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July 6, 2024

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SUBJECT: Remediation Closure and Soil Salinity Report for the 12" River Bore Release  
 (NAPP2229049089), Eddy County, New Mexico

Dear Sebastian Orozco,

On behalf of Frontier Field Services, LLC, Frontier Field Services, LLC ,Durango Midstream and Kinetik, Atkins Engineering Associates INC. (AEA) has prepared this Remediation Closure Report that describes the remediation of a release of liquids related to gas pipeline activities at the 12" River Bore. The site is in Unit E, Section 7, Township 18S, Range 27E, Eddy County, New Mexico, on Private land. Figure 1 illustrates the vicinity and site location on an USGS 7.5-minute quadrangle map. Table 1 summarizes release information and Closure Criteria.

**Table 1**

<b>Table 1: Release Information and Closure Criteria</b>			
Name	12" River Bore Release	Company	Frontier Field Services, LLC
API Number	N/A	Location	32.76342°, -104.32424°
Incident Number	NAPP2229049089		
Estimated Date of Release	10/14/2022	Date Reported to NMOCD	10/17/2022
Land Owner		Reported To	NMOCD,
Source of Release	Internal and External Corrosion		
Released Volume	<b>294.51 MCF</b>	Released Material	Condensate Gas
Recovered Volume	0	Net Release	<b>294.51 MCF Gas</b>
NMOCD Closure Criteria	<50 feet to Groundwater		

## **1.0 Background**

On October 14, 2022, a release was discovered at the 12" River Bore pipeline due to internal and external corrosion. Initial response activities were conducted by the operator, and included source elimination by means of repair and immediate site stabilization and release recovery. Figures 1 and 2 illustrate the vicinity and site location, Figure 3 illustrates the release location.

10/14/2022 The line failure has been repaired and the release has ceased. 2) During the repair of the line, it was observed that at 5 feet (ft) below grade surface (bgs) visible saline soil deposits were present within the excavation area.

10/17/2022 C141 submitted to NMOCD

2/28/2023 Terracon conducted soil removal activities in the area where the release occurred. Approximately 3,700 cubic yards of soil were excavated during remedial activities. Excavated material was stockpiled atop a polyethylene liner pending waste characterization and disposal under an approved Form C-138. Excavated materials were disposed of at Lea Land Landfill and waste manifests available upon request.

2/28/2032 Terracon conducted a background evaluation of soils present outside of the release margins to establish chloride background levels surrounding the site. Chloride concentrations appear to be naturally elevated in this area due to the natural accumulation of soil salinity resulting from the wetting and dry of chlorides within the Pecos River from the rising and falling of the alluvial perched water.

6/30/2023 The Closure Report is Denied by NMOCD and stated, "Please collect confirmation samples, representing no more than 200 ft<sup>2</sup>. The closure report includes an inadequate number of floor samples. The proposed background chloride concentration of 17,808 mg/kg is denied. A grab sample should be gathered in areas undisturbed by oil and gas activities, nominally uphill from the release area, and no closer than 50 feet but no farther than 100 feet from the lateral and horizontal extents of a release's impact. Do not use background numbers in areas void of vegetation and downhill from the release area. All background samples should be collected in 1-foot increments down to the depth equivalent to the deepest depth of the excavation. The background numbers at a depth of 1 foot should be averaged. The background numbers at a depth of 2 feet should be averaged and so on. The composite numbers will be used for the final background numbers. Sidewall samples should be delineated/excavated to 600 mg/kg for chlorides."

## **2.0 Area Soil type and Background Soil data**

Salts of sodium, calcium, potassium, and magnesium are produced by the weathering of minerals in soils and from the area drainage. Excess salts are concentrated in soils when precipitation is sufficient to move salts within the soil but of insufficient quantity to move the salts out of the soil.

The Pecos River at the USGS Malaga Station (the nearest station to the release) has an average Specific conductance or EC of 6.72 mmhos/cm = 1mS/cm and a Chloride concentration of 797ppm-1032ppm. The concentration of excess salts in soils is estimated by measuring the electrical conductivity (EC) of the soil. In areas like the surrounding pasture near the release area salt accumulates in the soil, precipitation does not exceed evapotranspiration, thus excess salts build up.

12" River Bore Remediation Closure and soil Salinity Report (NAPP2229049089)  
August 4, 2024

Page 3 of 12

According to Natural Resources Conservation Service (NRCS) soils at the site are mapped as Arno-Harkey series soils, 0 to 1 percent slopes, well-drained, 0 to 9 inches silty clay loam, 9 to 60 inches silty clay (Arno setting) and 0 to 9 inches very fine sandy loam, 9 to 60 inches very fine sandy loam (Harkey setting). Restrictive features are assumed present at more than 80 inches bgs resulting in the formation being categorized with a very high runoff classification. The area soils from 0-80 inches are classified as moderately saline to strong saline with an EC ranging from 8.0 to 32.0 mmhos/cm = 1mS/cm according to the NRCS. The upper soil horizon from 0 to 9 inches according to NRCS should have an EC ranging from 5.0 to 12.0 mS/cm as shown in figure 1.

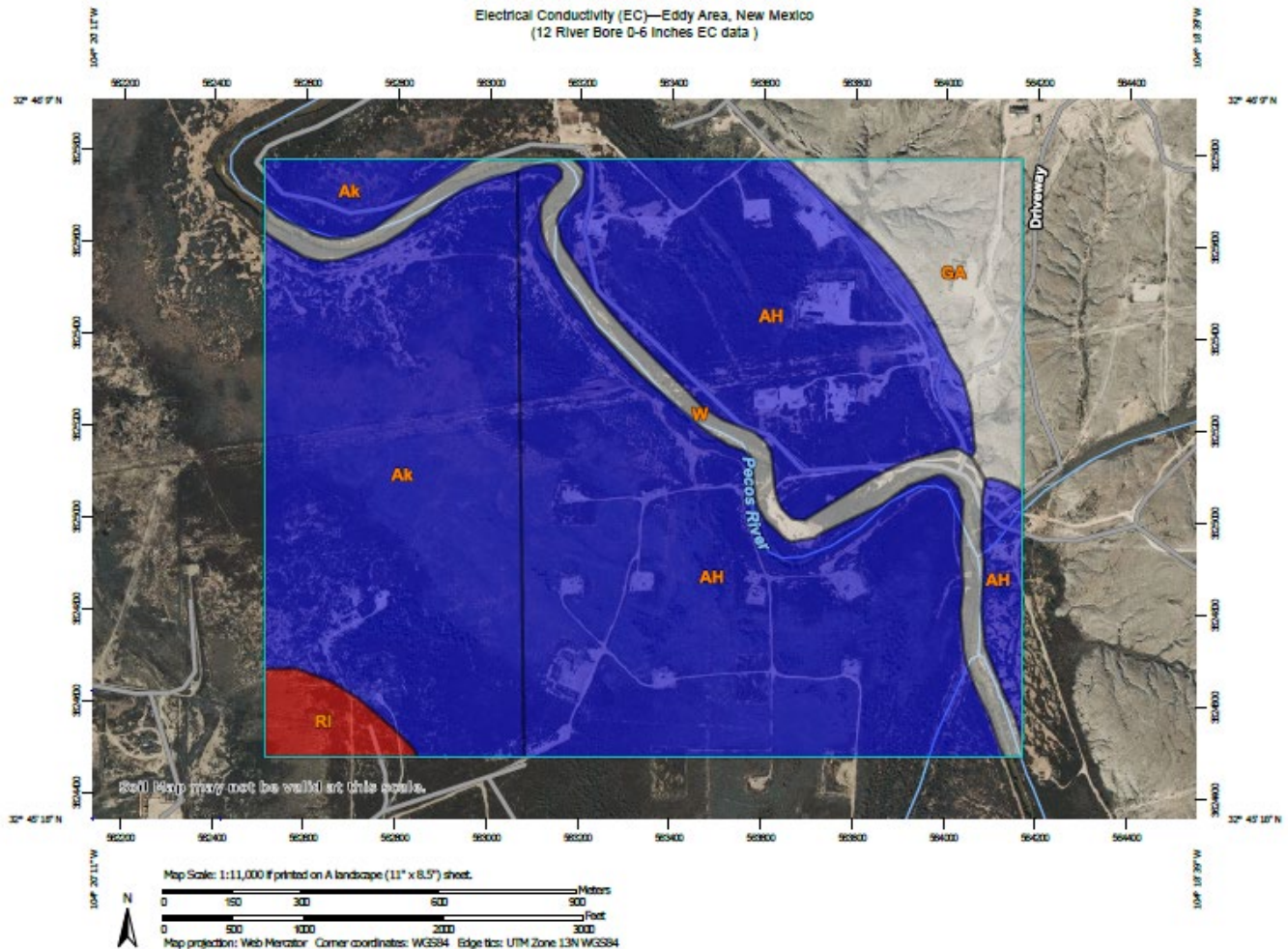


Figure 1

**Soils**  
**Soil EC Rating Polygons**

- $\leq 5.0$
- $> 5.0$  and  $\leq 12.0$
- Not rated or not available

## 12" River Bore Remediation Closure and soil Salinity Report (NAPP2229049089) August 4, 2024

Page 4 of 12

The lower soil horizon from 9 to 60 inches according to NRCS should have an EC ranging from 8.0 to 32.0 mS/cm with an NRCS average of 18.0mS/cm.

### 2.1 Terracon Soil data

According to the Report submitted by Terracon, "all the soil samples collected by Terracon from the excavation area exhibited concentrations of chloride above laboratory sample detection limits and ranging from 352 mg/kg in FS-04 (13-14 feet) to 6,560 in FS-02(7-8 feet). Chloride concentrations generally decrease with sample depth as exhibited in samples N-SW01 and N-SW3.2. Sample N-SW01 contained a chloride concentration of 4,530 mg/kg at 0-5 feet and N-SW3.2 contained a chloride concentration of 512 mg/kg at the 0-12-foot interval." As shown in figure 2.

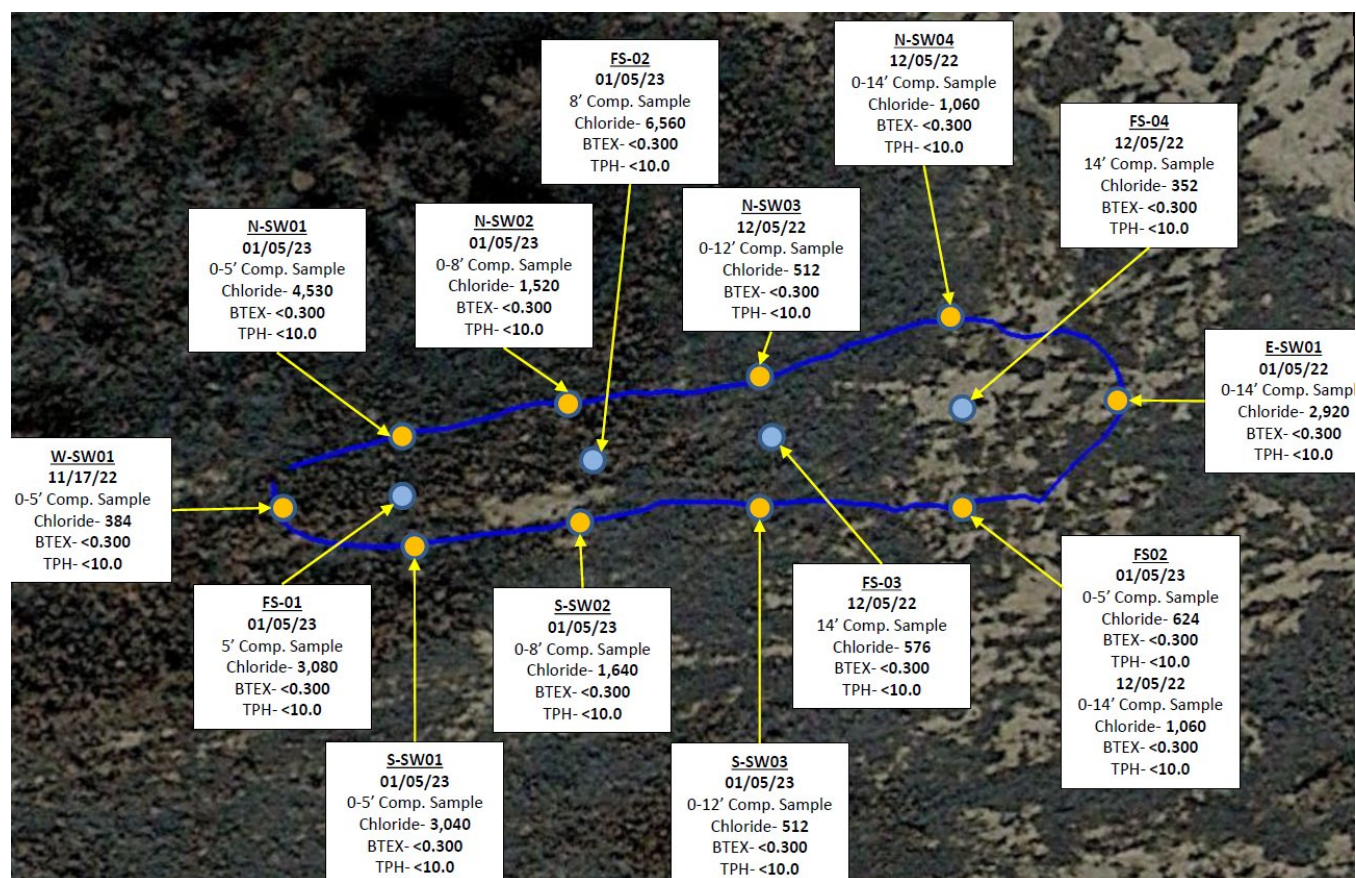


Figure 2

On December 6, 2022 and February 6, 2023, Terracon collected background soil samples from around the 12" River Bore site to establish background chloride concentrations in shallow soils in the area. Results of these sampling events indicate that background chloride concentrations in surface soils are found to exist at levels ranging from 16 mg/kg to 16,400 mg/kg in soil samples collected from surface to 0.5 ft. bgs, and the background soils samples collected from 5 ft bgs ranged from 2,440 mg/kg to 45,200 mg/kg. The chloride concentrations found in the 12" River Bore excavation area appear to be indicative of background levels in the area and as such, further excavation activities were discontinued at the direction of Frontier." Terracon background samples are shown in figure 3.

# 12" River Bore Remediation Closure and soil Salinity Report (NAPP2229049089) August 4, 2024

Page 5 of 12

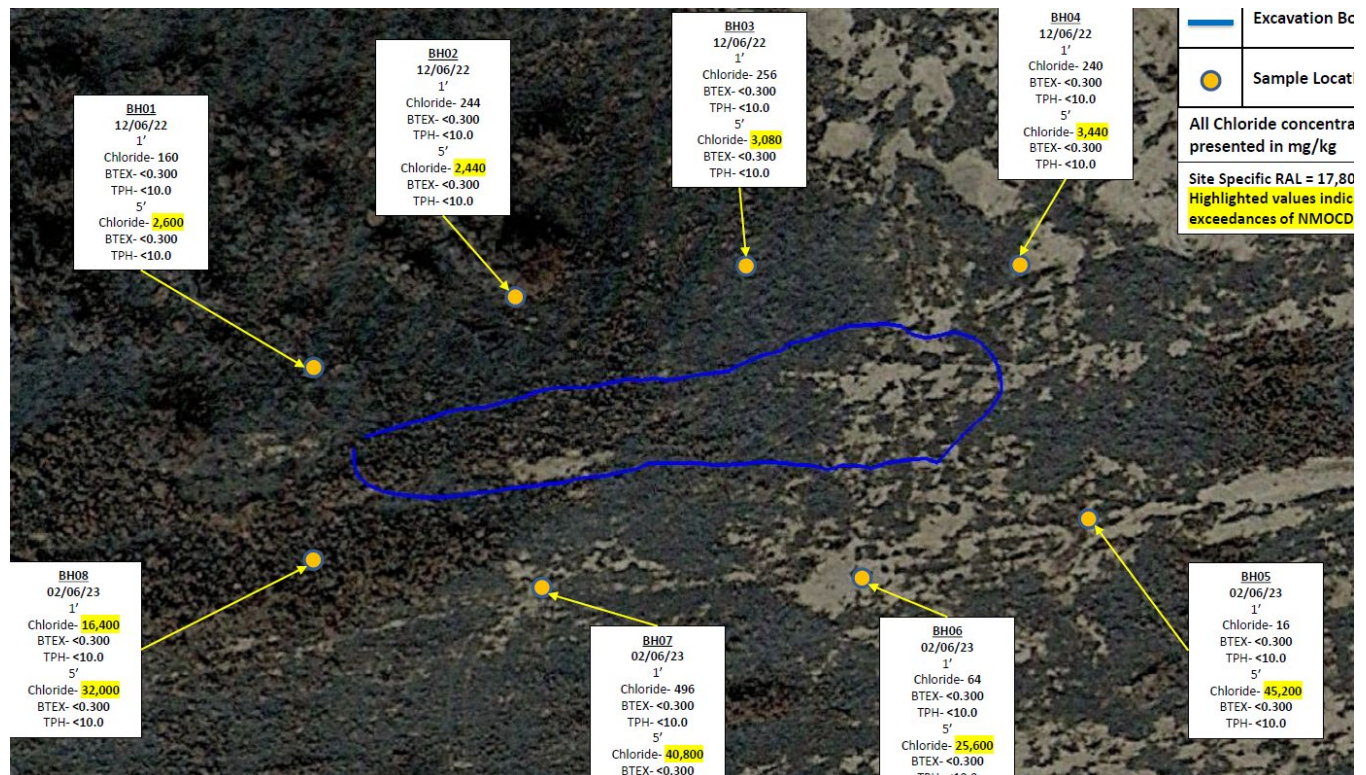


Figure 3

Terracon believed Chloride concentrations are lower in the surface soils than those found at the five-foot interval due to the layer of chloride concentration observed within the excavation and the NRCS data provided. Terracon determined in its report that the natural accumulation of soil salinity resulting from the wetting and dry of chlorides within the Pecos River from the rising and falling of the alluvial perched water caused the accumulation of salts and Chloride at the five-foot interval within the excavation and the surrounding area.

## 2.2 Atkins Soil data

AEA arrived on location on September 25<sup>th</sup> 2023 to collect the NMOCD requested additional bottom hole samples from the backfilled excavation and two background locations up gradient from the release area. All AEA soil bores were collected with steel two-foot in length spoons driven by an AEA Simco drill rig. All samples were a composite of the soil within the foot interval found in the two (2) foot soil spoon.

AEA field staff collected eighteen (18) sample locations, sixteen (16) locations within the excavation boundaries as defined by the Terracon provided KMZ file and two (2) background locations. The results are shown in Table 3 and the locations in figure 4. According to the Terracon report the excavation was five (5) foot in depth along the western most extent and sloped to eight (8) feet in the center and terminated in the east at a depth of fourteen (14) feet. AEA staff did not see the open excavation, the location was backfilled when AEA arrived the specific depths are from the Terracon report and sample locations within.

12" River Bore Remediation Closure and soil Salinity Report (NAPP2229049089)  
August 4, 2024

Page 6 of 12

Table 3

Table 3:  
Summary of Sample Results

Kinetik Holdings LP  
12" River Bore

Sample ID	Sample Date	Depth (feet bgs)	Description	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	Total TPH mg/Kg	Cl- mg/Kg	Benzene mg/Kg	BTEX mg/kg
NMOCD 19.15.29 Guidance							2500	600	10	50
AEA-FS-5	9/25/2023	5	insitu	<20	<25	<50	<100	<16	<0.050	<0.600
AEA-FS-6	9/25/2023	5	insitu	<20	<25	<50	<100	<16	<0.050	<0.600
AEA-FS-7	9/25/2023	5	insitu	<20	<25	<50	<100	<16	<0.050	<0.600
AEA-FS-8	9/25/2023	8	insitu	<20	<25	<50	<100	32	<0.050	<0.600
AEA-FS-9	9/25/2023	8	insitu	<20	<25	<50	<100	<16	<0.050	<0.600
AEA-FS-10	9/25/2023	14	insitu	<20	<25	<50	<100	<16	<0.050	<0.600
AEA-FS-11	9/25/2023	14	insitu	<20	<25	<50	<100	32	<0.050	<0.600
AEA-FS-12	9/25/2023	6	insitu	<20	<25	<50	<100	3080	<0.050	<0.600
AEA-FS-13	9/25/2023	14	insitu	<20	<25	<50	<100	48	<0.050	<0.600
AEA-FS-14	9/25/2023	14	insitu	<20	<25	<50	<100	16	<0.050	<0.600
AEA-FS-15	9/25/2023	8	insitu	<20	<25	<50	<100	<16	<0.050	<0.600
AEA-FS-16	9/25/2023	8	insitu	<20	<25	<50	<100	16	<0.050	<0.600
AEA-FS-17	9/25/2023	5	insitu	<20	<25	<50	<100	<16	<0.050	<0.600
AEA-FS-18	9/25/2023	5	insitu	<20	<25	<50	<100	1220	<0.050	<0.600
AEA-FS-19	9/25/2023	5	insitu	<20	<25	<50	<100	16	<0.050	<0.600
AEA-FS-20	9/25/2023	5	insitu	<20	<25	<50	<100	2360	<0.050	<0.600
BG1	9/25/2023	5	insitu	<20	<25	<50	<100	2560	<0.050	<0.600
BG2	9/25/2023	5-6	insitu	<20	<25	<50	<100	3040	<0.050	<0.600
"-" = Not Analyzed										

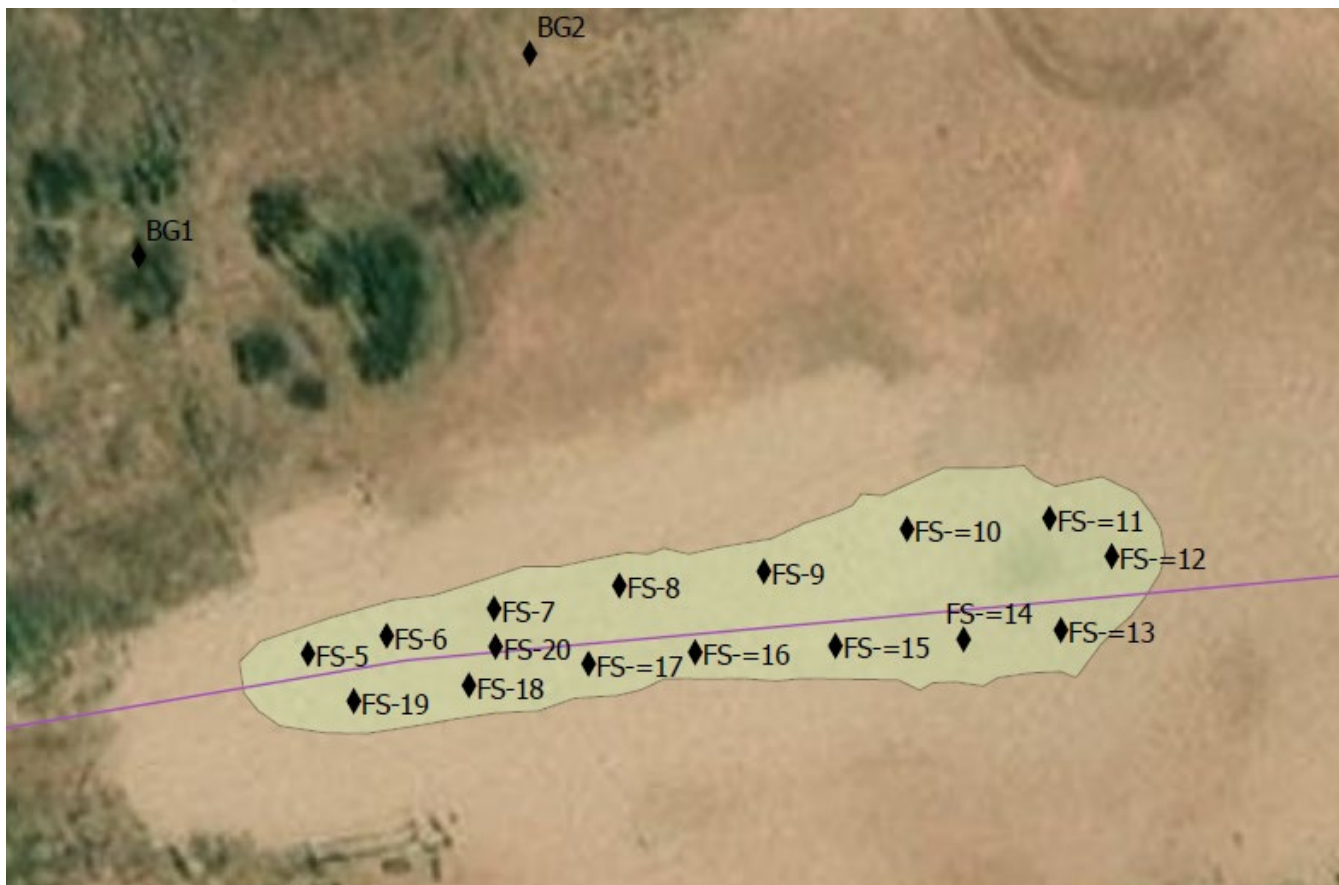


Figure 4

When we look at the AEA and Terracon samples on the northern side of the excavation at their interval depth along side with the NRCS data a trend is shown below in table 4.

**Table 4**

Chloride concentration vs sample depth							
		BH01	BH02	BH03	BH04	AEA BG1	AEA BG2
Depth (ft)	0.5	>160	244	256	240	302	250
Depth (ft)	5	2600	2400	3080	3440	2560	3040

<sup>1</sup> Calculated via NRCS ECe - EC1:5 - Chloride EM

Based on (Parker 2023) Chloride concentrations can be estimated from EC by converting ECe to EC1:5 to Chloride ppm. The up gradient or northern samples match the NRCS data predictions for the soil type which AEA calculated to be 101ppm to 308ppm in the upper soil profile and 1,446ppm to 4,338ppm in the lower profile.

Results from of these sampling events indicate that background chloride concentrations in surface soils are found to exist at levels ranging from >160 mg/kg to 302 mg/kg in soil samples collected from surface to 0.5 ft. bgs, and the background soils samples collected from 5 ft bgs ranged from 2,440 mg/kg to 3440 mg/kg. The chloride concentrations found in the 12" River Bore excavation and to the north appear to be indicative of background levels in the area.

The Southern background samples collected by Terracon BH05-BH08 are well outside the Chloride concentrations estimated from the NRCS EC and the northern background samples collected by AEA and Terracon. Because surface sample concentrations BH05-BH08 were found along a Right of Way (ROW) not leased by Frontier Field Services, LLC ,Durango Midstream or Kinetik and release NAPP2229049089 was dry gas (without water) AEA felt further source investigation was needed.

### 2.3 AEA EM Data

On June 21<sup>nd</sup>, 2024, AEA field staff arrived at the location and completed the following:

- 1) Set up a base station to tie the EM unit and DJI drone to an AEA established local network for RTK-GPS observations to get more accurate positional data. The control point(s) and base were set up to the south of the site.
- 2) The EM was zeroed and allowed to warm up as per the Geonics manual.
- 3) Collect conductivity and resistivity data continuously on 3 second intervals or, approximately every 5 feet across the area of interest.

A primer on EM survey work is found in Appendix.

The EM-38 was used to survey the pipeline ROW simultaneously to depths of approximately 0.5 and 1.0 meter. The instrument reports weighted averages of conductivity between the surface and the depth of

exploration of the EM field as termed “apparent conductivities” in ECa in millisiemens per meter (mS/m).

Table 5

Soil Conductivity vs Salinity (from McNeill, 1986a)			
Salinity (NRCS)	Lab ECe (mS/cm)	EM-38 ECa (mS/m) at 1 meter	Figure Color
NRCS Soil Background (site)	0-1	0-20	White
Slight	1-2	20-40	Green
Moderate	2-4	40-80	Yellow
High	8-12	100-240	Red

Table 5 shows the general correlation between laboratory soil saturated paste (ECe) and the EM’s apparent conductivity (ECa) (a primer on EM survey analysis found in Appendix, and the colors AEA assigned for the values in the referenced Figures 5 and 6. Similar data was collected from the Pipeline and surrounding area.

Figure 5 shows the apparent conductivities in ECa in millisiemens per meter (mS/m) for the 1.0 meter depth or VD mode of the EM38. The adjacent undisturbed pasture to the Pipeline, shown in Figure 5, shows an apparent conductivity less than 5 mS/cm (ECa >30 mS/m). This matches the background concentrations represented by the northern collected background samples. The area within the backfilled excavation matches the background concentrations. The areas of highest conductivities was found to the northeast of the excavation (40ft from sample FS10) during the EM surveys, ECa at a minimum 60mS/m (moderate) and a maximum reading of 135 mS/m (high) salinity according to the NRCS/McNeill scale. An area to the south of the excavation approximately 30 ft from sample FS14 was found to have elevated 85mS/m to 95 mS/m

Figure 6 shows the apparent conductivities in ECa in millisiemens per meter (mS/m) for the 0.5 meter depth or HD mode of the EM38. The adjacent undisturbed pasture to the Pipeline, shown in Figure 6, shows an apparent conductivity that matches the background concentrations represented by the northern collected background samples.

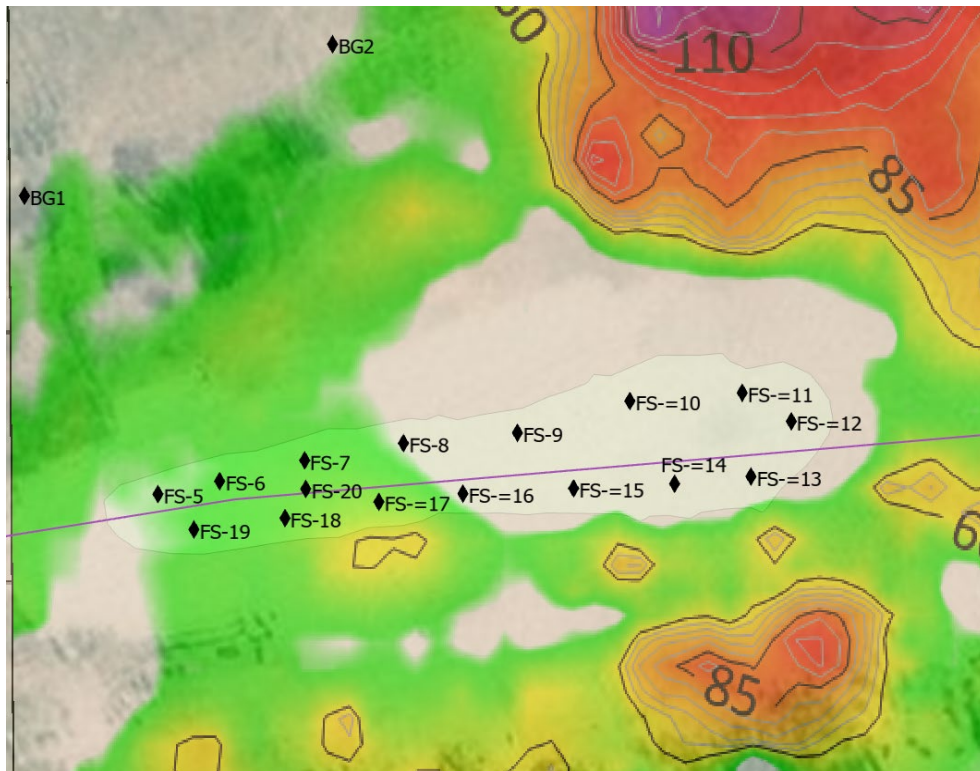


Figure 5

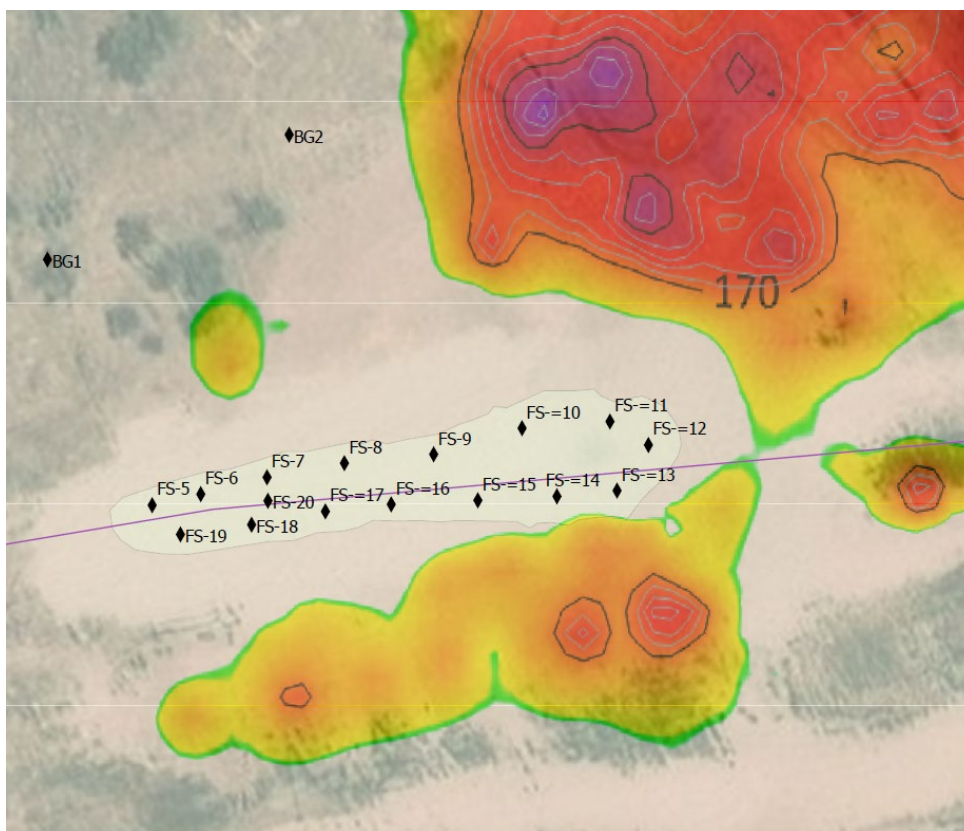


Figure 6

### **3.0 Analysis**

The upper soil profile from surface to four (0-4) feet in the immediate area is naturally less than 600ppm Chloride (Cl), the AEA soil bores and Terracon northern samples confirm this. Terracon observed a b-horizon or deposition layer at four (4) to seven (7) feet. The Terracon report described this soil horizon as, "a layer of chloride concentration observed within the excavation. It was determined to be natural accumulation of soil salinity resulting from the wetting and dry of chlorides within the Pecos River from the rising and falling of the alluvial perched water." The samples collected by AEA confirm that this soil deposition layer is continuous and can be found up gradient from the release area. The background soil Chloride (Cl) concentration within the deposition layer from as determined by the northern soil bores from four (4) to seven (7) feet is 2400ppm – 3440ppm. This sample confirmed Cl- concentration is well within the NRCS extracted and AEA calculated values of 1,446ppm to 4,338ppm in the lower profiles.

The Terracon surface sample BH05-BH08 has Chloride Cl- concentrations that exceed the AEA calculated and sampled background data. Because the River Bore 12 release was natural gas in a pipeline that is post fluid separation, and the pipeline is well maintained and regularly pigged to remove fluids is unlikely a source of brine water. The EM survey figures 5 and 6 show an area of high conductivity mainly surface impact (within the 0-.5m) in the ROW to the south of the River Bore 12 release area. The area to the south of the excavation approximately 30 ft from sample FS14 was found to have elevated 85mS/m to 95 mS/m This potentially affected area to the South of the release area bisects the 12" River Bore ROW to the east of the release area.

The area northeast of the excavation (40ft from sample FS10) has an ECa at a minimum of 60mS/m (moderate) and a maximum reading of 135 mS/m (high) salinity. Unlike the Southern area of high conductivity, the EM38 found a more homogenous potential salinity across the 0-.5m and 0 to 1m profiles.

The data presented within this report, and the Terracon report shows that release NAPP2229049089 likely occurred in an area of high soil salinity and Chlorides. The subject gas line is not an obvious source of salt or associated Chlorides and the EM survey points to some other area potential sources. Based on the AEA sample event the floor of the Terracon backfilled excavation currently meets the closure standards presented in the Terracon Closure report see table 6 below or 3.2 in the previous report.

**Table 6**

<b>Constituent</b>	<b>Remediation Limit</b>
Chloride	600 mg/kg
TPH (GRO+DRO+MRO)	100 mg/kg
BTEX	50 mg/kg

The sidewalls of the release area should be resampled from depths of surface to four (0-4) feet and/or eight to fourteen (8-14) feet only to avoid the naturally occurring high salt soil horizon from four to seven (4-7) feet.

12" River Bore Remediation Closure and soil Salinity Report (NAPP2229049089)

Page 11 of

12

August 4, 2024

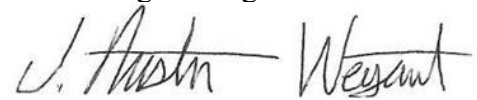
#### **4.0 Scope and Limitations**

The scope of our services included: assessment sampling; verifying release stabilization; regulatory liaison; remediation; and preparing this closure report. All work has been performed in accordance with generally accepted professional environmental consulting practices for oil and gas releases in the Permian Basin in New Mexico.

If there are any questions regarding this report, please contact Austin Weyant at 575-626-3993

Submitted by:

Atkins Engineering Associates INC

A handwritten signature in black ink, appearing to read "Austin Weyant", is written over the printed name.

Austin Weyant

Geoscientist

12" River Bore Remediation Closure and soil Salinity Report (NAPP2229049089)

Page 12 of

12

August 4, 2024

## **ATTACHMENTS:**

### **Figures:**

Figure 4: Atkins Soil Bore Map

Figure 5: ECa 1 Meter EM 38 Map

Figure 6: ECa 1/2 Meter EM 38 Map

### **Tables:**

Table 3: Summary of Confirmation Sample Results

### **Appendices:**

Appendix A: Laboratory Analytical Reports

Appendix B: AEA EM Primer and Parker EM Explain

Appendix C: Laboratory Report


# FIGURES

Soil Map—Eddy Area, New Mexico  
(12" River Bore)Natural Resources  
Conservation ServiceWeb Soil Survey  
National Cooperative Soil Survey7/11/2024  
Page 1 of 3


Soil Map—Eddy Area, New Mexico  
(12" River Bore)


## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

### Water Features



Streams and Canals

### Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

### Background



Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Eddy Area, New Mexico

Survey Area Data: Version 19, Sep 7, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 12, 2022—Dec 2, 2022

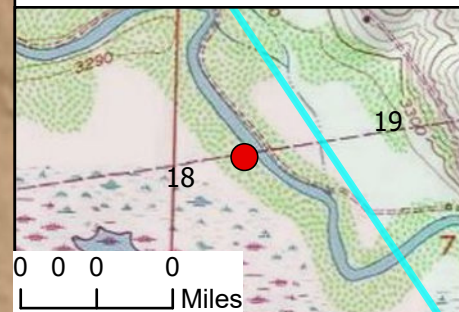
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



Map Unit Legend

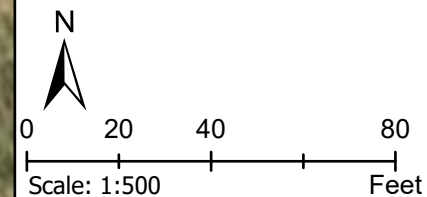
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AH	Arno-Harkey complex, saline, 0 to 1 percent slopes	73.2	81.3%
Ak	Arno-Harkey complex, saline, 0 to 1 percent slopes	9.3	10.4%
W	Water	7.5	8.3%
Totals for Area of Interest		90.1	100.0%

**FIGURE 4**  
**AEA Soil Samples**  
**12" River Bore**



### LEGEND

- Excavation Area
- Pipeline
- Closure Sample Location

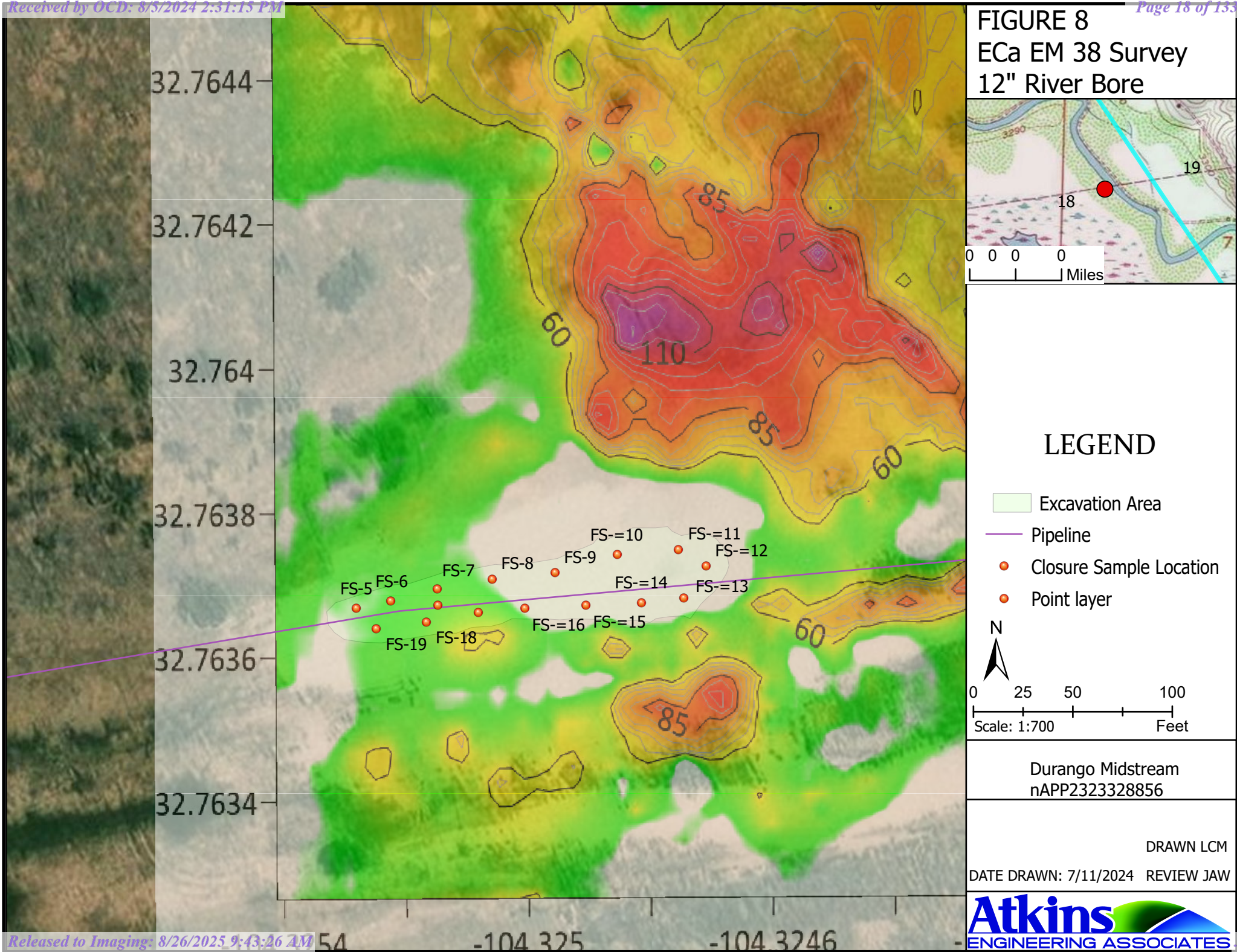


Durango Midstream  
nAPP2323328856

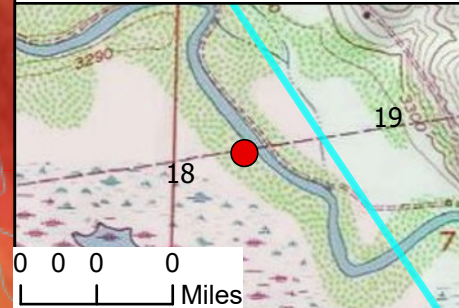
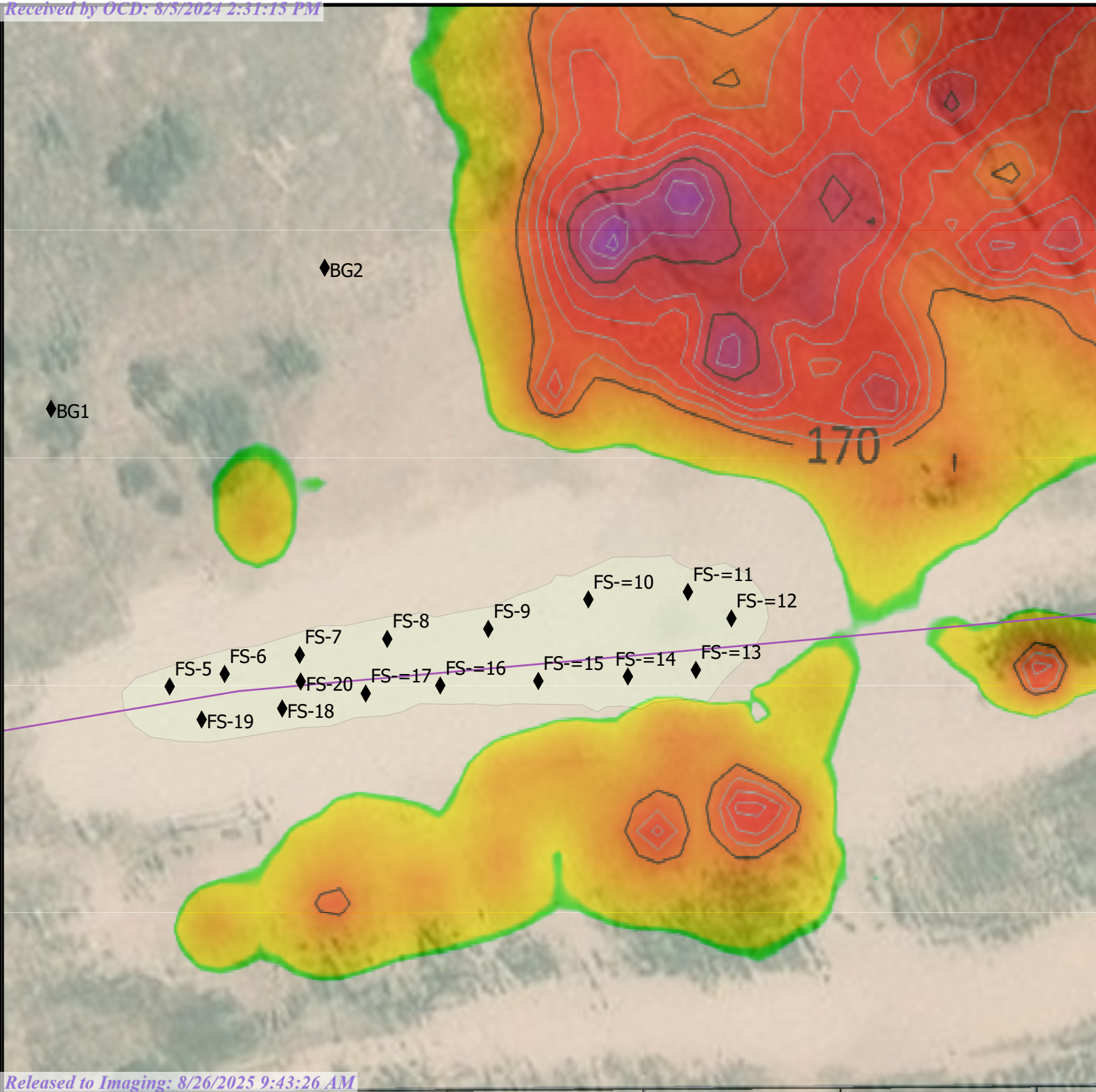
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DATE DRAWN: 7/12/2024 REVIEW JAW

FIGURE 8  
ECa EM 38 Survey  
12" River Bore

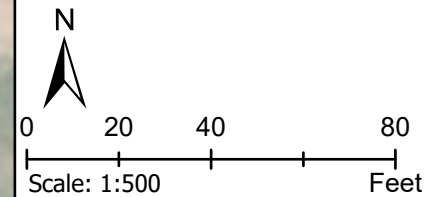


**FIGURE 6**  
ECa EM38 .5 meter  
12" River Bore



## LEGEND

- Excavation Area
- Pipeline
- Closure Sample Location



Durango Midstream  
nAPP2323328856

DRAWN LCM

DATE DRAWN: 8/2/2024 REVIEW JAW

# TABLES

TABLE 2 SOIL SAMPLE ANALYTICAL RESULTS - BTEX <sup>1</sup> , Chloride <sup>2</sup> , and TPH <sup>3</sup> 12" River Bore Terracon Project No. KH227021								
Sample I.D.	Sample Depth (ft. bgs)	Sample Type	Sample Date	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)		
						GRO	DRO	EXT DRO
Initial Release Margin Samples (On Pad)								
SS-N01	0-0.5'	Grab	11/17/22	<SLD	64.0	<10.0	<10.0	<10.0
SS-N02	0-0.5'	Grab	11/17/22	<SLD	80.0	<10.0	<10.0	<10.0
SS-N03	0-0.5'	Grab	11/17/22	<SLD	112	<10.0	<10.0	<10.0
SS-N04	0-0.5'	Grab	11/17/22	<SLD	704	<10.0	<10.0	<10.0
SS-E01	0-0.5'	Grab	11/17/22	<SLD	2,280	<10.0	<10.0	<10.0
SS-W01	0-0.5'	Grab	11/17/22	<SLD	208	<10.0	<10.0	<10.0
SS-S01	0-0.5'	Grab	11/17/22	<SLD	80.0	<10.0	<10.0	<10.0
SS-S02	0-0.5'	Grab	11/17/22	<SLD	432	<10.0	<10.0	<10.0
SS-S03	0-0.5'	Grab	11/17/22	<SLD	80.0	<10.0	<10.0	<10.0
SS-S04	0-0.5'	Grab	11/17/22	<SLD	64.0	<10.0	<10.0	<10.0
FS-01	5'	Comp.	11/17/22	<SLD	3,640	<10.0	<10.0	<10.0
FS-02	5'	Comp.	11/17/22	<SLD	3,520	<10.0	<10.0	<10.0
S-SW01	0-5'	Comp.	11/17/22	<SLD	1,460	<10.0	<10.0	<10.0
S-SW02	0-5'	Comp.	11/17/22	<SLD	2,560	<10.0	<10.0	<10.0
N-SW01	0-5'	Comp.	11/17/22	<SLD	848	<10.0	<10.0	<10.0
N-SW02	0-5'	Comp.	11/17/22	<SLD	3,080	<10.0	<10.0	<10.0
W-SW01	0-5'	Comp.	11/17/22	<SLD	384	<10.0	<10.0	<10.0
NMOCD Reclamation Standards <sup>4</sup> (Applicable for Soils from the Surface to 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	600	100		
NMOCD Remediation and Delineation Standards <sup>5</sup> (Applicable for Soils at Depths Greater than 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	600	2,500		

1. BTEX = Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8021B

2. Chloride = Chloride analyzed by EPA Method 300.

3. TPH = Total petroleum hydrocarbons analyzed by EPA Method 8015M (GRO/DRO/MRO)

4. New Mexico Administration Code (NMAC) Restoration, Reclamation, and Re-vegetation (19.15.29.13) New Mexico Administration Code (NMAC) – D (Reclamation of areas no longer in use) for soils extending to 4 ft. bgs

5. New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards are proposed in 19.15.29.12 NMAC - N, 8/14/2018

&lt; = Constituent not detected above the indicated laboratory SDL

NA = Not Analyzed

N/A = Not Applicable

**Bold and Highlight denotes concentrations that exceed the New Mexico Oil Conservation Division (NMOCD) Reclamation and/or Remediation and Delineation Standard**

TABLE 2 SOIL SAMPLE ANALYTICAL RESULTS - BTEX <sup>1</sup> , Chloride <sup>2</sup> , and TPH <sup>3</sup> 12" River Bore Terracon Project No. KH227021								
Sample I.D.	Sample Depth (ft. bgs)	Sample Type	Sample Date	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)		
						GRO	DRO	EXT DRO
Background Samples (On Pad)								
BH01	1'	Grab	12/06/22	<SLD	160	<10.0	<10.0	<10.0
	5'	Grab	12/06/22	<SLD	2,600	<10.0	<10.0	<10.0
BH02	1'	Grab	12/06/22	<SLD	244	<10.0	<10.0	<10.0
	5'	Grab	12/06/22	<SLD	2,440	<10.0	<10.0	<10.0
BH03	1'	Grab	12/06/22	<SLD	256	<10.0	<10.0	<10.0
	4.5'	Grab	12/06/22	<SLD	3,080	<10.0	<10.0	<10.0
BH04	1'	Grab	12/06/22	<SLD	240	<10.0	<10.0	<10.0
	5'	Grab	12/06/22	<SLD	3,440	<10.0	<10.0	<10.0
BH05	1'	Grab	02/06/23	<SLD	16	<10.0	<10.0	<10.0
	5'	Grab	02/06/23	<SLD	45,200	<10.0	<10.0	<10.0
BH06	1'	Grab	02/06/23	<SLD	64	<10.0	<10.0	<10.0
	5'	Grab	02/06/23	<SLD	25,600	<10.0	<10.0	<10.0
BH07	1'	Grab	02/06/23	<SLD	496	<10.0	<10.0	<10.0
	5'	Grab	02/06/23	<SLD	40,800	<10.0	<10.0	<10.0
BH08	1'	Grab	02/06/23	<SLD	16,400	<10.0	<10.0	<10.0
	5'	Grab	02/06/23	<SLD	32,000	<10.0	<10.0	<10.0
NMOCD Reclamation Standards <sup>4</sup> (Applicable for Soils from the Surface to 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	600	100		
NMOCD Remediation and Delineation Standards <sup>5</sup> (Applicable for Soils at Depths Greater than 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	600	2,500		

1. BTEX = Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8021B

2. Chloride = Chloride analyzed by EPA Method 300.

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Sample I.D.	Sample Depth (ft. bgs)	Sample Type	Sample Date	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)		
						GRO	DRO	EXT DRO
Confirmation Samples (On Pad)								
FS-01	5'	Comp.	01/05/23	Benzene - <0.050 Total BTEX - <0.300	3,080	<10.0	<10.0	<10.0
FS-02	8'	Comp.	01/05/23	Benzene - <0.050 Total BTEX - <0.300	6,560	<10.0	<10.0	<10.0
FS-03	14'	Comp.	12/05/22	Benzene - <0.050 Total BTEX - <0.300	576	<10.0	<10.0	<10.0
FS-04	14'	Comp.	12/05/22	Benzene - <0.050 Total BTEX - <0.300	352	<10.0	<10.0	<10.0
S-SW01	0-5'	Comp.	01/05/23	Benzene - <0.050 Total BTEX - <0.300	3,040	<10.0	<10.0	<10.0
S-SW02	0-8'	Comp.	01/05/23	Benzene - <0.050 Total BTEX - <0.300	1,640	<10.0	<10.0	<10.0
S-SW03	0-12'	Comp.	12/05/22	Benzene - <0.050 Total BTEX - <0.300	512	<10.0	<10.0	<10.0
S-SW04	0-5'	Comp.	01/05/23	Benzene - <0.050 Total BTEX - <0.300	624	<10.0	<10.0	<10.0
S-SW4.2	0-14'	Comp.	12/05/22	Benzene - <0.050 Total BTEX - <0.300	1,060	<10.0	<10.0	<10.0
E-SW01	0-14'	Comp.	01/05/23	Benzene - <0.050 Total BTEX - <0.300	2,920	<10.0	<10.0	<10.0
N-SW01	0-5'	Comp.	01/05/23	Benzene - <0.050 Total BTEX - <0.300	4,530	<10.0	<10.0	<10.0
N-SW02	0-8'	Comp.	01/05/23	Benzene - <0.050 Total BTEX - <0.300	1,520	<10.0	<10.0	<10.0
N-SW3.2	0-12'	Comp.	12/05/22	Benzene - <0.050 Total BTEX - <0.300	512	<10.0	<10.0	<10.0
N-SW4.2	0-14'	Comp.	12/05/22	Benzene - <0.050 Total BTEX - <0.300	1,060	<10.0	<10.0	<10.0
W-SW01	0-5'	Comp.	11/17/22	Benzene - <0.050 Total BTEX - <0.300	384	<10.0	<10.0	<10.0
NMOCD Reclamation Standards <sup>4</sup> (Applicable for Soils from the Surface to 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	600	100		
NMOCD Remediation and Delineation Standards <sup>5</sup> (Applicable for Soils at Depths Greater than 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	600	2,500		

1. BTEX = Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8021B

2. Chloride = Chloride analyzed by EPA Method 300.

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Table 3:

Summary of Sample Results

Kinetik Holdings LP  
12" River Bore

Sample ID	Sample Date	Depth (feet bgs)	Description	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	Total TPH mg/Kg	Cl- mg/Kg	Benzene mg/Kg	BTEX mg/kg
NMOCD 19.15.29 Guidance							2500	600	10	50
AEA-FS-5	9/25/2023	5	insitu	<20	<25	<50	<100	<16	<0.050	<0.600
AEA-FS-6	9/25/2023	5	insitu	<20	<25	<50	<100	<16	<0.050	<0.600
AEA-FS-7	9/25/2023	5	insitu	<20	<25	<50	<100	<16	<0.050	<0.600
AEA-FS-8	9/25/2023	8	insitu	<20	<25	<50	<100	32	<0.050	<0.600
AEA-FS-9	9/25/2023	8	insitu	<20	<25	<50	<100	<16	<0.050	<0.600
AEA-FS-10	9/25/2023	14	insitu	<20	<25	<50	<100	<16	<0.050	<0.600
AEA-FS-11	9/25/2023	14	insitu	<20	<25	<50	<100	32	<0.050	<0.600
AEA-FS-12	9/25/2023	6	insitu	<20	<25	<50	<100	3080	<0.050	<0.600
AEA-FS-13	9/25/2023	14	insitu	<20	<25	<50	<100	48	<0.050	<0.600
AEA-FS-14	9/25/2023	14	insitu	<20	<25	<50	<100	16	<0.050	<0.600
AEA-FS-15	9/25/2023	8	insitu	<20	<25	<50	<100	<16	<0.050	<0.600
AEA-FS-16	9/25/2023	8	insitu	<20	<25	<50	<100	16	<0.050	<0.600
AEA-FS-17	9/25/2023	5	insitu	<20	<25	<50	<100	<16	<0.050	<0.600
AEA-FS-18	9/25/2023	5	insitu	<20	<25	<50	<100	1220	<0.050	<0.600
AEA-FS-19	9/25/2023	5	insitu	<20	<25	<50	<100	16	<0.050	<0.600
AEA-FS-20	9/25/2023	5	insitu	<20	<25	<50	<100	2360	<0.050	<0.600
BG1	9/25/2023	5	insitu	<20	<25	<50	<100	2560	<0.050	<0.600
BG2	9/25/2023	5-6	insitu	<20	<25	<50	<100	3040	<0.050	<0.600
"--" = Not Analyzed										

# APPENDIX A



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

---

September 29, 2023

AUSTIN WEYANT

ATKINS ENGINEERING

2904 W. 2ND STREET

ROSWELL, NM 88203

RE: 12" RIVER BONE

Enclosed are the results of analyses for samples received by the laboratory on 09/26/23 10:13.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. 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).

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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



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

**Analytical Results For:**

ATKINS ENGINEERING  
AUSTIN WEYANT  
2904 W. 2ND STREET  
ROSWELL NM, 88203  
Fax To:

Received: 09/26/2023  
Reported: 09/29/2023  
Project Name: 12" RIVER BONE  
Project Number: NONE GIVEN  
Project Location: DURANGO

Sampling Date: 09/25/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: BG - 1 (H235244-01)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>2560</b>	16.0	09/27/2023	ND	432	108	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

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

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

Celey D. Keene, Lab Director/Quality Manager

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

---

### Notes and Definitions

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

---

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Celey D. Keene, Lab Director/Quality Manager



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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <b>Atkins Engineering</b> Project Manager: <b>Austin Weyant</b> Address: City: State:      Zip: Phone #:      Fax #: Project #:      Project Owner: Project Name: <b>12" Riverbank</b> Project Location: Sample Name: <b>L. Archer</b> FOR LAB USE ONLY				<b>BILL TO</b> P.O. #: Company: <b>Danaye M. Anderson</b> Attn: <b>Lucy Carrasco</b> Address: City: State:      Zip: Phone #:      Fax #: <b>ANALYSIS REQUEST</b>			
Lab I.D.      Sample I.D.		(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER : DATE      TIME		MATRIX PRESERV. SAMPLING			
H235244 BSA-1		X X 4/15/13      11:30		C-			
Relinquished By:		Date: <b>12/6</b> Time: <b>10:13</b> Date:      Time:		Received By: <b>Stephen Weyant</b>			
Relinquished By:		Date:      Time:		Received By:			
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Observed Temp. °C: <b>-1.2</b> Corrected Temp. °C:		Sample Condition Cool      Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No			
Turnaround Time:		Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>		Bacteria (only) Sample Condition Cool      Intact <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No			
Thermometer ID: <b>#143</b> Correction Factor: None		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No      Add'l Phone #:		All Results are emailed. Please provide Email address:			
Turnaround Time:		Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>		Bacteria (only) Sample Condition Cool      Intact <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No			
Thermometer ID: <b>#143</b> Correction Factor: None		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No      Add'l Phone #:		All Results are emailed. Please provide Email address:			



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

September 29, 2023

AUSTIN WEYANT

ATKINS ENGINEERING

2904 W. 2ND STREET

ROSWELL, NM 88203

RE: 12" RIVER BONE

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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.

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Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

ATKINS ENGINEERING  
AUSTIN WEYANT  
2904 W. 2ND STREET  
ROSWELL NM, 88203  
Fax To:

Received: 09/26/2023  
Reported: 09/29/2023  
Project Name: 12" RIVER BONE  
Project Number: NONE GIVEN  
Project Location: DURANGO

Sampling Date: 09/25/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: BG - 2 (H235246-01)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>3040</b>	16.0	09/27/2023	ND	432	108	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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

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### Notes and Definitions

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Celey D. Keene, Lab Director/Quality Manager



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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



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

---

September 29, 2023

AUSTIN WEYANT

ATKINS ENGINEERING

2904 W. 2ND STREET

ROSWELL, NM 88203

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Celey D. Keene

Lab Director/Quality Manager



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**Analytical Results For:**

ATKINS ENGINEERING  
AUSTIN WEYANT  
2904 W. 2ND STREET  
ROSWELL NM, 88203  
Fax To:

Received: 09/26/2023  
Reported: 09/29/2023  
Project Name: 12" RIVER BONE  
Project Number: NONE GIVEN  
Project Location: DURANGO

Sampling Date: 09/25/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 5 (H235249-01)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/27/2023	ND	1.78	89.2	2.00	0.628	
Toluene*	<0.050	0.050	09/27/2023	ND	1.79	89.3	2.00	2.35	
Ethylbenzene*	<0.050	0.050	09/27/2023	ND	1.88	94.0	2.00	3.06	
Total Xylenes*	<0.150	0.150	09/27/2023	ND	5.64	93.9	6.00	2.08	
Total BTX	<0.300	0.300	09/27/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/27/2023	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	09/27/2023	ND	181	90.4	200	0.211	
DRO >C10-C28*	<10.0	10.0	09/27/2023	ND	186	92.9	200	2.27	
EXT DRO >C28-C36	<10.0	10.0	09/27/2023	ND					

Surrogate: 1-Chlorooctane 67.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 76.8 % 49.1-148

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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:**

ATKINS ENGINEERING  
AUSTIN WEYANT  
2904 W. 2ND STREET  
ROSWELL NM, 88203  
Fax To:

Received: 09/26/2023  
Reported: 09/29/2023  
Project Name: 12" RIVER BONE  
Project Number: NONE GIVEN  
Project Location: DURANGO

Sampling Date: 09/25/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 6 (H235249-02)**

BTX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/27/2023	ND	1.78	89.2	2.00	0.628		
Toluene*	<0.050	0.050	09/27/2023	ND	1.79	89.3	2.00	2.35		
Ethylbenzene*	<0.050	0.050	09/27/2023	ND	1.88	94.0	2.00	3.06		
Total Xylenes*	<0.150	0.150	09/27/2023	ND	5.64	93.9	6.00	2.08		
Total BTX	<0.300	0.300	09/27/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/27/2023	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	09/27/2023	ND	181	90.4	200	0.211	
DRO >C10-C28*	<10.0	10.0	09/27/2023	ND	186	92.9	200	2.27	
EXT DRO >C28-C36	<10.0	10.0	09/27/2023	ND					

Surrogate: 1-Chlorooctane 91.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 105 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ATKINS ENGINEERING  
AUSTIN WEYANT  
2904 W. 2ND STREET  
ROSWELL NM, 88203  
Fax To:

Received: 09/26/2023  
Reported: 09/29/2023  
Project Name: 12" RIVER BONE  
Project Number: NONE GIVEN  
Project Location: DURANGO

Sampling Date: 09/25/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 7 (H235249-03)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/27/2023	ND	1.78	89.2	2.00	0.628	
Toluene*	<0.050	0.050	09/27/2023	ND	1.79	89.3	2.00	2.35	
Ethylbenzene*	<0.050	0.050	09/27/2023	ND	1.88	94.0	2.00	3.06	
Total Xylenes*	<0.150	0.150	09/27/2023	ND	5.64	93.9	6.00	2.08	
Total BTEx	<0.300	0.300	09/27/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/27/2023	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	09/27/2023	ND	181	90.4	200	0.211	
DRO >C10-C28*	<10.0	10.0	09/27/2023	ND	186	92.9	200	2.27	
EXT DRO >C28-C36	<10.0	10.0	09/27/2023	ND					

Surrogate: 1-Chlorooctane 83.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ATKINS ENGINEERING  
AUSTIN WEYANT  
2904 W. 2ND STREET  
ROSWELL NM, 88203  
Fax To:

Received: 09/26/2023  
Reported: 09/29/2023  
Project Name: 12" RIVER BONE  
Project Number: NONE GIVEN  
Project Location: DURANGO

Sampling Date: 09/25/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 8 (H235249-04)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/27/2023	ND	1.78	89.2	2.00	0.628		
Toluene*	<0.050	0.050	09/27/2023	ND	1.79	89.3	2.00	2.35		
Ethylbenzene*	<0.050	0.050	09/27/2023	ND	1.88	94.0	2.00	3.06		
Total Xylenes*	<0.150	0.150	09/27/2023	ND	5.64	93.9	6.00	2.08		
Total BTEx	<0.300	0.300	09/27/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 71.5-134

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	09/27/2023	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	09/27/2023	ND	181	90.4	200	0.211	
DRO >C10-C28*	<10.0	10.0	09/27/2023	ND	186	92.9	200	2.27	
EXT DRO >C28-C36	<10.0	10.0	09/27/2023	ND					

Surrogate: 1-Chlorooctane 83.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ATKINS ENGINEERING  
AUSTIN WEYANT  
2904 W. 2ND STREET  
ROSWELL NM, 88203  
Fax To:

Received: 09/26/2023  
Reported: 09/29/2023  
Project Name: 12" RIVER BONE  
Project Number: NONE GIVEN  
Project Location: DURANGO

Sampling Date: 09/25/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 9 (H235249-05)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/27/2023	ND	1.78	89.2	2.00	0.628		
Toluene*	<0.050	0.050	09/27/2023	ND	1.79	89.3	2.00	2.35		
Ethylbenzene*	<0.050	0.050	09/27/2023	ND	1.88	94.0	2.00	3.06		
Total Xylenes*	<0.150	0.150	09/27/2023	ND	5.64	93.9	6.00	2.08		
Total BTEx	<0.300	0.300	09/27/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/27/2023	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	09/27/2023	ND	181	90.4	200	0.211	
DRO >C10-C28*	<10.0	10.0	09/27/2023	ND	186	92.9	200	2.27	
EXT DRO >C28-C36	<10.0	10.0	09/27/2023	ND					

Surrogate: 1-Chlorooctane 84.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ATKINS ENGINEERING  
AUSTIN WEYANT  
2904 W. 2ND STREET  
ROSWELL NM, 88203  
Fax To:

Received: 09/26/2023  
Reported: 09/29/2023  
Project Name: 12" RIVER BONE  
Project Number: NONE GIVEN  
Project Location: DURANGO

Sampling Date: 09/25/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 10 (H235249-06)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/27/2023	ND	1.78	89.2	2.00	0.628	
Toluene*	<0.050	0.050	09/27/2023	ND	1.79	89.3	2.00	2.35	
Ethylbenzene*	<0.050	0.050	09/27/2023	ND	1.88	94.0	2.00	3.06	
Total Xylenes*	<0.150	0.150	09/27/2023	ND	5.64	93.9	6.00	2.08	
Total BTEX	<0.300	0.300	09/27/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/27/2023	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	09/27/2023	ND	181	90.4	200	0.211	
DRO >C10-C28*	<10.0	10.0	09/27/2023	ND	186	92.9	200	2.27	
EXT DRO >C28-C36	<10.0	10.0	09/27/2023	ND					

Surrogate: 1-Chlorooctane 65.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 74.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ATKINS ENGINEERING  
AUSTIN WEYANT  
2904 W. 2ND STREET  
ROSWELL NM, 88203  
Fax To:

Received: 09/26/2023  
Reported: 09/29/2023  
Project Name: 12" RIVER BONE  
Project Number: NONE GIVEN  
Project Location: DURANGO

Sampling Date: 09/25/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 11 (H235249-07)**

BTEX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/27/2023	ND	1.78	89.2	2.00	0.628	
Toluene*	<0.050	0.050	09/27/2023	ND	1.79	89.3	2.00	2.35	
Ethylbenzene*	<0.050	0.050	09/27/2023	ND	1.88	94.0	2.00	3.06	
Total Xylenes*	<0.150	0.150	09/27/2023	ND	5.64	93.9	6.00	2.08	
Total BTEX	<0.300	0.300	09/27/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

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	09/27/2023	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	09/27/2023	ND	181	90.4	200	0.211	
DRO >C10-C28*	<10.0	10.0	09/27/2023	ND	186	92.9	200	2.27	
EXT DRO >C28-C36	<10.0	10.0	09/27/2023	ND					

Surrogate: 1-Chlorooctane 95.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 109 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ATKINS ENGINEERING  
AUSTIN WEYANT  
2904 W. 2ND STREET  
ROSWELL NM, 88203  
Fax To:

Received: 09/26/2023  
Reported: 09/29/2023  
Project Name: 12" RIVER BONE  
Project Number: NONE GIVEN  
Project Location: DURANGO

Sampling Date: 09/25/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 12 (H235249-08)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/27/2023	ND	1.78	89.2	2.00	0.628	
Toluene*	<0.050	0.050	09/27/2023	ND	1.79	89.3	2.00	2.35	
Ethylbenzene*	<0.050	0.050	09/27/2023	ND	1.88	94.0	2.00	3.06	
Total Xylenes*	<0.150	0.150	09/27/2023	ND	5.64	93.9	6.00	2.08	
Total BTEX	<0.300	0.300	09/27/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3080	16.0	09/27/2023	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	09/27/2023	ND	181	90.4	200	0.211	
DRO >C10-C28*	<10.0	10.0	09/27/2023	ND	186	92.9	200	2.27	
EXT DRO >C28-C36	<10.0	10.0	09/27/2023	ND					

Surrogate: 1-Chlorooctane 74.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 85.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ATKINS ENGINEERING  
AUSTIN WEYANT  
2904 W. 2ND STREET  
ROSWELL NM, 88203  
Fax To:

Received: 09/26/2023  
Reported: 09/29/2023  
Project Name: 12" RIVER BONE  
Project Number: NONE GIVEN  
Project Location: DURANGO

Sampling Date: 09/25/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 13 (H235249-09)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/27/2023	ND	1.78	89.2	2.00	0.628	
Toluene*	<0.050	0.050	09/27/2023	ND	1.79	89.3	2.00	2.35	
Ethylbenzene*	<0.050	0.050	09/27/2023	ND	1.88	94.0	2.00	3.06	
Total Xylenes*	<0.150	0.150	09/27/2023	ND	5.64	93.9	6.00	2.08	
Total BTEX	<0.300	0.300	09/27/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	09/27/2023	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	09/27/2023	ND	181	90.4	200	0.211	
DRO >C10-C28*	<10.0	10.0	09/27/2023	ND	186	92.9	200	2.27	
EXT DRO >C28-C36	<10.0	10.0	09/27/2023	ND					

Surrogate: 1-Chlorooctane 79.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 90.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ATKINS ENGINEERING  
AUSTIN WEYANT  
2904 W. 2ND STREET  
ROSWELL NM, 88203  
Fax To:

Received: 09/26/2023  
Reported: 09/29/2023  
Project Name: 12" RIVER BONE  
Project Number: NONE GIVEN  
Project Location: DURANGO

Sampling Date: 09/25/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 14 (H235249-10)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/27/2023	ND	1.78	89.2	2.00	0.628	
Toluene*	<0.050	0.050	09/27/2023	ND	1.79	89.3	2.00	2.35	
Ethylbenzene*	<0.050	0.050	09/27/2023	ND	1.88	94.0	2.00	3.06	
Total Xylenes*	<0.150	0.150	09/27/2023	ND	5.64	93.9	6.00	2.08	
Total BTEX	<0.300	0.300	09/27/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	09/27/2023	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	09/27/2023	ND	181	90.4	200	0.211	
DRO >C10-C28*	<10.0	10.0	09/27/2023	ND	186	92.9	200	2.27	
EXT DRO >C28-C36	<10.0	10.0	09/27/2023	ND					

Surrogate: 1-Chlorooctane 75.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 86.3 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ATKINS ENGINEERING  
AUSTIN WEYANT  
2904 W. 2ND STREET  
ROSWELL NM, 88203  
Fax To:

Received: 09/26/2023  
Reported: 09/29/2023  
Project Name: 12" RIVER BONE  
Project Number: NONE GIVEN  
Project Location: DURANGO

Sampling Date: 09/25/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 15 (H235249-11)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/27/2023	ND	1.78	89.2	2.00	0.628	
Toluene*	<0.050	0.050	09/27/2023	ND	1.79	89.3	2.00	2.35	
Ethylbenzene*	<0.050	0.050	09/27/2023	ND	1.88	94.0	2.00	3.06	
Total Xylenes*	<0.150	0.150	09/27/2023	ND	5.64	93.9	6.00	2.08	
Total BTEx	<0.300	0.300	09/27/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/27/2023	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	09/27/2023	ND	181	90.4	200	0.211	
DRO >C10-C28*	<10.0	10.0	09/27/2023	ND	186	92.9	200	2.27	
EXT DRO >C28-C36	<10.0	10.0	09/27/2023	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 116 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ATKINS ENGINEERING  
AUSTIN WEYANT  
2904 W. 2ND STREET  
ROSWELL NM, 88203  
Fax To:

Received: 09/26/2023  
Reported: 09/29/2023  
Project Name: 12" RIVER BONE  
Project Number: NONE GIVEN  
Project Location: DURANGO

Sampling Date: 09/25/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 16 (H235249-12)**

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	09/27/2023	ND	1.81	90.3	2.00	1.04		
Toluene*	<0.050	0.050	09/27/2023	ND	1.89	94.6	2.00	0.740		
Ethylbenzene*	<0.050	0.050	09/27/2023	ND	1.90	94.8	2.00	0.918		
Total Xylenes*	<0.150	0.150	09/27/2023	ND	5.79	96.4	6.00	0.802		
Total BTEx	<0.300	0.300	09/27/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	09/27/2023	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	09/27/2023	ND	181	90.4	200	0.211	
DRO >C10-C28*	<10.0	10.0	09/27/2023	ND	186	92.9	200	2.27	
EXT DRO >C28-C36	<10.0	10.0	09/27/2023	ND					

Surrogate: 1-Chlorooctane 98.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 112 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ATKINS ENGINEERING  
AUSTIN WEYANT  
2904 W. 2ND STREET  
ROSWELL NM, 88203  
Fax To:

Received: 09/26/2023  
Reported: 09/29/2023  
Project Name: 12" RIVER BONE  
Project Number: NONE GIVEN  
Project Location: DURANGO

Sampling Date: 09/25/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 17 (H235249-13)**

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	09/27/2023	ND	1.81	90.3	2.00	1.04	
Toluene*	<0.050	0.050	09/27/2023	ND	1.89	94.6	2.00	0.740	
Ethylbenzene*	<0.050	0.050	09/27/2023	ND	1.90	94.8	2.00	0.918	
Total Xylenes*	<0.150	0.150	09/27/2023	ND	5.79	96.4	6.00	0.802	
Total BTEx	<0.300	0.300	09/27/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	09/27/2023	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	09/27/2023	ND	181	90.4	200	0.211	
DRO >C10-C28*	<10.0	10.0	09/27/2023	ND	186	92.9	200	2.27	
EXT DRO >C28-C36	<10.0	10.0	09/27/2023	ND					

Surrogate: 1-Chlorooctane 82.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ATKINS ENGINEERING  
AUSTIN WEYANT  
2904 W. 2ND STREET  
ROSWELL NM, 88203  
Fax To:

Received: 09/26/2023  
Reported: 09/29/2023  
Project Name: 12" RIVER BONE  
Project Number: NONE GIVEN  
Project Location: DURANGO

Sampling Date: 09/25/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 18 (H235249-14)**

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	09/27/2023	ND	1.81	90.3	2.00	1.04	
Toluene*	<0.050	0.050	09/27/2023	ND	1.89	94.6	2.00	0.740	
Ethylbenzene*	<0.050	0.050	09/27/2023	ND	1.90	94.8	2.00	0.918	
Total Xylenes*	<0.150	0.150	09/27/2023	ND	5.79	96.4	6.00	0.802	
Total BTX	<0.300	0.300	09/27/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1220	16.0	09/27/2023	ND	432	108	400	3.64	QM-07	

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	09/27/2023	ND	181	90.4	200	0.211	
DRO >C10-C28*	<10.0	10.0	09/27/2023	ND	186	92.9	200	2.27	
EXT DRO >C28-C36	<10.0	10.0	09/27/2023	ND					

Surrogate: 1-Chlorooctane 81.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.5 % 49.1-148

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**Analytical Results For:**

ATKINS ENGINEERING  
AUSTIN WEYANT  
2904 W. 2ND STREET  
ROSWELL NM, 88203  
Fax To:

Received: 09/26/2023  
Reported: 09/29/2023  
Project Name: 12" RIVER BONE  
Project Number: NONE GIVEN  
Project Location: DURANGO

Sampling Date: 09/25/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 19 (H235249-15)**

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	09/27/2023	ND	1.81	90.3	2.00	1.04	
Toluene*	<0.050	0.050	09/27/2023	ND	1.89	94.6	2.00	0.740	
Ethylbenzene*	<0.050	0.050	09/27/2023	ND	1.90	94.8	2.00	0.918	
Total Xylenes*	<0.150	0.150	09/27/2023	ND	5.79	96.4	6.00	0.802	
Total BTEx	<0.300	0.300	09/27/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	09/27/2023	ND	432	108	400	3.64		

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	09/27/2023	ND	181	90.4	200	0.211	
DRO >C10-C28*	<10.0	10.0	09/27/2023	ND	186	92.9	200	2.27	
EXT DRO >C28-C36	<10.0	10.0	09/27/2023	ND					

Surrogate: 1-Chlorooctane 101 % 48.2-134

Surrogate: 1-Chlorooctadecane 114 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ATKINS ENGINEERING  
AUSTIN WEYANT  
2904 W. 2ND STREET  
ROSWELL NM, 88203  
Fax To:

Received: 09/26/2023  
Reported: 09/29/2023  
Project Name: 12" RIVER BONE  
Project Number: NONE GIVEN  
Project Location: DURANGO

Sampling Date: 09/25/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS - 20 (H235249-16)**

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	09/27/2023	ND	1.81	90.3	2.00	1.04		
Toluene*	<0.050	0.050	09/27/2023	ND	1.89	94.6	2.00	0.740		
Ethylbenzene*	<0.050	0.050	09/27/2023	ND	1.90	94.8	2.00	0.918		
Total Xylenes*	<0.150	0.150	09/27/2023	ND	5.79	96.4	6.00	0.802		
Total BTEx	<0.300	0.300	09/27/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2360	16.0	09/27/2023	ND	432	108	400	3.64	

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	09/27/2023	ND	181	90.4	200	0.211	
DRO >C10-C28*	<10.0	10.0	09/27/2023	ND	186	92.9	200	2.27	
EXT DRO >C28-C36	<10.0	10.0	09/27/2023	ND					

Surrogate: 1-Chlorooctane 83.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

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 "Caley D. Keene", written over a horizontal line.

Caley D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

<b>Company Name:</b> Atkins Engineering		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>															
<b>Project Manager:</b> Austin Morgan		<b>P.O. #:</b>																	
<b>Address:</b>		<b>Company:</b> Overcup Muckham																	
<b>City:</b>		<b>Attn:</b> Luke Carrasco																	
<b>State:</b>		<b>Address:</b>																	
<b>Phone #:</b>		<b>City:</b>																	
<b>Fax #:</b>		<b>State:</b>																	
<b>Project #:</b>		<b>Zip:</b>																	
<b>Project Name:</b> 12" Riverbore		<b>Phone #:</b>																	
<b>Project Location:</b>		<b>Fax #:</b>																	
<b>Sampler Name:</b> L. Acosta																			
<b>FOR LAB USE ONLY</b>																			
<b>Lab I.D.</b>																			
<b>Sample I.D.</b>																			
H035249																			
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(575) 393-2326 FAX (575) 393-2476

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

## APPENDIX B



## Electromagnetic (EM38) Salinity Survey Primer

*"...since most environmental problems in the oilfield have associated saltwater or salt mud, this is a reliable and cost-effective method to collect large quantities of closely spaced data points to very accurately define not only the visible but the entire problem." (AAPG G.J. Newman)*

### Why Conduct a Salinity Survey

Oil and gas extracted from the Permian Basin has a high salt content from the parent geological formations; thus, when there is a release to the environment, it is expected that the surrounding soils will have a higher salinity and conductivity than native undisturbed soils.

### Salinity/Soil Basics

The Natural Resources Conservation Service (NRCS) publishes salinity classes (Table 1) to determine the salinity of soils based on ECe concentrations, (ECe is EC measured in a lab via an extractable soil paste). For clarification 1 dS/m = 1mmho/cm = 1mS/cm.

*Table 1 Salinity Classes (NRCS Field Guide)*

NRCS Salinity Class	ECe (1 dS/m = 1mmho/cm = 1mS/cm)
Nonsaline	<2
Very Slightly Saline	2-4
Slightly Saline	4-8
Moderately	8-16
Strongly Saline	>16

NRCS considers salinity to be a serious resource problem because when soil electrical conductivity ECe exceeds the plant salinity tolerance, yields decline by 10 percent or more.

The New Mexico State Land Office *Revegetation Guidelines Handbook for Southeastern NM, Soil Suitability Criteria* adopted the NRCS salinity class that establishes an ECe < 4 dS/m as suitable soils for surface reclamations.

Oil and gas wastes can affect soil physical properties as well. Pore spaces might be clogged, which could reduce soil aeration and water infiltration and increase bulk density, subsequently affecting plant growth.

## Equipment

Soil sampling is one method to assess impacts to soils; however, it is time consuming, intrusive, and may not reveal the whole area affected. Fortunately, there are non-intrusive instruments that can be deployed to assess releases.

The Geonics Limited Ground Conductivity Meters can detect the potential increased salinity, conductivity and bulk density caused by oil and produced water releases. AEA uses the Geonics EM38-MK2 assess the liability of oil and gas waste contained in the top four feet of soil i.e., the root zone.

## Electromagnetic Survey Basics

The fixed-frequency EM method maps variations in ground conductivity to identify anomalously conductive soils and infer changes in the soil characteristics and composition. The primary magnetic field from the transmitter coil induces subsurface eddy currents, which in turn generate a secondary magnetic field that is intercepted by the receiver coil. The ratio of the primary and secondary magnetic fields is related to ground conductivity as  $E_{Ca}$  in mS/m.

The conductivity values are not specific values from discrete depths; they are weighted averages of conductivity between the surface and the depth of exploration of the EM field and are termed “apparent conductivities.”

The apparent conductivity ( $E_{Ca}$ ) of the soil has been related to the paste extract conductivity ( $E_{Ce}$ ) by the relationship on Table 2 (McNeill, 1986a).

Table 2 Soil Conductivity vs Salinity (McNeill 1986)

NRCS Salinity Class	Sampled $E_{Ce}$ (mS/cm)	EM-38 at 1-meter $E_{Ca}$ (mS/m)
Non-saline	0-1	0-20
Slight	1-2	20-40
Moderate	2-4	40-80
High	8-12	100-240

An EM Survey is conducted in the either the horizontal (h) and vertical (v) dipole modes at 0.5 and 1.0-meter coil separations. The EM38 can effectively measure salinity to a depths with sensitivities shown Table 3 and Figure 1 allowing for the evaluation of salinity relative to depth over the four (4) depth ranges.

Table 3: EM38-MK2 Sensitivity Ranges and Depths

Coil Separation meter	Dipole Mode	Greatest Sensitivity meters (feet)	Relative Range	
			Depth (meters)	Depth (feet)
0.5	HD vs VD			
	Horizontal	0	0 - 0.4	0 - 1.3
	Vertical	0.2 (0.66)	0.2 - 0.8	0.7 - 2.5
1				
	Horizontal	0	0 - 0.8	0 - 2.5
	Vertical	0.4 (1.31)	0.4 - 1.5	1.3 - 4.9

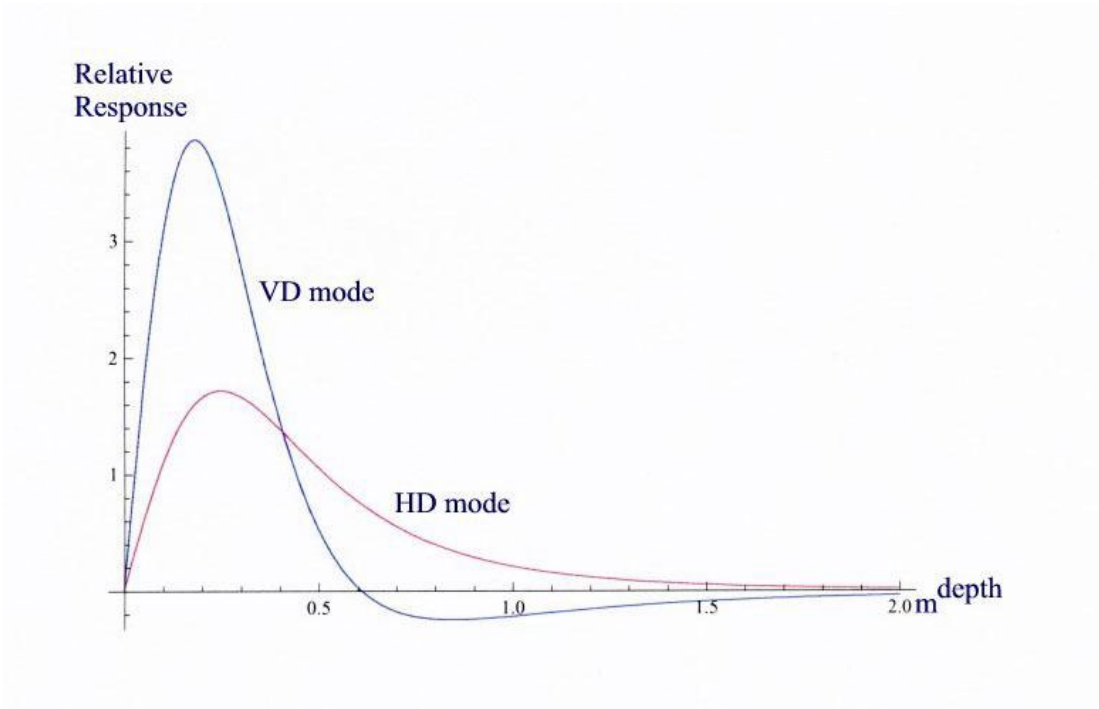


Figure 1 Relative Response (McNeill 2013)

The difference in sensitivity ranges in the two coil configurations and dipole modes is important. the horizontal dipole mode will be relatively sensitive to variations near surface whereas the

vertical dipole mode will be insensitive near the surface and sensitive at greater depths. This difference in sensitivity allows for a quick method for determining whether the near surface soil is more conductive (higher salinity) than soils at depth.

## Limitations

Many things can influence the conductivity readings (ECa) collected with an EM unit including:

- Soil salinity
- Type of soil
- Soil grain size (fine-grained clay is more electrically conductive than coarse-grained material such as sand or gravel)
- Soil temperature (conductivity decreases as soil temperature approaches freezing)
- Metal or large voids

That said, the largest factor affecting ground conductivity is soil salinity. If the area within the salinity survey has a similar soil type most of the influences on conductivity caused by a soil's physical properties are negated.

The soil temperature effects on any single EM survey are usually negligible because the soil survey is conducted within the same day, and affects from metals are only in the immediate area of the source (e.g a pipeline or other buried metal objects).

AEA takes background and additional laboratory analyzed soil samples in the EM survey area to help confirm and correlate survey data.

## References

Electrical Conductivity of Soils and Rock, (J.D. McNeill October, 1980)

McNeill, J. D. 1986a. Rapid, accurate mapping of soil salinity using electromagnetic ground conductivity meters. Geonics Ltd., Mississauga, Ontario. Tech. Note TN-18.

Joint USDA Soil Conservation Service electromagnetic induction (EM) feasibility (Holt 1990)

Abstract: Electromagnetic Surveying: a Basic Tool for Defining Environmental Problems in the Oilfield Gary J. Newman AAPG

## Electromagnetic Induction Survey Orientation

Electromagnetic Induction Surveys (EM Surveys) are commonly used to measure apparent electrical conductivity (ECa, “soil salinity”) in soils without intrusive sampling. Employing a Geonics EM38-MK2 (Exhibit 1), field personnel can effectively delineate the horizontal extent of saline soils by measuring ECa and monitoring for ECa changes between background and higher EC readings.



Exhibit 1: Measuring ECa with the EM38 in the vertical dipole position.

The EM Survey is conducted in the horizontal (h) and vertical (v) dipole modes at 0.5 and 1.0-meter coil separations. The EM38 can effectively measure salinity to a depth of 1-meter (4.9-feet). Sensitivity to surface material is presented in Table 1 and Figures 1a & 1b. Each coil separation and dipole mode listed in Table 1 is recorded by the EM38; allowing for the evaluation of salinity relative to depth over the four (4) depth ranges. The EM38 can record up to 5 measurements per second.

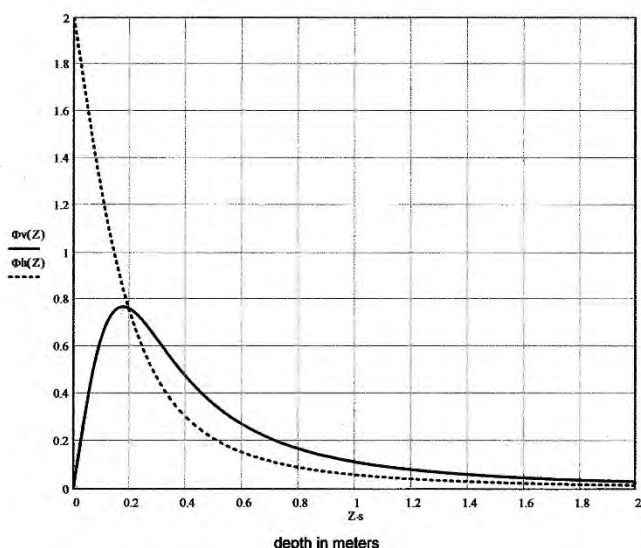
Coil Separation meters	Dipole Mode	Greatest Sensitivity meters (feet)	Relative Range	
			Depth (meters)	Depth (feet)
0.5				
	Horizontal	0	0 - 0.4	0 - 1.3
	Vertical	0.2 (0.66)	0.2 - 0.8	0.7 - 2.5
1				
	Horizontal	0	0 - 0.8	0 - 2.5
	Vertical	0.4 (1.31)	0.4 - 1.5	1.3 - 4.9

Table 1: EM38-MK2 Sensitivity Ranges

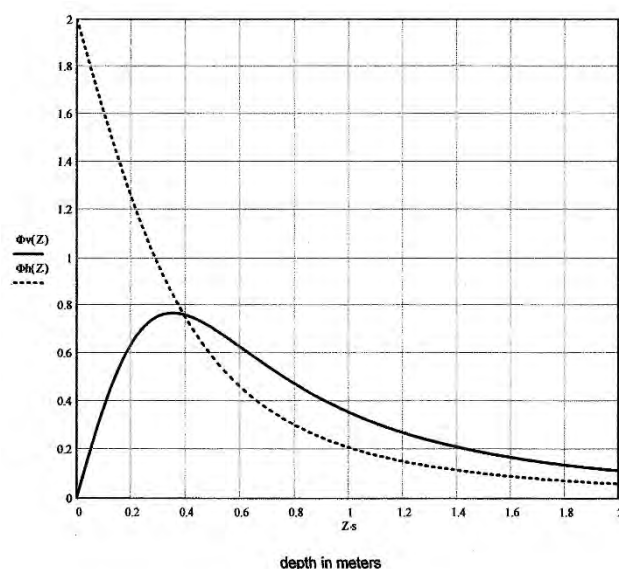
### Electromagnetic Induction Survey Orientation

The difference in sensitivity ranges in the two coil configurations and dipole modes is important; the horizontal dipole mode will be relatively sensitive to variations near surface whereas the vertical dipole mode will be insensitive near the surface and sensitive at greater depths. This difference in sensitivity allows for a quick method for determining whether the near surface soil is more conductive (higher salinity) than soils at depth, where

*if a higher  $EC_a$  reading is obtained in the horizontal position than the vertical position, chloride has likely impacted the upper surface more than soils at lower depths. If a higher  $EC_a$  reading is obtained in the vertical position than the horizontal position, chloride has likely impacted soils at lower depths than the upper surface soils.*



**Figure 1a: 0.5-meter coil separation. Relative sensitivity with depth. Dashed line horizontal dipole mode. Solid line vertical dipole mode.**



**Figure 1b: 1.0-meter coil separation. Relative sensitivity with depth. Dashed line horizontal dipole mode. Solid line vertical dipole mode.**

It is important to note that the EM38 is very susceptible to metal and electrical interferences. A metal object small as a steel nail can cause the apparent electrical conductivity to read high or go negative. EM Surveys near pipelines, wellheads, tank batteries, and powerlines must account for these interferences. The EM38 records both metal susceptibility and  $EC_a$  during each measurement.

### Electromagnetic Induction Survey Orientation

ECa concentrations measured by the Geonics EM38-MK2 instrument can be converted into effective electrical conductivity (ECe) concentrations using the generalized equation  $ECe = 5ECa^{1,2}$ . ECe is commonly used to determine the soil salinity class to evaluate plant productivity. Soil ECe can also be analyzed in a laboratory setting.

The Natural Resources Conservation Service (NRCS) publishes salinity classes (Table 2) to determine the salinity of soils based on ECe concentrations. The New Mexico State Land Office *Revegetation Guidelines Handbook for Southeastern NM, Soil Suitability Criteria* adopted the NRCS salinity class that establishes an  $ECe < 4$  dS/m as suitable soils for surface reclamations.

NRCS Field Guide	
Salinity Class	ECe (dS/m)
Nonsaline	<2
Very Slightly Saline	2 - 4
Slightly Saline	4 - 8
Moderately Saline	8 - 16
Strongly Saline	>16

Table 2: Salinity Classes as defined by Natural Resources Conservation Service (NRCS)

Furthermore, ECe can be estimated by using a set of conversion factors<sup>3</sup> based on common soil types, where

$$\text{Eq 1.} \quad ECe = EC_{1:5} \times CF$$

$EC_{1:5} = 20\text{ml soil}:100\text{ml deionized water then mix, let settle, and test}^4$ .

Hazelton Guide <sup>2</sup>	CF
Sand	17
Sandy Loam	11
Loam	10
Clay Loam	9
Light Medium Clay	8
Medium Clay	7
Heavy Clay	6

Table 3: Conversion Factors (CF) to calculate between  $EC_{1:5}$  and ECe.

<sup>1</sup> McNeill, J.D. 1986. Rapid Accurate Mapping of Soil Salinity by Electromagnetic Ground Conductivity Meters. Geonics Limited Technical Note TN-18, Geonics Ltd., Mississauga, ON.

<sup>2</sup> ECe is expressed in dS/m. ECa is expressed in mS/m. A conversion factor of 100 is applied to convert mS/m to dS/m.  $ECe = 5(ECa/100)$ .

<sup>3</sup> Hazelton, P. A. and Murphy, B.W. ed. (1992) *What do all the numbers mean? A guide for the interpretation of Soil Test Results*. Department of Conservation and Land Management (incorporating the Soil Conservation Service of NSW), Sydney.

<sup>4</sup>  $EC_{1:5}$  is measured with a Hanna DiST4 EC Tester.  $EC_{1:5}$  is commonly used for salinity field screening.

### Electromagnetic Induction Survey Orientation

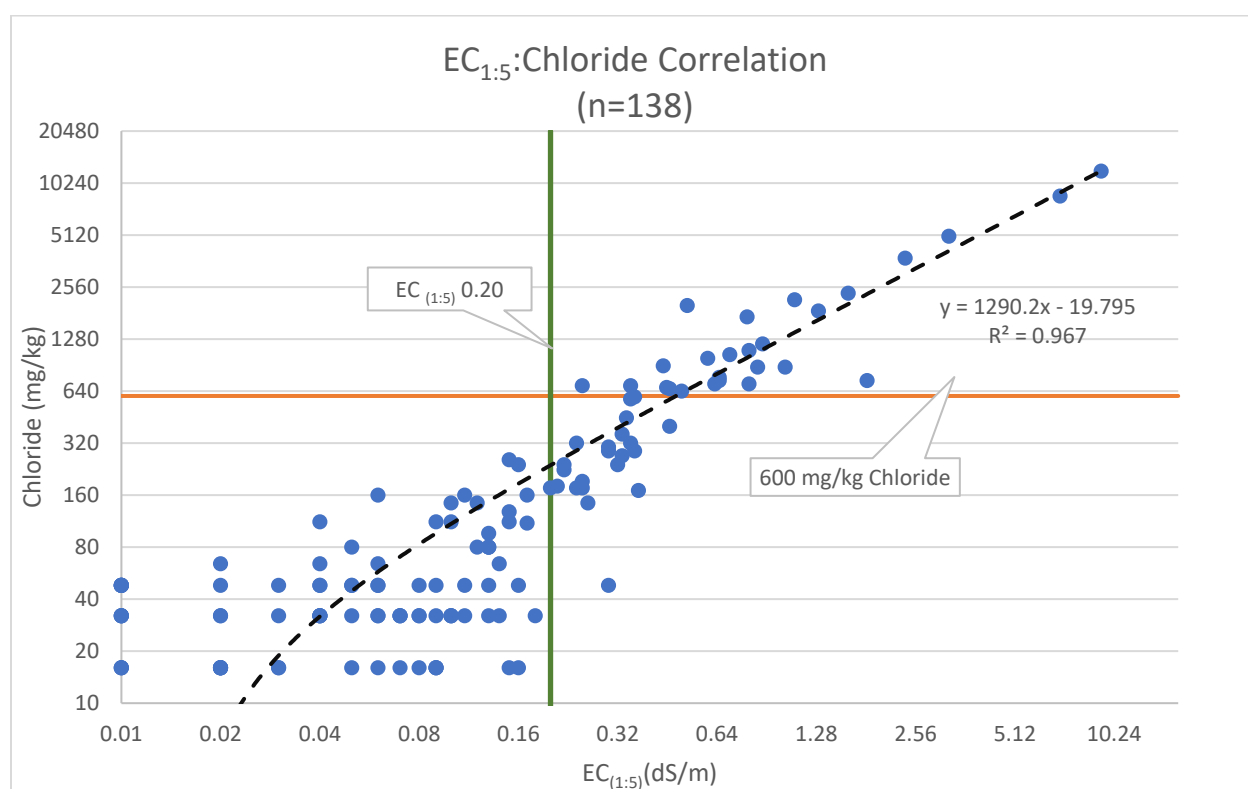
Chloride concentrations can be estimated from ECa by converting

$$ECa \rightarrow E_{Ce} \rightarrow EC_{1:5} \rightarrow \text{Chloride}$$

Converting  $EC_{1:5}$  to Chloride uses regression analysis to calculate the y-intercept, where

$$\text{Eq. 1: } y = 1290.2x - 19.795$$

The below chart shows the correlation between  $EC_{1:5}$  and laboratory analyzed chloride concentrations measured over 139 sample points ( $n=138$ ). Analysis of data shows that  $EC_{1:5}$  measurements greater than 0.20 dS/m (mS/cm) has potential to exhibit chloride concentrations greater than 600 mg/kg, which is NMOCD's Closure Criteria for remediation of spills in the upper 4-feet.



Equation 2 converts ECa to an estimated Chloride ( $Cl_{est}$ ) concentration, where

$$\text{Eq. 2: } Cl_{est} = (1290.2x) - 19.795, \text{ where}$$

$$x = EC_{1:5} = \left( \frac{E_{Ce}}{CF} \right)$$

$$E_{Ce} = 5 \left( \frac{ECa}{100} \right)$$

### Electromagnetic Induction Survey Orientation

Applying Equation 2 to an ECa reading of 250 mS/m yields the following estimated chloride ( $Cl_{est}$ ) concentrations.

To estimate chloride from EM38 ECa measurement					
ECa (mS/m)	ECe (dS/m)	Soil Type	CF	EC1:5 (dS/m)	Estimated Cl (mg/kg)
250	12.5	Sand	17	0.74	929
		Sandy Loam	11	1.14	1446
		Loam	10	1.25	1593
		Clay Loam	9	1.39	1772
		Light Medium Clay	8	1.56	1996
		Medium Clay	7	1.79	2284
		Heavy Clay	6	2.08	2668



# APPENDIX C



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

---

January 09, 2023

JOSEPH GUESNIER

TERRACON CONSULTANTS

5827 50TH ST. SUITE 1

LUBBOCK, TX 79424

RE: 12" RIVER BORE

Enclosed are the results of analyses for samples received by the laboratory on 01/05/23 10:38.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. 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, flowing style.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 01/05/2023  
 Reported: 01/09/2023  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: DURANGO - EDDY

Sampling Date: 01/05/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: FS 01 (H230053-01)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/07/2023	ND	2.06	103	2.00	2.83	
Toluene*	<0.050	0.050	01/07/2023	ND	2.10	105	2.00	3.64	
Ethylbenzene*	<0.050	0.050	01/07/2023	ND	2.11	106	2.00	4.39	
Total Xylenes*	<0.150	0.150	01/07/2023	ND	6.44	107	6.00	5.66	
Total BTX	<0.300	0.300	01/07/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3080	16.0	01/05/2023	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	01/05/2023	ND	221	111	200	11.3	
DRO >C10-C28*	<10.0	10.0	01/05/2023	ND	232	116	200	4.07	
EXT DRO >C28-C36	<10.0	10.0	01/05/2023	ND					

Surrogate: 1-Chlorooctane 93.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.3 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 01/05/2023  
 Reported: 01/09/2023  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: DURANGO - EDDY

Sampling Date: 01/05/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: FS 02 (H230053-02)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/07/2023	ND	2.06	103	2.00	2.83	
Toluene*	<0.050	0.050	01/07/2023	ND	2.10	105	2.00	3.64	
Ethylbenzene*	<0.050	0.050	01/07/2023	ND	2.11	106	2.00	4.39	
Total Xylenes*	<0.150	0.150	01/07/2023	ND	6.44	107	6.00	5.66	
Total BTX	<0.300	0.300	01/07/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	6560	16.0	01/05/2023	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	01/05/2023	ND	221	111	200	11.3	
DRO >C10-C28*	<10.0	10.0	01/05/2023	ND	232	116	200	4.07	
EXT DRO >C28-C36	<10.0	10.0	01/05/2023	ND					

Surrogate: 1-Chlorooctane 89.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 91.8 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 01/05/2023  
 Reported: 01/09/2023  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: DURANGO - EDDY

Sampling Date: 01/05/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S - SW 01 (H230053-03)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/07/2023	ND	2.06	103	2.00	2.83	
Toluene*	<0.050	0.050	01/07/2023	ND	2.10	105	2.00	3.64	
Ethylbenzene*	<0.050	0.050	01/07/2023	ND	2.11	106	2.00	4.39	
Total Xylenes*	<0.150	0.150	01/07/2023	ND	6.44	107	6.00	5.66	
Total BTEx	<0.300	0.300	01/07/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

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	01/05/2023	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	01/05/2023	ND	221	111	200	11.3	
DRO >C10-C28*	<10.0	10.0	01/05/2023	ND	232	116	200	4.07	
EXT DRO >C28-C36	<10.0	10.0	01/05/2023	ND					

Surrogate: 1-Chlorooctane 78.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 78.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 01/05/2023  
 Reported: 01/09/2023  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: DURANGO - EDDY

Sampling Date: 01/05/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S - SW 02 (H230053-04)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/07/2023	ND	2.06	103	2.00	2.83	
Toluene*	<0.050	0.050	01/07/2023	ND	2.10	105	2.00	3.64	
Ethylbenzene*	<0.050	0.050	01/07/2023	ND	2.11	106	2.00	4.39	
Total Xylenes*	<0.150	0.150	01/07/2023	ND	6.44	107	6.00	5.66	
Total BTX	<0.300	0.300	01/07/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1640	16.0	01/05/2023	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	01/05/2023	ND	221	111	200	11.3	
DRO >C10-C28*	<10.0	10.0	01/05/2023	ND	232	116	200	4.07	
EXT DRO >C28-C36	<10.0	10.0	01/05/2023	ND					

Surrogate: 1-Chlorooctane 95.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 01/05/2023  
 Reported: 01/09/2023  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: DURANGO - EDDY

Sampling Date: 01/05/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S - SW 04 (H230053-05)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/06/2023	ND	1.93	96.5	2.00	5.88		
Toluene*	<0.050	0.050	01/06/2023	ND	2.10	105	2.00	5.76		
Ethylbenzene*	<0.050	0.050	01/06/2023	ND	2.06	103	2.00	6.10		
Total Xylenes*	<0.150	0.150	01/06/2023	ND	6.39	107	6.00	5.90		
Total BTEx	<0.300	0.300	01/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 126 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	624	16.0	01/05/2023	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	01/05/2023	ND	221	111	200	11.3	
DRO >C10-C28*	<10.0	10.0	01/05/2023	ND	232	116	200	4.07	
EXT DRO >C28-C36	<10.0	10.0	01/05/2023	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 105 % 49.1-148

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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 01/05/2023  
 Reported: 01/09/2023  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: DURANGO - EDDY

Sampling Date: 01/05/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: N - SW 01 (H230053-06)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/06/2023	ND	1.93	96.5	2.00	5.88	
Toluene*	<0.050	0.050	01/06/2023	ND	2.10	105	2.00	5.76	
Ethylbenzene*	<0.050	0.050	01/06/2023	ND	2.06	103	2.00	6.10	
Total Xylenes*	<0.150	0.150	01/06/2023	ND	6.39	107	6.00	5.90	
Total BTX	<0.300	0.300	01/06/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 127 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4530	16.0	01/05/2023	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	01/05/2023	ND	221	111	200	11.3	
DRO >C10-C28*	<10.0	10.0	01/05/2023	ND	232	116	200	4.07	
EXT DRO >C28-C36	<10.0	10.0	01/05/2023	ND					

Surrogate: 1-Chlorooctane 93.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 01/05/2023  
 Reported: 01/09/2023  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: DURANGO - EDDY

Sampling Date: 01/05/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: N - SW 02 (H230053-07)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/06/2023	ND	1.95	97.7	2.00	10.0	
Toluene*	<0.050	0.050	01/06/2023	ND	2.04	102	2.00	7.06	
Ethylbenzene*	<0.050	0.050	01/06/2023	ND	2.02	101	2.00	6.27	
Total Xylenes*	<0.150	0.150	01/06/2023	ND	6.12	102	6.00	5.71	
Total BTX	<0.300	0.300	01/06/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1520	16.0	01/05/2023	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	01/05/2023	ND	221	111	200	11.3	
DRO >C10-C28*	<10.0	10.0	01/05/2023	ND	232	116	200	4.07	
EXT DRO >C28-C36	<10.0	10.0	01/05/2023	ND					

Surrogate: 1-Chlorooctane 86.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 87.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 01/05/2023  
 Reported: 01/09/2023  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: DURANGO - EDDY

Sampling Date: 01/05/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: E - SW 01 (H230053-08)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/06/2023	ND	1.95	97.7	2.00	10.0	
Toluene*	<0.050	0.050	01/06/2023	ND	2.04	102	2.00	7.06	
Ethylbenzene*	<0.050	0.050	01/06/2023	ND	2.02	101	2.00	6.27	
Total Xylenes*	<0.150	0.150	01/06/2023	ND	6.12	102	6.00	5.71	
Total BTX	<0.300	0.300	01/06/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2920	16.0	01/05/2023	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	01/05/2023	ND	221	111	200	11.3	
DRO >C10-C28*	<10.0	10.0	01/05/2023	ND	232	116	200	4.07	
EXT DRO >C28-C36	<10.0	10.0	01/05/2023	ND					

Surrogate: 1-Chlorooctane 95.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.8 % 49.1-148

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Notes and Definitions

- 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



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Terracon

Project Manager: Joseph Guesnier

Address: 4518 W. Peirce Street

City: Carlsbad

Phone #: 8065077057

Fax #:

State: NM Zip: 88220

Project #: KH227021

Project Owner: Durango

Project Name: 12" River Base

Project Location: Eddy

Sampler Name: Travis Casey

P.O. #:

Company: Durango

Attn: Amber Groves

Address:

City:

State: Zip:

Phone #:

Fax #:

BILL TO

ANALYSIS REQUEST

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.		DATE	TIME	ANALYSIS REQUEST									
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL			Chloride (EPA Method 4500)	TPH Extended 8015	BTEX (EPA Method 8021B)							
H230053	FS01	C 1	1	X								1/5	7:10	X	X	X							
1	FS02	C 1	1	X									7:15	X	X	X							
2	S-Sw 01	C 1	1	X									7:20	X	X	X							
3	S-Sw 02	C 1	1	X									7:25	X	X	X							
4	S-Sw 04	C 1	1	X									7:30	X	X	X							
5	N-Sw 01	C 1	1	X									7:35	X	X	X							
6	N-Sw 02	C 1	1	X									7:40	X	X	X							
7	E-Sw 01	C 1	1	X									7:45	X	X	X							

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Relinquished By:

Date: 1-5-23

Received By:

Verbal Result: ☐ Yes ☐ No Add'l Phone #:

All Results are emailed. Please provide Email address:

Relinquished By: Becky Miller

Date: 10-3-28

Received By: [Signature]

REMARKS: joesph.guesnier@terracon.com; travis.casey@terracon.com; austin.worley@terracon.com; michael.adams@terracon.com

Delivered By: (Circle One)

Observed Temp. °C: 0.5

Sample Condition: Cool ☒ Intact ☐

CHECKED BY: (Initials)

Turnaround Time: Standard ☒ Rush ☐

Thermometer ID #113

Bacteria (only) ☐

Cool ☐ Intact ☐

Observed Temp. °C

Sampler - UPS - Bus - Other:

Corrected Temp. °C: -0.1

Cool ☐ Intact ☐

Checked By: [Signature]

Correction Factor -0.5°C

Cool ☐ Intact ☐

Observed Temp. °C

Corrected Temp. °C

FORM-006 R 3.2 10/07/21

+ Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinalabnm.com



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

February 08, 2023

JOSEPH GUESNIER

TERRACON CONSULTANTS

5827 50TH ST. SUITE 1

LUBBOCK, TX 79424

RE: 12" RIVER BORE

Enclosed are the results of analyses for samples received by the laboratory on 02/06/23 14:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. 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



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

**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 02/06/2023  
 Reported: 02/08/2023  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: DURANGO - EDDY

Sampling Date: 02/06/2023  
 Sampling Type: Solid  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH 05 1' (H230507-01)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/07/2023	ND	2.05	103	2.00	4.97	
Toluene*	<0.050	0.050	02/07/2023	ND	2.03	102	2.00	4.78	
Ethylbenzene*	<0.050	0.050	02/07/2023	ND	1.98	99.1	2.00	5.86	
Total Xylenes*	<0.150	0.150	02/07/2023	ND	5.97	99.5	6.00	6.54	
Total BTEx	<0.300	0.300	02/07/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	02/07/2023	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	02/07/2023	ND	210	105	200	1.56	
DRO >C10-C28*	<10.0	10.0	02/07/2023	ND	234	117	200	2.63	
EXT DRO >C28-C36	<10.0	10.0	02/07/2023	ND					

Surrogate: 1-Chlorooctane 100 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 02/06/2023  
 Reported: 02/08/2023  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: DURANGO - EDDY

Sampling Date: 02/06/2023  
 Sampling Type: Solid  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH 06 1' (H230507-02)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/07/2023	ND	2.05	103	2.00	4.97	
Toluene*	<0.050	0.050	02/07/2023	ND	2.03	102	2.00	4.78	
Ethylbenzene*	<0.050	0.050	02/07/2023	ND	1.98	99.1	2.00	5.86	
Total Xylenes*	<0.150	0.150	02/07/2023	ND	5.97	99.5	6.00	6.54	
Total BTEx	<0.300	0.300	02/07/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	02/07/2023	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2023	ND	210	105	200	1.56	
DRO >C10-C28*	<10.0	10.0	02/07/2023	ND	234	117	200	2.63	
EXT DRO >C28-C36	<10.0	10.0	02/07/2023	ND					

Surrogate: 1-Chlorooctane 98.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 102 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 02/06/2023  
 Reported: 02/08/2023  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: DURANGO - EDDY

Sampling Date: 02/06/2023  
 Sampling Type: Solid  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH 07 1' (H230507-03)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/07/2023	ND	2.05	103	2.00	4.97	
Toluene*	<0.050	0.050	02/07/2023	ND	2.03	102	2.00	4.78	
Ethylbenzene*	<0.050	0.050	02/07/2023	ND	1.98	99.1	2.00	5.86	
Total Xylenes*	<0.150	0.150	02/07/2023	ND	5.97	99.5	6.00	6.54	
Total BTEX	<0.300	0.300	02/07/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	496	16.0	02/07/2023	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2023	ND	210	105	200	1.56	
DRO >C10-C28*	<10.0	10.0	02/07/2023	ND	234	117	200	2.63	
EXT DRO >C28-C36	<10.0	10.0	02/07/2023	ND					

Surrogate: 1-Chlorooctane 91.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 02/06/2023  
 Reported: 02/08/2023  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: DURANGO - EDDY

Sampling Date: 02/06/2023  
 Sampling Type: Solid  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH 8 5' (H230507-04)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/07/2023	ND	2.05	103	2.00	4.97		
Toluene*	0.092	0.050	02/07/2023	ND	2.03	102	2.00	4.78		
Ethylbenzene*	<0.050	0.050	02/07/2023	ND	1.98	99.1	2.00	5.86		
Total Xylenes*	<0.150	0.150	02/07/2023	ND	5.97	99.5	6.00	6.54		
Total BTEx	<0.300	0.300	02/07/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32000	16.0	02/07/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2023	ND	210	105	200	1.56	
DRO >C10-C28*	<10.0	10.0	02/07/2023	ND	234	117	200	2.63	
EXT DRO >C28-C36	<10.0	10.0	02/07/2023	ND					

Surrogate: 1-Chlorooctane 93.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 02/06/2023  
 Reported: 02/08/2023  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: DURANGO - EDDY

Sampling Date: 02/06/2023  
 Sampling Type: Solid  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH 05 5' (H230507-05)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/07/2023	ND	2.05	103	2.00	4.97	
Toluene*	<0.050	0.050	02/07/2023	ND	2.03	102	2.00	4.78	
Ethylbenzene*	<0.050	0.050	02/07/2023	ND	1.98	99.1	2.00	5.86	
Total Xylenes*	<0.150	0.150	02/07/2023	ND	5.97	99.5	6.00	6.54	
Total BTEX	<0.300	0.300	02/07/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	45200	16.0	02/07/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2023	ND	210	105	200	1.56	
DRO >C10-C28*	<10.0	10.0	02/07/2023	ND	234	117	200	2.63	
EXT DRO >C28-C36	<10.0	10.0	02/07/2023	ND					

Surrogate: 1-Chlorooctane 96.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 02/06/2023  
 Reported: 02/08/2023  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: DURANGO - EDDY

Sampling Date: 02/06/2023  
 Sampling Type: Solid  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH 06 5' (H230507-06)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/07/2023	ND	2.05	103	2.00	4.97	
Toluene*	<0.050	0.050	02/07/2023	ND	2.03	102	2.00	4.78	
Ethylbenzene*	<0.050	0.050	02/07/2023	ND	1.98	99.1	2.00	5.86	
Total Xylenes*	<0.150	0.150	02/07/2023	ND	5.97	99.5	6.00	6.54	
Total BTEx	<0.300	0.300	02/07/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	25600	16.0	02/07/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2023	ND	210	105	200	1.56	
DRO >C10-C28*	<10.0	10.0	02/07/2023	ND	234	117	200	2.63	
EXT DRO >C28-C36	<10.0	10.0	02/07/2023	ND					

Surrogate: 1-Chlorooctane 99.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 02/06/2023  
 Reported: 02/08/2023  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: DURANGO - EDDY

Sampling Date: 02/06/2023  
 Sampling Type: Solid  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH 07 5' (H230507-07)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/07/2023	ND	2.05	103	2.00	4.97	
Toluene*	<0.050	0.050	02/07/2023	ND	2.03	102	2.00	4.78	
Ethylbenzene*	<0.050	0.050	02/07/2023	ND	1.98	99.1	2.00	5.86	
Total Xylenes*	<0.150	0.150	02/07/2023	ND	5.97	99.5	6.00	6.54	
Total BTEx	<0.300	0.300	02/07/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	40800	16.0	02/07/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2023	ND	210	105	200	1.56	
DRO >C10-C28*	<10.0	10.0	02/07/2023	ND	234	117	200	2.63	
EXT DRO >C28-C36	<10.0	10.0	02/07/2023	ND					

Surrogate: 1-Chlorooctane 97.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 99.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 02/06/2023  
 Reported: 02/08/2023  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: DURANGO - EDDY

Sampling Date: 02/06/2023  
 Sampling Type: Solid  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH 8 1' (H230507-08)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/07/2023	ND	2.05	103	2.00	4.97	
Toluene*	<0.050	0.050	02/07/2023	ND	2.03	102	2.00	4.78	
Ethylbenzene*	<0.050	0.050	02/07/2023	ND	1.98	99.1	2.00	5.86	
Total Xylenes*	<0.150	0.150	02/07/2023	ND	5.97	99.5	6.00	6.54	
Total BTEx	<0.300	0.300	02/07/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16400	16.0	02/07/2023	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/07/2023	ND	210	105	200	1.56	
DRO >C10-C28*	<10.0	10.0	02/07/2023	ND	234	117	200	2.63	
EXT DRO >C28-C36	<10.0	10.0	02/07/2023	ND					

Surrogate: 1-Chlorooctane 88.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 89.8 % 49.1-148

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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".

---

Celey D. Keene, Lab Director/Quality Manager



**CARDINAL**  
Laboratories

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

[illegible]



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---

November 22, 2022

JOSEPH GUESNIER

TERRACON CONSULTANTS

5827 50TH ST. SUITE 1

LUBBOCK, TX 79424

RE: 12" RIVER BORE

Enclosed are the results of analyses for samples received by the laboratory on 11/18/22 9:12.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. 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:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 11/18/2022  
 Reported: 11/22/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 11/17/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SS - N01 (H225452-01)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2022	ND	2.05	102	2.00	8.89	
Toluene*	<0.050	0.050	11/18/2022	ND	2.17	109	2.00	8.75	
Ethylbenzene*	<0.050	0.050	11/18/2022	ND	2.13	107	2.00	8.71	
Total Xylenes*	<0.150	0.150	11/18/2022	ND	6.54	109	6.00	8.30	
Total BTEX	<0.300	0.300	11/18/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.5 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	11/18/2022	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/18/2022	ND	207	103	200	1.24	
DRO >C10-C28*	<10.0	10.0	11/18/2022	ND	196	98.1	200	2.21	
EXT DRO >C28-C36	<10.0	10.0	11/18/2022	ND					

Surrogate: 1-Chlorooctane 93.7 % 45.3-161

Surrogate: 1-Chlorooctadecane 106 % 46.3-178

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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:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 11/18/2022  
 Reported: 11/22/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 11/17/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SS - N02 (H225452-02)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/18/2022	ND	2.05	102	2.00	8.89		
Toluene*	<0.050	0.050	11/18/2022	ND	2.17	109	2.00	8.75		
Ethylbenzene*	<0.050	0.050	11/18/2022	ND	2.13	107	2.00	8.71		
Total Xylenes*	<0.150	0.150	11/18/2022	ND	6.54	109	6.00	8.30		
Total BTEX	<0.300	0.300	11/18/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.5 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	11/18/2022	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/18/2022	ND	207	103	200	1.24	
DRO >C10-C28*	<10.0	10.0	11/18/2022	ND	196	98.1	200	2.21	
EXT DRO >C28-C36	<10.0	10.0	11/18/2022	ND					

Surrogate: 1-Chlorooctane 104 % 45.3-161

Surrogate: 1-Chlorooctadecane 116 % 46.3-178

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



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 11/18/2022  
 Reported: 11/22/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 11/17/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SS - N03 (H225452-03)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2022	ND	2.05	102	2.00	8.89	
Toluene*	<0.050	0.050	11/18/2022	ND	2.17	109	2.00	8.75	
Ethylbenzene*	<0.050	0.050	11/18/2022	ND	2.13	107	2.00	8.71	
Total Xylenes*	<0.150	0.150	11/18/2022	ND	6.54	109	6.00	8.30	
Total BTX	<0.300	0.300	11/18/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.1 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	11/18/2022	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/18/2022	ND	207	103	200	1.24	
DRO >C10-C28*	<10.0	10.0	11/18/2022	ND	196	98.1	200	2.21	
EXT DRO >C28-C36	<10.0	10.0	11/18/2022	ND					

Surrogate: 1-Chlorooctane 99.4 % 45.3-161

Surrogate: 1-Chlorooctadecane 116 % 46.3-178

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



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 11/18/2022  
 Reported: 11/22/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 11/17/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SS - N04 (H225452-04)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2022	ND	2.05	102	2.00	8.89	
Toluene*	<0.050	0.050	11/18/2022	ND	2.17	109	2.00	8.75	
Ethylbenzene*	<0.050	0.050	11/18/2022	ND	2.13	107	2.00	8.71	
Total Xylenes*	<0.150	0.150	11/18/2022	ND	6.54	109	6.00	8.30	
Total BTEx	<0.300	0.300	11/18/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.5 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	704	16.0	11/18/2022	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/18/2022	ND	189	94.4	200	1.33	
DRO >C10-C28*	<10.0	10.0	11/18/2022	ND	196	97.9	200	3.50	
EXT DRO >C28-C36	<10.0	10.0	11/18/2022	ND					

Surrogate: 1-Chlorooctane 76.1 % 45.3-161

Surrogate: 1-Chlorooctadecane 80.1 % 46.3-178

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



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 11/18/2022  
 Reported: 11/22/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 11/17/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SS - E01 (H225452-05)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/18/2022	ND	2.04	102	2.00	11.0		
Toluene*	<0.050	0.050	11/18/2022	ND	2.16	108	2.00	10.7		
Ethylbenzene*	<0.050	0.050	11/18/2022	ND	2.11	106	2.00	9.94		
Total Xylenes*	<0.150	0.150	11/18/2022	ND	6.40	107	6.00	9.15		
Total BTEx	<0.300	0.300	11/18/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.3 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2280	16.0	11/18/2022	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/18/2022	ND	189	94.4	200	1.33	
DRO >C10-C28*	<10.0	10.0	11/18/2022	ND	196	97.9	200	3.50	
EXT DRO >C28-C36	<10.0	10.0	11/18/2022	ND					

Surrogate: 1-Chlorooctane 72.2 % 45.3-161

Surrogate: 1-Chlorooctadecane 74.0 % 46.3-178

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



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 11/18/2022  
 Reported: 11/22/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 11/17/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SS - W01 (H225452-06)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/18/2022	ND	2.04	102	2.00	11.0		
Toluene*	<0.050	0.050	11/18/2022	ND	2.16	108	2.00	10.7		
Ethylbenzene*	<0.050	0.050	11/18/2022	ND	2.11	106	2.00	9.94		
Total Xylenes*	<0.150	0.150	11/18/2022	ND	6.40	107	6.00	9.15		
Total BTEX	<0.300	0.300	11/18/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 91.7 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	208	16.0	11/18/2022	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/18/2022	ND	189	94.4	200	1.33	
DRO >C10-C28*	<10.0	10.0	11/18/2022	ND	196	97.9	200	3.50	
EXT DRO >C28-C36	<10.0	10.0	11/18/2022	ND					

Surrogate: 1-Chlorooctane 78.6 % 45.3-161

Surrogate: 1-Chlorooctadecane 84.0 % 46.3-178

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



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 11/18/2022  
 Reported: 11/22/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 11/17/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SS - S01 (H225452-07)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/18/2022	ND	2.04	102	2.00	11.0		
Toluene*	<0.050	0.050	11/18/2022	ND	2.16	108	2.00	10.7		
Ethylbenzene*	<0.050	0.050	11/18/2022	ND	2.11	106	2.00	9.94		
Total Xylenes*	<0.150	0.150	11/18/2022	ND	6.40	107	6.00	9.15		
Total BTEX	<0.300	0.300	11/18/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.1 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	11/18/2022	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/18/2022	ND	189	94.4	200	1.33	
DRO >C10-C28*	<10.0	10.0	11/18/2022	ND	196	97.9	200	3.50	
EXT DRO >C28-C36	<10.0	10.0	11/18/2022	ND					

Surrogate: 1-Chlorooctane 81.5 % 45.3-161

Surrogate: 1-Chlorooctadecane 84.7 % 46.3-178

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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:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 11/18/2022  
 Reported: 11/22/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 11/17/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SS - S02 (H225452-08)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/18/2022	ND	2.04	102	2.00	11.0	
Toluene*	<0.050	0.050	11/18/2022	ND	2.16	108	2.00	10.7	
Ethylbenzene*	<0.050	0.050	11/18/2022	ND	2.11	106	2.00	9.94	
Total Xylenes*	<0.150	0.150	11/18/2022	ND	6.40	107	6.00	9.15	
Total BTEx	<0.300	0.300	11/18/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.3 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	432	16.0	11/18/2022	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/18/2022	ND	189	94.4	200	1.33	
DRO >C10-C28*	<10.0	10.0	11/18/2022	ND	196	97.9	200	3.50	
EXT DRO >C28-C36	<10.0	10.0	11/18/2022	ND					

Surrogate: 1-Chlorooctane 73.7 % 45.3-161

Surrogate: 1-Chlorooctadecane 78.6 % 46.3-178

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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:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 11/18/2022  
 Reported: 11/22/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 11/17/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SS - S03 (H225452-09)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/19/2022	ND	2.04	102	2.00	11.0	
Toluene*	<0.050	0.050	11/19/2022	ND	2.16	108	2.00	10.7	
Ethylbenzene*	<0.050	0.050	11/19/2022	ND	2.11	106	2.00	9.94	
Total Xylenes*	<0.150	0.150	11/19/2022	ND	6.40	107	6.00	9.15	
Total BTEx	<0.300	0.300	11/19/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 91.5 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	11/18/2022	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/18/2022	ND	189	94.4	200	1.33	
DRO >C10-C28*	<10.0	10.0	11/18/2022	ND	196	97.9	200	3.50	
EXT DRO >C28-C36	<10.0	10.0	11/18/2022	ND					

Surrogate: 1-Chlorooctane 72.2 % 45.3-161

Surrogate: 1-Chlorooctadecane 75.9 % 46.3-178

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



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 11/18/2022  
 Reported: 11/22/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 11/17/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SS - S04 (H225452-10)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/19/2022	ND	2.04	102	2.00	11.0	
Toluene*	<0.050	0.050	11/19/2022	ND	2.16	108	2.00	10.7	
Ethylbenzene*	<0.050	0.050	11/19/2022	ND	2.11	106	2.00	9.94	
Total Xylenes*	<0.150	0.150	11/19/2022	ND	6.40	107	6.00	9.15	
Total BTX	<0.300	0.300	11/19/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 92.0 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	11/18/2022	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/18/2022	ND	189	94.4	200	1.33	
DRO >C10-C28*	<10.0	10.0	11/18/2022	ND	196	97.9	200	3.50	
EXT DRO >C28-C36	<10.0	10.0	11/18/2022	ND					

Surrogate: 1-Chlorooctane 83.5 % 45.3-161

Surrogate: 1-Chlorooctadecane 87.2 % 46.3-178

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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 11/18/2022  
 Reported: 11/22/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 11/17/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: FS 01 (H225452-11)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/19/2022	ND	2.04	102	2.00	11.0	
Toluene*	<0.050	0.050	11/19/2022	ND	2.16	108	2.00	10.7	
Ethylbenzene*	<0.050	0.050	11/19/2022	ND	2.11	106	2.00	9.94	
Total Xylenes*	<0.150	0.150	11/19/2022	ND	6.40	107	6.00	9.15	
Total BTX	<0.300	0.300	11/19/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 92.5 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3640	16.0	11/18/2022	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/18/2022	ND	189	94.4	200	1.33	
DRO >C10-C28*	<10.0	10.0	11/18/2022	ND	196	97.9	200	3.50	
EXT DRO >C28-C36	<10.0	10.0	11/18/2022	ND					

Surrogate: 1-Chlorooctane 79.0 % 45.3-161

Surrogate: 1-Chlorooctadecane 82.0 % 46.3-178

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



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 11/18/2022  
 Reported: 11/22/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 11/17/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: FS 02 (H225452-12)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/19/2022	ND	2.04	102	2.00	11.0		
Toluene*	<0.050	0.050	11/19/2022	ND	2.16	108	2.00	10.7		
Ethylbenzene*	<0.050	0.050	11/19/2022	ND	2.11	106	2.00	9.94		
Total Xylenes*	<0.150	0.150	11/19/2022	ND	6.40	107	6.00	9.15		
Total BTEx	<0.300	0.300	11/19/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 91.9 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3520	16.0	11/18/2022	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/18/2022	ND	189	94.4	200	1.33	
DRO >C10-C28*	<10.0	10.0	11/18/2022	ND	196	97.9	200	3.50	
EXT DRO >C28-C36	<10.0	10.0	11/18/2022	ND					

Surrogate: 1-Chlorooctane 77.4 % 45.3-161

Surrogate: 1-Chlorooctadecane 80.3 % 46.3-178

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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 11/18/2022  
 Reported: 11/22/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 11/17/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S - SW 01 (H225452-13)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/19/2022	ND	2.04	102	2.00	11.0		
Toluene*	<0.050	0.050	11/19/2022	ND	2.16	108	2.00	10.7		
Ethylbenzene*	<0.050	0.050	11/19/2022	ND	2.11	106	2.00	9.94		
Total Xylenes*	<0.150	0.150	11/19/2022	ND	6.40	107	6.00	9.15		
Total BTEX	<0.300	0.300	11/19/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.8 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1460	16.0	11/18/2022	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/18/2022	ND	189	94.4	200	1.33	
DRO >C10-C28*	<10.0	10.0	11/18/2022	ND	196	97.9	200	3.50	
EXT DRO >C28-C36	<10.0	10.0	11/18/2022	ND					

Surrogate: 1-Chlorooctane 60.4 % 45.3-161

Surrogate: 1-Chlorooctadecane 61.8 % 46.3-178

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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 11/18/2022  
 Reported: 11/22/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 11/17/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: S - SW 02 (H225452-14)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/19/2022	ND	2.04	102	2.00	11.0		
Toluene*	<0.050	0.050	11/19/2022	ND	2.16	108	2.00	10.7		
Ethylbenzene*	<0.050	0.050	11/19/2022	ND	2.11	106	2.00	9.94		
Total Xylenes*	<0.150	0.150	11/19/2022	ND	6.40	107	6.00	9.15		
Total BTEx	<0.300	0.300	11/19/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.5 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2560	16.0	11/18/2022	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/18/2022	ND	189	94.4	200	1.33	
DRO >C10-C28*	<10.0	10.0	11/18/2022	ND	196	97.9	200	3.50	
EXT DRO >C28-C36	<10.0	10.0	11/18/2022	ND					

Surrogate: 1-Chlorooctane 62.1 % 45.3-161

Surrogate: 1-Chlorooctadecane 64.6 % 46.3-178

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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 11/18/2022  
 Reported: 11/22/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 11/17/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: N - SW 01 (H225452-15)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/19/2022	ND	2.04	102	2.00	11.0	
Toluene*	<0.050	0.050	11/19/2022	ND	2.16	108	2.00	10.7	
Ethylbenzene*	<0.050	0.050	11/19/2022	ND	2.11	106	2.00	9.94	
Total Xylenes*	<0.150	0.150	11/19/2022	ND	6.40	107	6.00	9.15	
Total BTEx	<0.300	0.300	11/19/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.0 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	848	16.0	11/18/2022	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/18/2022	ND	189	94.4	200	1.33	
DRO >C10-C28*	<10.0	10.0	11/18/2022	ND	196	97.9	200	3.50	
EXT DRO >C28-C36	<10.0	10.0	11/18/2022	ND					

Surrogate: 1-Chlorooctane 69.5 % 45.3-161

Surrogate: 1-Chlorooctadecane 71.7 % 46.3-178

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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 11/18/2022  
 Reported: 11/22/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 11/17/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: N - SW 02 (H225452-16)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/19/2022	ND	2.04	102	2.00	11.0		
Toluene*	<0.050	0.050	11/19/2022	ND	2.16	108	2.00	10.7		
Ethylbenzene*	<0.050	0.050	11/19/2022	ND	2.11	106	2.00	9.94		
Total Xylenes*	<0.150	0.150	11/19/2022	ND	6.40	107	6.00	9.15		
Total BTEX	<0.300	0.300	11/19/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.1 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3080	16.0	11/18/2022	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/18/2022	ND	189	94.4	200	1.33	
DRO >C10-C28*	<10.0	10.0	11/18/2022	ND	196	97.9	200	3.50	
EXT DRO >C28-C36	<10.0	10.0	11/18/2022	ND					

Surrogate: 1-Chlorooctane 81.5 % 45.3-161

Surrogate: 1-Chlorooctadecane 83.7 % 46.3-178

Cardinal Laboratories

\*=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:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 11/18/2022  
 Reported: 11/22/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 11/17/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: W - SW 01 (H225452-17)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/21/2022	ND	2.01	100	2.00	0.739	
Toluene*	<0.050	0.050	11/21/2022	ND	2.12	106	2.00	0.0228	
Ethylbenzene*	<0.050	0.050	11/21/2022	ND	2.09	105	2.00	0.100	
Total Xylenes*	<0.150	0.150	11/21/2022	ND	6.33	106	6.00	0.930	
Total BTEX	<0.300	0.300	11/21/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 88.8 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	384	16.0	11/21/2022	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/18/2022	ND	189	94.4	200	1.33	
DRO >C10-C28*	<10.0	10.0	11/18/2022	ND	196	97.9	200	3.50	
EXT DRO >C28-C36	<10.0	10.0	11/18/2022	ND					

Surrogate: 1-Chlorooctane 74.9 % 45.3-161

Surrogate: 1-Chlorooctadecane 77.6 % 46.3-178

Cardinal Laboratories

\*=Accredited Analyte

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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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\*=Accredited Analyte

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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



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

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

<b>Company Name:</b> Terracon <b>Project Manager:</b> Joseph Guesnier <b>Address:</b> 4518 W. Peirce Street <b>City:</b> Carlsbad <b>State:</b> NM <b>Zip:</b> 88220 <b>Phone #:</b> 8065077057 <b>Fax #:</b> <b>Project #:</b> KH227021 <b>Project Owner:</b> <b>Project Name:</b> 12" RTRR Base <b>Project Location:</b> Eddy <b>Sample Name:</b> Travis Casey		<b>BILL TO</b> <b>P.O. #:</b> <b>Company:</b> Durango <b>Attn:</b> Amber Graves <b>Address:</b> <b>City:</b> <b>State:</b> <b>Zip:</b> <b>Phone #:</b> <b>Fax #:</b>		<b>ANALYSIS REQUEST</b>	
<b>FOR LAB USE ONLY</b>		<b>MATRIX</b> GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER :		<b>PRESERV</b> <b>SAMPLING</b>	
<b>Lab I.D.</b> H225452	<b>Sample I.D.</b> SS-N01 SS-N02 SS-N03 SS-N04 SS-E01 SS-W01 SS-S01 SS-S02 SS-S03 SS-S04	(G)RAB OR (C)OMP. # CONTAINERS DATE TIME	Chloride (EPA Method 4500) TPH Extended 8015 BTEX (EPA Method 8021B)		
1 SS-N01 C1 11/17 11:46 2 SS-N02 C1 11/17 11:48 3 SS-N03 C1 11/17 11:51 4 SS-N04 C1 11/17 11:53 5 SS-E01 C1 11/17 11:59 6 SS-W01 C1 12/02 12:02 7 SS-S01 C1 12/04 12:04 8 SS-S02 C1 12/06 12:06 9 SS-S03 C1 12/09 12:09 10 SS-S04 C1 12/12 12:12					
PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising from this contract or tort, shall be limited to the amount paid by the client for the analysis. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.					
<b>Relinquished By:</b> Buckey Miller Date: 11-18-22 Time: 0912		<b>Received By:</b> Joseph Guesnier Date: 11-18-22 Time: 0912		<b>REMARKS:</b> Joseph.guesnier@terracon.com; travis.casey@terracon.com; austlin.worley@terracon.com; michael.adams@terracon.com	
<b>Relinquished By:</b> Buckey Miller Date: 11-18-22 Time: 0912		<b>Received By:</b> Joseph Guesnier Date: 11-18-22 Time: 0912		<b>Verbal Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Add'l Phone #:</b> <b>All Results are emailed. Please provide Email address:</b>	
<b>Delivered By: (Circle One)</b> UPS - Bus - Other:		Observed Temp. °C 3.3 Corrected Temp. °C -3.9		Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Bacteria (only) Sample Condition Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No Observed Temp. °C Corrected Temp. °C	

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com



ANALYSIS REQUEST

[illegible]

55

FORM-000 R 3.2 10/07/21

+ Cardinal cannot accept verbal changes. Please email changes to [celey.kenne@cardinalbasin.com](mailto:celey.kenne@cardinalbasin.com).



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

---

December 12, 2022

JOSEPH GUESNIER

TERRACON CONSULTANTS

5827 50TH ST. SUITE 1

LUBBOCK, TX 79424

RE: 12" RIVER BORE

Enclosed are the results of analyses for samples received by the laboratory on 12/05/22 14:03.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. 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, flowing style.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 12/05/2022  
 Reported: 12/12/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: DURANGO - EDDY

Sampling Date: 12/05/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: N-SW 3.2 (H225694-01)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/09/2022	ND	2.10	105	2.00	3.22	
Toluene*	0.131	0.050	12/09/2022	ND	2.21	111	2.00	4.05	
Ethylbenzene*	<0.050	0.050	12/09/2022	ND	2.14	107	2.00	3.49	
Total Xylenes*	<0.150	0.150	12/09/2022	ND	6.56	109	6.00	3.47	
Total BTX	<0.300	0.300	12/09/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	512	16.0	12/08/2022	ND	448	112	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	12/07/2022	ND	194	96.9	200	4.87	
DRO >C10-C28*	<10.0	10.0	12/07/2022	ND	168	84.1	200	10.6	
EXT DRO >C28-C36	<10.0	10.0	12/07/2022	ND					

Surrogate: 1-Chlorooctane 82.9 % 45.3-161

Surrogate: 1-Chlorooctadecane 82.2 % 46.3-178

Cardinal Laboratories

\*=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:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 12/05/2022  
 Reported: 12/12/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: DURANGO - EDDY

Sampling Date: 12/05/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: N-SW 4.2 (H225694-02)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/09/2022	ND	2.10	105	2.00	3.22	
Toluene*	<0.050	0.050	12/09/2022	ND	2.21	111	2.00	4.05	
Ethylbenzene*	<0.050	0.050	12/09/2022	ND	2.14	107	2.00	3.49	
Total Xylenes*	<0.150	0.150	12/09/2022	ND	6.56	109	6.00	3.47	
Total BTEx	<0.300	0.300	12/09/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1060	16.0	12/08/2022	ND	448	112	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	12/07/2022	ND	194	96.9	200	4.87	
DRO >C10-C28*	<10.0	10.0	12/07/2022	ND	168	84.1	200	10.6	
EXT DRO >C28-C36	<10.0	10.0	12/07/2022	ND					

Surrogate: 1-Chlorooctane 82.5 % 45.3-161

Surrogate: 1-Chlorooctadecane 82.6 % 46.3-178

Cardinal Laboratories

\*=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:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 12/05/2022  
 Reported: 12/12/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: DURANGO - EDDY

Sampling Date: 12/05/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: FS 03 (H225694-03)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/12/2022	ND	2.10	105	2.00	3.22		
Toluene*	<0.050	0.050	12/12/2022	ND	2.21	111	2.00	4.05		
Ethylbenzene*	<0.050	0.050	12/12/2022	ND	2.14	107	2.00	3.49		
Total Xylenes*	<0.150	0.150	12/12/2022	ND	6.56	109	6.00	3.47		
Total BTEx	<0.300	0.300	12/12/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	576	16.0	12/08/2022	ND	448	112	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	12/07/2022	ND	194	96.9	200	4.87	
DRO >C10-C28*	<10.0	10.0	12/07/2022	ND	168	84.1	200	10.6	
EXT DRO >C28-C36	<10.0	10.0	12/07/2022	ND					

Surrogate: 1-Chlorooctane 82.6 % 45.3-161

Surrogate: 1-Chlorooctadecane 84.0 % 46.3-178

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 12/05/2022  
 Reported: 12/12/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: DURANGO - EDDY

Sampling Date: 12/05/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: FS 04 (H225694-04)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/09/2022	ND	2.10	105	2.00	3.22	
Toluene*	0.086	0.050	12/09/2022	ND	2.21	111	2.00	4.05	
Ethylbenzene*	<0.050	0.050	12/09/2022	ND	2.14	107	2.00	3.49	
Total Xylenes*	<0.150	0.150	12/09/2022	ND	6.56	109	6.00	3.47	
Total BTEX	<0.300	0.300	12/09/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	352	16.0	12/08/2022	ND	448	112	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	12/07/2022	ND	194	96.9	200	4.87	
DRO >C10-C28*	<10.0	10.0	12/07/2022	ND	168	84.1	200	10.6	
EXT DRO >C28-C36	<10.0	10.0	12/07/2022	ND					

Surrogate: 1-Chlorooctane 86.3 % 45.3-161

Surrogate: 1-Chlorooctadecane 88.2 % 46.3-178

Cardinal Laboratories

\*=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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Cardinal Laboratories

\*=Accredited Analyte

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

---

Celey D. Keene, Lab Director/Quality Manager



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

### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



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

---

December 08, 2022

JOSEPH GUESNIER

TERRACON CONSULTANTS

5827 50TH ST. SUITE 1

LUBBOCK, TX 79424

RE: 12" RIVER BORE

Enclosed are the results of analyses for samples received by the laboratory on 12/06/22 10:29.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. 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:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 12/06/2022  
 Reported: 12/08/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 12/05/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH 01 5' (H225707-02)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/06/2022	ND	2.16	108	2.00	12.1	
Toluene*	<0.050	0.050	12/06/2022	ND	2.19	110	2.00	13.0	
Ethylbenzene*	<0.050	0.050	12/06/2022	ND	2.12	106	2.00	11.0	
Total Xylenes*	<0.150	0.150	12/06/2022	ND	6.55	109	6.00	10.8	
Total BTX	<0.300	0.300	12/06/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2600	16.0	12/07/2022	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	12/07/2022	ND	181	90.5	200	7.81	
DRO >C10-C28*	<10.0	10.0	12/07/2022	ND	191	95.6	200	4.87	
EXT DRO >C28-C36	<10.0	10.0	12/07/2022	ND					

Surrogate: 1-Chlorooctane 46.1 % 45.3-161

Surrogate: 1-Chlorooctadecane 47.8 % 46.3-178

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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:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 12/06/2022  
 Reported: 12/08/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 12/05/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH 02 1' (H225707-03)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/06/2022	ND	2.16	108	2.00	12.1	
Toluene*	<0.050	0.050	12/06/2022	ND	2.19	110	2.00	13.0	
Ethylbenzene*	<0.050	0.050	12/06/2022	ND	2.12	106	2.00	11.0	
Total Xylenes*	<0.150	0.150	12/06/2022	ND	6.55	109	6.00	10.8	
Total BTEx	<0.300	0.300	12/06/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	224	16.0	12/07/2022	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	12/07/2022	ND	203	101	200	6.32	
DRO >C10-C28*	<10.0	10.0	12/07/2022	ND	205	103	200	10.9	
EXT DRO >C28-C36	<10.0	10.0	12/07/2022	ND					

Surrogate: 1-Chlorooctane 88.6 % 45.3-161

Surrogate: 1-Chlorooctadecane 90.8 % 46.3-178

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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:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 12/06/2022  
 Reported: 12/08/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 12/05/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH 02 5' (H225707-04)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/06/2022	ND	2.16	108	2.00	12.1	
Toluene*	<0.050	0.050	12/06/2022	ND	2.19	110	2.00	13.0	
Ethylbenzene*	<0.050	0.050	12/06/2022	ND	2.12	106	2.00	11.0	
Total Xylenes*	<0.150	0.150	12/06/2022	ND	6.55	109	6.00	10.8	
Total BTEx	<0.300	0.300	12/06/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2440	16.0	12/07/2022	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	12/07/2022	ND	203	101	200	6.32	
DRO >C10-C28*	<10.0	10.0	12/07/2022	ND	205	103	200	10.9	
EXT DRO >C28-C36	<10.0	10.0	12/07/2022	ND					

Surrogate: 1-Chlorooctane 76.6 % 45.3-161

Surrogate: 1-Chlorooctadecane 77.4 % 46.3-178

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



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 12/06/2022  
 Reported: 12/08/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 12/05/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH 03 1' (H225707-05)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/06/2022	ND	2.16	108	2.00	12.1	
Toluene*	<0.050	0.050	12/06/2022	ND	2.19	110	2.00	13.0	
Ethylbenzene*	<0.050	0.050	12/06/2022	ND	2.12	106	2.00	11.0	
Total Xylenes*	<0.150	0.150	12/06/2022	ND	6.55	109	6.00	10.8	
Total BTEx	<0.300	0.300	12/06/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 69.9-140

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	12/07/2022	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	12/07/2022	ND	203	101	200	6.32	
DRO >C10-C28*	<10.0	10.0	12/07/2022	ND	205	103	200	10.9	
EXT DRO >C28-C36	<10.0	10.0	12/07/2022	ND					

Surrogate: 1-Chlorooctane 84.6 % 45.3-161

Surrogate: 1-Chlorooctadecane 88.1 % 46.3-178

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



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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 12/06/2022  
 Reported: 12/08/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 12/05/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH 03 4.5' (H225707-06)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/06/2022	ND	2.16	108	2.00	12.1	
Toluene*	<0.050	0.050	12/06/2022	ND	2.19	110	2.00	13.0	
Ethylbenzene*	<0.050	0.050	12/06/2022	ND	2.12	106	2.00	11.0	
Total Xylenes*	<0.150	0.150	12/06/2022	ND	6.55	109	6.00	10.8	
Total BTEx	<0.300	0.300	12/06/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3080	16.0	12/07/2022	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	12/07/2022	ND	203	101	200	6.32	
DRO >C10-C28*	<10.0	10.0	12/07/2022	ND	205	103	200	10.9	
EXT DRO >C28-C36	<10.0	10.0	12/07/2022	ND					

Surrogate: 1-Chlorooctane 65.9 % 45.3-161

Surrogate: 1-Chlorooctadecane 66.3 % 46.3-178

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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 12/06/2022  
 Reported: 12/08/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 12/05/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH 04 1' (H225707-07)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/07/2022	ND	2.16	108	2.00	12.1	
Toluene*	<0.050	0.050	12/07/2022	ND	2.19	110	2.00	13.0	
Ethylbenzene*	<0.050	0.050	12/07/2022	ND	2.12	106	2.00	11.0	
Total Xylenes*	<0.150	0.150	12/07/2022	ND	6.55	109	6.00	10.8	
Total BTEx	<0.300	0.300	12/07/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	12/07/2022	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	12/07/2022	ND	203	101	200	6.32	
DRO >C10-C28*	<10.0	10.0	12/07/2022	ND	205	103	200	10.9	
EXT DRO >C28-C36	<10.0	10.0	12/07/2022	ND					

Surrogate: 1-Chlorooctane 92.3 % 45.3-161

Surrogate: 1-Chlorooctadecane 94.9 % 46.3-178

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**Analytical Results For:**

TERRACON CONSULTANTS  
 JOSEPH GUESNIER  
 5827 50TH ST. SUITE 1  
 LUBBOCK TX, 79424  
 Fax To:

Received: 12/06/2022  
 Reported: 12/08/2022  
 Project Name: 12" RIVER BORE  
 Project Number: KH227021  
 Project Location: EDDY

Sampling Date: 12/05/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH 04 5' (H225707-08)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/07/2022	ND	2.16	108	2.00	12.1	
Toluene*	<0.050	0.050	12/07/2022	ND	2.19	110	2.00	13.0	
Ethylbenzene*	<0.050	0.050	12/07/2022	ND	2.12	106	2.00	11.0	
Total Xylenes*	<0.150	0.150	12/07/2022	ND	6.55	109	6.00	10.8	
Total BTX	<0.300	0.300	12/07/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3440	16.0	12/07/2022	ND	432	108	400	0.00	QM-07	

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	12/07/2022	ND	203	101	200	6.32	
DRO >C10-C28*	<10.0	10.0	12/07/2022	ND	205	103	200	10.9	
EXT DRO >C28-C36	<10.0	10.0	12/07/2022	ND					

Surrogate: 1-Chlorooctane 80.6 % 45.3-161

Surrogate: 1-Chlorooctadecane 81.4 % 46.3-178

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



---

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### Notes and Definitions

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 "Mike Snyder", is written over a horizontal line.

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



Company Name: Terracon

**Project Manager:** Joseph Guesnier

**Address:** 4518 W. Perice Street

City: Carlsbad

Phone #: 8065077057

Project #: KH 227021

Project Name: /

Project Location:

FOR LAB USE ONLY	Sample name: David Casey
------------------	--------------------------

FOR LAB USE ONLY

**Lab I.D.**

## Sample I.D.

762570

5	
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20	
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4

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## Conclusion

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† Cardinal cannot accept verbal changes. Please email changes to [celey.keene@cardinallabsnm.com](mailto:celey.keene@cardinallabsnm.com)

Released to Imaging: 8/26/2025 9:43:26 AM



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

QUESTIONS

Action 370396

QUESTIONS

Operator: FRONTIER FIELD SERVICES, LLC 303 Veterans Airpark Lane Midland, TX 79705	OGRID: 221115
	Action Number: 370396
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2229049089
Incident Name	NAPP2229049089 12" RIVER BORE @ 0
Incident Type	Natural Gas Release
Incident Status	Remediation Closure Report Received

Location of Release Source	
Please answer all the questions in this group.	
Site Name	12" RIVER BORE
Date Release Discovered	10/14/2022
Surface Owner	Private

Incident Details	
Please answer all the questions in this group.	
Incident Type	Natural Gas Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Not answered.
Is the concentration of chloride in the produced water >10,000 mg/l	Not answered.
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Cause: Corrosion   Pipeline (Any)   Natural Gas Liquids   Released: 295 MCF   Recovered: 0 MCF   Lost: 295 MCF.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	N/A

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QUESTIONS, Page 2

Action 370396

**QUESTIONS (continued)**

Operator: FRONTIER FIELD SERVICES, LLC 303 Veterans Airpark Lane Midland, TX 79705	OGRID: 221115
	Action Number: 370396
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	Yes, according to supplied volumes this appears to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	No
Reasons why this would be considered a submission for a notification of a major release	Unavailable.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

**Initial Response**

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

The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

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.

I hereby agree and sign off to the above statement	Name: Sebastian Orozco Title: Sr. Environmental Specialist Email: sorozco@kinetik.com Date: 08/05/2024
----------------------------------------------------	-----------------------------------------------------------------------------------------------------------------

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QUESTIONS, Page 3

Action 370396

**QUESTIONS (continued)**

Operator: FRONTIER FIELD SERVICES, LLC 303 Veterans Airport Lane Midland, TX 79705	OGRID:
	221115
	Action Number:
	370396
Action Type:	
[C-141] Remediation Closure Request C-141 (C-141-v-Closure)	

**QUESTIONS**

<b>Site Characterization</b>	
<i>Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 26 and 50 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Between 1000 (ft.) and ½ (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Greater than 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Between 1 and 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Medium
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

<b>Remediation Plan</b>	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
Requesting a remediation plan approval with this submission	Yes
<i>Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.</i>	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
<b>Soil Contamination Sampling:</b> (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	45200
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	0
GRO+DRO (EPA SW-846 Method 8015M)	0
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
On what estimated date will the remediation commence	02/28/2023
On what date will (or did) the final sampling or liner inspection occur	09/25/2023
On what date will (or was) the remediation complete(d)	06/21/2024
What is the estimated surface area (in square feet) that will be reclaimed	0
What is the estimated volume (in cubic yards) that will be reclaimed	0
What is the estimated surface area (in square feet) that will be remediated	3334
What is the estimated volume (in cubic yards) that will be remediated	3700
<i>These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.</i>	
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

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QUESTIONS, Page 4

Action 370396

**QUESTIONS (continued)**

Operator: FRONTIER FIELD SERVICES, LLC 303 Veterans Airpark Lane Midland, TX 79705	OGRID: 221115
	Action Number: 370396
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Remediation Plan (continued)</b>	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
<b>This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:</b>	
<i>(Select all answers below that apply.)</i>	
(Ex Situ) Excavation and <b>off-site</b> disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for <b>off-site</b> disposal	LEA LAND LANDFILL [fEEM0112342028]
<b>OR</b> which OCD approved well (API) will be used for <b>off-site</b> disposal	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, out-of-state	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and <b>on-site</b> remediation (i.e. On-Site Land Farms)	No
(In Situ) Soil Vapor Extraction	No
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	No
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	No
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	No
Ground Water Abatement pursuant to 19.15.30 NMAC	No
OTHER (Non-listed remedial process)	No
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
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.	
I hereby agree and sign off to the above statement	Name: Sebastian Orozco Title: Sr. Environmental Specialist Email: sorozco@kinetik.com Date: 08/05/2024
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

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QUESTIONS, Page 5  
  
Action 370396

QUESTIONS (continued)

Operator:  FRONTIER FIELD SERVICES, LLC 303 Veterans Airpark Lane Midland, TX 79705	OGRID:  221115
	Action Number:  370396
	Action Type:  [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS, Page 6

Action 370396

**QUESTIONS (continued)**

Operator: FRONTIER FIELD SERVICES, LLC 303 Veterans Airpark Lane Midland, TX 79705	OGRID: 221115
	Action Number: 370396
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

Sampling Event Information	
Last sampling notification (C-141N) recorded	370573
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	09/25/2023
What was the (estimated) number of samples that were to be gathered	18
What was the sampling surface area in square feet	3334

**Remediation Closure Request**

*Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.*

Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	3334
What was the total volume (cubic yards) remediated	3700
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	0
What was the total volume (in cubic yards) reclaimed	0
Summarize any additional remediation activities not included by answers (above)	n/a

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

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

I hereby agree and sign off to the above statement	Name: Sebastian Orozco Title: Sr. Environmental Specialist Email: sorozco@kinetik.com Date: 08/05/2024
----------------------------------------------------	-----------------------------------------------------------------------------------------------------------------

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QUESTIONS, Page 7  
  
Action 370396

QUESTIONS (continued)

Operator:  FRONTIER FIELD SERVICES, LLC 303 Veterans Airpark Lane Midland, TX 79705	OGRID:  221115
	Action Number:  370396
	Action Type:  [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Reclamation Report	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	No

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CONDITIONS

Action 370396

CONDITIONS

Operator:  FRONTIER FIELD SERVICES, LLC 303 Veterans Airpark Lane Midland, TX 79705	OGRID:  221115
	Action Number:  370396
	Action Type:  [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your Remediation Closure Report for Incident #NAPP2229049089 12" RIVER BORE, thank you. This Remediation Closure Report is approved.	8/26/2025