

Incident ID	NAPP2112555381
District RP	
Facility ID	
Application ID	

## Remediation Plan

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

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

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

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Todd Wells Title: Environmental Specialist  
Signature: Todd Wells Date: 8/23/21  
email: Todd\_Wells@eogresources.com Telephone: 432-686-3613

**OCD Only**

Received by: Chad Hensley Date: 09/22/2021

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

Signature: Chad Hensley Date: 09/22/2021



## SITE INFORMATION

### Report Type: Work Plan NAPP2112555381

#### General Site Information:

Site:	Caballo Section 23 Tank Battery					
Company:	EOG Resources					
Section, Township and Range		Sec. 23	T 25S	R 33E		
Lease Number:						
County:	Lea County					
GPS:	32.122741°N			103.542910°W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From the intersection of Battle Axe Rd and J-2, travel northeast on Battle Axe Rd for 2.80 miles, turn northwest onto lease road and continue for 3.55 miles, turn east onto lease road for 0.30 miles to location.					

#### Release Data:

<b>Date Released:</b>	6/8/2019
<b>Type Release:</b>	Oil & Produced Water
<b>Source of Contamination:</b>	Heater Treater
<b>Fluid Released:</b>	1 bbl oil & 7 bbl water
<b>Fluids Recovered:</b>	1 bbl oil & 4 bbl water

#### Official Communication:

<b>Name:</b>	Todd Wells		Clair Gonzales
<b>Company:</b>	EOG Resources		Tetra Tech
<b>Address:</b>	5509 Champions Dr		901 West Wall St.
			Ste 100
<b>City:</b>	Midland Texas, 79706		Midland, Texas
<b>Phone number:</b>	(432) 686-3613		(432) 687-8123
<b>Fax:</b>			
<b>Email:</b>	<a href="mailto:Todd_Wells@eogresources.com">Todd_Wells@eogresources.com</a>		<a href="mailto:Clair.Gonzales@tetrattech.com">Clair.Gonzales@tetrattech.com</a>

#### Site Characterization

<b>Depth to Groundwater:</b>	110'
<b>Karst Potential:</b>	Low

#### Recommended Remedial Action Levels (RRALs)

Benzene	Total BTEX	TPH (GRO+DRO)	TPH (GRO+DRO+MRO)	Chlorides
10 mg/kg	50 mg/kg	1,000 mg/kg	2,500 mg/kg	20000 mg/kg





August 23, 2021

Oil Conservation Division, District 1  
1625 North French Drive  
Hobbs, New Mexico 88240

**Re: Work Plan for the EOG Resources, Caballo Section 23 Tank Battery, Section 23, Township 25 South, Range 33 East, Lea County, New Mexico. NAPP2112555381**

Oil Conservation Division:

Tetra Tech, Inc. (Tetra Tech) was contacted by EOG Resources to assess a release that occurred at the Caballo Section 23 Tank Battery, Section 23, Township 25 South, Range 33 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.122741°, W 103.542910°. 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 June 8, 2019, and released approximately 1 barrel of oil and 7 barrels of produced water due to a pin hole leak on the heater water leg. Approximately 1 barrel of oil and 4 barrels of produced water were recovered. The release occurred on the pad impacting an area measuring approximately 75' x 115' and migrated into the adjacent pasture impacting areas measuring approximately 32' x 175' and 18' x 80'. The initial C-141 form is included in Appendix A.

## Site Characterization

A site characterization was performed for the site and no lakebeds, sinkholes, playa lakes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the specified distances. The site is in a low karst potential area. The nearest well is listed on the USGS National Water Information data base in Section 26, approximately 1.8 miles south of the site and has a reported depth to groundwater of 110' below surface. The groundwater data is shown in Appendix B.

## Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, updated August 14, 2018. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed

Tetra Tech

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

Tel 432.682.4559 Fax 432.682.3946 www.tetrattech.com





## TETRA TECH

RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 1,000 mg/kg (GRO + DRO) and 2,500 mg/kg (GRO + DRO + ORO). Additionally, based on the reported depth to groundwater in the area, the proposed RRAL for chlorides is 20,000 mg/kg.

### Soil Assessment and Analytical Results

On June 24, 2019, Tetra Tech personnel were onsite to evaluate and sample the release area. Using a hand auger, eight (8) auger holes (AH-1 through AH-8) were installed inside the area to total depths ranging from 0-1' and 4-4.5' below surface. The areas of AH-5 through AH-8 were installed on the pad area and in between the numerous aboveground lines and equipment. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The sample locations are shown on Figure 3.

Referring to Table 1, none of the samples analyzed showed any benzene or total BTEX concentrations above the laboratory reporting limits. The area of auger holes (AH-4 through AH-8) showed TPH concentrations above RRALs, concentrations ranging from 155 mg/kg to 4,350 mg/kg, at depths ranging from surface to 1.5' below surface. All auger holes (AH-1 through AH-8) showed chloride concentrations greater than the 600 mg/kg threshold in the top 4.0' of soil, concentrations ranging from 776 mg/kg to 9,330 mg/kg, at depths ranging from surface to 4.0' below surface. Vertical delineation was only found in auger holes (AH-5 and AH-6) at a depth of 1.0'-1.5' below surface.

### Remediation and Reclamation Activities

Based on the laboratory data, Tetra Tech was onsite on October 11 through October 14, and November 5<sup>th</sup>, 2019, in order to excavate the release area to the maximum extent safely possible. The areas of AH-1 through AH-4, in the pasture, were excavated to 4.5' below surface and the areas of AH-5 through AH-8, inside the facility, were excavated to 1.5' below surface. Deeper excavation could not be performed inside the facility due to the numerous above ground and buried lines and onsite equipment. Additionally, the excavated areas of AH-5 through AH-8 were treated with a Micro-Blaze product to help the natural attenuation of the hydrocarbons.

A total of 33 bottom hole (Bottom Hole-1 through Bottom Hole-33) and 17 sidewall composite confirmation samples were collected every 200 square feet. All collected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 2. The sample locations are shown on Figure 4.

Referring to Table 2, none of the confirmation samples collected showed benzene or total BTEX concentrations above the laboratory reporting limits. Additionally, the sidewall samples (SSW-2, SSW-3, and WSW-1) showed chloride concentrations above the 600 mg/kg reclamation threshold. However, at the time, these areas were not expanded due to a buried pipeline in the area.



**TETRA TECH**

All of the sidewall samples and bottom hole samples collected at 1.5' below surface on the pad area showed either TPH or chloride concentrations above the reclamation thresholds. However, at the time, these areas were not excavated deeper or expanded horizontally due to the numerous above ground lines, buried lines, and onsite equipment causing safety concerns.

### **Work Plan**

Based on the previous laboratory results EOG proposes to install a groundwater determination bore to determine and establish depth to groundwater. EOG will further sample the release to attempt to find delineation. Based on the data, EOG will attempt to remediate the remaining impact located on the pad and around the equipment, by remediating the top 4.0' of soil to the most stringent standards, and any remaining impact to the determined RRALs. Additionally, in the pasture area, the areas of sidewalls (WSW-1, SSW-2, and SSW-3) will be assessed further and will be attempted to be remediated if necessary. EOG will remediate the release to the maximum extent practical that does not cause pipeline, equipment, or safety concerns, or cause major facility deconstruction. Once remediation activities are complete, bottom hole and sidewall confirmation samples will be collected every 200 square feet to ensure concentrations are reported below the determined RRALs. If groundwater is proven to be less than 50' below surface, EOG will remediate the site to the most stringent standards. The final C-141 is enclosed in Appendix A. If you have any questions or comments concerning the assessment for this site, please call at (432) 682-4559.

Respectfully submitted,  
TETRA TECH

Brittany Long,  
Project Manager

Clair Gonzales, P.G.  
Senior Project Manager

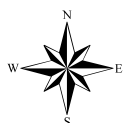


## Figures





● SITE LOCATION



0 10,416.5 20,833

Approximate Scale in Feet

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



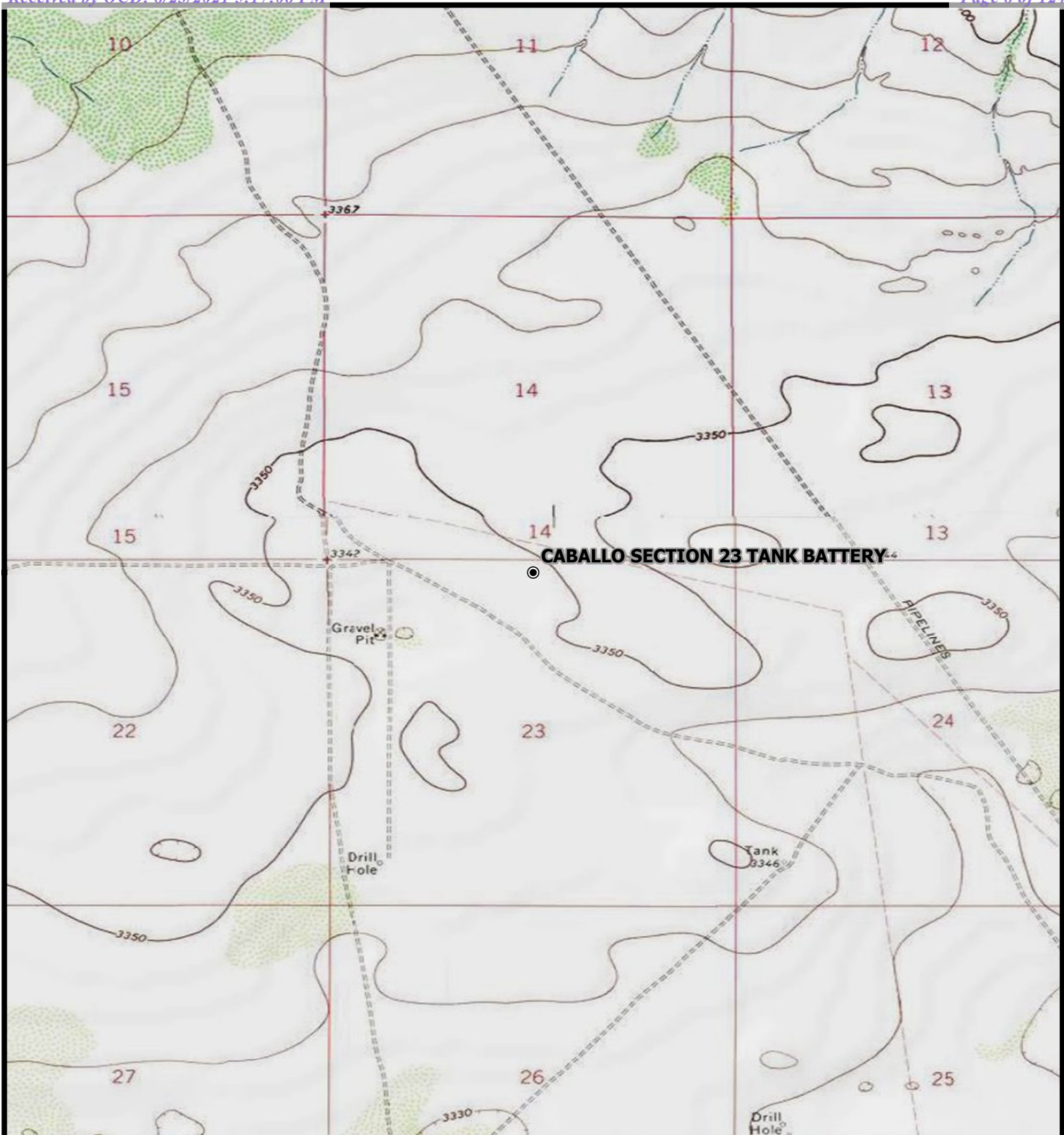
OVERVIEW MAP  
CABALLO SECTION 23 TANK BATTERY  
Property Located at coordinates 32.122741°, -103.542910°  
LEA COUNTY, NEW MEXICO



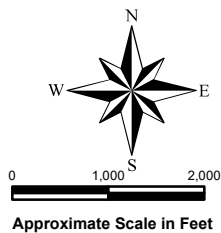
Project #:  
212C-MD-01809  
Date:10/01/2019

FIGURE  
1





● SITE LOCATION



Approximate Scale in Feet

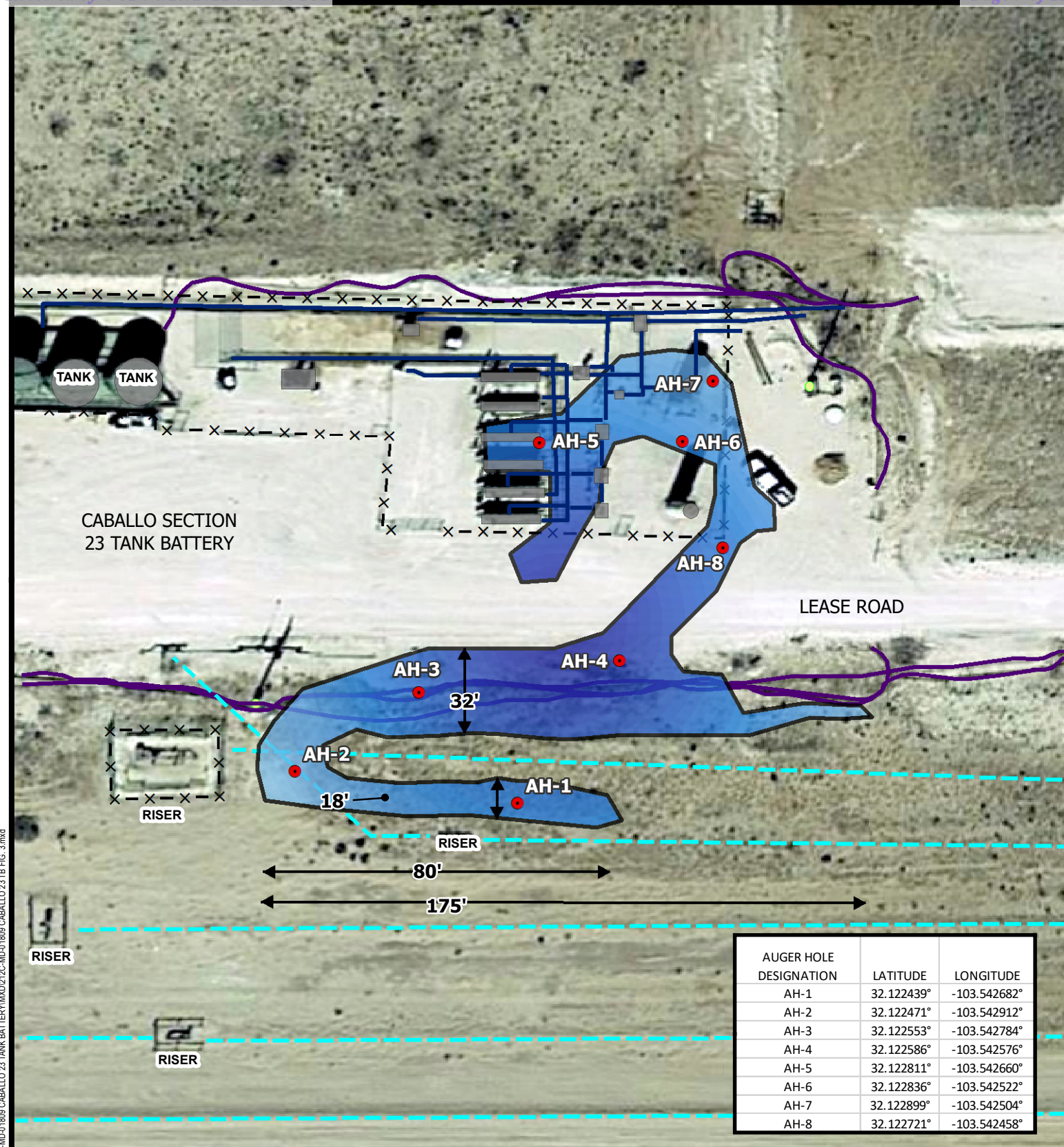
TOPOGRAPHIC MAP  
CABALLO SECTION 23 TANK BATTERY  
Property Located at coordinates 32.122741°, -103.542910°  
LEA COUNTY, NEW MEXICO



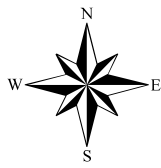
Project #:  
212C-MD-01809  
Date: 10/01/2019

FIGURE  
2





- AUGERHOLE SAMPLE LOCATIONS
- POWER POLE
- PROCESS PIPE
- BURIED PIPELINE
- ABOVEGROUND FLOWLINE
- X — FENCELINE
- EQUIPMENT
- AFFECTED SPILL AREA



0 25 50  
Approximate Scale in Feet

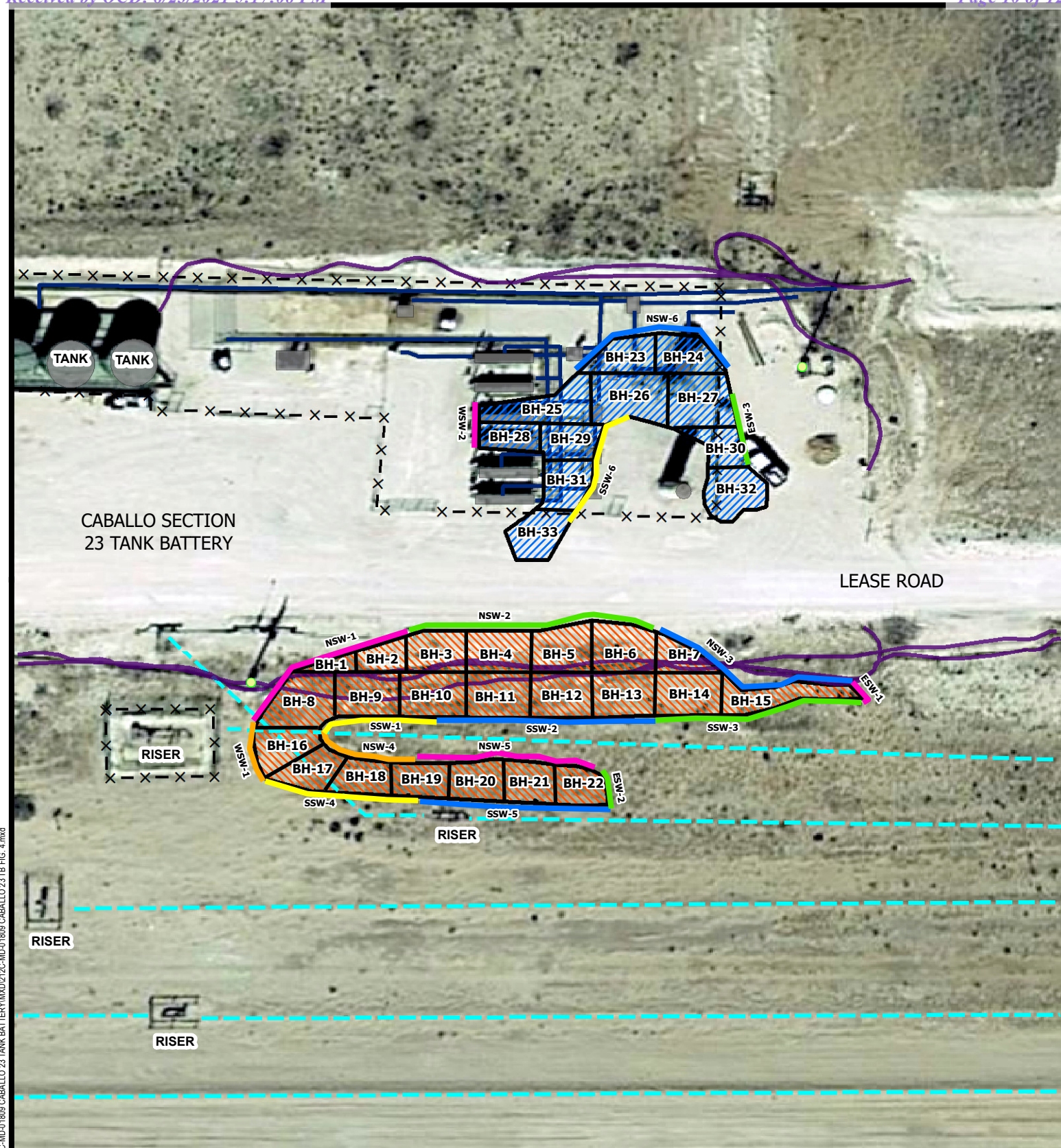
**SPILL ASSESSMENT MAP**  
**CABALLO SECTION 23 TANK BATTERY**  
 Property Located at coordinates 32.122741°, -103.542910°  
 LEA COUNTY, NEW MEXICO



Project #:  
212C-MD-01809  
Date: 10/01/2019

**FIGURE**  
3





EXCAVATION AREA & DEPTH MAP  
 CABALLO SECTION 23 TANK BATTERY  
 Property Located at coordinates 32.122741°, -103.542910°  
 LEA COUNTY, NEW MEXICO



Project #:  
212C-MD-01809  
Date: 10/01/2019

FIGURE  
4



## Tables



**Table 1**  
**EOG**  
**Caballo Section 23 Tank Battery**  
**Lea 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						
AH-1	6/24/2019	0-1		X	9.00	9.9	<8.12	18.9	<0.00382	<0.000452	<0.000560	<0.000342	<0.00342	3,820
	"	1-1.5		X	8.65	10.3	<8.10	19.0	<0.000383	<0.000454	<0.000563	<0.000343	<0.000343	4,190
	"	2-2.5		X	-	-	-	-	-	-	-	-	-	1,800
	"	3-3.5		X	-	-	-	-	-	-	-	-	-	2,210
	"	4-4.5		X	-	-	-	-	-	-	-	-	-	3,500
AH-2	6/24/2019	0-1		X	10.1	10.0	<8.11	20.1	<0.000386	<0.000457	<0.000566	<0.000345	<0.000345	5,970
	"	1-1.5		X	8.91	9.19	<8.10	18.1	<0.000381	<0.000451	<0.000559	<0.000341	<0.000341	4,060
AH-3	6/24/2019	0-1		X	10.4	13.1	<8.13	23.5	<0.000381	<0.000451	<0.000559	<0.000341	<0.000341	207
	"	1-1.5		X	9.60	10.6	<8.11	20.2	<0.000378	<0.000448	<0.000555	<0.000338	<0.000338	247
	"	2-2.5		X	-	-	-	-	-	-	-	-	-	1,570
	"	3-3.5		X	-	-	-	-	-	-	-	-	-	2,160
	"	4-4.5		X	-	-	-	-	-	-	-	-	-	9,330
AH-4	6/24/2019	0-1		X	15.5	1710	170	<b>1900</b>	<0.000384	<0.000455	<0.000564	<0.000344	<0.000344	967
	"	1-1.5		X	9.04	132	21.3	162	<0.000386	<0.000457	<0.000567	<0.000346	<0.000346	143
	"	2-2.5		X	-	-	-	-	-	-	-	-	-	54.1
	"	3-3.5		X	-	-	-	-	-	-	-	-	-	348
	"	4-4.5		X	-	-	-	-	-	-	-	-	-	922
AH-5	6/24/2019	0-1		X	13.1	2690	281	<b>2980</b>	<0.000385	<0.000456	<0.000565	<0.000344	<0.000344	6,190
	"	1-1.5	X		<7.98	109	46.2	155	<0.000386	<0.000457	<0.000567	<0.000346	<0.000346	2,510
	"	2-2.5	X		-	-	-	-	-	-	-	-	-	321
	"	3-3.5	X		-	-	-	-	-	-	-	-	-	4,980
AH-6	6/24/2019	0-1		X	44.9	3990	314	<b>4350</b>	<0.000382	<0.000452	<0.000560	<0.000342	<0.000342	3,730
	"	1-1.5	X		11.4	858	114	983	<0.000382	<0.000452	<0.000560	<0.000342	<0.000342	776
	"	2-2.5	X		-	-	-	-	-	-	-	-	-	11.4
AH-7	6/24/2019	0-1		X	9.64	2460	259	<b>2730</b>	<0.000383	<0.000453	<0.000561	<0.000342	<0.000342	2,810
AH-8	6/24/2019	0-1		X	11.7	1140	138	<b>1290</b>	<0.000382	<0.000452	<0.000560	<0.000342	<0.000342	2,500



**Table 2**  
**EOG**  
**Caballo Section 23 Tank Battery**  
**Lea County, New Mexico**

Sample ID	Sample Date	Excavation 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						
Bottom Hole - 1	10/14/2019	4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	416
Bottom Hole - 2	10/14/2019	4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	320
Bottom Hole - 3	10/14/2019	4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	3,160
Bottom Hole - 4	10/14/2019	4.5	X		<10.0	104	37.1	141	<0.050	<0.050	<0.050	<0.150	<0.300	1,060
Bottom Hole - 5	10/14/2019	4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	1,280
Bottom Hole - 6	10/14/2019	4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	6,800
Bottom Hole - 7	10/14/2019	4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	752
Bottom Hole - 8	10/14/2019	4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	1,090
Bottom Hole - 9	10/14/2019	4.5	X		<10.0	63.1	13.5	76.6	<0.050	<0.050	<0.050	<0.150	<0.300	1,120
Bottom Hole - 10	10/14/2019	4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	320
Bottom Hole - 11	10/14/2019	4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	128
Bottom Hole - 12	10/14/2019	4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	48.0
Bottom Hole - 13	10/14/2019	4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	384
Bottom Hole - 14	10/14/2019	4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	384
Bottom Hole - 15	10/14/2019	4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	256
Bottom Hole - 16	10/11/2019	4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	784
Bottom Hole - 17	10/11/2019	4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	768
Bottom Hole - 18	10/11/2019	4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	1,360
Bottom Hole - 19	10/11/2019	4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	736
Bottom Hole - 20	10/11/2019	4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	752
Bottom Hole - 21	10/11/2019	4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	1,100
Bottom Hole - 22	10/11/2019	4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	368
Bottom Hole - 23	11/5/2019	1.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	176
Bottom Hole - 24	11/5/2019	1.5	X		<10.0	109	28.1	137	<0.050	<0.050	<0.050	<0.150	<0.300	768
Bottom Hole - 25	11/5/2019	1.5	X		<10.0	779	415	1,194	<0.050	<0.050	<0.050	<0.150	<0.300	592
Bottom Hole - 26	11/5/2019	1.5	X		<10.0	2,590	1,080	<b>3,670</b>	<0.050	<0.050	<0.050	<0.150	<0.300	2,800
Bottom Hole - 27	11/5/2019	1.5	X		<10.0	214	86.6	301	<0.050	<0.050	<0.050	<0.150	<0.300	848
Bottom Hole - 28	11/5/2019	1.5	X		<10.0	3,870	1,470	<b>5,340</b>	<0.050	<0.050	<0.050	<0.150	<0.300	5,520
Bottom Hole - 29	11/5/2019	1.5	X		<10.0	534	318	852	<0.050	<0.050	<0.050	<0.150	<0.300	432
Bottom Hole - 30	11/5/2019	1.5	X		<10.0	948	343	1,291	<0.050	<0.050	<0.050	<0.150	<0.300	3,040
Bottom Hole - 31	11/5/2019	1.5	X		<10.0	2,310	996	<b>3,306</b>	<0.050	<0.050	<0.050	<0.150	<0.300	4,240
Bottom Hole - 32	11/5/2019	1.5	X		<10.0	3,150	1,300	<b>4,450</b>	<0.050	<0.050	<0.050	<0.150	<0.300	1,620
Bottom Hole - 33	11/5/2019	1.5	X		<10.0	1,820	666	<b>2,486</b>	<0.050	<0.050	<0.050	<0.150	<0.300	4,400
NSW-1	10/14/2019	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	112



**Table 2**  
**EOG**  
**Caballo Section 23 Tank Battery**  
**Lea County, New Mexico**

Sample ID	Sample Date	Excavation 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						
NSW-2	10/14/2019	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	96.0
NSW-3	10/14/2019	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	96.0
NSW-4	10/11/2019	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	112
NSW-5	10/11/2019	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	128
NSW-6	11/5/2019	-	X		<10.0	113	51.1	164	<0.050	<0.050	<0.050	<0.150	<0.300	10,000
SSW-1	10/11/2019	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	384
SSW-2	10/11/2019	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	1,300
SSW-3	10/11/2019	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	896
SSW-4	10/11/2019	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	48.0
SSW-5	10/11/2019	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	32.0
SSW-6	11/5/2019	-	X		<10.0	321	145	466	<0.050	<0.050	<0.050	<0.150	<0.300	4,400
WSW-1	10/11/2019	-	X		<10.0	273	109	382	<0.050	<0.050	<0.050	<0.150	<0.300	176
WSW-2	11/5/2019	-	X		<10.0	4,140	1,400	5,540	<0.050	<0.050	<0.050	<0.150	<0.300	3,680
ESW-1	10/11/2019	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	32.0
ESW-2	10/11/2019	-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	32.0
ESW-3	11/5/2019	-	X		<10.0	2,340	896	3,236	<0.050	<0.050	<0.050	<0.150	<0.300	9,000



## Photos



EOG Resources  
Caballo Section 23 Tank Battery  
Lea County, New Mexico



TETRA TECH



View West – Excavated Pasture Area



View East – Excavated Pasture Area



EOG Resources  
Caballo Section 23 Tank Battery  
Lea County, New Mexico



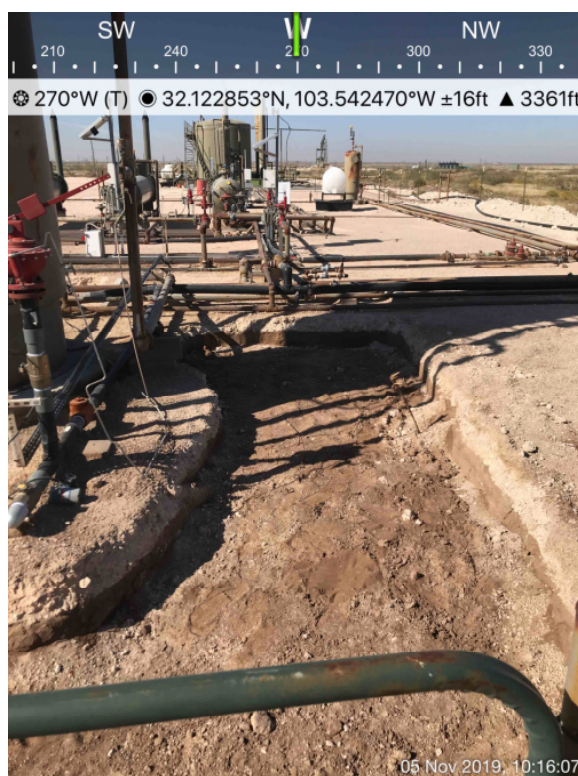
View North – Excavated Pad Area



View West – Excavated Pad Area



EOG Resources  
Caballo Section 23 Tank Battery  
Lea County, New Mexico



View West – Excavated Pad Area



View Northeast – Excavated Pad Area



## Appendix A



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

State of New Mexico  
Energy Minerals and Natural  
Resources Department

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

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

Incident ID	NAPP2112555381
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party EOG Resources	OGRID 7377
Contact Name Todd Wells	Contact Telephone (432) 686-3613
Contact email Todd_Wells@eogresources.com	Incident # (assigned by OCD) NAPP2112555381
Contact mailing address 5509 Champions Drive Midland, TX 79706	

### Location of Release Source

Latitude 32.122741° Longitude -103.542910°  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Caballo Section 23 Tank Battery	Site Type EOG Facility
Date Release Discovered 6/8/19	API# (if applicable)

Unit Letter	Section	Township	Range	County
B	23	25S	33E	Lea

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (Name: Bureau of Land Management, BLM)

### Nature and Volume of Release

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

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 1	Volume Recovered (bbls) 1
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 7	Volume Recovered (bbls) 4
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: The pin hole in the LP heater water leg allowed the release of approximately 8 bbls of oil and water and 5 bbls recovered.



Incident ID	NAPP2112555381
District RP	
Facility ID	
Application ID	

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

## Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Todd Wells</u>	Title: <u>Environmental Specialist</u>
Signature: <u>Todd Wells</u>	Date: <u>7-12-19</u>
email: <u>Todd_Wells@eogresources.com</u>	Telephone: <u>(432) 686-3613</u>
<b><u>OCD Only</u></b>	
Received by: <u>Ramona Marcus</u>	Date: <u>5/13/2021</u>



Incident ID	
District RP	
Facility ID	
Application ID	

## Site Assessment/Characterization

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

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

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

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

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

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



State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	
District RP	
Facility ID	
Application ID	

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

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

Signature: Todd Wells Date: \_\_\_\_\_

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

**OCD Only**

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



Incident ID	
District RP	
Facility ID	
Application ID	

## Remediation Plan

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

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

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

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

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

Signature: Todd Wells Date: \_\_\_\_\_

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

**OCD Only**

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

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

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



## Appendix B



**Water Well Data**  
**Average Depth to Groundwater (ft)**  
**EOG - Caballo Sec. 23 Tank Battery , Lea County, New Mexico**

24 South			32 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
		290			

24 South			33 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
		93.2			

24 South			34 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			32 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
	290				

25 South			33 East		
6	5	90	4	3	172
7	8		9	10	11
18	17		16	15	14
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
	257				

25 South			34 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	50	28	27	26
31	32	33	34	35	36
					260

26 South			32 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
295					

26 South			33 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			34 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

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

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

34 NMOCD - Groundwater Data

121 Abandoned Waterwell (recently measured)





# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

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

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

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

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
<a href="#">C 02312</a>		CUB	LE	1	2	1	05	25S	33E	632241	3559687*	150	90	60
<a href="#">C 02313</a>		CUB	LE	2	3	3	26	25S	33E	636971	3552098*	150	110	40
<a href="#">C 02373 CLW317846</a>	O	CUB	LE	2	1	1	13	25S	33E	638518	3556544*	625	185	440
<a href="#">C 02373 S</a>		CUB	LE	1	2	1	13	25S	33E	638721	3556549*	625	185	440

Average Depth to Water: **142 feet**

Minimum Depth: **90 feet**

Maximum Depth: **185 feet**

**Record Count:** 4

**PLSS Search:**

**Township:** 25S

**Range:** 33E

\*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.

7/2/19 10:12 AM

Page 1 of 1

WATER COLUMN/ AVERAGE  
DEPTH TO WATER





USGS Home  
Contact USGS  
Search USGS

## National Water Information System: Web Interface

USGS Water Resources

Data Category:

Groundwater

Geographic Area:

United States

GO

Click to hide News Bulletins

- [Introducing The Next Generation of USGS Water Data for the Nation](#)
- [Full News](#) 

Groundwater levels for the Nation

## Search Results -- 1 sites found

site\_no list =

- 320631103351401

Minimum number of levels = 1

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

## USGS 320631103351401 25S.33E.20.443313

Available data for this site

Groundwater: Field measurements

GO

Lea County, New Mexico

Hydrologic Unit Code --

Latitude 32°06'31", Longitude 103°35'14" NAD27

Land-surface elevation 3,398 feet above NAVD88

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

### Output formats

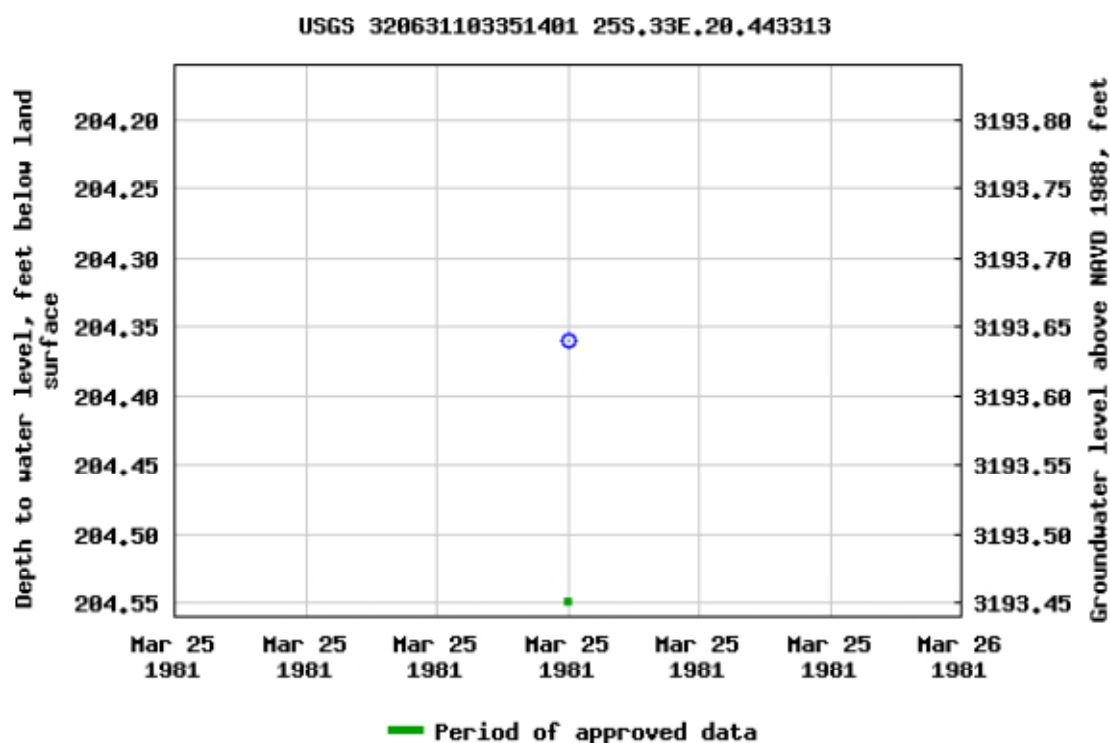
[Table of data](#)

[Tab-separated data](#)

[Graph of data](#)

[Reselect period](#)





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

[Download a presentation-quality graph](#)

[Questions about sites/data?](#)

[Feedback on this web site](#)

[Automated retrievals](#)

[Help](#)

[Data Tips](#)

[Explanation of terms](#)

[Subscribe for system changes](#)

[News](#)

[Accessibility](#)

[Plug-Ins](#)

[FOIA](#)

[Privacy](#)

[Policies and Notices](#)

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

**Title: Groundwater for USA: Water Levels**

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



Page Contact Information: [USGS Water Data Support Team](#)

Page Last Modified: 2019-07-02 12:16:27 EDT

1.03 0.92 nadww01





## National Water Information System: Mapper

SitesMap

Search

Search by Street Address:

32.122741 -103.542910

Search by Place Name:

Enter Place Name

Search by Site Number(s):

Enter Site Number(s)

Search by State/Territory:

Select an Area

Search by Watershed Region:

Select a Region

Surface-Water Sites

Groundwater Sites

Springs

Atmospheric Sites

Other Sites






Site Information




# Karst Potential

EOG Caballo Sec. 23 TB

## Legend

-  Caballo Sec 23 CTB Spill Path\_Part
-  Caballo Section 23 Tank Battery
-  High
-  Low
-  Medium

 Caballo Section 23 Tank Battery



3 mi





## NFHL Web Mapping Application



Data Layers

Search Result

Y:32.122741 X:-103.542910

[Zoom to](#)

100m  
300ft

3345 ft

FEMA | Bureau of Land Management



## Appendix C





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

---

October 14, 2019

JAMES KENNEDY

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: CABALLO 23

Enclosed are the results of analyses for samples received by the laboratory on 10/11/19 13:25.

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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:**

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

Received: 10/11/2019  
 Reported: 10/14/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location:

Sampling Date: 10/11/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BOTTOMHOLE-16 COMP 4.5' (H903464-01)**

BTEX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/12/2019	ND	1.72	85.9	2.00	2.40		
Toluene*	<0.050	0.050	10/12/2019	ND	1.82	90.8	2.00	2.70		
Ethylbenzene*	<0.050	0.050	10/12/2019	ND	1.78	89.0	2.00	0.0991		
Total Xylenes*	<0.150	0.150	10/12/2019	ND	5.37	89.5	6.00	0.901		
Total BTEX	<0.300	0.300	10/12/2019	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	784	16.0	10/14/2019	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	10/11/2019	ND	215	108	200	2.55		
DRO >C10-C28*	<10.0	10.0	10/11/2019	ND	211	106	200	1.24		
EXT DRO >C28-C36	<10.0	10.0	10/11/2019	ND						

Surrogate: 1-Chlorooctane 112 % 41-142

Surrogate: 1-Chlorooctadecane 113 % 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

**Analytical Results For:**

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

Received: 10/11/2019  
 Reported: 10/14/2019  
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 Project Location:

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 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BOTTOMHOLE-17 COMP 4.5' (H903464-02)**

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/12/2019	ND	1.72	85.9	2.00	2.40		
Toluene*	<0.050	0.050	10/12/2019	ND	1.82	90.8	2.00	2.70		
Ethylbenzene*	<0.050	0.050	10/12/2019	ND	1.78	89.0	2.00	0.0991		
Total Xylenes*	<0.150	0.150	10/12/2019	ND	5.37	89.5	6.00	0.901		
Total BTEx	<0.300	0.300	10/12/2019	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	768	16.0	10/14/2019	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	10/11/2019	ND	215	108	200	2.55	
DRO >C10-C28*	<10.0	10.0	10/11/2019	ND	211	106	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 111 % 41-142

Surrogate: 1-Chlorooctadecane 110 % 37.6-147

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\*=Accredited Analyte

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





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**Analytical Results For:**

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

Received: 10/11/2019  
 Reported: 10/14/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location:

Sampling Date: 10/11/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BOTTOMHOLE-18 COMP 4.5' (H903464-03)**

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/12/2019	ND	1.72	85.9	2.00	2.40		
Toluene*	<0.050	0.050	10/12/2019	ND	1.82	90.8	2.00	2.70		
Ethylbenzene*	<0.050	0.050	10/12/2019	ND	1.78	89.0	2.00	0.0991		
Total Xylenes*	<0.150	0.150	10/12/2019	ND	5.37	89.5	6.00	0.901		
Total BTEx	<0.300	0.300	10/12/2019	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1360	16.0	10/14/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	215	108	200	2.55	
DRO >C10-C28*	<10.0	10.0	10/11/2019	ND	211	106	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 110 % 41-142

Surrogate: 1-Chlorooctadecane 112 % 37.6-147

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**Analytical Results For:**

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Received: 10/11/2019  
 Reported: 10/14/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location:

Sampling Date: 10/11/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BOTTOMHOLE-19 COMP 4.5' (H903464-04)**

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/12/2019	ND	1.72	85.9	2.00	2.40		
Toluene*	<0.050	0.050	10/12/2019	ND	1.82	90.8	2.00	2.70		
Ethylbenzene*	<0.050	0.050	10/12/2019	ND	1.78	89.0	2.00	0.0991		
Total Xylenes*	<0.150	0.150	10/12/2019	ND	5.37	89.5	6.00	0.901		
Total BTEx	<0.300	0.300	10/12/2019	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	736	16.0	10/14/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	215	108	200	2.55	
DRO >C10-C28*	<10.0	10.0	10/11/2019	ND	211	106	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 115 % 41-142

Surrogate: 1-Chlorooctadecane 113 % 37.6-147

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**Analytical Results For:**

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Received: 10/11/2019  
 Reported: 10/14/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location:

Sampling Date: 10/11/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BOTTOMHOLE-20 COMP 4.5' (H903464-05)**

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/12/2019	ND	1.72	85.9	2.00	2.40		
Toluene*	<0.050	0.050	10/12/2019	ND	1.82	90.8	2.00	2.70		
Ethylbenzene*	<0.050	0.050	10/12/2019	ND	1.78	89.0	2.00	0.0991		
Total Xylenes*	<0.150	0.150	10/12/2019	ND	5.37	89.5	6.00	0.901		
Total BTEx	<0.300	0.300	10/12/2019	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	752	16.0	10/14/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	215	108	200	2.55	
DRO >C10-C28*	<10.0	10.0	10/11/2019	ND	211	106	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 112 % 41-142

Surrogate: 1-Chlorooctadecane 111 % 37.6-147

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**Analytical Results For:**

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 Fax To: (432) 682-3946

Received: 10/11/2019  
 Reported: 10/14/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location:

Sampling Date: 10/11/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BOTTOMHOLE-21 COMP 4.5' (H903464-06)**

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/12/2019	ND	1.72	85.9	2.00	2.40		
Toluene*	<0.050	0.050	10/12/2019	ND	1.82	90.8	2.00	2.70		
Ethylbenzene*	<0.050	0.050	10/12/2019	ND	1.78	89.0	2.00	0.0991		
Total Xylenes*	<0.150	0.150	10/12/2019	ND	5.37	89.5	6.00	0.901		
Total BTEx	<0.300	0.300	10/12/2019	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1100	16.0	10/14/2019	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	215	108	200	2.55	
DRO >C10-C28*	<10.0	10.0	10/11/2019	ND	211	106	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 114 % 41-142

Surrogate: 1-Chlorooctadecane 115 % 37.6-147

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**Analytical Results For:**

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Received: 10/11/2019  
 Reported: 10/14/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location:

Sampling Date: 10/11/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: BOTTOMHOLE-22 COMP 4.5' (H903464-07)**

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/12/2019	ND	1.72	85.9	2.00	2.40		
Toluene*	<0.050	0.050	10/12/2019	ND	1.82	90.8	2.00	2.70		
Ethylbenzene*	<0.050	0.050	10/12/2019	ND	1.78	89.0	2.00	0.0991		
Total Xylenes*	<0.150	0.150	10/12/2019	ND	5.37	89.5	6.00	0.901		
Total BTEx	<0.300	0.300	10/12/2019	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	368	16.0	10/14/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	215	108	200	2.55	
DRO >C10-C28*	<10.0	10.0	10/11/2019	ND	211	106	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 108 % 41-142

Surrogate: 1-Chlorooctadecane 106 % 37.6-147

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**Analytical Results For:**

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 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 10/11/2019  
 Reported: 10/14/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location:

Sampling Date: 10/11/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SSW-1 COMP 4.5' (H903464-08)**

BTEX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/12/2019	ND	1.72	85.9	2.00	2.40		
Toluene*	<0.050	0.050	10/12/2019	ND	1.82	90.8	2.00	2.70		
Ethylbenzene*	<0.050	0.050	10/12/2019	ND	1.78	89.0	2.00	0.0991		
Total Xylenes*	<0.150	0.150	10/12/2019	ND	5.37	89.5	6.00	0.901		
Total BTEX	<0.300	0.300	10/12/2019	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	384	16.0	10/14/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	215	108	200	2.55	
DRO >C10-C28*	<10.0	10.0	10/11/2019	ND	211	106	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 103 % 41-142

Surrogate: 1-Chlorooctadecane 102 % 37.6-147

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**Analytical Results For:**

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 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 10/11/2019  
 Reported: 10/14/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location:

Sampling Date: 10/11/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SSW-2 COMP 4.5' (H903464-09)**

BTX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/12/2019	ND	1.72	85.9	2.00	2.40		
Toluene*	<0.050	0.050	10/12/2019	ND	1.82	90.8	2.00	2.70		
Ethylbenzene*	<0.050	0.050	10/12/2019	ND	1.78	89.0	2.00	0.0991		
Total Xylenes*	<0.150	0.150	10/12/2019	ND	5.37	89.5	6.00	0.901		
Total BTX	<0.300	0.300	10/12/2019	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1300	16.0	10/14/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	215	108	200	2.55	
DRO >C10-C28*	<10.0	10.0	10/11/2019	ND	211	106	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 114 % 41-142

Surrogate: 1-Chlorooctadecane 112 % 37.6-147

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**Analytical Results For:**

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 Fax To: (432) 682-3946

Received: 10/11/2019  
 Reported: 10/14/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location:

Sampling Date: 10/11/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SSW-3 COMP 4.5' (H903464-10)**

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/12/2019	ND	1.72	85.9	2.00	2.40		
Toluene*	<0.050	0.050	10/12/2019	ND	1.82	90.8	2.00	2.70		
Ethylbenzene*	<0.050	0.050	10/12/2019	ND	1.78	89.0	2.00	0.0991		
Total Xylenes*	<0.150	0.150	10/12/2019	ND	5.37	89.5	6.00	0.901		
Total BTEx	<0.300	0.300	10/12/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.4 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	896	16.0	10/14/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	215	108	200	2.55	
DRO >C10-C28*	<10.0	10.0	10/11/2019	ND	211	106	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 112 % 41-142

Surrogate: 1-Chlorooctadecane 112 % 37.6-147

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\*=Accredited Analyte

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





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

**Analytical Results For:**

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

Received: 10/11/2019  
 Reported: 10/14/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location:

Sampling Date: 10/11/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SSW-4 COMP 4.5' (H903464-11)**

BTEX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/12/2019	ND	1.72	85.9	2.00	2.40		
Toluene*	<0.050	0.050	10/12/2019	ND	1.82	90.8	2.00	2.70		
Ethylbenzene*	<0.050	0.050	10/12/2019	ND	1.78	89.0	2.00	0.0991		
Total Xylenes*	<0.150	0.150	10/12/2019	ND	5.37	89.5	6.00	0.901		
Total BTEX	<0.300	0.300	10/12/2019	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	10/14/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	215	108	200	2.55	
DRO >C10-C28*	<10.0	10.0	10/11/2019	ND	211	106	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 100 % 37.6-147

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\*=Accredited Analyte

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





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**Analytical Results For:**

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

Received: 10/11/2019  
 Reported: 10/14/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location:

Sampling Date: 10/11/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: SSW-5 COMP 4.5' (H903464-12)**

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/12/2019	ND	1.72	85.9	2.00	2.40		
Toluene*	<0.050	0.050	10/12/2019	ND	1.82	90.8	2.00	2.70		
Ethylbenzene*	<0.050	0.050	10/12/2019	ND	1.78	89.0	2.00	0.0991		
Total Xylenes*	<0.150	0.150	10/12/2019	ND	5.37	89.5	6.00	0.901		
Total BTEx	<0.300	0.300	10/12/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.7 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/14/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	215	108	200	2.55	
DRO >C10-C28*	<10.0	10.0	10/11/2019	ND	211	106	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 108 % 41-142

Surrogate: 1-Chlorooctadecane 109 % 37.6-147

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





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**Analytical Results For:**

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

Received: 10/11/2019  
 Reported: 10/14/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location:

Sampling Date: 10/11/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: WSW-1 COMP 4.5' (H903464-13)**

BTX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/12/2019	ND	1.72	85.9	2.00	2.40		
Toluene*	<0.050	0.050	10/12/2019	ND	1.82	90.8	2.00	2.70		
Ethylbenzene*	<0.050	0.050	10/12/2019	ND	1.78	89.0	2.00	0.0991		
Total Xylenes*	<0.150	0.150	10/12/2019	ND	5.37	89.5	6.00	0.901		
Total BTX	<0.300	0.300	10/12/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.8 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	10/14/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	215	108	200	2.55	
DRO >C10-C28*	273	10.0	10/11/2019	ND	211	106	200	1.24	
EXT DRO >C28-C36	109	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 122 % 37.6-147

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





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**Analytical Results For:**

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

Received: 10/11/2019  
 Reported: 10/14/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location:

Sampling Date: 10/11/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: ESW-1 COMP 4.5' (H903464-14)**

BTEX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/12/2019	ND	1.72	85.9	2.00	2.40		
Toluene*	<0.050	0.050	10/12/2019	ND	1.82	90.8	2.00	2.70		
Ethylbenzene*	<0.050	0.050	10/12/2019	ND	1.78	89.0	2.00	0.0991		
Total Xylenes*	<0.150	0.150	10/12/2019	ND	5.37	89.5	6.00	0.901		
Total BTEX	<0.300	0.300	10/12/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.0 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/14/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	215	108	200	2.55	
DRO >C10-C28*	<10.0	10.0	10/11/2019	ND	211	106	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 102 % 37.6-147

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





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**Analytical Results For:**

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

Received: 10/11/2019  
 Reported: 10/14/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location:

Sampling Date: 10/11/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: ESW-2 COMP 4.5' (H903464-15)**

BTEX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/12/2019	ND	1.72	85.9	2.00	2.40		
Toluene*	<0.050	0.050	10/12/2019	ND	1.82	90.8	2.00	2.70		
Ethylbenzene*	<0.050	0.050	10/12/2019	ND	1.78	89.0	2.00	0.0991		
Total Xylenes*	<0.150	0.150	10/12/2019	ND	5.37	89.5	6.00	0.901		
Total BTEX	<0.300	0.300	10/12/2019	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/14/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	215	108	200	2.55	
DRO >C10-C28*	<10.0	10.0	10/11/2019	ND	211	106	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 84.3 % 41-142

Surrogate: 1-Chlorooctadecane 82.6 % 37.6-147

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





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**Analytical Results For:**

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

Received: 10/11/2019  
 Reported: 10/14/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location:

Sampling Date: 10/11/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: NSW-4 COMP 4.5' (H903464-16)**

BTEX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/12/2019	ND	1.72	85.9	2.00	2.40		
Toluene*	<0.050	0.050	10/12/2019	ND	1.82	90.8	2.00	2.70		
Ethylbenzene*	<0.050	0.050	10/12/2019	ND	1.78	89.0	2.00	0.0991		
Total Xylenes*	<0.150	0.150	10/12/2019	ND	5.37	89.5	6.00	0.901		
Total BTEX	<0.300	0.300	10/12/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.1 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	10/14/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	215	108	200	2.55	
DRO >C10-C28*	<10.0	10.0	10/11/2019	ND	211	106	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 116 % 41-142

Surrogate: 1-Chlorooctadecane 115 % 37.6-147

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





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**Analytical Results For:**

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

Received: 10/11/2019  
 Reported: 10/14/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location:

Sampling Date: 10/11/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: NSW-5 COMP 4.5' (H903464-17)**

BTX 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/12/2019	ND	1.72	85.9	2.00	2.40		
Toluene*	<0.050	0.050	10/12/2019	ND	1.82	90.8	2.00	2.70		
Ethylbenzene*	<0.050	0.050	10/12/2019	ND	1.78	89.0	2.00	0.0991		
Total Xylenes*	<0.150	0.150	10/12/2019	ND	5.37	89.5	6.00	0.901		
Total BTX	<0.300	0.300	10/12/2019	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	10/14/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	215	108	200	2.55	
DRO >C10-C28*	<10.0	10.0	10/11/2019	ND	211	106	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 110 % 41-142

Surrogate: 1-Chlorooctadecane 111 % 37.6-147

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





---

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### Notes and Definitions

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

---

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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



### Analysis Request of Chain of Custody Record



**Tetra Tech, Inc.**

900 West Wall Street, Ste 100  
Midland, Texas 79701  
Tel (432) 682-4559  
Fax (432) 682-3946

Client Name: EOG		Site Manager: Mike Carmona	
Project Name: Caballo 23		Project #:	
Project Location: Lea County, New Mexico (county, state)			
Invoice to: James Kennedy			
Receiving Laboratory: Cardinal Laboratory		Sampler Signature: Devin Dominguez	
Comments:			

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD				# CONTAINERS	FILTERED (Y/N)	
		YEAR 2019		WATER	SOIL	HCL	HNO <sub>3</sub>	ICE	None			
		DATE	TIME									
1	Bottomhole-16 Comp 4.5'	10/11/2019		X				X			1	N
2	Bottomhole-17 Comp 4.5'	10/11/2019		X				X			1	N
3	Bottomhole-18 Comp 4.5'	10/11/2019		X				X			1	N
4	Bottomhole-19 Comp 4.5'	10/11/2019		X				X			1	N
5	Bottomhole-20 Comp 4.5'	10/11/2019		X				X			1	N
6	Bottomhole-21 Comp 4.5'	10/11/2019		X				X			1	N
7	Bottomhole-22 Comp 4.5'	10/11/2019		X				X			1	N
8	SSW-1 Comp 4.5'	10/11/2019		X				X			1	N
9	SSW-2 Comp 4.5'	10/11/2019		X				X			1	N
10	SSW-3 Comp 4.5'	10/11/2019		X				X			1	N

Relinquished by:	Date: 10/11/19	Time: 1:05	Received by:	Date: 10/11/19	Time: 10/11/19
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

## ANALYSIS REQUEST

(Circle or Specify Method No.)

[illegible]



Analysis Request of Custody Record



Tetra Tech, Inc.

900 West Wall Street, Ste 100  
Midland, Texas 79701  
Tel (432) 682-4559  
Fax (432) 682-3946

Client Name:		EOG		Site Manager:		Mike Carmona																									
Project Name:		Caballo 23		Project #:																											
Project Location: (county, state)		Lea County, New Mexico		Project #:																											
Invoice to:		James Kennedy		Sampler Signature:		Devin Dominguez																									
Receiving Laboratory:		Cardinal Laboratory		Sampler Signature:		Devin Dominguez																									
Comments:																															
LAB # LAB USE ONLY H9034164	SAMPLE IDENTIFICATION			SAMPLING		MATRIX		PRESERVATIVE METHOD		# CONTAINERS		FILTERED (Y/N)		ANALYSIS REQUEST (Circle or Specify Method No.)																	
				YEAR 2019																											
				DATE		TIME		WATER		SOIL		HCL		HNO <sub>3</sub>		ICE		None													
	11			SSW-4 Comp 4.5'		10/11/2019				X				X				1		N		BTEX 8021B BTEX 8260B									
	12			SSW-5 Comp 4.5'		10/11/2019				X				X				1		N		TPH TX1005 (Ext to C35)									
	13			WSW-1 Comp 4.5'		10/11/2019				X				X				1		N		TPH 8015M ( GRO - DRO - ORO - MRO)									
	14			ESW-1 Comp 4.5'		10/11/2019				X				X				1		N		PAH 8270C									
	15			ESW-2 Comp 4.5'		10/11/2019				X				X				1		N		Total Metals Ag As Ba Cd Cr Pb Se Hg									
	16			NSW-4 Comp 4.5'		10/11/2019				X				X				1		N		TCLP Metals Ag As Ba Cd Cr Pb Se Hg									
	17			NSW-5 Comp 4.5'		10/11/2019				X				X				1		N		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										
																					TPH 8015R										
																					Hold										
Relinquished by:		Date: Time:		Received by:		Date: Time:		LAB USE ONLY		REMARKS:																					
Relinquished by:		Date: Time:		Received by:		Date: Time:		LAB USE ONLY		REMARKS:																					
Relinquished by:		Date: Time:		Received by:		Date: Time:		LAB USE ONLY		REMARKS:																					

ORIGINAL COPY





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---

October 15, 2019

JAMES KENNEDY

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: CABALLO 23

Enclosed are the results of analyses for samples received by the laboratory on 10/14/19 13:35.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager





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**Analytical Results For:**

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

Received:	10/14/2019	Sampling Date:	10/14/2019
Reported:	10/15/2019	Sampling Type:	Soil
Project Name:	CABALLO 23	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EOG-LEA COUNTY, NM		

**Sample ID: BOTTOMHOLE-1 COMP 4.5' (H903484-01)**

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/14/2019	ND	2.04	102	2.00	2.89	
Toluene*	<0.050	0.050	10/14/2019	ND	2.14	107	2.00	3.19	
Ethylbenzene*	<0.050	0.050	10/14/2019	ND	2.07	104	2.00	2.57	
Total Xylenes*	<0.150	0.150	10/14/2019	ND	6.23	104	6.00	2.68	
Total BTEX	<0.300	0.300	10/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.0 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	416	16.0	10/15/2019	ND	416	104	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	10/14/2019	ND	212	106	200	1.45	
DRO >C10-C28*	<10.0	10.0	10/14/2019	ND	214	107	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	10/14/2019	ND					

Surrogate: 1-Chlorooctane 109 % 41-142

Surrogate: 1-Chlorooctadecane 114 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 10/14/2019  
 Reported: 10/15/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location: EOG-LEA COUNTY, NM

Sampling Date: 10/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BOTTOMHOLE-2 COMP 4.5' (H903484-02)**

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/14/2019	ND	2.04	102	2.00	2.89		
Toluene*	<0.050	0.050	10/14/2019	ND	2.14	107	2.00	3.19		
Ethylbenzene*	<0.050	0.050	10/14/2019	ND	2.07	104	2.00	2.57		
Total Xylenes*	<0.150	0.150	10/14/2019	ND	6.23	104	6.00	2.68		
Total BTEx	<0.300	0.300	10/14/2019	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	320	16.0	10/15/2019	ND	416	104	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	10/14/2019	ND	212	106	200	1.45	
DRO >C10-C28*	<10.0	10.0	10/14/2019	ND	214	107	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	10/14/2019	ND					

Surrogate: 1-Chlorooctane 110 % 41-142

Surrogate: 1-Chlorooctadecane 113 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 10/14/2019  
 Reported: 10/15/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location: EOG-LEA COUNTY, NM

Sampling Date: 10/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BOTTOMHOLE-3 COMP 4.5' (H903484-03)**

BTEx 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/14/2019	ND	2.04	102	2.00	2.89	
Toluene*	<0.050	0.050	10/14/2019	ND	2.14	107	2.00	3.19	
Ethylbenzene*	<0.050	0.050	10/14/2019	ND	2.07	104	2.00	2.57	
Total Xylenes*	<0.150	0.150	10/14/2019	ND	6.23	104	6.00	2.68	
Total BTEx	<0.300	0.300	10/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.7 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3160	16.0	10/15/2019	ND	416	104	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	10/14/2019	ND	212	106	200	1.45	
DRO >C10-C28*	<10.0	10.0	10/14/2019	ND	214	107	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	10/14/2019	ND					

Surrogate: 1-Chlorooctane 116 % 41-142

Surrogate: 1-Chlorooctadecane 120 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 10/14/2019  
 Reported: 10/15/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location: EOG-LEA COUNTY, NM

Sampling Date: 10/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BOTTOMHOLE-4 COMP 4.5' (H903484-04)**

BTEx 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/14/2019	ND	2.04	102	2.00	2.89	
Toluene*	<0.050	0.050	10/14/2019	ND	2.14	107	2.00	3.19	
Ethylbenzene*	<0.050	0.050	10/14/2019	ND	2.07	104	2.00	2.57	
Total Xylenes*	<0.150	0.150	10/14/2019	ND	6.23	104	6.00	2.68	
Total BTEx	<0.300	0.300	10/14/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1060	16.0	10/15/2019	ND	416	104	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	10/14/2019	ND	212	106	200	1.45	
DRO >C10-C28*	104	10.0	10/14/2019	ND	214	107	200	1.46	
EXT DRO >C28-C36	37.1	10.0	10/14/2019	ND					

Surrogate: 1-Chlorooctane 111 % 41-142

Surrogate: 1-Chlorooctadecane 126 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 10/14/2019  
 Reported: 10/15/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location: EOG-LEA COUNTY, NM

Sampling Date: 10/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BOTTOMHOLE-5 COMP 4.5' (H903484-05)**

BTEx 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/14/2019	ND	2.04	102	2.00	2.89	
Toluene*	<0.050	0.050	10/14/2019	ND	2.14	107	2.00	3.19	
Ethylbenzene*	<0.050	0.050	10/14/2019	ND	2.07	104	2.00	2.57	
Total Xylenes*	<0.150	0.150	10/14/2019	ND	6.23	104	6.00	2.68	
Total BTEx	<0.300	0.300	10/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.5 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1280	16.0	10/15/2019	ND	416	104	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	10/14/2019	ND	212	106	200	1.45	
DRO >C10-C28*	<10.0	10.0	10/14/2019	ND	214	107	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	10/14/2019	ND					

Surrogate: 1-Chlorooctane 110 % 41-142

Surrogate: 1-Chlorooctadecane 110 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 10/14/2019  
 Reported: 10/15/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location: EOG-LEA COUNTY, NM

Sampling Date: 10/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BOTTOMHOLE-6 COMP 4.5' (H903484-06)**

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/14/2019	ND	2.04	102	2.00	2.89		
Toluene*	<0.050	0.050	10/14/2019	ND	2.14	107	2.00	3.19		
Ethylbenzene*	<0.050	0.050	10/14/2019	ND	2.07	104	2.00	2.57		
Total Xylenes*	<0.150	0.150	10/14/2019	ND	6.23	104	6.00	2.68		
Total BTEx	<0.300	0.300	10/14/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.9 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6800	16.0	10/15/2019	ND	416	104	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	10/15/2019	ND	212	106	200	1.45	
DRO >C10-C28*	<10.0	10.0	10/15/2019	ND	214	107	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	10/15/2019	ND					

Surrogate: 1-Chlorooctane 113 % 41-142

Surrogate: 1-Chlorooctadecane 113 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 10/14/2019  
 Reported: 10/15/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location: EOG-LEA COUNTY, NM

Sampling Date: 10/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BOTTOMHOLE-7 COMP 4.5' (H903484-07)**

BTEx 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/15/2019	ND	2.04	102	2.00	2.89	
Toluene*	<0.050	0.050	10/15/2019	ND	2.14	107	2.00	3.19	
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	2.07	104	2.00	2.57	
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.23	104	6.00	2.68	
Total BTEx	<0.300	0.300	10/15/2019	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	752	16.0	10/15/2019	ND	416	104	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	10/15/2019	ND	212	106	200	1.45	
DRO >C10-C28*	<10.0	10.0	10/15/2019	ND	214	107	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	10/15/2019	ND					

Surrogate: 1-Chlorooctane 119 % 41-142

Surrogate: 1-Chlorooctadecane 122 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 10/14/2019  
 Reported: 10/15/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location: EOG-LEA COUNTY, NM

Sampling Date: 10/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BOTTOMHOLE-8 COMP 4.5' (H903484-08)**

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/15/2019	ND	2.04	102	2.00	2.89		
Toluene*	<0.050	0.050	10/15/2019	ND	2.14	107	2.00	3.19		
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	2.07	104	2.00	2.57		
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.23	104	6.00	2.68		
Total BTEx	<0.300	0.300	10/15/2019	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1090	16.0	10/15/2019	ND	416	104	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	10/15/2019	ND	212	106	200	1.45	
DRO >C10-C28*	<10.0	10.0	10/15/2019	ND	214	107	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	10/15/2019	ND					

Surrogate: 1-Chlorooctane 116 % 41-142

Surrogate: 1-Chlorooctadecane 117 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received:	10/14/2019	Sampling Date:	10/14/2019
Reported:	10/15/2019	Sampling Type:	Soil
Project Name:	CABALLO 23	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EOG-LEA COUNTY, NM		

**Sample ID: BOTTOMHOLE-9 COMP 4.5' (H903484-09)**

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/15/2019	ND	2.04	102	2.00	2.89		
Toluene*	<0.050	0.050	10/15/2019	ND	2.14	107	2.00	3.19		
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	2.07	104	2.00	2.57		
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.23	104	6.00	2.68		
Total BTEx	<0.300	0.300	10/15/2019	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1120	16.0	10/15/2019	ND	416	104	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	10/15/2019	ND	212	106	200	1.45	
DRO >C10-C28*	63.1	10.0	10/15/2019	ND	214	107	200	1.46	
EXT DRO >C28-C36	13.5	10.0	10/15/2019	ND					

Surrogate: 1-Chlorooctane 108 % 41-142

Surrogate: 1-Chlorooctadecane 115 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 JAMES KENNEDY  
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 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received:	10/14/2019	Sampling Date:	10/14/2019
Reported:	10/15/2019	Sampling Type:	Soil
Project Name:	CABALLO 23	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EOG-LEA COUNTY, NM		

**Sample ID: BOTTOMHOLE-10 COMP 4.5' (H903484-10)**

BTEx 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/15/2019	ND	2.04	102	2.00	2.89	
Toluene*	<0.050	0.050	10/15/2019	ND	2.14	107	2.00	3.19	
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	2.07	104	2.00	2.57	
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.23	104	6.00	2.68	
Total BTEx	<0.300	0.300	10/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.9 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	320	16.0	10/15/2019	ND	416	104	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	10/15/2019	ND	212	106	200	1.45	
DRO >C10-C28*	<10.0	10.0	10/15/2019	ND	214	107	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	10/15/2019	ND					

Surrogate: 1-Chlorooctane 108 % 41-142

Surrogate: 1-Chlorooctadecane 108 % 37.6-147

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**Analytical Results For:**

TETRA TECH  
 JAMES KENNEDY  
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 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received:	10/14/2019	Sampling Date:	10/14/2019
Reported:	10/15/2019	Sampling Type:	Soil
Project Name:	CABALLO 23	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EOG-LEA COUNTY, NM		

**Sample ID: BOTTOMHOLE-11 COMP 4.5' (H903484-11)**

BTEx 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/15/2019	ND	2.04	102	2.00	2.89	
Toluene*	<0.050	0.050	10/15/2019	ND	2.14	107	2.00	3.19	
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	2.07	104	2.00	2.57	
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.23	104	6.00	2.68	
Total BTEx	<0.300	0.300	10/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.1 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	10/15/2019	ND	416	104	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	10/15/2019	ND	212	106	200	1.45	
DRO >C10-C28*	<10.0	10.0	10/15/2019	ND	214	107	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	10/15/2019	ND					

Surrogate: 1-Chlorooctane 96.3 % 41-142

Surrogate: 1-Chlorooctadecane 112 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 JAMES KENNEDY  
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 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 10/14/2019  
 Reported: 10/15/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location: EOG-LEA COUNTY, NM

Sampling Date: 10/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BOTTOMHOLE-12 COMP 4.5' (H903484-12)**

BTEx 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/15/2019	ND	2.04	102	2.00	2.89	
Toluene*	<0.050	0.050	10/15/2019	ND	2.14	107	2.00	3.19	
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	2.07	104	2.00	2.57	
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.23	104	6.00	2.68	
Total BTEx	<0.300	0.300	10/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.6 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	10/15/2019	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	10/15/2019	ND	212	106	200	1.45	
DRO >C10-C28*	<10.0	10.0	10/15/2019	ND	214	107	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	10/15/2019	ND					

Surrogate: 1-Chlorooctane 114 % 41-142

Surrogate: 1-Chlorooctadecane 117 % 37.6-147

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**Analytical Results For:**

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 JAMES KENNEDY  
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 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received:	10/14/2019	Sampling Date:	10/14/2019
Reported:	10/15/2019	Sampling Type:	Soil
Project Name:	CABALLO 23	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EOG-LEA COUNTY, NM		

**Sample ID: BOTTOMHOLE-13 COMP 4.5' (H903484-13)**

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/15/2019	ND	2.04	102	2.00	2.89		
Toluene*	<0.050	0.050	10/15/2019	ND	2.14	107	2.00	3.19		
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	2.07	104	2.00	2.57		
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.23	104	6.00	2.68		
Total BTEx	<0.300	0.300	10/15/2019	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	384	16.0	10/15/2019	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	10/15/2019	ND	212	106	200	1.45	
DRO >C10-C28*	<10.0	10.0	10/15/2019	ND	214	107	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	10/15/2019	ND					

Surrogate: 1-Chlorooctane 117 % 41-142

Surrogate: 1-Chlorooctadecane 121 % 37.6-147

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**Analytical Results For:**

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 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 10/14/2019  
 Reported: 10/15/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location: EOG-LEA COUNTY, NM

Sampling Date: 10/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BOTTOMHOLE-14 COMP 4.5' (H903484-14)**

BTEx 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/15/2019	ND	2.04	102	2.00	2.89	
Toluene*	<0.050	0.050	10/15/2019	ND	2.14	107	2.00	3.19	
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	2.07	104	2.00	2.57	
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.23	104	6.00	2.68	
Total BTEx	<0.300	0.300	10/15/2019	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	384	16.0	10/15/2019	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	10/15/2019	ND	212	106	200	1.45	
DRO >C10-C28*	<10.0	10.0	10/15/2019	ND	214	107	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	10/15/2019	ND					

Surrogate: 1-Chlorooctane 114 % 41-142

Surrogate: 1-Chlorooctadecane 115 % 37.6-147

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**Analytical Results For:**

TETRA TECH  
 JAMES KENNEDY  
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 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 10/14/2019  
 Reported: 10/15/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location: EOG-LEA COUNTY, NM

Sampling Date: 10/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BOTTOMHOLE-15 COMP 4.5' (H903484-15)**

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/15/2019	ND	2.04	102	2.00	2.89		
Toluene*	<0.050	0.050	10/15/2019	ND	2.14	107	2.00	3.19		
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	2.07	104	2.00	2.57		
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.23	104	6.00	2.68		
Total BTEx	<0.300	0.300	10/15/2019	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	10/15/2019	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	10/15/2019	ND	212	106	200	1.45	
DRO >C10-C28*	<10.0	10.0	10/15/2019	ND	214	107	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	10/15/2019	ND					

Surrogate: 1-Chlorooctane 112 % 41-142

Surrogate: 1-Chlorooctadecane 114 % 37.6-147

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**Analytical Results For:**

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

Received: 10/14/2019  
 Reported: 10/15/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location: EOG-LEA COUNTY, NM

Sampling Date: 10/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: NSW-1 COMP 4.5' (H903484-16)**

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/15/2019	ND	2.04	102	2.00	2.89	
Toluene*	<0.050	0.050	10/15/2019	ND	2.14	107	2.00	3.19	
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	2.07	104	2.00	2.57	
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.23	104	6.00	2.68	
Total BTEX	<0.300	0.300	10/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.5 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	10/15/2019	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	10/15/2019	ND	212	106	200	1.45	
DRO >C10-C28*	<10.0	10.0	10/15/2019	ND	214	107	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	10/15/2019	ND					

Surrogate: 1-Chlorooctane 111 % 41-142

Surrogate: 1-Chlorooctadecane 112 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 10/14/2019  
 Reported: 10/15/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location: EOG-LEA COUNTY, NM

Sampling Date: 10/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: NSW-2 COMP 4.5' (H903484-17)**

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/14/2019	ND	1.91	95.5	2.00	1.84	
Toluene*	<0.050	0.050	10/14/2019	ND	1.95	97.7	2.00	2.67	
Ethylbenzene*	<0.050	0.050	10/14/2019	ND	1.94	97.1	2.00	2.36	
Total Xylenes*	<0.150	0.150	10/14/2019	ND	5.84	97.3	6.00	2.20	
Total BTEX	<0.300	0.300	10/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.5 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	10/15/2019	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	10/15/2019	ND	212	106	200	1.45	
DRO >C10-C28*	<10.0	10.0	10/15/2019	ND	214	107	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	10/15/2019	ND					

Surrogate: 1-Chlorooctane 114 % 41-142

Surrogate: 1-Chlorooctadecane 118 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 10/14/2019  
 Reported: 10/15/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location: EOG-LEA COUNTY, NM

Sampling Date: 10/14/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: NSW-3 COMP 4.5' (H903484-18)**

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/14/2019	ND	1.91	95.5	2.00	1.84		
Toluene*	<0.050	0.050	10/14/2019	ND	1.95	97.7	2.00	2.67		
Ethylbenzene*	<0.050	0.050	10/14/2019	ND	1.94	97.1	2.00	2.36		
Total Xylenes*	<0.150	0.150	10/14/2019	ND	5.84	97.3	6.00	2.20		
Total BTEx	<0.300	0.300	10/14/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.0 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	10/15/2019	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	10/15/2019	ND	212	106	200	1.45	
DRO >C10-C28*	<10.0	10.0	10/15/2019	ND	214	107	200	1.46	
EXT DRO >C28-C36	<10.0	10.0	10/15/2019	ND					

Surrogate: 1-Chlorooctane 112 % 41-142

Surrogate: 1-Chlorooctadecane 114 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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### Notes and Definitions

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

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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



## Analysis Request of Chain of Custody Record



Tetra Tech, Inc.

 900 West Wall Street, Ste 100  
 Midland, Texas 79701  
 Tel (432) 682-4559  
 Fax (432) 682-3946

Client Name: EOG		Site Manager: Mike Carmona	
Project Name: Caballo 23		Project #:	
Project Location: Lea County, New Mexico (county, state)		Project #:	
Invoice to: James Kennedy		Sampler Signature: Devin Dominguez	
Receiving Laboratory: Cardinal Laboratory		Comments:	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD				# CONTAINERS	FILTERED (Y/N)	ANALYSIS REQUEST (Circle or Specify Method No.)	
		DATE	TIME	WATER	SOIL	HCL	HNO <sub>3</sub>	ICE	None				
													YEAR: 2019
1	Bottomhole-1 Comp 4.5'	10/14/2019		X				X			1	N	X
2	Bottomhole-2 Comp 4.5'	10/14/2019		X				X			1	N	X
3	Bottomhole-3 Comp 4.5'	10/14/2019		X				X			1	N	X
4	Bottomhole-4 Comp 4.5'	10/14/2019		X				X			1	N	X
5	Bottomhole-5 Comp 4.5'	10/14/2019		X				X			1	N	X
6	Bottomhole-6 Comp 4.5'	10/14/2019		X				X			1	N	X
7	Bottomhole-7 Comp 4.5'	10/14/2019		X				X			1	N	X
8	Bottomhole-8 Comp 4.5'	10/14/2019		X				X			1	N	X
9	Bottomhole-9 Comp 4.5'	10/14/2019		X				X			1	N	X
10	Bottomhole-10 Comp 4.5'	10/14/2019		X				X			1	N	X

Relinquished by: <i>[Signature]</i>	Date: 10/14/19	Time: 1335	Received by: <i>[Signature]</i>	Date: 10/14/19	Time: 13:35
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY	REMARKS:
<input type="checkbox"/> STANDARD <input checked="" type="checkbox"/> RUSH: Same Day 24 hr 48 hr 72 hr <input type="checkbox"/> Rush Charges Authorized <input type="checkbox"/> Special Report Limits or TRRP Report	Sample Temperature: 39.2 #47 Collected 4.3c (Circle) HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY



## Analysis Request of Custody Record



Tetra Tech, Inc.

 900 West Wall Street, Ste 100  
 Midland, Texas 79701  
 Tel (432) 682-4559  
 Fax (432) 682-3946

Client Name:	EOG	Site Manager:	Mike Carmona
Project Name:	Caballo 23		
Project Location: (county, state)	Lea County, New Mexico	Project #:	
Invoice to:	James Kennedy		
Receiving Laboratory:	Cardinal Laboratory	Sampler Signature:	Devin Dominguez
Comments:			

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD		# CONTAINERS	FILTERED (Y/N)		
		DATE	TIME	WATER	SOIL	HCL	HNO <sub>3</sub>			ICE	None
11	Bottomhole-11 Comp 4.5'	10/14/2019		X				X	N		
12	Bottomhole-12 Comp 4.5'	10/14/2019		X				X	N		
13	Bottomhole-13 Comp 4.5'	10/14/2019		X				X	N		
14	Bottomhole-14 Comp 4.5'	10/14/2019		X				X	N		
15	Bottomhole-15 Comp 4.5'	10/14/2019		X				X	N		
16	NSW-1 Comp 4.5'	10/14/2019		X				X	N		
17	NSW-2 Comp 4.5'	10/14/2019		X				X	N		
18	NSW-3 Comp 4.5'	10/14/2019		X				X	N		

LAB USE ONLY		REMARKS:	
Sample Temperature	ONLY	STANDARD	
3.9°C #97		<input checked="" type="checkbox"/> RUSH: Same Day 24 hr 48 hr 72 hr	
4.3°C		<input type="checkbox"/> Rush Charges Authorized	
		<input type="checkbox"/> Special Report Limits or TRRP Report	

ANALYSIS REQUEST (Circle or Specify Method No.)	
BTEX 8021B	BTEX 8260B
TPH TX1005 (Ext to C35)	
TPH 8015M (GRO - DRO - ORO - MRO)	
PAH 8270C	
Total Metals Ag As Ba Cd Cr Pb Se Hg	
TCLP Metals Ag As Ba Cd Cr Pb Se Hg	
TCLP Volatiles	
TCLP Semi Volatiles	
RCI	
GC/MS Vol. 8260B / 624	
GC/MS Semi. Vol. 8270C/625	
PCB's 8082 / 608	
NORM	
PLM (Asbestos)	
Chloride	
Chloride Sulfate TDS	
General Water Chemistry (see attached list)	
Anion/Cation Balance	
TPH 8015R	
Hold	

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November 06, 2019

MIKE CARMONA

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: CABALLO 23

Enclosed are the results of analyses for samples received by the laboratory on 11/05/19 12:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager





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**Analytical Results For:**

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

Received:	11/05/2019	Sampling Date:	11/05/2019
Reported:	11/06/2019	Sampling Type:	Soil
Project Name:	CABALLO 23	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EOG-LEA COUNTY, NM		

**Sample ID: BOTTOMHOLE-23 COMP 1.5' (H903762-01)**

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	11/05/2019	ND	2.00	100	2.00	2.64		
Toluene*	<0.050	0.050	11/05/2019	ND	1.79	89.3	2.00	2.55		
Ethylbenzene*	<0.050	0.050	11/05/2019	ND	1.81	90.5	2.00	0.667		
Total Xylenes*	<0.150	0.150	11/05/2019	ND	5.48	91.3	6.00	1.42		
Total BTEX	<0.300	0.300	11/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 76.5 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	11/06/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/06/2019	ND	210	105	200	1.75	
DRO >C10-C28*	<10.0	10.0	11/06/2019	ND	211	106	200	0.788	
EXT DRO >C28-C36	<10.0	10.0	11/06/2019	ND					

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 108 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received:	11/05/2019	Sampling Date:	11/05/2019
Reported:	11/06/2019	Sampling Type:	Soil
Project Name:	CABALLO 23	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EOG-LEA COUNTY, NM		

**Sample ID: BOTTOMHOLE-24 COMP 1.5' (H903762-02)**

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	11/05/2019	ND	2.00	100	2.00	2.64		
Toluene*	<0.050	0.050	11/05/2019	ND	1.79	89.3	2.00	2.55		
Ethylbenzene*	<0.050	0.050	11/05/2019	ND	1.81	90.5	2.00	0.667		
Total Xylenes*	<0.150	0.150	11/05/2019	ND	5.48	91.3	6.00	1.42		
Total BTX	<0.300	0.300	11/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.3 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	768	16.0	11/06/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/06/2019	ND	210	105	200	1.75	
DRO >C10-C28*	109	10.0	11/06/2019	ND	211	106	200	0.788	
EXT DRO >C28-C36	28.1	10.0	11/06/2019	ND					

Surrogate: 1-Chlorooctane 109 % 41-142

Surrogate: 1-Chlorooctadecane 127 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received:	11/05/2019	Sampling Date:	11/05/2019
Reported:	11/06/2019	Sampling Type:	Soil
Project Name:	CABALLO 23	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EOG-LEA COUNTY, NM		

**Sample ID: BOTTOMHOLE-25 COMP 1.5' (H903762-03)**

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	11/05/2019	ND	2.00	100	2.00	2.64		
Toluene*	<0.050	0.050	11/05/2019	ND	1.79	89.3	2.00	2.55		
Ethylbenzene*	<0.050	0.050	11/05/2019	ND	1.81	90.5	2.00	0.667		
Total Xylenes*	<0.150	0.150	11/05/2019	ND	5.48	91.3	6.00	1.42		
Total BTX	<0.300	0.300	11/05/2019	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	592	16.0	11/06/2019	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/06/2019	ND	210	105	200	1.75	
DRO >C10-C28*	779	10.0	11/06/2019	ND	211	106	200	0.788	
EXT DRO >C28-C36	415	10.0	11/06/2019	ND					

Surrogate: 1-Chlorooctane 105 % 41-142

Surrogate: 1-Chlorooctadecane 138 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received:	11/05/2019	Sampling Date:	11/05/2019
Reported:	11/06/2019	Sampling Type:	Soil
Project Name:	CABALLO 23	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EOG-LEA COUNTY, NM		

**Sample ID: BOTTOMHOLE-26 COMP 1.5' (H903762-04)**

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	11/05/2019	ND	2.00	100	2.00	2.64		
Toluene*	<0.050	0.050	11/05/2019	ND	1.79	89.3	2.00	2.55		
Ethylbenzene*	<0.050	0.050	11/05/2019	ND	1.81	90.5	2.00	0.667		
Total Xylenes*	<0.150	0.150	11/05/2019	ND	5.48	91.3	6.00	1.42		
Total BTEx	<0.300	0.300	11/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.9 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2800	16.0	11/06/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/06/2019	ND	210	105	200	1.75	
DRO >C10-C28*	2590	10.0	11/06/2019	ND	211	106	200	0.788	
EXT DRO >C28-C36	1080	10.0	11/06/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 190 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received:	11/05/2019	Sampling Date:	11/05/2019
Reported:	11/06/2019	Sampling Type:	Soil
Project Name:	CABALLO 23	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EOG-LEA COUNTY, NM		

**Sample ID: BOTTOMHOLE-27 COMP 1.5' (H903762-05)**

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	11/05/2019	ND	2.00	100	2.00	2.64		
Toluene*	<0.050	0.050	11/05/2019	ND	1.79	89.3	2.00	2.55		
Ethylbenzene*	<0.050	0.050	11/05/2019	ND	1.81	90.5	2.00	0.667		
Total Xylenes*	<0.150	0.150	11/05/2019	ND	5.48	91.3	6.00	1.42		
Total BTX	<0.300	0.300	11/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 88.4 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	848	16.0	11/06/2019	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/06/2019	ND	210	105	200	1.75	
DRO >C10-C28*	214	10.0	11/06/2019	ND	211	106	200	0.788	
EXT DRO >C28-C36	86.6	10.0	11/06/2019	ND					

Surrogate: 1-Chlorooctane 109 % 41-142

Surrogate: 1-Chlorooctadecane 133 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 11/05/2019  
 Reported: 11/06/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location: EOG-LEA COUNTY, NM

Sampling Date: 11/05/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BOTTOMHOLE-28 COMP 1.5' (H903762-06)**

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	11/05/2019	ND	2.00	100	2.00	2.64		
Toluene*	<0.050	0.050	11/05/2019	ND	1.79	89.3	2.00	2.55		
Ethylbenzene*	<0.050	0.050	11/05/2019	ND	1.81	90.5	2.00	0.667		
Total Xylenes*	<0.150	0.150	11/05/2019	ND	5.48	91.3	6.00	1.42		
Total BTEx	<0.300	0.300	11/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 84.0 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5520	16.0	11/06/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/06/2019	ND	210	105	200	1.75	
DRO >C10-C28*	3870	10.0	11/06/2019	ND	211	106	200	0.788	
EXT DRO >C28-C36	1470	10.0	11/06/2019	ND					

Surrogate: 1-Chlorooctane 72.8 % 41-142

Surrogate: 1-Chlorooctadecane 183 % 37.6-147

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**Analytical Results For:**

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

Received:	11/05/2019	Sampling Date:	11/05/2019
Reported:	11/06/2019	Sampling Type:	Soil
Project Name:	CABALLO 23	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EOG-LEA COUNTY, NM		

**Sample ID: BOTTOMHOLE-29 COMP 1.5' (H903762-07)**

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	11/05/2019	ND	2.00	100	2.00	2.64		
Toluene*	<0.050	0.050	11/05/2019	ND	1.79	89.3	2.00	2.55		
Ethylbenzene*	<0.050	0.050	11/05/2019	ND	1.81	90.5	2.00	0.667		
Total Xylenes*	<0.150	0.150	11/05/2019	ND	5.48	91.3	6.00	1.42		
Total BTEX	<0.300	0.300	11/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 82.0 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	432	16.0	11/06/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/06/2019	ND	210	105	200	1.75	
DRO >C10-C28*	534	10.0	11/06/2019	ND	211	106	200	0.788	
EXT DRO >C28-C36	318	10.0	11/06/2019	ND					

Surrogate: 1-Chlorooctane 101 % 41-142

Surrogate: 1-Chlorooctadecane 140 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received:	11/05/2019	Sampling Date:	11/05/2019
Reported:	11/06/2019	Sampling Type:	Soil
Project Name:	CABALLO 23	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EOG-LEA COUNTY, NM		

**Sample ID: BOTTOMHOLE-30 COMP 1.5' (H903762-08)**

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	11/05/2019	ND	2.00	100	2.00	2.64		
Toluene*	<0.050	0.050	11/05/2019	ND	1.79	89.3	2.00	2.55		
Ethylbenzene*	<0.050	0.050	11/05/2019	ND	1.81	90.5	2.00	0.667		
Total Xylenes*	<0.150	0.150	11/05/2019	ND	5.48	91.3	6.00	1.42		
Total BTX	<0.300	0.300	11/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.0 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3040	16.0	11/06/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/06/2019	ND	210	105	200	1.75	
DRO >C10-C28*	948	10.0	11/06/2019	ND	211	106	200	0.788	
EXT DRO >C28-C36	343	10.0	11/06/2019	ND					

Surrogate: 1-Chlorooctane 99.7 % 41-142

Surrogate: 1-Chlorooctadecane 136 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received:	11/05/2019	Sampling Date:	11/05/2019
Reported:	11/06/2019	Sampling Type:	Soil
Project Name:	CABALLO 23	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EOG-LEA COUNTY, NM		

**Sample ID: BOTTOMHOLE-31 COMP 1.5' (H903762-09)**

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	11/05/2019	ND	2.00	100	2.00	2.64		
Toluene*	<0.050	0.050	11/05/2019	ND	1.79	89.3	2.00	2.55		
Ethylbenzene*	<0.050	0.050	11/05/2019	ND	1.81	90.5	2.00	0.667		
Total Xylenes*	<0.150	0.150	11/05/2019	ND	5.48	91.3	6.00	1.42		
Total BTEX	<0.300	0.300	11/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 91.3 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4240	16.0	11/06/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/06/2019	ND	210	105	200	1.75	
DRO >C10-C28*	2310	10.0	11/06/2019	ND	211	106	200	0.788	
EXT DRO >C28-C36	996	10.0	11/06/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 176 % 37.6-147

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**Analytical Results For:**

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

Received:	11/05/2019	Sampling Date:	11/05/2019
Reported:	11/06/2019	Sampling Type:	Soil
Project Name:	CABALLO 23	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EOG-LEA COUNTY, NM		

**Sample ID: BOTTOMHOLE-32 COMP 1.5' (H903762-10)**

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	11/05/2019	ND	2.00	100	2.00	2.64		
Toluene*	<0.050	0.050	11/05/2019	ND	1.79	89.3	2.00	2.55		
Ethylbenzene*	<0.050	0.050	11/05/2019	ND	1.81	90.5	2.00	0.667		
Total Xylenes*	<0.150	0.150	11/05/2019	ND	5.48	91.3	6.00	1.42		
Total BTX	<0.300	0.300	11/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 88.2 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1620	16.0	11/06/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/06/2019	ND	210	105	200	1.75	
DRO >C10-C28*	3150	10.0	11/06/2019	ND	211	106	200	0.788	
EXT DRO >C28-C36	1300	10.0	11/06/2019	ND					

Surrogate: 1-Chlorooctane 100 % 41-142

Surrogate: 1-Chlorooctadecane 181 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received:	11/05/2019	Sampling Date:	11/05/2019
Reported:	11/06/2019	Sampling Type:	Soil
Project Name:	CABALLO 23	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	EOG-LEA COUNTY, NM		

**Sample ID: BOTTOMHOLE-33 COMP 1.5' (H903762-11)**

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	11/05/2019	ND	2.00	100	2.00	2.64	
Toluene*	<0.050	0.050	11/05/2019	ND	1.79	89.3	2.00	2.55	
Ethylbenzene*	<0.050	0.050	11/05/2019	ND	1.81	90.5	2.00	0.667	
Total Xylenes*	<0.150	0.150	11/05/2019	ND	5.48	91.3	6.00	1.42	
Total BTEx	<0.300	0.300	11/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 91.6 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4400	16.0	11/06/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/06/2019	ND	210	105	200	1.75	
DRO >C10-C28*	1820	10.0	11/06/2019	ND	211	106	200	0.788	
EXT DRO >C28-C36	666	10.0	11/06/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 160 % 37.6-147

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**Analytical Results For:**

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

Received: 11/05/2019  
 Reported: 11/06/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location: EOG-LEA COUNTY, NM

Sampling Date: 11/05/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: NSW-6 COMP 1.5' (H903762-12)**

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	11/05/2019	ND	2.00	100	2.00	2.64		
Toluene*	<0.050	0.050	11/05/2019	ND	1.79	89.3	2.00	2.55		
Ethylbenzene*	<0.050	0.050	11/05/2019	ND	1.81	90.5	2.00	0.667		
Total Xylenes*	<0.150	0.150	11/05/2019	ND	5.48	91.3	6.00	1.42		
Total BTEx	<0.300	0.300	11/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 82.0 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	10000	16.0	11/06/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/06/2019	ND	210	105	200	1.75	
DRO >C10-C28*	113	10.0	11/06/2019	ND	211	106	200	0.788	
EXT DRO >C28-C36	51.1	10.0	11/06/2019	ND					

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 120 % 37.6-147

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**Analytical Results For:**

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

Received: 11/05/2019  
 Reported: 11/06/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location: EOG-LEA COUNTY, NM

Sampling Date: 11/05/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: WSW-2 COMP 1.5' (H903762-13)**

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	11/05/2019	ND	2.00	100	2.00	2.64		
Toluene*	<0.050	0.050	11/05/2019	ND	1.79	89.3	2.00	2.55		
Ethylbenzene*	<0.050	0.050	11/05/2019	ND	1.81	90.5	2.00	0.667		
Total Xylenes*	<0.150	0.150	11/05/2019	ND	5.48	91.3	6.00	1.42		
Total BTEX	<0.300	0.300	11/05/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 86.3 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3680	16.0	11/06/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/06/2019	ND	210	105	200	1.75	
DRO >C10-C28*	4140	10.0	11/06/2019	ND	211	106	200	0.788	
EXT DRO >C28-C36	1400	10.0	11/06/2019	ND					

Surrogate: 1-Chlorooctane 93.9 % 41-142

Surrogate: 1-Chlorooctadecane 211 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 11/05/2019  
 Reported: 11/06/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location: EOG-LEA COUNTY, NM

Sampling Date: 11/05/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: ESW-3 COMP 1.5' (H903762-14)**

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	11/05/2019	ND	2.00	100	2.00	2.64	
Toluene*	<0.050	0.050	11/05/2019	ND	1.79	89.3	2.00	2.55	
Ethylbenzene*	<0.050	0.050	11/05/2019	ND	1.81	90.5	2.00	0.667	
Total Xylenes*	<0.150	0.150	11/05/2019	ND	5.48	91.3	6.00	1.42	
Total BTX	<0.300	0.300	11/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 75.4 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	9000	16.0	11/06/2019	ND	432	108	400	3.77	QM-07	

TPH 8015M		mg/kg		Analyzed By: CK				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/06/2019	ND	210	105	200	1.75	
DRO >C10-C28*	2340	10.0	11/06/2019	ND	211	106	200	0.788	
EXT DRO >C28-C36	896	10.0	11/06/2019	ND					

Surrogate: 1-Chlorooctane 100 % 41-142

Surrogate: 1-Chlorooctadecane 167 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

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

Received: 11/05/2019  
 Reported: 11/06/2019  
 Project Name: CABALLO 23  
 Project Number: NONE GIVEN  
 Project Location: EOG-LEA COUNTY, NM

Sampling Date: 11/05/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SSW-6 COMP 1.5' (H903762-15)**

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	11/06/2019	ND	2.00	100	2.00	2.64	
Toluene*	<0.050	0.050	11/06/2019	ND	1.79	89.3	2.00	2.55	
Ethylbenzene*	<0.050	0.050	11/06/2019	ND	1.81	90.5	2.00	0.667	
Total Xylenes*	<0.150	0.150	11/06/2019	ND	5.48	91.3	6.00	1.42	
Total BTEX	<0.300	0.300	11/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 82.5 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4400	16.0	11/06/2019	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/06/2019	ND	210	105	200	1.75	
DRO >C10-C28*	321	10.0	11/06/2019	ND	211	106	200	0.788	
EXT DRO >C28-C36	145	10.0	11/06/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 136 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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### Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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

---

Celey D. Keene, Lab Director/Quality Manager



## Analysis Request of Chain of Custody Record



Mike Carmona

Hold

[illegible]

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

Released to Imaging: 9/22/2021 2:57:16 PM



## Page 2 of 2



Fax (432) 682-3946

ORIGINAL COPY

ANALYSIS REQUEST  
(Circle or Specify Method No.)

LAB USE  
ONLY

REMARKS:

STANDARD

Sample Temperature

☐ Rush Charges Authorized

Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #



# **Analytical Report 628855**

**for  
Tetra Tech- Midland**

**Project Manager: Clair Gonzales**

**Caballo 23 TB**

**07-JUL-19**

Collected By: Client



**1089 N Canal Street  
Carlsbad, NM 88220**

Xenco-Houston (EPA Lab Code: TX00122):

Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):

Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)

Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)

Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)

Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)

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

Xenco-Atlanta (LELAP Lab ID #04176)

Xenco-Tampa: Florida (E87429), North Carolina (483)





07-JUL-19

Project Manager: **Clair Gonzales**

**Tetra Tech- Midland**

901 West Wall ST

Midland, TX 79701

Reference: XENCO Report No(s): **628855**

**Caballo 23 TB**

Project Address: Lea Co, NM

**Clair Gonzales :**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 628855. 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. 628855 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 'Jessica Kramer'.

---

**Jessica Kramer**

Project Assistant

***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 628855

## Tetra Tech- Midland, Midland, TX

Caballo 23 TB

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH #1	S	06-24-19 00:00	0 - 1 ft	628855-001
AH #1	S	06-24-19 00:00	1 - 1.5 ft	628855-002
AH #1	S	06-24-19 00:00	2 - 2.5 ft	628855-003
AH #1	S	06-24-19 00:00	3 - 3.5 ft	628855-004
AH #1	S	06-24-19 00:00	4 - 4.5 ft	628855-005
AH #2	S	06-24-19 00:00	0 - 1 ft	628855-006
AH #2	S	06-24-19 00:00	1 - 1.5 ft	628855-007
AH #3	S	06-24-19 00:00	0 - 1 ft	628855-008
AH #3	S	06-24-19 00:00	1 - 1.5 ft	628855-009
AH #3	S	06-24-19 00:00	2 - 2.5 ft	628855-010
AH #3	S	06-24-19 00:00	4 - 4.5 ft	628855-011
AH #3	S	06-24-19 00:00	3 - 3.5 ft	628855-012
AH #4	S	06-24-19 00:00	0 - 1 ft	628855-013
AH #4	S	06-24-19 00:00	1 - 1.5 ft	628855-014
AH #4	S	06-24-19 00:00	2 - 2.5 ft	628855-015
AH #4	S	06-24-19 00:00	3 - 3.5 ft	628855-016
AH #4	S	06-24-19 00:00	4 - 4.5 ft	628855-017
AH #5	S	06-24-19 00:00	0 - 1 ft	628855-018
AH #5	S	06-24-19 00:00	1 - 1.5 ft	628855-019
AH #5	S	06-24-19 00:00	2 - 2.5 ft	628855-020
AH #5	S	06-24-19 00:00	3 - 3.5 ft	628855-021
AH #6	S	06-24-19 00:00	0 - 1 ft	628855-022
AH #6	S	06-24-19 00:00	1 - 1.5 ft	628855-023
AH #6	S	06-24-19 00:00	2 - 2.5 ft	628855-024
AH #7	S	06-24-19 00:00	0 - 1 ft	628855-025
AH #8	S	06-24-19 00:00	0 - 1 ft	628855-026





## CASE NARRATIVE

**Client Name: Tetra Tech- Midland**

**Project Name: Caballo 23 TB**

Project ID:

Work Order Number(s): 628855

Report Date: 07-JUL-19

Date Received: 06/24/2019

---

**Sample receipt non conformances and comments:**

None

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**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3094559 BTEX by EPA 8021B

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





# Certificate of Analysis Summary 628855

Tetra Tech- Midland, Midland, TX

Project Name: Caballo 23 TB

Project Id:

Contact: Clair Gonzales

Project Location: Lea Co, NM

Date Received in Lab: Mon Jun-24-19 02:35 pm

Report Date: 07-JUL-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	628855-001	628855-002	628855-003	628855-004	628855-005	628855-006
	<i>Field Id:</i>	AH #1	AH #1	AH #1	AH #1	AH #1	AH #2
	<i>Depth:</i>	0-1 ft	1-1.5 ft	2-2.5 ft	3-3.5 ft	4-4.5 ft	0-1 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-24-19 00:00	Jun-24-19 00:00	Jun-24-19 00:00	Jun-24-19 00:00	Jun-24-19 00:00	Jun-24-19 00:00
<b>BTEX by EPA 8021B SUB: T104704400-18-16</b>	<i>Extracted:</i>	Jul-01-19 17:40	Jul-01-19 17:40				Jul-01-19 17:40
	<i>Analyzed:</i>	Jul-05-19 16:30	Jul-05-19 16:52				Jul-05-19 17:14
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				mg/kg RL
Benzene		<0.000382 0.000382	<0.000383 0.000383				<0.000386 0.000386
Toluene		<0.000452 0.000452	<0.000454 0.000454				<0.000457 0.000457
Ethylbenzene		<0.000560 0.000560	<0.000563 0.000563				<0.000566 0.000566
m,p-Xylenes		<0.00101 0.00101	<0.00101 0.00101				<0.00102 0.00102
o-Xylene		<0.000342 0.000342	<0.000343 0.000343				<0.000345 0.000345
Total Xylenes		<0.000342 0.000342	<0.000343 0.000343				<0.000345 0.000345
Total BTEX		<0.000342 0.000342	<0.000343 0.000343				<0.000345 0.000345
<b>Chloride by EPA 300 SUB: T104704400-18-16</b>	<i>Extracted:</i>	Jun-26-19 16:35	Jun-26-19 16:35	Jun-26-19 16:35	Jun-26-19 16:35	Jun-26-19 16:35	Jun-26-19 16:45
	<i>Analyzed:</i>	Jun-26-19 18:39	Jun-26-19 18:44	Jun-26-19 18:48	Jun-26-19 18:53	Jun-26-19 18:58	Jun-26-19 19:42
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		3820 4.27	4190 4.28	1800 4.29	2210 4.32	3500 4.27	5970 8.58
<b>TPH by SW8015 Mod SUB: T104704400-18-16</b>	<i>Extracted:</i>	Jun-27-19 07:00	Jun-27-19 07:00				Jun-27-19 07:00
	<i>Analyzed:</i>	Jun-27-19 12:48	Jun-27-19 14:02				Jun-27-19 14:27
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				mg/kg RL
Gasoline Range Hydrocarbons (GRO)		9.00 J 7.99	8.65 J 7.98				10.1 J 7.99
Diesel Range Organics (DRO)		9.93 J 8.12	10.3 J 8.10				10.0 J 8.11
Motor Oil Range Hydrocarbons (MRO)		<8.12 8.12	<8.10 8.10				<8.11 8.11
Total TPH		18.9 7.99	19.0 7.98				20.1 7.99

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Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer  
Project Assistant





# Certificate of Analysis Summary 628855

Tetra Tech- Midland, Midland, TX

Project Name: Caballo 23 TB

Project Id:

Contact: Clair Gonzales

Project Location: Lea Co, NM

Date Received in Lab: Mon Jun-24-19 02:35 pm

Report Date: 07-JUL-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	628855-007	628855-008	628855-009	628855-010	628855-011	628855-012
	<i>Field Id:</i>	AH #2	AH #3	AH #3	AH #3	AH #3	AH #3
	<i>Depth:</i>	1-1.5 ft	0-1 ft	1-1.5 ft	2-2.5 ft	4-4.5 ft	3-3.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-24-19 00:00	Jun-24-19 00:00	Jun-24-19 00:00	Jun-24-19 00:00	Jun-24-19 00:00	Jun-24-19 00:00
<b>BTEX by EPA 8021B SUB: T104704400-18-16</b>	<i>Extracted:</i>	Jul-01-19 17:40	Jul-01-19 17:40	Jul-01-19 17:40			
	<i>Analyzed:</i>	Jul-05-19 17:36	Jul-05-19 17:58	Jul-05-19 18:20			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.000381 0.000381	<0.000381 0.000381	<0.000378 0.000378			
Toluene		<0.000451 0.000451	<0.000451 0.000451	<0.000448 0.000448			
Ethylbenzene		<0.000559 0.000559	<0.000559 0.000559	<0.000555 0.000555			
m,p-Xylenes		<0.00100 0.00100	<0.00100 0.00100	<0.000996 0.000996			
o-Xylene		<0.000341 0.000341	<0.000341 0.000341	<0.000338 0.000338			
Total Xylenes		<0.000341 0.000341	<0.000341 0.000341	<0.000338 0.000338			
Total BTEX		<0.000341 0.000341	<0.000341 0.000341	<0.000338 0.000338			
<b>Chloride by EPA 300 SUB: T104704400-18-16</b>	<i>Extracted:</i>	Jun-26-19 16:45	Jun-26-19 16:45	Jun-26-19 16:45	Jun-26-19 16:45	Jun-26-19 16:45	Jun-26-19 16:45
	<i>Analyzed:</i>	Jun-26-19 19:46	Jun-26-19 19:27	Jun-26-19 19:51	Jun-26-19 19:56	Jun-26-19 20:11	Jun-26-19 20:16
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		4060 8.60	207 0.862	247 0.867	1570 4.27	2160 4.25	9330 8.65
<b>TPH by SW8015 Mod SUB: T104704400-18-16</b>	<i>Extracted:</i>	Jun-27-19 07:00	Jun-27-19 07:00	Jun-27-19 07:00			
	<i>Analyzed:</i>	Jun-27-19 14:52	Jun-27-19 15:18	Jun-27-19 15:43			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		8.91 J 7.98	10.4 J 8.00	9.60 J 7.99			
Diesel Range Organics (DRO)		9.19 J 8.10	13.1 J 8.13	10.6 J 8.11			
Motor Oil Range Hydrocarbons (MRO)		<8.10 8.10	<8.13 8.13	<8.11 8.11			
Total TPH		18.1 7.98	23.5 8.00	20.2 7.99			

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Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer  
Project Assistant





# Certificate of Analysis Summary 628855

Tetra Tech- Midland, Midland, TX

Project Name: Caballo 23 TB

Project Id:

Contact: Clair Gonzales

Project Location: Lea Co, NM

Date Received in Lab: Mon Jun-24-19 02:35 pm

Report Date: 07-JUL-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	628855-013	628855-014	628855-015	628855-016	628855-017	628855-018
	<i>Field Id:</i>	AH #4	AH #4	AH #4	AH #4	AH #4	AH #5
	<i>Depth:</i>	0-1 ft	1-1.5 ft	2-2.5 ft	3-3.5 ft	4-4.5 ft	0-1 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-24-19 00:00	Jun-24-19 00:00	Jun-24-19 00:00	Jun-24-19 00:00	Jun-24-19 00:00	Jun-24-19 00:00
<b>BTEX by EPA 8021B SUB: T104704400-18-16</b>	<i>Extracted:</i>	Jul-01-19 17:40	Jul-01-19 17:40				Jul-01-19 17:40
	<i>Analyzed:</i>	Jul-06-19 00:19	Jul-05-19 21:45				Jul-05-19 18:42
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				mg/kg RL
Benzene		<0.000384 0.000384	<0.000386 0.000386				<0.000385 0.000385
Toluene		<0.000455 0.000455	<0.000457 0.000457				<0.000456 0.000456
Ethylbenzene		<0.000564 0.000564	<0.000567 0.000567				<0.000565 0.000565
m,p-Xylenes		<0.00101 0.00101	<0.00102 0.00102				<0.00101 0.00101
o-Xylene		<0.000344 0.000344	<0.000346 0.000346				<0.000344 0.000344
Total Xylenes		<0.000344 0.000344	<0.000346 0.000346				<0.000344 0.000344
Total BTEX		<0.000344 0.000344	<0.000346 0.000346				<0.000344 0.000344
<b>Chloride by EPA 300 SUB: T104704400-18-16</b>	<i>Extracted:</i>	Jun-26-19 16:45	Jun-26-19 16:45	Jun-26-19 16:45	Jun-26-19 16:45	Jun-26-19 16:45	Jun-26-19 16:45
	<i>Analyzed:</i>	Jun-26-19 20:20	Jun-26-19 20:25	Jun-26-19 20:30	Jun-26-19 20:35	Jun-26-19 20:49	Jun-26-19 20:54
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		967 0.857	143 0.858	54.1 0.858	348 0.858	922 0.853	6190 8.67
<b>TPH by SW8015 Mod SUB: T104704400-18-16</b>	<i>Extracted:</i>	Jun-27-19 07:00	Jun-27-19 07:00				Jun-27-19 07:00
	<i>Analyzed:</i>	Jun-27-19 16:09	Jun-27-19 16:34				Jun-27-19 17:00
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				mg/kg RL
Gasoline Range Hydrocarbons (GRO)		15.5 7.99	9.04 J 7.99				13.1 J 7.97
Diesel Range Organics (DRO)		1710 8.12	132 8.12				2690 8.10
Motor Oil Range Hydrocarbons (MRO)		170 8.12	21.3 8.12				281 8.10
Total TPH		1900 7.99	162 7.99				2980 7.97

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Jessica Kramer  
Project Assistant





## Certificate of Analysis Summary 628855

Tetra Tech- Midland, Midland, TX

Project Name: Caballo 23 TB

Project Id:

Contact: Clair Gonzales

Project Location: Lea Co, NM

Date Received in Lab: Mon Jun-24-19 02:35 pm

Report Date: 07-JUL-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	628855-019	628855-020	628855-021	628855-022	628855-023	628855-024
	<i>Field Id:</i>	AH #5	AH #5	AH #5	AH #6	AH #6	AH #6
	<i>Depth:</i>	1-1.5 ft	2-2.5 ft	3-3.5 ft	0-1 ft	1-1.5 ft	2-2.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-24-19 00:00	Jun-24-19 00:00	Jun-24-19 00:00	Jun-24-19 00:00	Jun-24-19 00:00	Jun-24-19 00:00
<b>BTEX by EPA 8021B SUB: T104704400-18-16</b>	<i>Extracted:</i>	Jul-01-19 17:40			Jul-01-19 17:40	Jul-01-19 17:40	
	<i>Analyzed:</i>	Jul-05-19 19:04			Jul-06-19 00:41	Jul-05-19 19:26	
	<i>Units/RL:</i>	mg/kg RL			mg/kg RL	mg/kg RL	
Benzene		<0.000386 0.000386			<0.000382 0.000382	<0.000382 0.000382	
Toluene		<0.000457 0.000457			<0.000452 0.000452	<0.000452 0.000452	
Ethylbenzene		<0.000567 0.000567			<0.000560 0.000560	<0.000560 0.000560	
m,p-Xylenes		<0.00102 0.00102			<0.00101 0.00101	<0.00101 0.00101	
o-Xylene		<0.000346 0.000346			<0.000342 0.000342	<0.000342 0.000342	
Total Xylenes		<0.000346 0.000346			<0.000342 0.000342	<0.000342 0.000342	
Total BTEX		<0.000346 0.000346			<0.000342 0.000342	<0.000342 0.000342	
<b>Chloride by EPA 300 SUB: T104704400-18-16</b>	<i>Extracted:</i>	Jun-26-19 16:45	Jun-26-19 16:45	Jun-26-19 16:45	Jun-26-19 16:45	Jun-26-19 16:45	Jun-26-19 16:45
	<i>Analyzed:</i>	Jun-26-19 21:09	Jun-26-19 21:14	Jun-26-19 21:18	Jun-26-19 21:23	Jun-26-19 21:28	Jun-26-19 21:33
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		2510 4.30	321 0.850	4980 4.25	3730 4.27	776 0.864	11.4 0.857
<b>TPH by SW8015 Mod SUB: T104704400-18-16</b>	<i>Extracted:</i>	Jun-27-19 07:00			Jun-27-19 07:00	Jun-27-19 07:00	
	<i>Analyzed:</i>	Jun-27-19 17:25			Jun-27-19 18:17	Jun-27-19 18:43	
	<i>Units/RL:</i>	mg/kg RL			mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		<7.98 7.98			44.9 7.99	11.4 J 7.97	
Diesel Range Organics (DRO)		109 8.10			3990 8.12	858 8.10	
Motor Oil Range Hydrocarbons (MRO)		46.2 8.10			314 8.12	114 8.10	
Total TPH		155 7.98			4350 7.99	983 7.97	

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Jessica Kramer  
Project Assistant





# Certificate of Analysis Summary 628855

Tetra Tech- Midland, Midland, TX

Project Name: Caballo 23 TB

Project Id:

Contact: Clair Gonzales

Project Location: Lea Co, NM

Date Received in Lab: Mon Jun-24-19 02:35 pm

Report Date: 07-JUL-19

Project Manager: Jessica Kramer

<b>Analysis Requested</b>	<b>Lab Id:</b>	628855-025	628855-026				
	<b>Field Id:</b>	AH #7	AH #8				
	<b>Depth:</b>	0-1 ft	0-1 ft				
	<b>Matrix:</b>	SOIL	SOIL				
	<b>Sampled:</b>	Jun-24-19 00:00	Jun-24-19 00:00				
<b>BTEX by EPA 8021B SUB: T104704400-18-16</b>	<b>Extracted:</b>	Jul-01-19 17:40	Jul-01-19 17:40				
	<b>Analyzed:</b>	Jul-05-19 19:48	Jul-05-19 21:23				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Benzene		<0.000383 0.000383	<0.000382 0.000382				
Toluene		<0.000453 0.000453	<0.000452 0.000452				
Ethylbenzene		<0.000561 0.000561	<0.000560 0.000560				
m,p-Xylenes		<0.00101 0.00101	<0.00101 0.00101				
o-Xylene		<0.000342 0.000342	<0.000342 0.000342				
Total Xylenes		<0.000342 0.000342	<0.000342 0.000342				
Total BTEX		<0.000342 0.000342	<0.000342 0.000342				
<b>Chloride by EPA 300 SUB: T104704400-18-16</b>	<b>Extracted:</b>	Jun-26-19 16:45	Jun-28-19 08:30				
	<b>Analyzed:</b>	Jun-26-19 21:38	Jun-28-19 11:42				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Chloride		2810 4.29	2500 4.29				
<b>TPH by SW8015 Mod SUB: T104704400-18-16</b>	<b>Extracted:</b>	Jun-27-19 07:00	Jun-27-19 07:00				
	<b>Analyzed:</b>	Jun-27-19 19:09	Jun-27-19 19:35				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Gasoline Range Hydrocarbons (GRO)		9.64 J 8.00	11.7 J 8.00				
Diesel Range Organics (DRO)		2460 8.13	1140 8.13				
Motor Oil Range Hydrocarbons (MRO)		259 8.13	138 8.13				
Total TPH		2730 8.00	1290 8.00				

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Jessica Kramer  
Project Assistant





## Flagging Criteria

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

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample      **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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





## Form 2 - Surrogate Recoveries

Project Name: Caballo 23 TB

Work Orders : 628855,

Lab Batch #: 3093877

Sample: 628855-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/27/19 12:48

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.9	99.9	94	70-135	
o-Terphenyl	38.7	50.0	77	70-135	

Lab Batch #: 3093877

Sample: 628855-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/27/19 14:02

## 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	48.0	49.9	96	70-135	

Lab Batch #: 3093877

Sample: 628855-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/27/19 14:27

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.8	104	70-135	
o-Terphenyl	49.8	49.9	100	70-135	

Lab Batch #: 3093877

Sample: 628855-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/27/19 14:52

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.2	99.7	91	70-135	
o-Terphenyl	41.8	49.9	84	70-135	

Lab Batch #: 3093877

Sample: 628855-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/27/19 15:18

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.8	100	86	70-135	
o-Terphenyl	46.9	50.0	94	70-135	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





## Form 2 - Surrogate Recoveries

Project Name: Caballo 23 TB

Work Orders : 628855,

Lab Batch #: 3093877

Sample: 628855-009 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/27/19 15:43

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.7	99.8	88	70-135	
o-Terphenyl	40.9	49.9	82	70-135	

Lab Batch #: 3093877

Sample: 628855-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/27/19 16:09

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.2	99.9	85	70-135	
o-Terphenyl	46.4	50.0	93	70-135	

Lab Batch #: 3093877

Sample: 628855-014 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/27/19 16:34

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.6	99.9	100	70-135	
o-Terphenyl	46.0	50.0	92	70-135	

Lab Batch #: 3093877

Sample: 628855-018 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/27/19 17:00

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.9	99.6	83	70-135	
o-Terphenyl	43.7	49.8	88	70-135	

Lab Batch #: 3093877

Sample: 628855-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/27/19 17:25

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.9	99.7	95	70-135	
o-Terphenyl	43.4	49.9	87	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: Caballo 23 TB

Work Orders : 628855,

Lab Batch #: 3093877

Sample: 628855-022 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/27/19 18:17

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.1	99.9	81	70-135	
o-Terphenyl	49.2	50.0	98	70-135	

Lab Batch #: 3093877

Sample: 628855-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/27/19 18:43

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.4	99.6	97	70-135	
o-Terphenyl	40.8	49.8	82	70-135	

Lab Batch #: 3093877

Sample: 628855-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/27/19 19:09

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	74.7	100	75	70-135	
o-Terphenyl	37.0	50.0	74	70-135	

Lab Batch #: 3093877

Sample: 628855-026 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/27/19 19:35

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.8	100	86	70-135	
o-Terphenyl	36.2	50.0	72	70-135	

Lab Batch #: 3094559

Sample: 628855-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/05/19 16:30

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	70-130	
4-Bromofluorobenzene	0.0315	0.0300	105	70-130	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





## Form 2 - Surrogate Recoveries

Project Name: Caballo 23 TB

Work Orders : 628855,

Lab Batch #: 3094559

Sample: 628855-002 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/05/19 16:52

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	70-130	
4-Bromofluorobenzene	0.0319	0.0300	106	70-130	

Lab Batch #: 3094559

Sample: 628855-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/05/19 17:14

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	70-130	
4-Bromofluorobenzene	0.0322	0.0300	107	70-130	

Lab Batch #: 3094559

Sample: 628855-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/05/19 17:36

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	70-130	
4-Bromofluorobenzene	0.0326	0.0300	109	70-130	

Lab Batch #: 3094559

Sample: 628855-008 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/05/19 17:58

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	70-130	
4-Bromofluorobenzene	0.0337	0.0300	112	70-130	

Lab Batch #: 3094559

Sample: 628855-009 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/05/19 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	0.0288	0.0300	96	70-130	
4-Bromofluorobenzene	0.0325	0.0300	108	70-130	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





## Form 2 - Surrogate Recoveries

Project Name: Caballo 23 TB

Work Orders : 628855,

Lab Batch #: 3094559

Sample: 628855-018 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/05/19 18:42

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	70-130	
4-Bromofluorobenzene	0.0326	0.0300	109	70-130	

Lab Batch #: 3094559

Sample: 628855-019 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/05/19 19:04

## 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	70-130	
4-Bromofluorobenzene	0.0359	0.0300	120	70-130	

Lab Batch #: 3094559

Sample: 628855-023 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/05/19 19:26

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	70-130	
4-Bromofluorobenzene	0.0339	0.0300	113	70-130	

Lab Batch #: 3094559

Sample: 628855-025 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/05/19 19:48

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	70-130	
4-Bromofluorobenzene	0.0337	0.0300	112	70-130	

Lab Batch #: 3094559

Sample: 628855-026 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/05/19 21:23

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	70-130	
4-Bromofluorobenzene	0.0297	0.0300	99	70-130	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





## Form 2 - Surrogate Recoveries

Project Name: Caballo 23 TB

Work Orders : 628855,

Lab Batch #: 3094559

Sample: 628855-014 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/05/19 21:45

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	70-130	
4-Bromofluorobenzene	0.0360	0.0300	120	70-130	

Lab Batch #: 3094559

Sample: 628855-013 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/06/19 00:19

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	70-130	
4-Bromofluorobenzene	0.0357	0.0300	119	70-130	

Lab Batch #: 3094559

Sample: 628855-022 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/06/19 00:41

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	70-130	
4-Bromofluorobenzene	0.0335	0.0300	112	70-130	

Lab Batch #: 3093877

Sample: 7680987-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/27/19 11:34

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.0	100	93	70-135	
o-Terphenyl	38.3	50.0	77	70-135	

Lab Batch #: 3094559

Sample: 7681346-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/05/19 16:08

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	70-130	
4-Bromofluorobenzene	0.0298	0.0300	99	70-130	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





## Form 2 - Surrogate Recoveries

Project Name: Caballo 23 TB

Work Orders : 628855,

Lab Batch #: 3093877

Sample: 7680987-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/27/19 11:58

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.2	100	81	70-135	
o-Terphenyl	36.1	50.0	72	70-135	

Lab Batch #: 3094559

Sample: 7681346-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 07/05/19 14:36

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	70-130	
4-Bromofluorobenzene	0.0330	0.0300	110	70-130	

Lab Batch #: 3093877

Sample: 7680987-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/27/19 12:23

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.7	100	90	70-135	
o-Terphenyl	43.2	50.0	86	70-135	

Lab Batch #: 3093877

Sample: 628855-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/27/19 13:13

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.7	99.9	95	70-135	
o-Terphenyl	55.6	50.0	111	70-135	

Lab Batch #: 3094559

Sample: 628855-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/05/19 14:58

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	70-130	
4-Bromofluorobenzene	0.0346	0.0300	115	70-130	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





## Form 2 - Surrogate Recoveries

Project Name: Caballo 23 TB

Work Orders : 628855,

Project ID:

Lab Batch #: 3093877

Sample: 628855-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/27/19 13:37

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.4	100	85	70-135	
o-Terphenyl	38.9	50.0	78	70-135	

Lab Batch #: 3094559

Sample: 628855-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 07/05/19 15:20

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	70-130	
4-Bromofluorobenzene	0.0365	0.0300	122	70-130	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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





# Blank Spike Recovery

Project Name: Caballo 23 TB

Work Order #: 628855

Project ID:

Lab Batch #: 3094559

Sample: 7681346-1-BKS

Matrix: Solid

Date Analyzed: 07/05/2019

Date Prepared: 07/01/2019

Analyst: AMB

Reporting Units: mg/kg

Batch #: 1

## BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	<0.000384	0.0998	0.0929	93	70-130	
Toluene	<0.000455	0.0998	0.0900	90	70-130	
Ethylbenzene	<0.000564	0.0998	0.0992	99	70-130	
m,p-Xylenes	<0.00101	0.200	0.201	101	70-130	
o-Xylene	<0.000344	0.0998	0.0973	97	70-130	

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

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

BRL - Below Reporting Limit





## BS / BSD Recoveries



Project Name: Caballo 23 TB

Work Order #: 628855

Project ID:

Analyst: CHE

Date Prepared: 06/26/2019

Date Analyzed: 06/26/2019

Lab Batch ID: 3093717

Sample: 7680864-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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	<0.858	250	272	109	250	272	109	0	90-110	20	

Analyst: CHE

Date Prepared: 06/26/2019

Date Analyzed: 06/26/2019

Lab Batch ID: 3093719

Sample: 7680866-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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	<0.858	250	261	104	250	261	104	0	90-110	20	

Analyst: CHE

Date Prepared: 06/28/2019

Date Analyzed: 06/28/2019

Lab Batch ID: 3093973

Sample: 7680927-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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	<0.858	250	247	99	250	248	99	0	90-110	20	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$ 

All results are based on MDL and Validated for QC Purposes





## BS / BSD Recoveries



Project Name: Caballo 23 TB

Work Order #: 628855

Project ID:

Analyst: ARM

Date Prepared: 06/27/2019

Date Analyzed: 06/27/2019

Lab Batch ID: 3093877

Sample: 7680987-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	910	91	1000	1050	105	14	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	915	92	1000	1070	107	16	70-135	20	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$ 

All results are based on MDL and Validated for QC Purposes





## Form 3 - MS / MSD Recoveries

Project Name: Caballo 23 TB

Work Order #: 628855

Project ID:

Lab Batch ID: 3094559

QC- Sample ID: 628855-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 07/05/2019

Date Prepared: 07/01/2019

Analyst: AMB

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000381	0.0990	0.0825	83	0.0992	0.0875	88	6	70-130	35	
Toluene	<0.000451	0.0990	0.0795	80	0.0992	0.0842	85	6	70-130	35	
Ethylbenzene	<0.000559	0.0990	0.0869	88	0.0992	0.0883	89	2	70-130	35	
m,p-Xylenes	<0.00100	0.198	0.174	88	0.198	0.180	91	3	70-130	35	
o-Xylene	<0.000341	0.0990	0.0817	83	0.0992	0.0862	87	5	70-130	35	

Lab Batch ID: 3093717

QC- Sample ID: 628956-009 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/26/2019

Date Prepared: 06/26/2019

Analyst: CHE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	62.8	252	357	117	252	354	116	1	90-110	20	X

Lab Batch ID: 3093717

QC- Sample ID: 628956-019 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/26/2019

Date Prepared: 06/26/2019

Analyst: CHE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.853	249	284	114	249	281	113	1	90-110	20	X

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

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

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

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





## Form 3 - MS / MSD Recoveries

Project Name: Caballo 23 TB

Work Order #: 628855

Project ID:

Lab Batch ID: 3093719

QC- Sample ID: 628855-008 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/26/2019

Date Prepared: 06/26/2019

Analyst: CHE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	207	251	469	104	251	465	103	1	90-110	20	

Lab Batch ID: 3093719

QC- Sample ID: 628855-016 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/26/2019

Date Prepared: 06/26/2019

Analyst: CHE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	348	250	598	100	250	598	100	0	90-110	20	

Lab Batch ID: 3093973

QC- Sample ID: 629155-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/28/2019

Date Prepared: 06/28/2019

Analyst: CHE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	401	250	639	95	250	639	95	0	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.





## Form 3 - MS / MSD Recoveries

Project Name: Caballo 23 TB

Work Order #: 628855

Project ID:

Lab Batch ID: 3093973

QC- Sample ID: 629155-011 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/28/2019

Date Prepared: 06/28/2019

Analyst: CHE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	14.8	250	277	105	250	277	105	0	90-110	20	

Lab Batch ID: 3093877

QC- Sample ID: 628855-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/27/2019

Date Prepared: 06/27/2019

Analyst: ARM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	9.00	999	1050	104	1000	968	96	8	70-135	20	
Diesel Range Organics (DRO)	9.93	999	1150	114	1000	1000	99	14	70-135	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.



Analysis Request of Chain of Custody Record



Tetra Tech, Inc.

901W Wall Street, Ste 100  
Midland, Texas 79705  
Tel (432) 682-4559  
Fax (432) 682-3946

Client Name: **E O G** Site Manager: **Clair Gonzalez**

Project Name: **Caballero 23 TR**

Project Location: **Leatherhead LEA Co, NM** Project #: **Ponding**

Invoice to: **James Kennedy (EOG)**

Receiving Laboratory: **Xenco** Sampler Signature: **Tony Legarda**

Comments: **Run dec per i f ben zane 1000. TE X exceeds 50 or Give + Dro**

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX	PRESERVATIVE METHOD					# CONTAINERS	FILTERED (Y/N)
		YEAR: 2019	DATE	TIME	WATER	SOIL	HCL	HNO <sub>3</sub>	ICE	None	

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Analysis Request of Custody Record



Tetra Tech, Inc.

901W Wall Street, Ste 100  
Midland, Texas 79705  
Tel (432) 682-4559  
Fax (432) 682-3946

Client Name:

EOG

Site Manager:

Clair Gonzalez

Project Name:

Chalko 23 TR

Project Location:  
(county, state)

Lea NM

Project #:

Pending

Invoice to:

EOG - James Kennedy

Receiving Laboratory:

Xenon

Sampler Signature:

Tony Legarda

Comments:

Run deeper is benzene exceeds 10, BTEX exceeds 50 or Growth is greater than 1000.

SAMPLE IDENTIFICATION

LAB #  
(LAB USE ONLY)

SAMPLING  
YEAR: 2019  
DATE  
TIME

MATRIX  
WATER  
SOIL  
HCL  
HNO<sub>3</sub>  
ICE  
None

PRESERVATIVE METHOD  
# CONTAINERS  
FILTERED (Y/N)

AH #3 (4-4.5')

AH #3 (3-3.5')

AH #4 (0-1')

AH #4 (1-1.5')

AH #4 (2-2.5')

AH #4 (3-3.5')

AH #4 (4-4.5')

AH #5 (0-1')

AH #5 (1-1.5')

AH #5 (2-2.5')

AH #5 (2-2.5')

AH #5 (2-2.5')

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AH #5 (2-2.5')

AH #5 (2-2.5')

AH #5 (2-2.5')

Received by:

6/24/19 14:35

Date: Time:

Received by:

6/24/19 14:35

Date: Time:

Inquired by:

Date: Time:

Received by:

Date: Time:

ORIGINAL COPY

ANALYSIS REQUEST

(Circle or Specify Method No.)

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

Hold

REMARKS:  
☒ STANDARD

☐ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

Sample Temperature

4°C





**Tetra Tech, Inc.**

901W Wall Street, Ste 1000  
Midland, Texas 79705  
Tel (432) 682-4559  
Fax (432) 682-3946

620055

Page 3 of 5

### Analysis Request of Chain of Custody Record

[illegible]

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## Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 06/24/2019 02:35:00 PM

Work Order #: 628855

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4
#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)?	Yes
#18 Water VOC samples have zero headspace?	N/A

Subbed to Xenco Midland.

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

Analyst:

PH Device/Lot#:

Checklist completed by:

Elizabeth McClellan

Date: 06/24/2019

Checklist reviewed by:

Jessica Kramer

Date: 06/27/2019



**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 43946

CONDITIONS

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 43946
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
chensley	None	9/22/2021