND					

Surrogate: 1-Chlorooctane 91.4 % 41-142

Surrogate: 1-Chlorooctadecane 89.1 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
 DAKOTA NEEL
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received: 07/30/2018
 Reported: 08/06/2018
 Project Name: SRO SWD #103
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 07/27/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SW7 - NORTH (H802069-08)

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	08/03/2018	ND	1.95	97.6	2.00	3.41		
Toluene*	<0.050	0.050	08/03/2018	ND	2.02	101	2.00	3.06		
Ethylbenzene*	<0.050	0.050	08/03/2018	ND	2.05	102	2.00	2.64		
Total Xylenes*	<0.150	0.150	08/03/2018	ND	5.98	99.7	6.00	2.87		
Total BTEx	<0.300	0.300	08/03/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.8-142

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	07/31/2018	ND	400	100	400	7.69		

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	08/01/2018	ND	190	95.2	200	4.97	
DRO >C10-C28*	10.6	10.0	08/01/2018	ND	204	102	200	1.15	
EXT DRO >C28-C36	<10.0	10.0	08/01/2018	ND					

Surrogate: 1-Chlorooctane 96.0 % 41-142

Surrogate: 1-Chlorooctadecane 93.8 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
 DAKOTA NEEL
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received: 07/30/2018
 Reported: 08/06/2018
 Project Name: SRO SWD #103
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 07/27/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: BOTTOM 7 (H802069-09)

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	08/03/2018	ND	1.95	97.6	2.00	3.41		
Toluene*	<0.050	0.050	08/03/2018	ND	2.02	101	2.00	3.06		
Ethylbenzene*	<0.050	0.050	08/03/2018	ND	2.05	102	2.00	2.64		
Total Xylenes*	<0.150	0.150	08/03/2018	ND	5.98	99.7	6.00	2.87		
Total BTEx	<0.300	0.300	08/03/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	07/31/2018	ND	400	100	400	7.69		

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	08/01/2018	ND	190	95.2	200	4.97	
DRO >C10-C28*	14.4	10.0	08/01/2018	ND	204	102	200	1.15	
EXT DRO >C28-C36	10.6	10.0	08/01/2018	ND					

Surrogate: 1-Chlorooctane 92.4 % 41-142

Surrogate: 1-Chlorooctadecane 89.0 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
 DAKOTA NEEL
 P. O. BOX 1630
 ARTESIA NM, 88210
 Fax To: NONE

Received: 07/30/2018
 Reported: 08/06/2018
 Project Name: SRO SWD #103
 Project Number: NONE GIVEN
 Project Location: EDDY COUNTY, NM

Sampling Date: 07/27/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SW9 - WEST (H802069-10)

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	08/03/2018	ND	1.95	97.6	2.00	3.41		
Toluene*	<0.050	0.050	08/03/2018	ND	2.02	101	2.00	3.06		
Ethylbenzene*	<0.050	0.050	08/03/2018	ND	2.05	102	2.00	2.64		
Total Xylenes*	<0.150	0.150	08/03/2018	ND	5.98	99.7	6.00	2.87		
Total BTEx	<0.300	0.300	08/03/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 69.8-142

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	07/31/2018	ND	400	100	400	7.69		

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	08/01/2018	ND	190	95.2	200	4.97	
DRO >C10-C28*	<10.0	10.0	08/01/2018	ND	204	102	200	1.15	
EXT DRO >C28-C36	<10.0	10.0	08/01/2018	ND					

Surrogate: 1-Chlorooctane 99.4 % 41-142

Surrogate: 1-Chlorooctadecane 94.5 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager

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

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

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

A handwritten signature in black ink, appearing to read "Celey D. Keene".

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

Company Name: COG Operating LLC Project Manager: Dakota Neel Address: 2208 West Main City: Artesia State: NM Zip: 88210 Phone #: (575) 748-6930 Fax #: Project #: Project Name: SRD SWD 103 Project Location: B Sampler Name: DAKOTA NEEL FOR LAB USE ONLY		P.O. #: Company: COG Operating LLC Attn: Robert McNeill Address: 600 W Illinois City: Midland State: TX Zip: 79701 Phone #: (432) 221-0388 Fax #:	
Lab I.D. Sample I.D.		BILL TO	
PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.		ANALYSIS REQUEST	
Relinquished By: [Signature] Date: 7-30-18 Time: 1:50 Received By: [Signature] Date: Time: Relinquished By: Date: Time: Received By: [Signature] Date: Time: Delivered By: (Circle One) 4.16c / 4.55c Sampler - UPS - Bus - Other: [Signature] FORM 006 R 2.0 s. Please fax written changes to 575-393-2476		Matrix: (G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER: ACID/BASE: ICE / COOL OTHER: DATE TIME BTEX TPH Extended Chloride	
1 SWZ - WEST 2 SW2 - EAST 3 SW3 - WEST 4 SW3 - EAST 5 SW4 - EAST 6 SW5 - WEST 7 SW5 - EAST 8 SW7 - NORTH 9 BOTTOM 7 10 SW9 - WEST		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1		1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1	
1 1 2 1 3 1 4 1 5 1 6 1 7 1 8 1 9 1 10 1			



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

August 03, 2018

SHELDON HITCHCOCK

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: SRO SWD #103

Enclosed are the results of analyses for samples received by the laboratory on 08/02/18 13:45.

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.

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,

A handwritten signature in black ink that reads "Mike Snyder". The signature is fluid and cursive, with the first name "Mike" and last name "Snyder" clearly distinguishable.

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received: 08/02/2018
Reported: 08/03/2018
Project Name: SRO SWD #103
Project Number: NONE GIVEN
Project Location: EDDY COUNTY, NM

Sampling Date: 08/02/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: SW4 - EAST (H802105-01)

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	08/03/2018	ND	1.81	90.7	2.00	2.32		
Toluene*	<0.050	0.050	08/03/2018	ND	1.87	93.3	2.00	3.32		
Ethylbenzene*	<0.050	0.050	08/03/2018	ND	1.88	94.2	2.00	3.47		
Total Xylenes*	<0.150	0.150	08/03/2018	ND	5.60	93.3	6.00	3.20		
Total BTEx	<0.300	0.300	08/03/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	288	16.0	08/03/2018	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	08/02/2018	ND	188	94.0	200	3.50	
DRO >C10-C28*	<10.0	10.0	08/02/2018	ND	191	95.7	200	4.35	
EXT DRO >C28-C36	<10.0	10.0	08/02/2018	ND					

Surrogate: 1-Chlorooctane 71.9 % 41-142

Surrogate: 1-Chlorooctadecane 63.2 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

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

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

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

A handwritten signature in black ink, appearing to read "Mike Snyder", is written over a horizontal line.

Mike Snyder For 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

Company Name: Concho Resources Project Manager: Sheldon Hitchcock Address: 2407 Pecos Avenue City: Artesia Phone #: 575-703-6475 State: NM Zip: 88210 Project #: Project Name: S Ro 103 SLD Project Location: Eddy Co. NM Sample Name: Sheldon Hitchcock		P.O. #: Company: COG Attn: Robert McNeill Address: City: State: Zip: Phone #: Fax #:	
FOR LAB USE ONLY		BILL TO	
Lab I.D. H802105 1 SW-4 East	Sample I.D. (G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER :	MATRIX PRESERV SAMPLING	DATE 8/2/18 TIME 1:00
TPH BTEX Chlorides		ANALYSIS REQUEST	
REMARKS: Rush			

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: *Sheldon Hitchcock* **Date:** 8/2/18 **Received By:** *Robert McNeill* **Date:** 8/2/18

Relinquished By: *Sheldon Hitchcock* **Date:** 8/2/18 **Received By:** *Robert McNeill* **Date:** 8/2/18

Delivered By: (Circle One) *#75* **Sample Condition** ☒ Cool ☐ Intact ☐ Yes ☐ No ☐ Yes ☐ No **CHECKED BY:** *[Signature]*

Sampler - UPS - Bus - Other: *5.44 / 5.350*

Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326



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

January 18, 2019

CLAIR GONZALES

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: SRO SWD #103

Enclosed are the results of analyses for samples received by the laboratory on 01/17/19 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.

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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 01/17/2019
 Reported: 01/18/2019
 Project Name: SRO SWD #103
 Project Number: 212C - MD - 01563
 Project Location: COG - EDDY CO NM

Sampling Date: 01/15/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: ESW - 1 (H900176-01)

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	01/18/2019	ND	2.47	124	2.00	1.91	
Toluene*	<0.050	0.050	01/18/2019	ND	2.36	118	2.00	1.61	
Ethylbenzene*	<0.050	0.050	01/18/2019	ND	2.35	117	2.00	0.714	
Total Xylenes*	<0.150	0.150	01/18/2019	ND	7.13	119	6.00	0.567	
Total BTX	<0.300	0.300	01/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	01/18/2019	ND	432	108	400	3.77	

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	01/18/2019	ND	188	94.0	200	1.09	
DRO >C10-C28*	<10.0	10.0	01/18/2019	ND	206	103	200	2.39	
EXT DRO >C28-C36	<10.0	10.0	01/18/2019	ND					

Surrogate: 1-Chlorooctane 91.1 % 41-142

Surrogate: 1-Chlorooctadecane 93.7 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 01/17/2019
 Reported: 01/18/2019
 Project Name: SRO SWD #103
 Project Number: 212C - MD - 01563
 Project Location: COG - EDDY CO NM

Sampling Date: 01/17/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: ESW - 2 (H900176-02)

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	01/18/2019	ND	2.47	124	2.00	1.91		
Toluene*	<0.050	0.050	01/18/2019	ND	2.36	118	2.00	1.61		
Ethylbenzene*	<0.050	0.050	01/18/2019	ND	2.35	117	2.00	0.714		
Total Xylenes*	<0.150	0.150	01/18/2019	ND	7.13	119	6.00	0.567		
Total BTX	<0.300	0.300	01/18/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	208	16.0	01/18/2019	ND	432	108	400	3.77		

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	01/18/2019	ND	188	94.0	200	1.09	
DRO >C10-C28*	<10.0	10.0	01/18/2019	ND	206	103	200	2.39	
EXT DRO >C28-C36	<10.0	10.0	01/18/2019	ND					

Surrogate: 1-Chlorooctane 88.8 % 41-142

Surrogate: 1-Chlorooctadecane 89.9 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 01/17/2019
 Reported: 01/18/2019
 Project Name: SRO SWD #103
 Project Number: 212C - MD - 01563
 Project Location: COG - EDDY CO NM

Sampling Date: 01/17/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: ESW - 3 (H900176-03)

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	01/18/2019	ND	2.47	124	2.00	1.91	
Toluene*	<0.050	0.050	01/18/2019	ND	2.36	118	2.00	1.61	
Ethylbenzene*	<0.050	0.050	01/18/2019	ND	2.35	117	2.00	0.714	
Total Xylenes*	<0.150	0.150	01/18/2019	ND	7.13	119	6.00	0.567	
Total BTX	<0.300	0.300	01/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.5 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	01/18/2019	ND	432	108	400	3.77		

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	01/18/2019	ND	188	94.0	200	1.09	
DRO >C10-C28*	<10.0	10.0	01/18/2019	ND	206	103	200	2.39	
EXT DRO >C28-C36	<10.0	10.0	01/18/2019	ND					

Surrogate: 1-Chlorooctane 83.8 % 41-142

Surrogate: 1-Chlorooctadecane 83.8 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 01/17/2019
 Reported: 01/18/2019
 Project Name: SRO SWD #103
 Project Number: 212C - MD - 01563
 Project Location: COG - EDDY CO NM

Sampling Date: 01/16/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: WSW - 3 (H900176-04)

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	01/18/2019	ND	2.47	124	2.00	1.91	
Toluene*	<0.050	0.050	01/18/2019	ND	2.36	118	2.00	1.61	
Ethylbenzene*	<0.050	0.050	01/18/2019	ND	2.35	117	2.00	0.714	
Total Xylenes*	<0.150	0.150	01/18/2019	ND	7.13	119	6.00	0.567	
Total BTEX	<0.300	0.300	01/18/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.8 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	528	16.0	01/18/2019	ND	432	108	400	3.77		

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	01/18/2019	ND	188	94.0	200	1.09	
DRO >C10-C28*	<10.0	10.0	01/18/2019	ND	206	103	200	2.39	
EXT DRO >C28-C36	<10.0	10.0	01/18/2019	ND					

Surrogate: 1-Chlorooctane 87.5 % 41-142

Surrogate: 1-Chlorooctadecane 87.7 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager

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

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

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

A handwritten signature in black ink, appearing to read "Celey D. Keene", is written over a horizontal line.

Celey D. Keene, Lab Director/Quality Manager

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

Released to Imaging: 12/2/2022 9:37:34 AM

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

January 21, 2019

CLAIR GONZALES

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: SRO SWD #103

Enclosed are the results of analyses for samples received by the laboratory on 01/18/19 16:25.

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.

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
21-Jan-19 10:32

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BOTTOM HOLE 1 (4' BEB)	H900186-01	Soil	15-Jan-19 00:00	18-Jan-19 16:25
BOTTOM HOLE 2 (4' BEB)	H900186-02	Soil	15-Jan-19 00:00	18-Jan-19 16:25
BOTTOM HOLE 3 (4' BEB)	H900186-03	Soil	18-Jan-19 00:00	18-Jan-19 16:25
BOTTOM HOLE 4 (4' BEB)	H900186-04	Soil	18-Jan-19 00:00	18-Jan-19 16:25

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
21-Jan-19 10:32

BOTTOM HOLE 1 (4' BEB)**H900186-01 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

Cardinal Laboratories**Inorganic Compounds**

Chloride	1310		16.0	mg/kg	4	9012107	AC	21-Jan-19	4500-Cl-B	
-----------------	-------------	--	------	-------	---	---------	----	-----------	-----------	--

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	mg/kg	50	9011802	ms	19-Jan-19	8021B	
Toluene*	<0.050	0.050	mg/kg	50	9011802	ms	19-Jan-19	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	9011802	ms	19-Jan-19	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	9011802	ms	19-Jan-19	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	9011802	ms	19-Jan-19	8021B	

Surrogate: 4-Bromofluorobenzene (PID)		101 %		73.3-129	9011802	ms	19-Jan-19	8021B	
---------------------------------------	--	-------	--	----------	---------	----	-----------	-------	--

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	9011810	MS	19-Jan-19	8015B	
DRO >C10-C28*	<10.0	10.0	mg/kg	1	9011810	MS	19-Jan-19	8015B	
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	9011810	MS	19-Jan-19	8015B	

Surrogate: 1-Chlorooctane		73.1 %		41-142	9011810	MS	19-Jan-19	8015B	
---------------------------	--	--------	--	--------	---------	----	-----------	-------	--

Surrogate: 1-Chlorooctadecane		69.2 %		37.6-147	9011810	MS	19-Jan-19	8015B	
-------------------------------	--	--------	--	----------	---------	----	-----------	-------	--

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
21-Jan-19 10:32

BOTTOM HOLE 2 (4' BEB)**H900186-02 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

Cardinal Laboratories**Inorganic Compounds**

Chloride	544		16.0	mg/kg	4	9012107	AC	21-Jan-19	4500-Cl-B	
----------	-----	--	------	-------	---	---------	----	-----------	-----------	--

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	9011802	ms	19-Jan-19	8021B	
Toluene*	<0.050		0.050	mg/kg	50	9011802	ms	19-Jan-19	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	9011802	ms	19-Jan-19	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	9011802	ms	19-Jan-19	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	9011802	ms	19-Jan-19	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129 9011802 ms 19-Jan-19 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	9011810	MS	19-Jan-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9011810	MS	19-Jan-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9011810	MS	19-Jan-19	8015B	

Surrogate: 1-Chlorooctane 79.4 % 41-142 9011810 MS 19-Jan-19 8015B

Surrogate: 1-Chlorooctadecane 73.4 % 37.6-147 9011810 MS 19-Jan-19 8015B

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
21-Jan-19 10:32

BOTTOM HOLE 3 (4' BEB)**H900186-03 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

Cardinal Laboratories**Inorganic Compounds**

Chloride	192		16.0	mg/kg	4	9012107	AC	21-Jan-19	4500-Cl-B	
-----------------	------------	--	------	-------	---	---------	----	-----------	-----------	--

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	9011802	ms	19-Jan-19	8021B	
Toluene*	<0.050		0.050	mg/kg	50	9011802	ms	19-Jan-19	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	9011802	ms	19-Jan-19	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	9011802	ms	19-Jan-19	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	9011802	ms	19-Jan-19	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129 9011802 ms 19-Jan-19 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	9011810	MS	19-Jan-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9011810	MS	19-Jan-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9011810	MS	19-Jan-19	8015B	

Surrogate: 1-Chlorooctane 86.4 % 41-142 9011810 MS 19-Jan-19 8015B

Surrogate: 1-Chlorooctadecane 78.1 % 37.6-147 9011810 MS 19-Jan-19 8015B

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
21-Jan-19 10:32

BOTTOM HOLE 4 (4' BEB)**H900186-04 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

Cardinal Laboratories**Inorganic Compounds**

Chloride	320		16.0	mg/kg	4	9012107	AC	21-Jan-19	4500-Cl-B	
----------	-----	--	------	-------	---	---------	----	-----------	-----------	--

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	9011802	ms	19-Jan-19	8021B	
Toluene*	<0.050		0.050	mg/kg	50	9011802	ms	19-Jan-19	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	9011802	ms	19-Jan-19	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	9011802	ms	19-Jan-19	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	9011802	ms	19-Jan-19	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			102 %		73.3-129	9011802	ms	19-Jan-19	8021B	
---------------------------------------	--	--	-------	--	----------	---------	----	-----------	-------	--

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	9011810	MS	19-Jan-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9011810	MS	19-Jan-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9011810	MS	19-Jan-19	8015B	

Surrogate: 1-Chlorooctane			79.3 %		41-142	9011810	MS	19-Jan-19	8015B	
---------------------------	--	--	--------	--	--------	---------	----	-----------	-------	--

Surrogate: 1-Chlorooctadecane			72.7 %		37.6-147	9011810	MS	19-Jan-19	8015B	
-------------------------------	--	--	--------	--	----------	---------	----	-----------	-------	--

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
21-Jan-19 10:32

Inorganic Compounds - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 9012107 - General Prep - Wet Chem									
Blank (9012107-BLK1)				Prepared & Analyzed: 21-Jan-19					
Chloride	ND	16.0	mg/kg						
LCS (9012107-BS1)				Prepared & Analyzed: 21-Jan-19					
Chloride	432	16.0	mg/kg	400		108	80-120		
LCS Dup (9012107-BSD1)				Prepared & Analyzed: 21-Jan-19					
Chloride	432	16.0	mg/kg	400		108	80-120	0.00	20

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
21-Jan-19 10:32

Volatile Organic Compounds by EPA Method 8021 - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	----------------	-----	--------------	-------

Batch 9011802 - Volatiles**Blank (9011802-BLK1)**

Prepared: 18-Jan-19 Analyzed: 19-Jan-19

Benzene	ND	0.050	mg/kg						
Toluene	ND	0.050	mg/kg						
Ethylbenzene	ND	0.050	mg/kg						
Total Xylenes	ND	0.150	mg/kg						
Total BTEX	ND	0.300	mg/kg						
Surrogate: 4-Bromofluorobenzene (PID)	0.0998		mg/kg	0.100		99.8	73.3-129		

LCS (9011802-BS1)

Prepared: 18-Jan-19 Analyzed: 19-Jan-19

Benzene	1.88	0.050	mg/kg	2.00		94.0	72.2-131		
Toluene	1.80	0.050	mg/kg	2.00		89.8	71.7-126		
Ethylbenzene	1.79	0.050	mg/kg	2.00		89.6	68.9-126		
Total Xylenes	5.40	0.150	mg/kg	6.00		90.0	71.4-125		
Surrogate: 4-Bromofluorobenzene (PID)	0.0988		mg/kg	0.100		98.8	73.3-129		

LCS Dup (9011802-BSD1)

Prepared: 18-Jan-19 Analyzed: 19-Jan-19

Benzene	1.84	0.050	mg/kg	2.00		92.2	72.2-131	1.97	6.91
Toluene	1.79	0.050	mg/kg	2.00		89.5	71.7-126	0.340	7.12
Ethylbenzene	1.76	0.050	mg/kg	2.00		88.0	68.9-126	1.79	7.88
Total Xylenes	5.32	0.150	mg/kg	6.00		88.6	71.4-125	1.54	7.46
Surrogate: 4-Bromofluorobenzene (PID)	0.0982		mg/kg	0.100		98.2	73.3-129		

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
21-Jan-19 10:32

Petroleum Hydrocarbons by GC FID - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch 9011810 - General Prep - Organics**Blank (9011810-BLK1)**

Prepared & Analyzed: 18-Jan-19

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Total TPH C6-C28	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	48.6		mg/kg	50.0		97.3	41-142			
Surrogate: 1-Chlorooctadecane	48.0		mg/kg	50.0		95.9	37.6-147			

LCS (9011810-BS1)

Prepared & Analyzed: 18-Jan-19

GRO C6-C10	240	10.0	mg/kg	200		120	76.5-133			
DRO >C10-C28	231	10.0	mg/kg	200		116	72.9-138			
Total TPH C6-C28	471	10.0	mg/kg	400		118	78-132			
Surrogate: 1-Chlorooctane	52.4		mg/kg	50.0		105	41-142			
Surrogate: 1-Chlorooctadecane	49.5		mg/kg	50.0		99.1	37.6-147			

LCS Dup (9011810-BSD1)

Prepared & Analyzed: 18-Jan-19

GRO C6-C10	239	10.0	mg/kg	200		120	76.5-133	0.290	20.6	
DRO >C10-C28	231	10.0	mg/kg	200		116	72.9-138	0.112	20.6	
Total TPH C6-C28	470	10.0	mg/kg	400		118	78-132	0.203	18	
Surrogate: 1-Chlorooctane	52.3		mg/kg	50.0		105	41-142			
Surrogate: 1-Chlorooctadecane	49.7		mg/kg	50.0		99.4	37.6-147			

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager

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

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

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager

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

January 22, 2019

CLAIR GONZALES

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: SRO SWD #103

Enclosed are the results of analyses for samples received by the laboratory on 01/21/19 16:30.

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.

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is fluid and cursive, with the first name "Celey" being more prominent.

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
22-Jan-19 17:30

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BOTTOM HOLE 5 (2' BEB)	H900205-01	Soil	21-Jan-19 00:00	21-Jan-19 16:30
BOTTOM HOLE 6 (2' BEB)	H900205-02	Soil	21-Jan-19 00:00	21-Jan-19 16:30
WSW - 1	H900205-03	Soil	21-Jan-19 00:00	21-Jan-19 16:30
WSW - 2	H900205-04	Soil	21-Jan-19 00:00	21-Jan-19 16:30
ESW - 4	H900205-05	Soil	21-Jan-19 00:00	21-Jan-19 16:30
WSW - 4	H900205-06	Soil	21-Jan-19 00:00	21-Jan-19 16:30
SSW - 1	H900205-07	Soil	21-Jan-19 00:00	21-Jan-19 16:30
NSW - 1	H900205-08	Soil	21-Jan-19 00:00	21-Jan-19 16:30

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
22-Jan-19 17:30

BOTTOM HOLE 5 (2' BEB)
H900205-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

Cardinal Laboratories**Inorganic Compounds**

Chloride	64.0		16.0	mg/kg	4	9012210	AC	22-Jan-19	4500-Cl-B	
-----------------	-------------	--	------	-------	---	---------	----	-----------	-----------	--

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Toluene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	9012201	ms	22-Jan-19	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 97.5 % 73.3-129 9012201 ms 22-Jan-19 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	
DRO >C10-C28*	36.7		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	
EXT DRO >C28-C36	43.1		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	

Surrogate: 1-Chlorooctane 79.6 % 41-142 9012203 MS 22-Jan-19 8015B

Surrogate: 1-Chlorooctadecane 86.4 % 37.6-147 9012203 MS 22-Jan-19 8015B

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
22-Jan-19 17:30

BOTTOM HOLE 6 (2' BEB)**H900205-02 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

Cardinal Laboratories**Inorganic Compounds**

Chloride	32.0		16.0	mg/kg	4	9012210	AC	22-Jan-19	4500-Cl-B	
----------	------	--	------	-------	---	---------	----	-----------	-----------	--

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Toluene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	9012201	ms	22-Jan-19	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			101 %	73.3-129		9012201	ms	22-Jan-19	8021B	
---------------------------------------	--	--	-------	----------	--	---------	----	-----------	-------	--

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	
DRO >C10-C28*	14.4		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	
EXT DRO >C28-C36	12.7		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	

Surrogate: 1-Chlorooctane			78.6 %	41-142		9012203	MS	22-Jan-19	8015B	
---------------------------	--	--	--------	--------	--	---------	----	-----------	-------	--

Surrogate: 1-Chlorooctadecane			78.0 %	37.6-147		9012203	MS	22-Jan-19	8015B	
-------------------------------	--	--	--------	----------	--	---------	----	-----------	-------	--

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
22-Jan-19 17:30

WSW - 1
H900205-03 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

Cardinal Laboratories**Inorganic Compounds**

Chloride	64.0		16.0	mg/kg	4	9012210	AC	22-Jan-19	4500-Cl-B	
-----------------	-------------	--	------	-------	---	---------	----	-----------	-----------	--

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Toluene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	9012201	ms	22-Jan-19	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129 9012201 ms 22-Jan-19 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	

Surrogate: 1-Chlorooctane 71.7 % 41-142 9012203 MS 22-Jan-19 8015B

Surrogate: 1-Chlorooctadecane 70.1 % 37.6-147 9012203 MS 22-Jan-19 8015B

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
22-Jan-19 17:30

WSW - 2
H900205-04 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

Cardinal Laboratories**Inorganic Compounds**

Chloride	80.0		16.0	mg/kg	4	9012210	AC	22-Jan-19	4500-Cl-B	
-----------------	-------------	--	------	-------	---	---------	----	-----------	-----------	--

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Toluene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			101 %	73.3-129		9012201	ms	22-Jan-19	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	
Surrogate: 1-Chlorooctane			87.0 %	41-142		9012203	MS	22-Jan-19	8015B	
Surrogate: 1-Chlorooctadecane			84.3 %	37.6-147		9012203	MS	22-Jan-19	8015B	

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
22-Jan-19 17:30

ESW - 4
H900205-05 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

Cardinal Laboratories**Inorganic Compounds**

Chloride	224		16.0	mg/kg	4	9012210	AC	22-Jan-19	4500-Cl-B	
-----------------	------------	--	------	-------	---	---------	----	-----------	-----------	--

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Toluene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	9012201	ms	22-Jan-19	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129 9012201 ms 22-Jan-19 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	

Surrogate: 1-Chlorooctane 86.7 % 41-142 9012203 MS 22-Jan-19 8015B

Surrogate: 1-Chlorooctadecane 84.3 % 37.6-147 9012203 MS 22-Jan-19 8015B

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
22-Jan-19 17:30

WSW - 4
H900205-06 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

Cardinal Laboratories**Inorganic Compounds**

Chloride	48.0		16.0	mg/kg	4	9012210	AC	22-Jan-19	4500-Cl-B	
-----------------	-------------	--	------	-------	---	---------	----	-----------	-----------	--

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Toluene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	9012201	ms	22-Jan-19	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129 9012201 ms 22-Jan-19 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	

Surrogate: 1-Chlorooctane 87.7 % 41-142 9012203 MS 22-Jan-19 8015B

Surrogate: 1-Chlorooctadecane 85.9 % 37.6-147 9012203 MS 22-Jan-19 8015B

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
22-Jan-19 17:30

SSW - 1
H900205-07 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

Cardinal Laboratories**Inorganic Compounds**

Chloride	64.0		16.0	mg/kg	4	9012210	AC	22-Jan-19	4500-Cl-B	
-----------------	-------------	--	------	-------	---	---------	----	-----------	-----------	--

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Toluene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	9012201	ms	22-Jan-19	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	9012201	ms	22-Jan-19	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.3-129 9012201 ms 22-Jan-19 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	

Surrogate: 1-Chlorooctane 85.8 % 41-142 9012203 MS 22-Jan-19 8015B

Surrogate: 1-Chlorooctadecane 86.0 % 37.6-147 9012203 MS 22-Jan-19 8015B

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
22-Jan-19 17:30

NSW - 1
H900205-08 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

Cardinal Laboratories**Inorganic Compounds**

Chloride	80.0		16.0	mg/kg	4	9012210	AC	22-Jan-19	4500-Cl-B	
-----------------	-------------	--	------	-------	---	---------	----	-----------	-----------	--

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	9012202	MS	22-Jan-19	8021B	
Toluene*	<0.050		0.050	mg/kg	50	9012202	MS	22-Jan-19	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	9012202	MS	22-Jan-19	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	9012202	MS	22-Jan-19	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	9012202	MS	22-Jan-19	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129 9012202 MS 22-Jan-19 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9012203	MS	22-Jan-19	8015B	

Surrogate: 1-Chlorooctane 92.2 % 41-142 9012203 MS 22-Jan-19 8015B

Surrogate: 1-Chlorooctadecane 94.8 % 37.6-147 9012203 MS 22-Jan-19 8015B

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
22-Jan-19 17:30

Inorganic Compounds - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 9012210 - General Prep - Wet Chem									
Blank (9012210-BLK1)				Prepared & Analyzed: 22-Jan-19					
Chloride	ND	16.0	mg/kg						
LCS (9012210-BS1)				Prepared & Analyzed: 22-Jan-19					
Chloride	432	16.0	mg/kg	400		108	80-120		
LCS Dup (9012210-BSD1)				Prepared & Analyzed: 22-Jan-19					
Chloride	432	16.0	mg/kg	400		108	80-120	0.00	20

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
22-Jan-19 17:30

Volatile Organic Compounds by EPA Method 8021 - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 9012201 - Volatiles**Blank (9012201-BLK1)**

Prepared & Analyzed: 22-Jan-19

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.101		mg/kg	0.100		101	73.3-129			

LCS (9012201-BS1)

Prepared & Analyzed: 22-Jan-19

Benzene	2.18	0.050	mg/kg	2.00		109	72.2-131			
Toluene	2.10	0.050	mg/kg	2.00		105	71.7-126			
Ethylbenzene	2.11	0.050	mg/kg	2.00		106	68.9-126			
Total Xylenes	6.46	0.150	mg/kg	6.00		108	71.4-125			
Surrogate: 4-Bromofluorobenzene (PID)	0.101		mg/kg	0.100		101	73.3-129			

LCS Dup (9012201-BSD1)

Prepared & Analyzed: 22-Jan-19

Benzene	2.13	0.050	mg/kg	2.00		107	72.2-131	2.04	6.91	
Toluene	2.08	0.050	mg/kg	2.00		104	71.7-126	1.06	7.12	
Ethylbenzene	2.06	0.050	mg/kg	2.00		103	68.9-126	2.32	7.88	
Total Xylenes	6.23	0.150	mg/kg	6.00		104	71.4-125	3.61	7.46	
Surrogate: 4-Bromofluorobenzene (PID)	0.0979		mg/kg	0.100		97.9	73.3-129			

Batch 9012202 - Volatiles**Blank (9012202-BLK1)**

Prepared & Analyzed: 22-Jan-19

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.103		mg/kg	0.100		103	73.3-129			

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
22-Jan-19 17:30

Volatile Organic Compounds by EPA Method 8021 - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch 9012202 - Volatiles**LCS (9012202-BS1)**

Prepared & Analyzed: 22-Jan-19

Benzene	1.80	0.050	mg/kg	2.00		90.0	72.2-131			
Toluene	1.89	0.050	mg/kg	2.00		94.4	71.7-126			
Ethylbenzene	1.90	0.050	mg/kg	2.00		95.0	68.9-126			
Total Xylenes	5.57	0.150	mg/kg	6.00		92.8	71.4-125			
Surrogate: 4-Bromofluorobenzene (PID)	0.104		mg/kg	0.100		104	73.3-129			

LCS Dup (9012202-BS1)

Prepared & Analyzed: 22-Jan-19

Benzene	1.82	0.050	mg/kg	2.00		91.1	72.2-131	1.14	6.91	
Toluene	1.90	0.050	mg/kg	2.00		95.2	71.7-126	0.832	7.12	
Ethylbenzene	1.83	0.050	mg/kg	2.00		91.6	68.9-126	3.64	7.88	
Total Xylenes	5.44	0.150	mg/kg	6.00		90.7	71.4-125	2.34	7.46	
Surrogate: 4-Bromofluorobenzene (PID)	0.0968		mg/kg	0.100		96.8	73.3-129			

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

TETRA TECH
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701

Project: SRO SWD #103
Project Number: 212C - MD - 01563
Project Manager: CLAIR GONZALES
Fax To: (432) 682-3946

Reported:
22-Jan-19 17:30

Petroleum Hydrocarbons by GC FID - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	----------------	-----	--------------	-------

Batch 9012203 - General Prep - Organics**Blank (9012203-BLK1)**

Prepared & Analyzed: 22-Jan-19

GRO C6-C10	ND	10.0	mg/kg						
DRO >C10-C28	ND	10.0	mg/kg						
EXT DRO >C28-C36	ND	10.0	mg/kg						
Total TPH C6-C28	ND	10.0	mg/kg						
Surrogate: 1-Chlorooctane	47.7		mg/kg	50.0		95.5	41-142		
Surrogate: 1-Chlorooctadecane	48.2		mg/kg	50.0		96.3	37.6-147		

LCS (9012203-BS1)

Prepared & Analyzed: 22-Jan-19

GRO C6-C10	212	10.0	mg/kg	200		106	76.5-133		
DRO >C10-C28	218	10.0	mg/kg	200		109	72.9-138		
Total TPH C6-C28	430	10.0	mg/kg	400		107	78-132		
Surrogate: 1-Chlorooctane	48.2		mg/kg	50.0		96.3	41-142		
Surrogate: 1-Chlorooctadecane	48.6		mg/kg	50.0		97.1	37.6-147		

LCS Dup (9012203-BSD1)

Prepared & Analyzed: 22-Jan-19

GRO C6-C10	211	10.0	mg/kg	200		105	76.5-133	0.401	20.6
DRO >C10-C28	204	10.0	mg/kg	200		102	72.9-138	6.50	20.6
Total TPH C6-C28	415	10.0	mg/kg	400		104	78-132	3.45	18
Surrogate: 1-Chlorooctane	47.2		mg/kg	50.0		94.4	41-142		
Surrogate: 1-Chlorooctadecane	47.7		mg/kg	50.0		95.4	37.6-147		

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager

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

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

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager

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

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 163305

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 163305
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Created By	Condition	Condition Date
bhall	None	12/2/2022