



June 9, 2023

**New Mexico Oil Conservation Division**

New Mexico Energy, Minerals, and Natural Resources Department  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

**Re: Remediation Work Plan  
Gem 4, 5, 7, 10 Battery, 8705 JV-P  
Incident Number nCH1903263128  
Lea County, New Mexico**

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of BTA Oil Producers, LLC (BTA), has prepared the following *Remediation Work Plan (Work Plan)* to document the release of produced water at the Gem 4, 5, 7, 10 Battery, 8705 JV-P (Site), present the Site Characterization identifying any potential sensitive receptors, and propose additional delineation and subsequent excavation activities related to documented impacted and waste-containing soil associated with Incident Number nCH1903263128.

**SITE DESCRIPTION AND RELEASE SUMMARY**

The Site is located in Unit N, Section 2, Township 20 South, Range 33 East, in Lea County, New Mexico (32.59584°, -103.63667°) and is associated with oil and gas exploration and production operations on New Mexico State Trust Land managed by the New Mexico State Land Office (NMSLO).

On December 7, 2018, a failure of a 45-degree connection on a 2.875-inch flowline that transports fluid to a saltwater disposal (SWD) well resulted in the release of 6 barrels (bbls) of produced water. Following the release, 1 bbl of free-standing produced water was recovered. BTA reported the release to the New Mexico Oil Conservation Division (NMOCD) via a Release Notification Form C-141 (Form C-141) on December 18, 2018. The release was assigned Incident Number nCH1903263128.

**SITE CHARACTERIZATION AND CLOSURE CRITERIA**

The Site was characterized to assess the applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are presented on Form C-141, Site Assessment/Characterization. Potential Site receptors are identified on Figure 1.

Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the closest groundwater well data. The closest groundwater well with depth to groundwater data is New Mexico Office of the State Engineer (OSE) well number CP-01865, located approximately 0.4 miles northwest of the Site. On February 8, 2021, a borehole was advanced to 105 feet bgs and no water was encountered, confirming that groundwater beneath the Site is greater than 100 feet bgs. All

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wells used for depth to water determination are depicted on Figure 1 and the referenced well record for CP-01865 is included in Appendix A.

The closest continuously flowing or significant watercourse to the Site is an irrigation canal, located approximately 11,948 feet northwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). Site receptors are identified on Figure 1.

Based on the results of the Site Characterization, the following NMOCD Table I Closure Criteria (Closure Criteria) apply for the following chemicals of concern (COCs):

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total Petroleum Hydrocarbons (TPH) – gasoline range organics (GRO) and TPH – diesel range organics (DRO): 1,000 mg/kg
- Total TPH: 2,500 mg/kg
- Chloride: 20,00 mg/kg

A reclamation requirement of 600 mg/kg chloride and 100 mg/kg TPH will be applied to the top 4 feet of the pasture area per 19.15.29.13.D (1) NMAC for the top 4 feet of areas that will be immediately reclaimed following remediation.

## DELINEATIONS ACTIVITIES

Following the release, BTA retained Trinity Oilfield Services and Rentals, LLC (Trinity) to assess the release extent. According to Trinity's *Site Summary and Spill Remediation Proposal*, dated August 21, 2019 (Appendix B), Trinity was onsite between February 15, 2019 and April 2, 2019 to assess the release and to define the magnitude and extent of impacts. Trinity advanced 14 soil boreholes (SP-1 through SP-14) via hand auger and backhoe, to depths ranging from 0.5 feet to 16 feet bgs to assess impacts to soil. Based on soil borehole locations, the point of release was on the west side of the well pad and the extent included an area inside the earthen berm secondary containment and onto the south adjacent pasture (Figure 2). Laboratory analytical results indicated concentrations of BTEX in all submitted soil samples were compliant with the Closure Criteria. Concentrations of TPH in soil from all soil samples were in compliance with the Closure Criteria; however, the TPH concentration in borehole SP-2, at approximately 0.5 feet bgs, did exceed the reclamation requirement, indicating waste-containing soil is present in the adjacent pasture. Laboratory analytical results indicated chloride concentrations in soil from boreholes SP-4, SP-5, SP-8, SP-9, and SP-10 exceeded the Closure Criteria and/or reclamation requirement. While Trinity did propose excavation activities to address impacted soil documented at the Site, the proposal was not submitted to the NMOCD for approval. Based on the findings presented in Trinity's report, it appears additional delineation and remediation activities are warranted to address the December 2018 release.

## PROPOSED REMEDIAL ACTIONS

Based delineation activities completed by Trinity in 2019, Ensolum proposes to complete delineation of the release laterally and vertically and then remediate impacted and waste-containing soil to meet requirements set forth in 19.15.29 NMAC.

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### Cultural Resources Survey

Since the release entered the pasture, the release location will be assessed for determination of whether the release encroached into undisturbed areas to comply with the Cultural Properties Protection Rule (CPP) prior to disturbing the surface with mechanical equipment. The NMSLO will be notified of potential disturbance of the pasture on a Right of Entry Request for Remediation form. The request will include a copy of the Form C-141, a topographic location map, and a satellite image of the location. Ensolum will request an Archaeological Records Management System (ARMS) review be completed by the NMSLO to determine if prior cultural resources survey(s) overlap with the project area and if so, whether oversight by an approved archeologist would be required during disturbance activities. Fieldwork will be modified if cultural resources are present at a distance that could compromise those resources and any modifications of the following activities will be documented and relayed to the NMOCD and NMSLO prior to entering the pasture.

### Proposed Additional Delineation Activities

Ensolum will complete additional delineation activities prior to any excavation in order to fully define the release extent. Below is a summary table of delineation sample locations that will be advanced via hand auger and/or backhoe, as applicable.

**TABLE 1 – PROPOSED DELINEATION PLAN**

Proposed Lateral Delineation Locations	
North	North of borehole SP-14
East	East of boreholes SP-9 and SP-10
South	South of borehole SP-2
West	West of borehole SP-10
Proposed Vertical Delineation Locations	
Vertical depth greater than 6 feet bgs in the vicinity of borehole SP-5	
Second depth in the vicinity of borehole SP-12 (first depth at 0.5 feet bgs)	
Second depth in the vicinity of borehole SP-13 (first depth at 0.5 feet bgs)	
Second depth in the vicinity of borehole SP-14 (first depth at 0.5 feet bgs)	

To adequately define the lateral extent of the release, soil samples from the locations described above and depicted on Figure 2 will be collected at 0.5 feet bgs confirm the release did not extend past the footprint previously identified. It should be noted that the lateral delineation soil samples south of borehole SP-2 will be completed with a hand auger until an ARMS review determined the remediation area has been properly assessed for potential presence of culture resources.

Ensolum will advance hand auger/backhoe borings in vertical delineation locations described above and depicted on Figure 2 until field screening results indicate concentrations of COCs in soil are in compliance with the Closure Criteria and/or reclamation requirement. A soil sample will be collected from each of the vertical delineation soil borings at the terminus of the soil boring, which will define the vertical extents of impacts.

All soil samples will be field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. Field screening results and observations were logged on lithologic/soil sampling logs. The soil sample locations will be mapped utilizing a handheld Global Positioning System (GPS) unit. Photographic documentation will be completed during the Site visit.

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Soil samples will be placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples will be transported under strict chain-of-custody procedures to Cardinal Laboratories (Cardinal) in Hobbs, New Mexico, for analysis of the following COCs: BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method SM4500.

BTA will complete the delineation activities described above within 90 days of the date of approval of this *Work Plan* by the NMOCD.

### Proposed Excavation Activities

Laboratory analytical results from Trinity's assessment activities in 2019 indicated concentrations of COCs exceeded the Closure Criteria and/or the reclamation requirement and it is determined that impacted and waste-containing soil is present. As such, Ensolum proposes to complete the following excavation activities:

- Excavation of waste-containing soil in the vicinity of borehole SP-2 to a depth of approximately 1-foot bgs;
- Excavation of waste-containing soil in the vicinity of boreholes SP-4 and SP-8 to a total depth of 4 feet bgs;
- Excavation of impacted soil in the vicinity of boreholes SP-9 and SP-10 to an approximate depth of 4 feet bgs;
- Excavation of impacted soil in the vicinity of borehole SP-5 to a depth to be determined by vertical delineation efforts described above. If impacts are documented to be greater than 8 feet bgs, BTA requests to excavate in this area to a depth of 4 feet bgs and install a 20-mil poly liner to prevent vertical migration of chloride impacts in the future instead of excavating all impacts to below the Closure Criteria;
- Following removal of impacted soil listed above, 5-point composite soil samples will be collected every 200 square feet from the floor and sidewalls of the excavation. The 5-point composite samples will be collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. The composite soil samples will be handled and analyzed as described above; and
- In those areas where waste-containing soil is removed, representative sidewall samples will be collected and analyzed to verify all waste-containing soil has been removed per 19.15.29.13 NMAC.

### Reclamation Plan

The southern portion of release went into the pasture and as such, reclamation requirements set forth in 19.15.29.13.D (1) NMAC for the top 4 feet of areas that will be reclaimed following remediation will be applied. The following Reclamation Plan addresses reclamation of the off-pad excavation area and has been developed through review and application of the *Revegetation Guidelines Handbook for Southeastern New Mexico* – Version 1-1, authored by NMSLO and dated 2018, and 19.2.100.67 NMAC – *Surface Reclamation on State Oil and Gas Leases*:

- The excavation will be backfilled with locally sourced caliche and topsoil to match surrounding grade. A minimum of 1-foot of topsoil will be placed on top of the caliche to support vegetative growth within the disturbed area;

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- Soil in the vicinity of the release in the pasture will be assessed for the proper application of *Table 3 - Revegetation Plans, Codes, and Soil Types for Southeastern New Mexico*;
- The backfilled areas will be seeded utilizing a weed-free seed mix designed listed in the table below;

<b>Common Name and Preferred Variety</b>	<b><u>Scientific Name</u></b>	<b>PLS Per Acre</b>
<b><i>Annual Quick-cover Grass</i></b>		
Oats	<i>Avena sativa</i>	1.00
<b><i>Cool Season Grass</i></b>		
Western Wheatgrass	<i>Agropyron smithii</i>	2.50
<b><i>Warm-Season Grass</i></b>		
Black or Blue Grama	<i>Boutela gracilis</i> var. <i>Alma</i>	1.50
Little Bluestem	<i>Schizachyrium scoparium</i>	0.50
Sand Dropseed	<i>Sporobolus cryptandrus</i>	0.50
Sand Bluestem	<i>Andropogon hallii</i>	1.00
Indiangrass	<i>Sorghastrum nutans</i>	0.50
Sideoats Grama	<i>Bouteloua curtipendula</i> var. <i>Vaughn</i>	2.00
<b><i>Wildflowers/ Forbs</i></b>		
White prairie clover	<i>Dalea candida</i>	0.10
Scarlet globemallow	<i>Sphaeralcea coccinea</i>	0.10
Chia Sage	<i>Salvia columbariae</i>	0.10
Annual sunflower	<i>Helianthus annuus</i>	0.10
Annual buckwheat	<i>Eriogonum annuum</i>	0.10

- The seed mixture will be distributed with one or more of the following methods: push broadcaster seed spreader, tractor operated broadcast seed spreader, and/or drill seeding based on Site conditions and contractor availability;
- Application of the seed mixture will be at a coverage of 10 pounds of seeds per acre of reclaimed pasture with distribution by a drilling method or 20 pounds of seeds per acre of reclaimed pasture with distribution by a broadcast method;
- Erosion control management is not anticipated since the proposed excavation area is relatively flat; however, in the event erosion control management is necessary to support vegetation growth and minimize erosion until the root structures take hold, the application of the following best management practices (BMPs) could potentially include:
  - Prompt revegetation with mulching and contouring the ground surface to limit surface water flow;
  - The placement of wattles in areas with a propensity for high run off rates;
  - Straw cover if high winds are anticipated to support moisture retention and limit wind from blowing seeds away before they have had time to germinate; and/or
  - Other erosional control best management practices (BMP) as necessary to support timely and healthy regrowth of vegetation in disturbed areas;
- Backfilling of the excavation will be scheduled and communicated with NMSLO prior to initiation;



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- Seeding is anticipated to be completed in the Fall when temperatures and precipitation are most conducive for vegetation growth. In general, seeding should occur approximately one month after the last frost in the Spring up until approximately one month prior to the first fall frost. NMSLO has recognized the optimal time to seed is between July and early September, which will be the preferred timeframe for this Site;
- If seeding occurs outside of the 180 days approved in the current fully executed ROE Permit, a new ROE Permit will be executed prior to entering the pasture for reclamation activities;
- Annual inspections (at a minimum) will take place on the location until revegetation is consistent with local natural vegetation density. The Site will be inspected the following Fall to assess the success of regrowth. If necessary, an additional application of the NMSLO-approved pure live seed mixture will be applied as well as any needed BMPs will be installed to support growth and limit erosion; and
- Upon completion of revegetation, a copy of the C-103 submitted to NMOCD will also be submitted to NMSLO for final inspection and release.


### Schedule and Reporting

BTA will complete the remedial activities described above within 90 days of the date of approval of this *Work Plan* by the NMOCD. If laboratory analytical results indicate concentrations of all COCs are in compliance with the Closure Criteria and/or the reclamation requirement and it is determined that impacted soil is not present, a Closure Request will be prepared and submitted to the NMOCD for concurrence. If laboratory analytical results do indicate the presence of impacted soil in the vicinity of equipment and/or lines on pad, BTA will submit a Deferral Request for impacts that are left in-place and to be remediated when there is major Site reconstruction and/or the well pad is plugged and abandoned and the well pad is to be reclaimed.

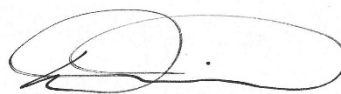
BTA believes the scope of work described above will meet requirements set forth in 19.15.29.12 NMAC as well as stipulation set forth in 19.2.100.67 NMAC for reclamation of Sites on State Trust Land. These measures are believed to be protective of human health, the environment, and groundwater. As such, BTA respectfully requests approval of this *Work Plan* from NMOCD and NMSLO.

If you have any questions or comments, please contact Ms. Tacoma Morrissey at (337) 257-8307 or [tmorrissey@ensolum.com](mailto:tmorrissey@ensolum.com).

Sincerely,  
**Ensolum, LLC**



Hadlie Green  
Staff Geologist



Daniel R. Moir, PG  
Senior Managing Geologist

cc: Kelton Beaird, BTA  
Nathan Sirgo, BTA  
NMSLO ECO

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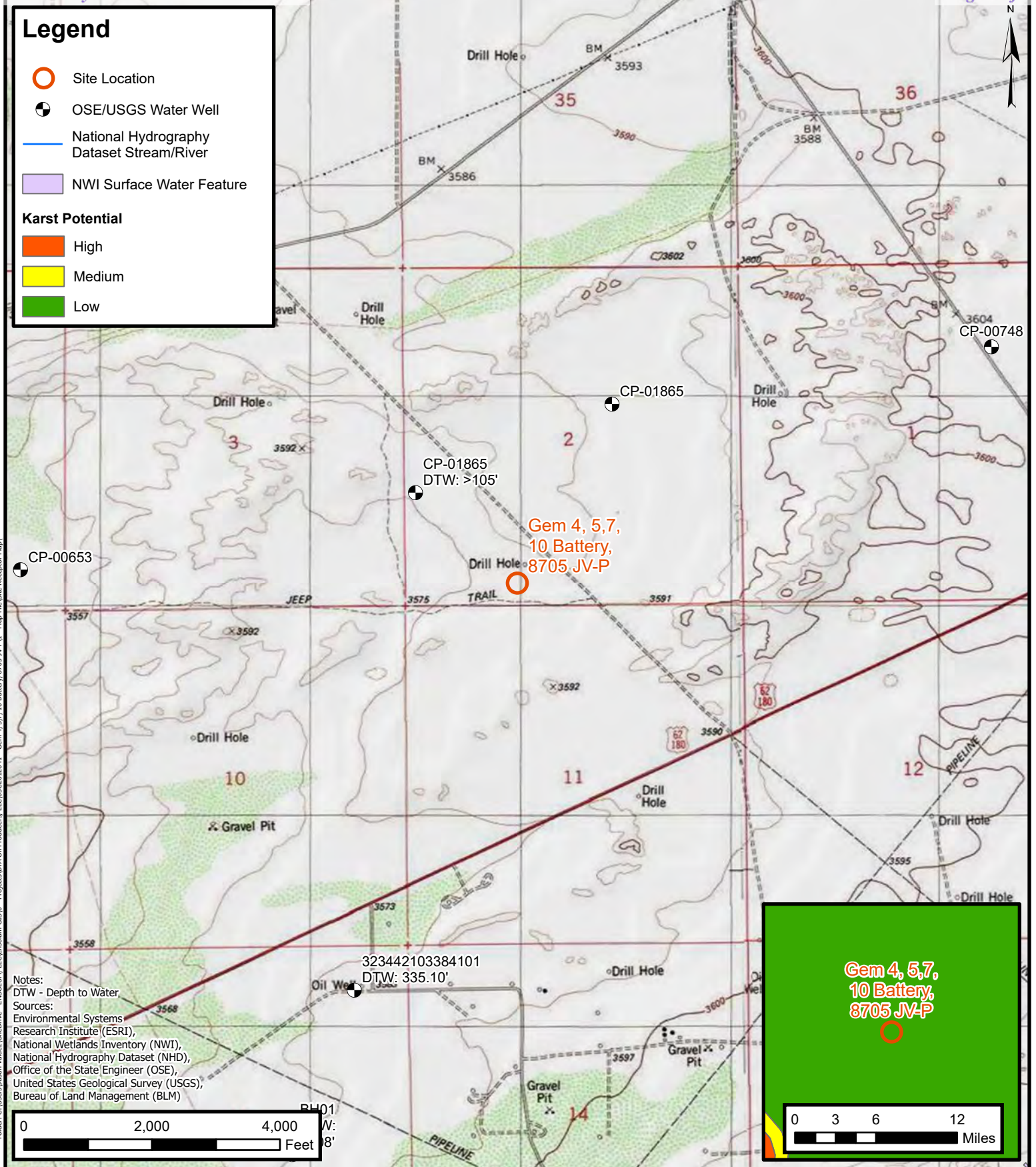
Appendices:

Figure 1	Sensitive Receptor Map
Figure 2	Proposed Remedial Actions
Appendix A	Referenced Well Records
Appendix B	<i>Site Summary and Spill Remediation Proposal</i> , dated August 21, 2019
Appendix C	Form C-141



FIGURES





## Sensitive Receptor Map

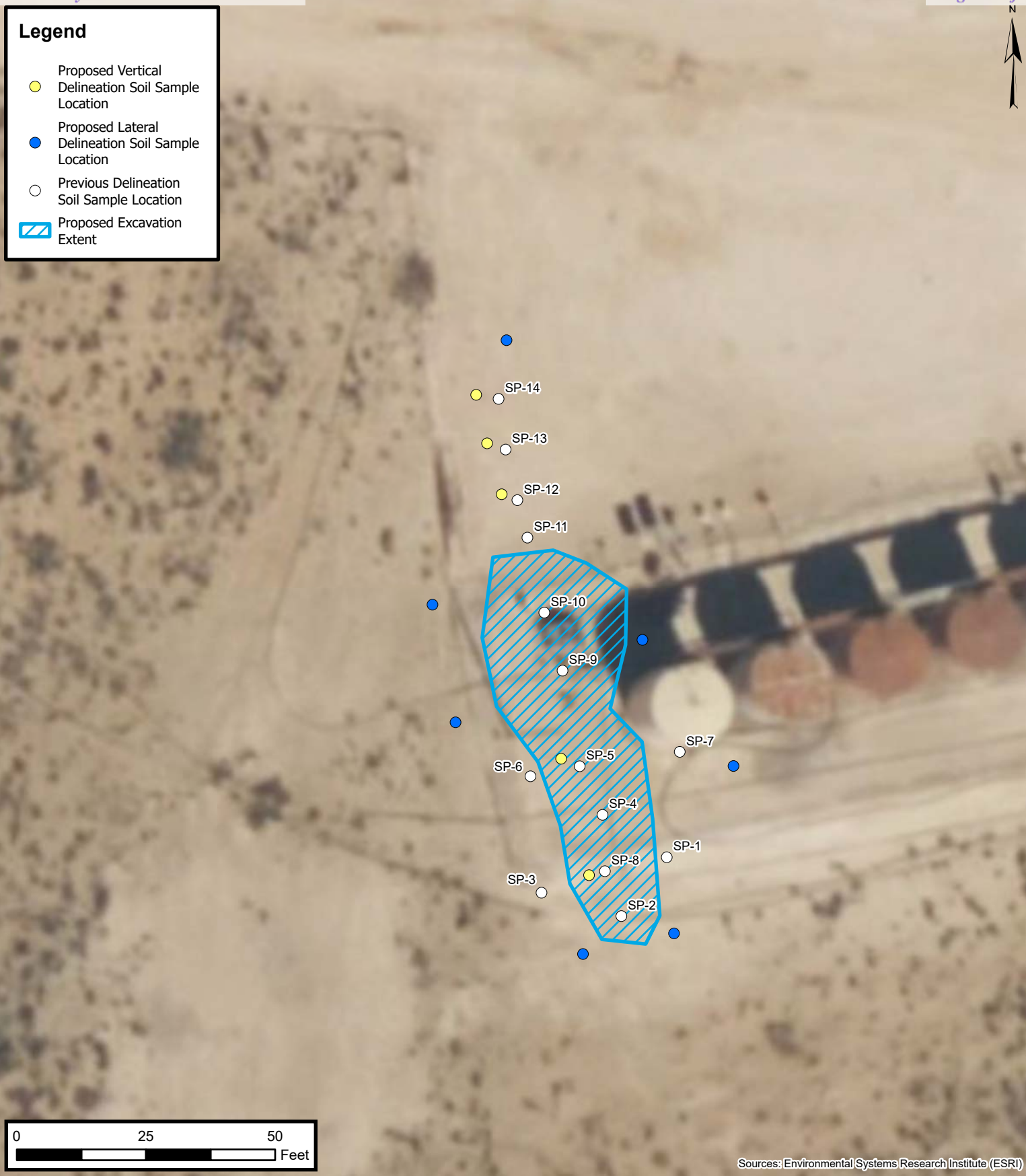
BTA Oil Producers, LLC  
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Incident Number: nCH1903263128  
Unit N, Sec 2, 20S, 33E  
Lea County, New Mexico

**FIGURE**

**1**

## Legend

- Proposed Vertical Delineation Soil Sample Location
- Proposed Lateral Delineation Soil Sample Location
- Previous Delineation Soil Sample Location
- Proposed Excavation Extent



Sources: Environmental Systems Research Institute (ESRI)



## Proposed Remedial Actions

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**FIGURE**  
**2**



## APPENDIX A

### Referenced Well Records

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# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

[www.ose.state.nm.us](http://www.ose.state.nm.us)

OSE DTI JUL 22 2021 PM 2:05

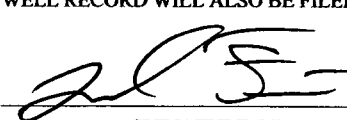
1. GENERAL AND WELL LOCATION	OSE POD NO. (WELL NO.) POD2 CP-1865		WELL TAG ID NO.		OSE FILE NO(S). CP-01865			
	WELL OWNER NAME(S) BTA OIL PRODUCERS, LLC				PHONE (OPTIONAL)			
	WELL OWNER MAILING ADDRESS 104 S PECOS ST				CITY MIDLAND	STATE TX	ZIP 79701	
	WELL LOCATION (FROM GPS)	DEGREES LATITUDE 32	MINUTES 35	SECONDS 59 N	* ACCURACY REQUIRED: ONE TENTH OF A SECOND			
		LONGITUDE -103	38	30.4 W	* DATUM REQUIRED: WGS 84			
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE LEA SECTION 2 TOWNSHIP 20S RANGE 33E								
2. DRILLING & CASING INFORMATION	LICENSE NO. WD-1753		NAME OF LICENSED DRILLER JACOB FRIESEN			NAME OF WELL DRILLING COMPANY VANGURD		
	DRILLING STARTED 2-8-21	DRILLING ENDED 2-8-21	DEPTH OF COMPLETED WELL (FT) 105	BORE HOLE DEPTH (FT) 105	DEPTH WATER FIRST ENCOUNTERED (FT) 0			
	COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input checked="" type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)				STATIC WATER LEVEL IN COMPLETED WELL (FT) 0			
	DRILLING FLUID: <input checked="" type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:							
	DRILLING METHOD: <input checked="" type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input type="checkbox"/> OTHER - SPECIFY:							
	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
	FROM	TO						
	-1	99	4.5	BLANK PVC	THREAD 2.375	2	.187	
	99	105	4.5	SCREEN PVC	THREAD 2.375	2	.187	.02
3. ANNULAR MATERIAL	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT		
	FROM	TO						
	0	99	4.5	GROUT	8	POURED		
	99	105	4.5	SILICA SAND	.5	POURED		

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 04/30/19)

FILE NO. C-1865	POD NO. 2	TRN NO. 086912
LOCATION 20S-33E-02 3.1-B	WELL TAG ID NO. NA	PAGE 1 OF 2

05E DTI JUL 22 2021 PM2:05

4. HYDROGEOLOGIC LOG OF WELL	DEPTH (feet bgl)		THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER- BEARING ZONES (gpm)
	FROM	TO				
	0	2	2	TOPSOIL	Y    ✓ N	
	2	21	19	CALICHE	Y    ✓ N	
	21	48	27	SAND	Y    ✓ N	
	48	66	18	RED CLAY	Y    ✓ N	
	66	77	11	SAND	Y    ✓ N	
	77	89	12	RED CLAY	Y    ✓ N	
	89	105	16	BLUE CLAY	Y    ✓ N	
					Y    N	
					Y    N	
					Y    N	
					Y    N	
					Y    N	
					Y    N	
					Y    N	
					Y    N	
					Y    N	
	METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input checked="" type="checkbox"/> BAILER <input type="checkbox"/> OTHER - SPECIFY:				TOTAL ESTIMATED WELL YIELD (gpm):            0.00	
	5. TEST; RIG SUPERVISION	WELL TEST	TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.			
MISCELLANEOUS INFORMATION:						
PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE: PETE LOEWEN						
6. SIGNATURE	BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING.					
 SIGNATURE OF DRILLER / PRINT SIGNED NAME					7-13-21 DATE	

FOR OSE INTERNAL USE		WR-20 WELL RECORD & LOG (Version 04/30/2019)	
FILE NO. C-1865	POD NO. 2	TRN NO. 686912	
LOCATION 205-33E-02 3-1-3	WELL TAG ID NO. NA	PAGE 2 OF 2	



## APPENDIX B

Site Summary and Spill Remediation Proposal,

Dated August 21, 2019

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# Trinity Oilfield Services & Rentals, LLC

## Environmental Site Summary & Spill Remediation Proposal



**Company:** BTA Oil Producers, LLC **Address:** 104 S. Pecos St., Midland, TX 79701 **Telephone #:** (432) 390-2828

**Site Name:** Gem 4,5,7,10 Battery 8705 JV-P **NMOCD Reference#:** 1RP-5309

**Surface Owner:** State of New Mexico **Mineral Owner:** State of New Mexico

**Unit Letter:** N **Section:** 2 **Township:** 20S **Range:** 33E **County:** Lea **GPS Coordinates:** 32.59584 N -103.63667 W

**Date/Time of Release:** 12/7/2018 **Type of Release:** ☐ Crude Oil ☒ Produced Water

**Volume(s) Released:** 6 bbls **Volume(s) Recovered:** 1 bbl

**Closure Criteria for Impacted Soil (mg/kg; See Appendix C, "Closure Criteria Justification"):**

**Benzene:** 10 **BTEX:** 50 **GRO+DRO:** 1,000 **TPH:** ☐ 100 **Chloride:** ☐ 600  
☒ 2,500 ☐ 10,000  
☒ 20,000

### Background Information:

On December 7, 2018, BTA Oil Producers, LLC (BTA), discovered a release at the Gem 4,5,7,10 Battery, 8705 JV-P. Failure of a 45-degree connection on a 2-7/8-inch steel flowline from the battery to the salt water disposal (SWD) well resulted in the release of approximately 6 barrels (bbls) of produced water, which breached the earthen containment berm surrounding the battery. The spill and overspray affected a total area of the containment, caliche pad, and adjacent pasture measuring approximately 2,030 square feet. During initial response activities, the failed connection was repaired, and a vacuum truck was utilized to recover approximately 1 bbl of free-standing liquid.

The release was reported to the New Mexico Oil Conservation Division's (NMOCD) Hobbs District Office on December 18, 2018. The NMOCD "Release Notification & Corrective Action" form (C-141) is provided as Appendix A. General photographs of the release site are provided in Appendix B. A "Site Location Map" is provided as Figure 1.

### Summary of Field Activities:

On February 15, 2018, a hand auger was utilized to advance a series of 15 boreholes (SP-1 through SP-15) in the inferred impacted areas inside the containment area, on the caliche pad, and in the adjacent pasture to investigate the extent of impacted soil. The auger holes were advanced to total depths ranging from approximately 6 inches (SP-1 through SP-3, SP-5 through SP-7, and SP-9 through SP-14) to 6 feet (SP-4) below ground surface (bgs). Soil samples were collected at 6-inch to 1-foot vertical intervals and field-screened with a chloride test kit. Representative confirmation samples were submitted to Xenco Laboratories in Midland, Texas, for analysis of chloride, total petroleum hydrocarbons (TPH), and/or benzene, toluene, ethylbenzene, and total xylene (BTEX) concentrations using Environmental Protection Agency (EPA) Methods 300, SW 846-8015 Mod, and SW 846-8021B, respectively. Laboratory analytical results and field screens indicated the release may have commingled with a historical release (or releases), and additional delineation was required to determine the extent of chloride contamination. However, vertical delineation of TPH and BTEX contamination had been achieved.

On February 18, 2019, a backhoe was utilized to advance a delineation trench in the area represented by auger hole SP-8 to further investigate the vertical extent of chloride contamination in the pasture. The trench was advanced to a total depth of approximately 13 feet bgs. Soil samples were collected at 1- to 2-foot vertical intervals and field-screened with a chloride test kit. Representative confirmation samples were submitted to the laboratory for analysis of chloride, TPH, and BTEX concentrations. Laboratory analytical results indicated delineation of TPH and BTEX contamination had been achieved. However, additional delineation was required to determine the extent of chloride contamination.

On March 8, 2019, a hand auger was utilized to re-enter auger holes SP-5, SP-9, SP-10, and SP-11 to further investigate the vertical extent of chloride contamination in those areas. The auger holes were advanced to total depths ranging from 5.5 feet (SP-9) to 6 feet bgs (SP-5, SP-10, and SP-11). Soil samples were collected at 1- to 2-foot vertical intervals and field-screened with a chloride test kit. Representative confirmation samples were submitted to the laboratory for analysis of chloride, TPH, and BTEX concentrations. Laboratory analytical results indicated delineation of



# Trinity Oilfield Services & Rentals, LLC

## Environmental Site Summary & Spill Remediation Proposal



### Summary of Field Activities (cont.):

TPH and BTEX contamination had been achieved. However, additional delineation was required to determine the extent of chloride contamination in the area represented by auger hole SP-5.

On April 2, 2019, a backhoe was utilized to advance a delineation trench in the area represented by auger holes SP-4 and SP-5 (which are less than 10 feet apart), as well as re-enter and further advance delineation trench SP-8. The trenches were advanced to total depths ranging from approximately 13 feet (SP-4) to 16 feet (SP-8) bgs. Soil samples were collected at 1- to 2-foot vertical intervals and field-screened with a chloride test kit. Representative confirmation samples were submitted to the laboratory for analysis of chloride, TPH, and BTEX concentrations. Laboratory analytical results indicated delineation of chloride, TPH, and BTEX contamination had been achieved.

Locations of the auger holes and delineation trenches are depicted in Figure 2, "Site Plan". Laboratory analytical results are summarized in Table 1, and analytical reports are provided in Appendix D. Chloride field test results are summarized in Table 2.

### Proposed Activities:

BTA proposes to conduct the following activities to progress the Gem 4,5,7,10 Battery, 8705 JV-P release site to an NMOCD- and NMSLO-approved closure:

- The areas represented by auger holes SP-10 and SP-11 will be excavated to a total depth of 2 feet bgs.
- The area represented by auger hole/delineation trench SP-4 will be excavated as necessary to remove all visibly stained soil, with anticipated depths ranging from 2 to 4 feet bgs.
- The areas represented by auger holes/delineation trenches SP-5, SP-8, and SP-9 will be excavated to total depths of 4 feet bgs. The excavations will be advanced horizontally to the areas represented by auger holes SP-1, SP-2, SP-3, SP-6, and SP-7. Representative 5-point composite soil samples will be collected from the sidewalls of the excavations and submitted to Cardinal Laboratories for confirmatory analyses of chloride, TPH, and BTEX concentrations using the EPA analytical methods listed in the "Summary of Field Activities" above. Each composite sample will represent an area measuring no larger than 200 square feet.
- No excavation or additional remediation will be conducted in the areas represented by auger holes SP-12, SP-13, and SP-14.
- All excavated soil will be stockpiled on 6-mil plastic, pending transfer to Lea Land, Inc. (NMOCD Permit #WM-01-035), for disposal.
- The total volume of impacted soil to be excavated is approximately 226 cubic yards.
- All open excavations will be fenced off during periods of inactivity to prevent injury to oilfield personnel, livestock, and/or wildlife.
- Following remediation activities, the excavation(s) will be backfilled with locally acquired, non-impacted material, compacted, and contoured to fit the surrounding topography. Prior to backfilling, 20-mil, impermeable, plastic liners and felt padding will be installed on the floors of the excavations in the areas represented by auger holes/delineation trenches SP-5 and SP-8. These engineered controls will serve to inhibit vertical migration of contaminants remaining in-situ.
- The aforementioned corrective actions will be completed within 45 days of receipt of approval of this proposal by the NMOCD and NMSLO. Upon completion of the proposed tasks, a "Remediation Summary & Closure Request" will be submitted to the NMOCD and NMSLO, documenting remediation activities and results of confirmation soil samples.

# Trinity Oilfield Services & Rentals, LLC

## Environmental Site Summary & Spill Remediation Proposal



### Enclosures:

Figure 1: Site Location Map

Figure 2: Site Plan

Table 1: Concentrations of Benzene, BTEX, TPH & Chloride in Soil

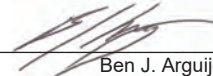
Table 2: Field Tests

Appendix A: Release Notification & Corrective Action (Form C-141)

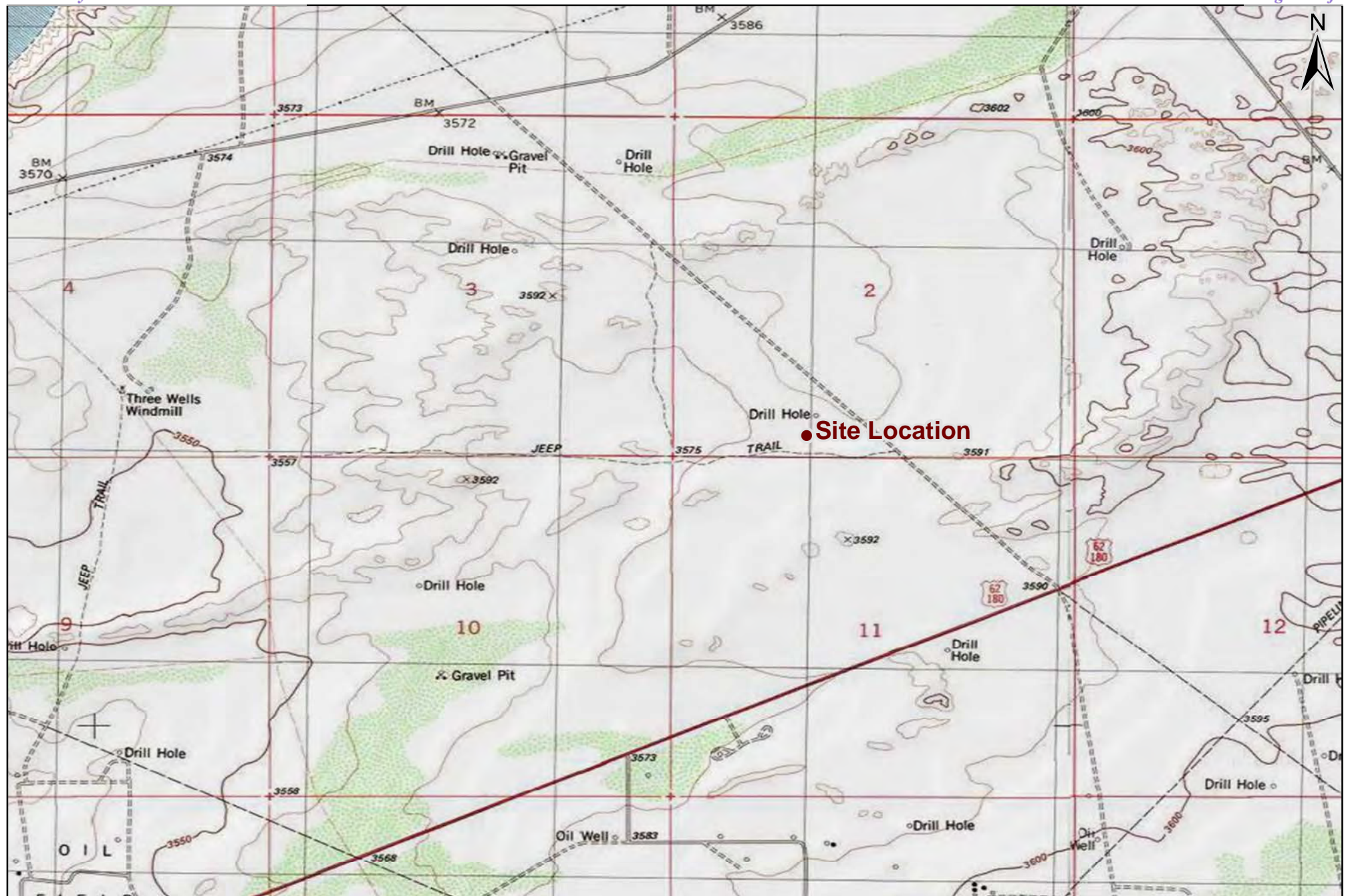
Appendix B: Photographs

Appendix C: Closure Criteria Justification

Appendix D: Laboratory Analytical Results

 8/21/2019  
Ben J. Arguijo  
Project Manager

# Figures



2,000 1,000 0 2,000  
 Distance in Feet

**Figure 1**  
**Site Location Map**  
 BTA Oil Producers, LLC  
 Gem 4,5,7,10 Battery, 8705 JV-P  
 Lea County, New Mexico  
 NMOCD Reference #: 1RP-5309



Trinity Oilfield Services & Rentals, LLC  
 P.O. Box 2587  
 Hobbs, NM 88241

Drawn By: BJA	Checked By: JEH
March 26, 2019	Scale: 1" = 2,000'



**Legend**

Proposed Excavation Depths

- 2' bgs
  2' - 4' bgs
  4' bgs
- Delineation Trench
  Proposed Liner
  Auger Hole

**Figure 2**  
**Site Plan**  
**BTA Oil Producers, LLC**  
**Gem 4,5,7,10 Battery**  
**Lea County, New Mexico**  
**NMOCD Reference #: 1RP-5309**



Trinity Oilfield Services & Rentals, LLC  
 P.O. Box 2587  
 Hobbs, NM 88241

Drawn By: BJA	Checked By: JEH
August 21, 2019	Scale: 1" = 18'

# Tables

TABLE 1  
CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL

BTA OIL PRODUCERS, LLC  
GEM 4,5,7,10 BATTERY, 8705 JV-P  
LEA COUNTY, NEW MEXICO  
NMOCD REFERENCE #: 1RP-5309



SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	EPA SW-846 Method 8021B					EPA SW-846 Method 8015M					EPA 300
				BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	TOTAL XYLENES (mg/kg)	TOTAL BTEX (mg/kg)	GRO C6-C12 (mg/kg)	DRO C12-C28 (mg/kg)	GRO+ DRO (mg/kg)	MRO C28-C35 (mg/kg)	TPH C6-C35 (mg/kg)	CHLORIDE (mg/kg)
NMOCD Closure Limit (mg/kg)				10	NE	NE	NE	50	NE	NE	1,000	NE	2,500	20,000
SP-1	6"	2/15/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	256
SP-2	6"	2/15/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	112	112	85.5	198	192
SP-3	6"	2/15/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	96.0
SP-4 @ 4.5'	4.5'	2/15/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	8,000
SP-4 @ 6'	6'	2/15/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	15,600
SP-4 @ 7'	7'	4/2/2019	In-Situ	-	-	-	-	-	-	-	-	-	-	1,280
SP-4 @ 8'	8'	4/2/2019	In-Situ	-	-	-	-	-	-	-	-	-	-	7,760
SP-4 @ 10'	10'	4/2/2019	In-Situ	-	-	-	-	-	-	-	-	-	-	6,480
SP-4 @ 13'	13'	4/2/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	7,760
SP-5	6"	2/15/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	17,400
SP-5 @ 2'	2'	3/8/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	27,600
SP-5 @ 6'	6'	3/8/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	26,400
SP-6	6"	2/15/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SP-7	6"	2/15/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	288
SP-8 @ 4'	4'	2/18/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	2,960
SP-8 @ 13'	13'	2/18/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	2,120
SP-8 @ 14'	14'	4/2/2019	In-Situ	-	-	-	-	-	-	-	-	-	-	2,360
SP-8 @ 16'	16'	4/2/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	880
SP-9	6"	2/15/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	21,600
SP-9 @ 2'	2'	3/8/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	34,000
SP-9 @ 5.5'	5.5'	3/8/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	3,200
SP-10	6"	2/15/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	25,200
SP-10 @ 4'	4'	3/8/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	6,080
SP-10 @ 6'	6'	3/8/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	7,200
SP-11	6"	2/15/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	2,240
SP-11 @ 2.5'	2.5'	3/8/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	5,760
SP-11 @ 6'	6'	3/8/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	97.6	97.6	<10.0	97.6	4,320

NE = Not established

- = Not analyzed

Concentrations in **BOLD** exceed the NMOCD Closure Limit



TABLE 1  
CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL

BTA OIL PRODUCERS, LLC  
GEM 4,5,7,10 BATTERY, 8705 JV-P  
LEA COUNTY, NEW MEXICO  
NMOCD REFERENCE #: 1RP-5309



SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	EPA SW-846 Method 8021B					EPA SW-846 Method 8015M					EPA 300
				BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	TOTAL XYLENES (mg/kg)	TOTAL BTEX (mg/kg)	GRO C6-C12 (mg/kg)	DRO C12-C28 (mg/kg)	GRO+ DRO (mg/kg)	MRO C28-C35 (mg/kg)	TPH C6-C35 (mg/kg)	CHLORIDE (mg/kg)
NMOCD Closure Limit (mg/kg)				10	NE	NE	NE	50	NE	NE	1,000	NE	2,500	20,000
SP-12	6"	2/15/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,470
SP-13	6"	2/15/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	4,800
SP-14	6"	2/15/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	2,320

NE = Not established

- = Not analyzed

Concentrations in **BOLD** exceed the NMOCD Closure Limit

**TABLE 2**  
**FIELD TESTS**

**BTA OIL PRODUCERS, LLC**  
**GEM 4,5,7,10 BATTERY, 8705 JV-P**  
**LEA COUNTY, NEW MEXICO**  
**NMOCD REFERENCE #: 1RP-5309**



SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	HACH QUANTAB
				CHLORIDE (mg/Kg)
NMOCD Closure Limit (mg/kg)				20,000
SP-1 @ 6"	6"	2/15/2019	In-Situ	292
SP-2 @ 6"	6"	2/15/2019	In-Situ	228
SP-3 @ 6"	6"	2/15/2019	In-Situ	168
SP-4 @ 2.5'	2.5'	2/15/2019	In-Situ	3,408
SP-4 @ 4.5'	4.5'	2/15/2019	In-Situ	6,076
SP-4 @ 6'	6'	2/15/2019	In-Situ	10,884
SP-5 @ 6"	6"	2/15/2019	In-Situ	11,888
SP-5 @ 2'	2'	3/8/2019	In-Situ	14,080
SP-5 @ 3'	3'	3/8/2019	In-Situ	12,736
SP-5 @ 4'	4'	3/8/2019	In-Situ	6,256
SP-5 @ 5'	5'	3/8/2019	In-Situ	15,636
SP-5 @ 6'	6'	3/8/2019	In-Situ	10,524
SP-6 @ 6"	6"	2/15/2019	In-Situ	<128
SP-7 @ 6"	6"	2/15/2019	In-Situ	292
SP-8 @ 6"	6"	2/15/2019	In-Situ	1,156
SP-8 @ 1'	1'	2/15/2019	In-Situ	1,240
SP-8 @ 2'	2'	2/15/2019	In-Situ	1,156
SP-9 @ 6"	6"	2/15/2019	In-Situ	19,276
SP-9 @ 2'	2'	3/8/2019	In-Situ	15,636
SP-9 @ 4'	4'	3/8/2019	In-Situ	11,560
SP-9 @ 5.5'	5.5'	3/8/2019	In-Situ	1,432
SP-10 @ 6"	6"	2/15/2019	In-Situ	17,376
SP-10 @ 2'	2'	3/8/2019	In-Situ	3,824
SP-10 @ 4'	4'	3/8/2019	In-Situ	7,396
SP-10 @ 6'	6'	3/8/2019	In-Situ	6,256
SP-11 @ 6"	6"	2/15/2019	In-Situ	1,924
SP-11 @ 2'	2'	3/8/2019	In-Situ	3,824
SP-11 @ 4'	4'	3/8/2019	In-Situ	2,500
SP-11 @ 6'	6'	3/8/2019	In-Situ	2,428
SP-12 @ 6"	6"	2/15/2019	In-Situ	1,332
SP-13 @ 6"	6"	2/15/2019	In-Situ	4,348
SP-14 @ 6"	6"	2/15/2019	In-Situ	1,924

# Appendices

# **Appendix A**

## **Release Notification & Corrective Action (Form C-141)**

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

State of New Mexico  
Energy Minerals and Natural  
Resources Department

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

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

Incident ID	NCH1903263128
District RP	1RP-5309
Facility ID	
Application ID	pCH1903263832

## Release Notification

### Responsible Party

Responsible Party: BTA Oil Producers, LLC	OGRID: 260297
Contact Name: Bob Hall	Contact Telephone: 432-682-3753
Contact email: bhall@btaoil.com	Incident # NCH1903263128 GEM 4, 5, 7, 10 BATTERY, 8705 JV-P @ 30-025-31209
Contact mailing address: 104 S. Pecos St., Midland, TX 79701	

### Location of Release Source

Latitude: 32.59584° Longitude: -103.63667°

(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Gem 4, 5, 7, 10 Battery, 8705 JV-P	Site Type: Tank Battery
Date Release Discovered: 12/7/2018	API# (if applicable) Nearest well: Gem #4 API #30-025-31209

Unit Letter	Section	Township	Range	County
N	2	20S	33E	Lea

Surface Owner: ☒ State ☐ Federal ☐ Tribal ☐ Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 6 BBL	Volume Recovered (bbls) 1 BBL
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

#### Cause of Release

Failure at a 45 degree connection in a 2-7/8" flowline leaving the Gem 4, 5, 7, 10 Battery, 8705 JV-P that connects to the SWD well.


State of New Mexico  
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

**Initial Response**

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
If all the actions described above have <u>not</u> been undertaken, explain why:
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.
Printed Name: Bob Hall Title: Environmental Manager
Signature:  Date: 12/18/2018
email: bhall@btaoil.com Telephone: 432-682-3753
<b>OCD Only</b> Received by: <b>RECEIVED</b> <b>By CHernandez at 5:27 pm, Feb 01, 2019</b>

# **Appendix B**

# **Photographs**



**BTA Oil Producers, LLC – Gem 4,5,7,10 Battery, 8705 JV-P**  
Unit Letter “N” (SE/SW), Section 2, Township 20S, Range 33E



Release (Looking South-Southwest)



Release (Looking Southwest)



**BTA Oil Producers, LLC – Gem 4,5,7,10 Battery, 8705 JV-P**

Unit Letter "N" (SE/SW), Section 2, Township 20S, Range 33E



Release Site (Looking North)



Release site (Looking Northeast)



**BTA Oil Producers, LLC – Gem 4,5,7,10 Battery, 8705 JV-P**

Unit Letter "N" (SE/SW), Section 2, Township 20S, Range 33E



Release Site (Looking East-Northeast)



Release Site (Looking West-Northwest)

# **Appendix C**

## **Closure Criteria Justification**

**TABLE 3  
CLOSURE CRITERIA JUSTIFICATION**

**BTA OIL PRODUCERS, LLC  
GEM 4,5,7,10 BATTERY, 8705 JV-P  
LEA COUNTY, NEW MEXICO  
NMOCD REF. #: 1RP-5309**

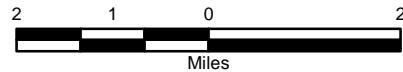
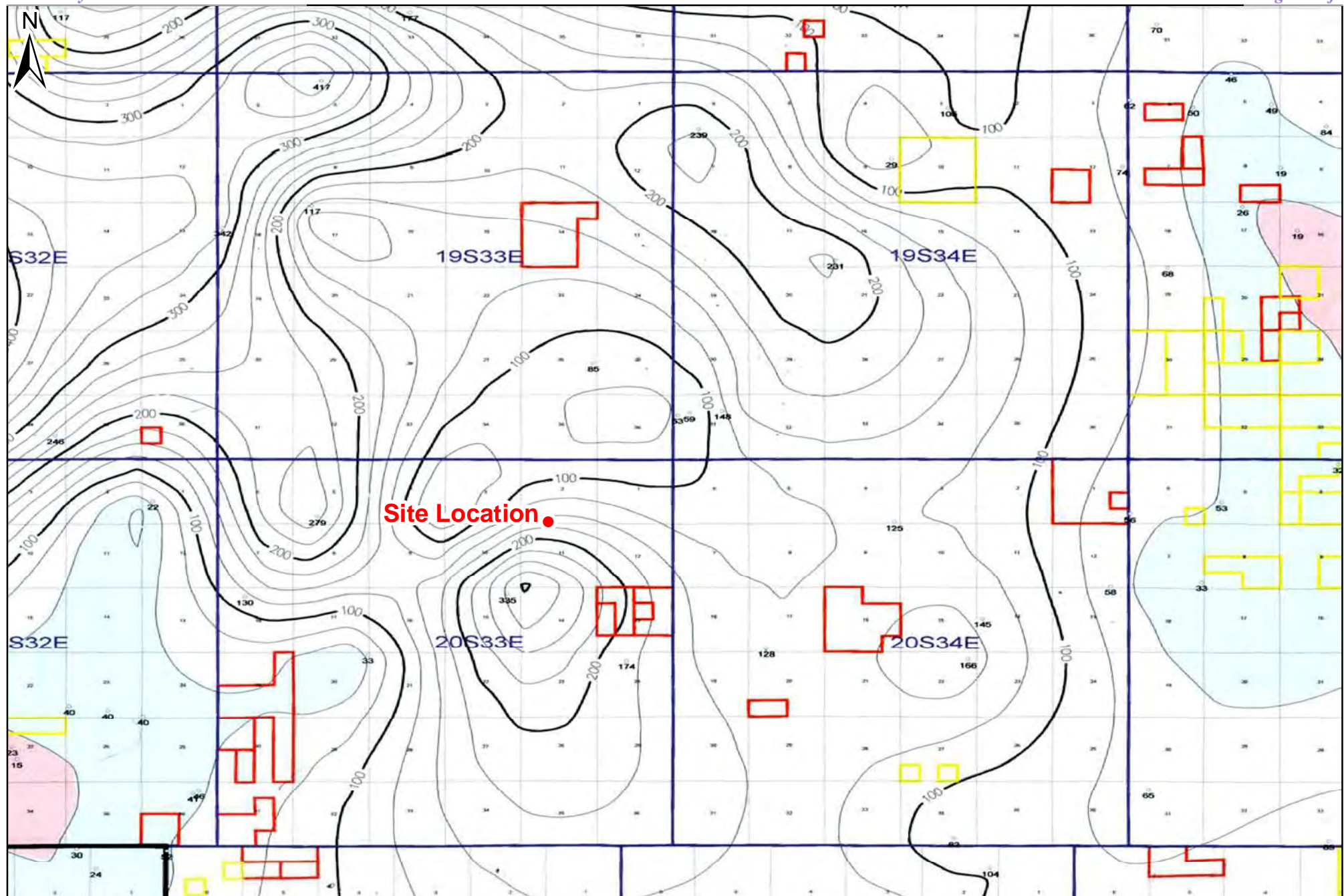


Groundwater, Water Wells & Other Water Sources	
Depth to groundwater (ft)?	160-165
Horizontal distance (ft) from all water sources within 0.5 miles?	N/A
Within 500' of a spring or a private, domestic fresh water well used by less than 5 households for domestic or stock watering purposes?	No
Within 1000' of any fresh water well or spring?	No
Surface Water	
Horizontal distance (ft) to nearest significant watercourse?	>1,000
Within 300' of any continuously flowing watercourse or any other significant watercourse?	No
Within 200' of any lakebed, sinkhole or playa lake?	No
Human-Occupied, Environmental & Other Areas	
Within incorporated municipal boundaries or within a defined municipal fresh water well field?	No
Within 300' of an occupied permanent residence, school, hospital, institution or church?	No
Within 300' of a wetland?	No
Within the area overlying a subsurface mine?	No
Within an unstable area?	No
Within a 100-year floodplain?	No

Closure Criteria (mg/kg)*				
Benzene	BTEX	GRO + DRO	TPH	Chloride
10	50	1,000	2,500	20,000

\*Numerical limits or natural background level, whichever is greater





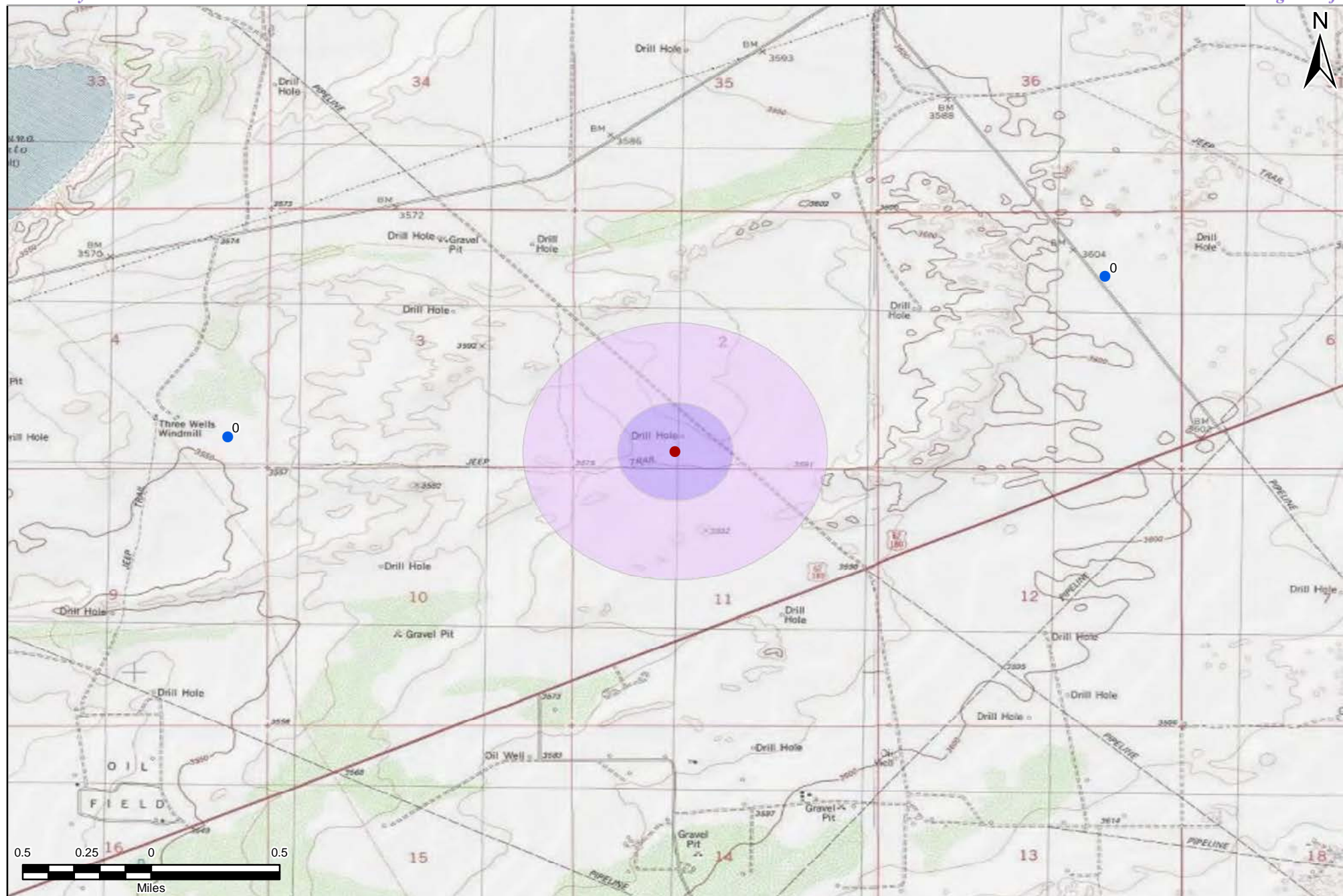
**Figure 3**  
**Depth-to-Groundwater Trend Map**  
 BTA Oil Producers, LLC  
 Gem 4,5,7,10 Battery, 8705 JV-P  
 Lea County, New Mexico  
 NMOCD Reference #: 1RP-5309



Trinity Oilfield Services & Rentals, LLC  
 P.O. Box 2587  
 Hobbs, NM 88241

Drawn By: BJA	Checked By: JEH
March 26, 2019	Scale: 1" = 2mi





**Legend**

	1,000-ft Radius		Site Location
	0.5-mi Radius		NMOSE Depth to Water

**Figure 4**  
**Vicinity & Wellhead Protection Area Map**  
**BTA Oil Producers, LLC**  
**Gem 4,5,7,10 Battery, 8705 JV-P**  
**Lea County, New Mexico**  
**NMOCD Reference #: 1RP-5309**



Trinity Oilfield Services & Rentals, LLC  
P.O. Box 2587  
Hobbs, NM 88241

Drawn By: BJA	Checked By: JEH
March 26, 2019	Scale: 1" = 0.5mi



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

---

No records found.

### UTMNAD83 Radius Search (in meters):

**Easting (X):** 627939.18

**Northing (Y):** 3607303.25

**Radius:** 1610  
(1 mile)

---

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

---

2/15/19 5:23 PM

Page 1 of 1

WATER COLUMN/ AVERAGE  
DEPTH TO WATER

# **Appendix D**

## **Laboratory Analytical Reports**



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

---

February 28, 2019

BEN ARGUIJO

TRINITY OILFIELD SERVICES & RENTALS, LLC

P. O. BOX 2587

HOBBS, NM 88241

RE: GEM 4,5,7,10 BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 02/21/19 16:40.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 02/21/2019  
 Reported: 02/28/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 02/15/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 1 (H900697-01)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2019	ND	1.91	95.3	2.00	4.32	
Toluene*	<0.050	0.050	02/27/2019	ND	2.10	105	2.00	2.86	
Ethylbenzene*	<0.050	0.050	02/27/2019	ND	2.25	113	2.00	5.16	
Total Xylenes*	<0.150	0.150	02/27/2019	ND	6.43	107	6.00	4.22	
Total BTEX	<0.300	0.300	02/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 114 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	256	16.0	02/25/2019	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	02/23/2019	ND	191	95.3	200	1.12	
DRO >C10-C28*	<10.0	10.0	02/23/2019	ND	228	114	200	13.6	
EXT DRO >C28-C36	<10.0	10.0	02/23/2019	ND					

Surrogate: 1-Chlorooctane 95.2 % 41-142

Surrogate: 1-Chlorooctadecane 99.9 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 02/21/2019  
 Reported: 02/28/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 02/15/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 2 (H900697-02)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2019	ND	1.91	95.3	2.00	4.32	
Toluene*	<0.050	0.050	02/27/2019	ND	2.10	105	2.00	2.86	
Ethylbenzene*	<0.050	0.050	02/27/2019	ND	2.25	113	2.00	5.16	
Total Xylenes*	<0.150	0.150	02/27/2019	ND	6.43	107	6.00	4.22	
Total BTEX	<0.300	0.300	02/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	02/25/2019	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	02/25/2019	ND	218	109	200	6.25	
DRO >C10-C28*	112	10.0	02/25/2019	ND	237	119	200	1.72	
EXT DRO >C28-C36	85.5	10.0	02/25/2019	ND					

Surrogate: 1-Chlorooctane 81.5 % 41-142

Surrogate: 1-Chlorooctadecane 94.6 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 02/21/2019  
 Reported: 02/28/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 02/15/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 3 (H900697-03)**

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	02/27/2019	ND	1.91	95.3	2.00	4.32	
Toluene*	<0.050	0.050	02/27/2019	ND	2.10	105	2.00	2.86	
Ethylbenzene*	<0.050	0.050	02/27/2019	ND	2.25	113	2.00	5.16	
Total Xylenes*	<0.150	0.150	02/27/2019	ND	6.43	107	6.00	4.22	
Total BTEx	<0.300	0.300	02/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	96.0	16.0	02/25/2019	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	02/25/2019	ND	218	109	200	6.25	
DRO >C10-C28*	<10.0	10.0	02/25/2019	ND	237	119	200	1.72	
EXT DRO >C28-C36	<10.0	10.0	02/25/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 106 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 02/21/2019  
 Reported: 02/28/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 02/15/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 4 @ 4.5' (H900697-04)**

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/27/2019	ND	1.91	95.3	2.00	4.32		
Toluene*	<0.050	0.050	02/27/2019	ND	2.10	105	2.00	2.86		
Ethylbenzene*	<0.050	0.050	02/27/2019	ND	2.25	113	2.00	5.16		
Total Xylenes*	<0.150	0.150	02/27/2019	ND	6.43	107	6.00	4.22		
Total BTX	<0.300	0.300	02/27/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	8000	16.0	02/25/2019	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	02/25/2019	ND	218	109	200	6.25	
DRO >C10-C28*	<10.0	10.0	02/25/2019	ND	237	119	200	1.72	
EXT DRO >C28-C36	<10.0	10.0	02/25/2019	ND					

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 105 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 02/21/2019  
 Reported: 02/28/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 02/15/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 4 @ 6' (H900697-05)**

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/27/2019	ND	1.91	95.3	2.00	4.32		
Toluene*	<0.050	0.050	02/27/2019	ND	2.10	105	2.00	2.86		
Ethylbenzene*	<0.050	0.050	02/27/2019	ND	2.25	113	2.00	5.16		
Total Xylenes*	<0.150	0.150	02/27/2019	ND	6.43	107	6.00	4.22		
Total BTEx	<0.300	0.300	02/27/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	15600	16.0	02/25/2019	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	02/25/2019	ND	218	109	200	6.25	
DRO >C10-C28*	<10.0	10.0	02/25/2019	ND	237	119	200	1.72	
EXT DRO >C28-C36	<10.0	10.0	02/25/2019	ND					

Surrogate: 1-Chlorooctane 99.9 % 41-142

Surrogate: 1-Chlorooctadecane 105 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 02/21/2019  
 Reported: 02/28/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 02/15/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 5 (H900697-06)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2019	ND	1.91	95.3	2.00	4.32	
Toluene*	<0.050	0.050	02/27/2019	ND	2.10	105	2.00	2.86	
Ethylbenzene*	<0.050	0.050	02/27/2019	ND	2.25	113	2.00	5.16	
Total Xylenes*	<0.150	0.150	02/27/2019	ND	6.43	107	6.00	4.22	
Total BTEx	<0.300	0.300	02/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	17400	16.0	02/25/2019	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	02/25/2019	ND	218	109	200	6.25	
DRO >C10-C28*	<10.0	10.0	02/25/2019	ND	237	119	200	1.72	
EXT DRO >C28-C36	<10.0	10.0	02/25/2019	ND					

Surrogate: 1-Chlorooctane 95.7 % 41-142

Surrogate: 1-Chlorooctadecane 99.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 02/21/2019  
 Reported: 02/28/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 02/15/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 6 (H900697-07)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2019	ND	1.91	95.3	2.00	4.32	
Toluene*	<0.050	0.050	02/27/2019	ND	2.10	105	2.00	2.86	
Ethylbenzene*	<0.050	0.050	02/27/2019	ND	2.25	113	2.00	5.16	
Total Xylenes*	<0.150	0.150	02/27/2019	ND	6.43	107	6.00	4.22	
Total BTEX	<0.300	0.300	02/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	02/25/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/25/2019	ND	218	109	200	6.25	
DRO >C10-C28*	<10.0	10.0	02/25/2019	ND	237	119	200	1.72	
EXT DRO >C28-C36	<10.0	10.0	02/25/2019	ND					

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 105 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 02/21/2019  
 Reported: 02/28/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 02/15/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 7 (H900697-08)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2019	ND	1.91	95.3	2.00	4.32	
Toluene*	<0.050	0.050	02/27/2019	ND	2.10	105	2.00	2.86	
Ethylbenzene*	<0.050	0.050	02/27/2019	ND	2.25	113	2.00	5.16	
Total Xylenes*	<0.150	0.150	02/27/2019	ND	6.43	107	6.00	4.22	
Total BTEX	<0.300	0.300	02/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	02/25/2019	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/25/2019	ND	218	109	200	6.25	
DRO >C10-C28*	<10.0	10.0	02/25/2019	ND	237	119	200	1.72	
EXT DRO >C28-C36	<10.0	10.0	02/25/2019	ND					

Surrogate: 1-Chlorooctane 103 % 41-142

Surrogate: 1-Chlorooctadecane 106 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 02/21/2019  
 Reported: 02/28/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 02/18/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 8 @ 4' (H900697-09)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2019	ND	1.91	95.3	2.00	4.32	
Toluene*	<0.050	0.050	02/27/2019	ND	2.10	105	2.00	2.86	
Ethylbenzene*	<0.050	0.050	02/27/2019	ND	2.25	113	2.00	5.16	
Total Xylenes*	<0.150	0.150	02/27/2019	ND	6.43	107	6.00	4.22	
Total BTEx	<0.300	0.300	02/27/2019	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2960	16.0	02/25/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/25/2019	ND	218	109	200	6.25	
DRO >C10-C28*	<10.0	10.0	02/25/2019	ND	237	119	200	1.72	
EXT DRO >C28-C36	<10.0	10.0	02/25/2019	ND					

Surrogate: 1-Chlorooctane 95.1 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 02/21/2019  
 Reported: 02/28/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 02/18/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 8 @ 13' (H900697-10)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2019	ND	1.91	95.3	2.00	4.32	
Toluene*	<0.050	0.050	02/27/2019	ND	2.10	105	2.00	2.86	
Ethylbenzene*	<0.050	0.050	02/27/2019	ND	2.25	113	2.00	5.16	
Total Xylenes*	<0.150	0.150	02/27/2019	ND	6.43	107	6.00	4.22	
Total BTEX	<0.300	0.300	02/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2120	16.0	02/25/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/25/2019	ND	218	109	200	6.25	
DRO >C10-C28*	<10.0	10.0	02/25/2019	ND	237	119	200	1.72	
EXT DRO >C28-C36	<10.0	10.0	02/25/2019	ND					

Surrogate: 1-Chlorooctane 105 % 41-142

Surrogate: 1-Chlorooctadecane 112 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 02/21/2019  
 Reported: 02/28/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 02/15/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 9 (H900697-11)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2019	ND	1.91	95.3	2.00	4.32	
Toluene*	<0.050	0.050	02/27/2019	ND	2.10	105	2.00	2.86	
Ethylbenzene*	<0.050	0.050	02/27/2019	ND	2.25	113	2.00	5.16	
Total Xylenes*	<0.150	0.150	02/27/2019	ND	6.43	107	6.00	4.22	
Total BTEX	<0.300	0.300	02/27/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 113 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	21600	16.0	02/25/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/25/2019	ND	218	109	200	6.25	
DRO >C10-C28*	<10.0	10.0	02/25/2019	ND	237	119	200	1.72	
EXT DRO >C28-C36	<10.0	10.0	02/25/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 113 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 02/21/2019  
 Reported: 02/28/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 02/15/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 10 (H900697-12)**

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	02/26/2019	ND	1.94	97.0	2.00	2.34	
Toluene*	<0.050	0.050	02/26/2019	ND	2.15	108	2.00	1.81	
Ethylbenzene*	<0.050	0.050	02/26/2019	ND	2.20	110	2.00	2.27	
Total Xylenes*	<0.150	0.150	02/26/2019	ND	6.35	106	6.00	2.82	
Total BTEX	<0.300	0.300	02/26/2019	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	25200	16.0	02/25/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/25/2019	ND	218	109	200	6.25	
DRO >C10-C28*	<10.0	10.0	02/25/2019	ND	237	119	200	1.72	
EXT DRO >C28-C36	<10.0	10.0	02/25/2019	ND					

Surrogate: 1-Chlorooctane 105 % 41-142

Surrogate: 1-Chlorooctadecane 113 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 02/21/2019  
 Reported: 02/28/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 02/15/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 11 (H900697-13)**

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	02/26/2019	ND	1.94	97.0	2.00	2.34	
Toluene*	<0.050	0.050	02/26/2019	ND	2.15	108	2.00	1.81	
Ethylbenzene*	<0.050	0.050	02/26/2019	ND	2.20	110	2.00	2.27	
Total Xylenes*	<0.150	0.150	02/26/2019	ND	6.35	106	6.00	2.82	
Total BTX	<0.300	0.300	02/26/2019	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2240	16.0	02/25/2019	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/25/2019	ND	218	109	200	6.25	
DRO >C10-C28*	<10.0	10.0	02/25/2019	ND	237	119	200	1.72	
EXT DRO >C28-C36	<10.0	10.0	02/25/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 110 % 37.6-147

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\*=Accredited Analyte

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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 02/21/2019  
 Reported: 02/28/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 02/15/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 12 (H900697-14)**

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	02/26/2019	ND	1.94	97.0	2.00	2.34		
Toluene*	<0.050	0.050	02/26/2019	ND	2.15	108	2.00	1.81		
Ethylbenzene*	<0.050	0.050	02/26/2019	ND	2.20	110	2.00	2.27		
Total Xylenes*	<0.150	0.150	02/26/2019	ND	6.35	106	6.00	2.82		
Total BTEx	<0.300	0.300	02/26/2019	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1470	16.0	02/25/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/25/2019	ND	218	109	200	6.25	
DRO >C10-C28*	<10.0	10.0	02/25/2019	ND	237	119	200	1.72	
EXT DRO >C28-C36	<10.0	10.0	02/25/2019	ND					

Surrogate: 1-Chlorooctane 107 % 41-142

Surrogate: 1-Chlorooctadecane 112 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 02/21/2019  
 Reported: 02/28/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 02/15/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 13 (H900697-15)**

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	02/26/2019	ND	1.94	97.0	2.00	2.34	
Toluene*	<0.050	0.050	02/26/2019	ND	2.15	108	2.00	1.81	
Ethylbenzene*	<0.050	0.050	02/26/2019	ND	2.20	110	2.00	2.27	
Total Xylenes*	<0.150	0.150	02/26/2019	ND	6.35	106	6.00	2.82	
Total BTEX	<0.300	0.300	02/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.7 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4800	16.0	02/25/2019	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/25/2019	ND	218	109	200	6.25	
DRO >C10-C28*	<10.0	10.0	02/25/2019	ND	237	119	200	1.72	
EXT DRO >C28-C36	<10.0	10.0	02/25/2019	ND					

Surrogate: 1-Chlorooctane 105 % 41-142

Surrogate: 1-Chlorooctadecane 112 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 02/21/2019  
 Reported: 02/28/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 02/15/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 14 (H900697-16)**

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	02/26/2019	ND	1.94	97.0	2.00	2.34		
Toluene*	<0.050	0.050	02/26/2019	ND	2.15	108	2.00	1.81		
Ethylbenzene*	<0.050	0.050	02/26/2019	ND	2.20	110	2.00	2.27		
Total Xylenes*	<0.150	0.150	02/26/2019	ND	6.35	106	6.00	2.82		
Total BTEx	<0.300	0.300	02/26/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.6 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2320	16.0	02/25/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/25/2019	ND	218	109	200	6.25	
DRO >C10-C28*	<10.0	10.0	02/25/2019	ND	237	119	200	1.72	
EXT DRO >C28-C36	<10.0	10.0	02/25/2019	ND					

Surrogate: 1-Chlorooctane 106 % 41-142

Surrogate: 1-Chlorooctadecane 113 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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### 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", is written over a horizontal line.

Celey D. Keene, Lab Director/Quality Manager

**ARDINAL LABORATORIES**

101 East Marland, Hobbs, NM 88240

(575) 393-2326 FAX (575) 393-2476

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 2

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## • CARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240

**(575) 393-2326 FAX (575) 393-2476**

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 2 of 2

[illegible]



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

---

March 15, 2019

BEN ARGUIJO

TRINITY OILFIELD SERVICES & RENTALS, LLC

P. O. BOX 2587

HOBBS, NM 88241

RE: GEM 4,5,7,10 BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 03/11/19 10:50.

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

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 03/11/2019  
 Reported: 03/15/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 03/08/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 5 @ 2' (H900958-01)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/13/2019	ND	2.12	106	2.00	0.322	
Toluene*	<0.050	0.050	03/13/2019	ND	1.93	96.4	2.00	1.65	
Ethylbenzene*	<0.050	0.050	03/13/2019	ND	2.06	103	2.00	1.32	
Total Xylenes*	<0.150	0.150	03/13/2019	ND	6.29	105	6.00	1.03	
Total BTEX	<0.300	0.300	03/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.2 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	27600	16.0	03/14/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/12/2019	ND	202	101	200	1.71	
DRO >C10-C28*	<10.0	10.0	03/12/2019	ND	205	102	200	2.37	
EXT DRO >C28-C36	<10.0	10.0	03/12/2019	ND					

Surrogate: 1-Chlorooctane 107 % 41-142

Surrogate: 1-Chlorooctadecane 110 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 03/11/2019  
 Reported: 03/15/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 03/08/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 5 @ 6' (H900958-02)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/13/2019	ND	2.12	106	2.00	0.322	
Toluene*	<0.050	0.050	03/13/2019	ND	1.93	96.4	2.00	1.65	
Ethylbenzene*	<0.050	0.050	03/13/2019	ND	2.06	103	2.00	1.32	
Total Xylenes*	<0.150	0.150	03/13/2019	ND	6.29	105	6.00	1.03	
Total BTEX	<0.300	0.300	03/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.4 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	26400	16.0	03/14/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/12/2019	ND	202	101	200	1.71	
DRO >C10-C28*	<10.0	10.0	03/12/2019	ND	205	102	200	2.37	
EXT DRO >C28-C36	<10.0	10.0	03/12/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 108 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 03/11/2019  
 Reported: 03/15/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 03/08/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 9 @ 2' (H900958-03)**

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	03/13/2019	ND	2.12	106	2.00	0.322	
Toluene*	<0.050	0.050	03/13/2019	ND	1.93	96.4	2.00	1.65	
Ethylbenzene*	<0.050	0.050	03/13/2019	ND	2.06	103	2.00	1.32	
Total Xylenes*	<0.150	0.150	03/13/2019	ND	6.29	105	6.00	1.03	
Total BTEX	<0.300	0.300	03/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.9 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	34000	16.0	03/14/2019	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/12/2019	ND	202	101	200	1.71	
DRO >C10-C28*	<10.0	10.0	03/12/2019	ND	205	102	200	2.37	
EXT DRO >C28-C36	<10.0	10.0	03/12/2019	ND					

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 106 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 03/11/2019  
 Reported: 03/15/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 03/08/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 9 @ 5.5' (H900958-04)**

BTEx 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/13/2019	ND	2.12	106	2.00	0.322		
Toluene*	<0.050	0.050	03/13/2019	ND	1.93	96.4	2.00	1.65		
Ethylbenzene*	<0.050	0.050	03/13/2019	ND	2.06	103	2.00	1.32		
Total Xylenes*	<0.150	0.150	03/13/2019	ND	6.29	105	6.00	1.03		
Total BTEx	<0.300	0.300	03/13/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.7 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3200	16.0	03/14/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/12/2019	ND	202	101	200	1.71	
DRO >C10-C28*	<10.0	10.0	03/12/2019	ND	205	102	200	2.37	
EXT DRO >C28-C36	<10.0	10.0	03/12/2019	ND					

Surrogate: 1-Chlorooctane 106 % 41-142

Surrogate: 1-Chlorooctadecane 111 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 03/11/2019  
 Reported: 03/15/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 03/08/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 10 @ 4' (H900958-05)**

BTEx 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/13/2019	ND	2.12	106	2.00	0.322	
Toluene*	<0.050	0.050	03/13/2019	ND	1.93	96.4	2.00	1.65	
Ethylbenzene*	<0.050	0.050	03/13/2019	ND	2.06	103	2.00	1.32	
Total Xylenes*	<0.150	0.150	03/13/2019	ND	6.29	105	6.00	1.03	
Total BTEX	<0.300	0.300	03/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.8 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	6080	16.0	03/14/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/12/2019	ND	202	101	200	1.71	
DRO >C10-C28*	<10.0	10.0	03/12/2019	ND	205	102	200	2.37	
EXT DRO >C28-C36	<10.0	10.0	03/12/2019	ND					

Surrogate: 1-Chlorooctane 103 % 41-142

Surrogate: 1-Chlorooctadecane 108 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 03/11/2019  
 Reported: 03/15/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 03/08/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 10 @ 6' (H900958-06)**

BTEx 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/13/2019	ND	2.12	106	2.00	0.322	
Toluene*	<0.050	0.050	03/13/2019	ND	1.93	96.4	2.00	1.65	
Ethylbenzene*	<0.050	0.050	03/13/2019	ND	2.06	103	2.00	1.32	
Total Xylenes*	<0.150	0.150	03/13/2019	ND	6.29	105	6.00	1.03	
Total BTEx	<0.300	0.300	03/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.2 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	7200	16.0	03/14/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/12/2019	ND	202	101	200	1.71	
DRO >C10-C28*	<10.0	10.0	03/12/2019	ND	205	102	200	2.37	
EXT DRO >C28-C36	<10.0	10.0	03/12/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 108 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 03/11/2019  
 Reported: 03/15/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 03/08/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 11 @ 2.5' (H900958-07)**

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/13/2019	ND	2.12	106	2.00	0.322		
Toluene*	<0.050	0.050	03/13/2019	ND	1.93	96.4	2.00	1.65		
Ethylbenzene*	<0.050	0.050	03/13/2019	ND	2.06	103	2.00	1.32		
Total Xylenes*	<0.150	0.150	03/13/2019	ND	6.29	105	6.00	1.03		
Total BTEX	<0.300	0.300	03/13/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.7 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5760	16.0	03/14/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/12/2019	ND	202	101	200	1.71	
DRO >C10-C28*	<10.0	10.0	03/12/2019	ND	205	102	200	2.37	
EXT DRO >C28-C36	<10.0	10.0	03/12/2019	ND					

Surrogate: 1-Chlorooctane 100 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 03/11/2019  
 Reported: 03/15/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 03/08/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 11 @ 6' (H900958-08)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/13/2019	ND	2.12	106	2.00	0.322	
Toluene*	<0.050	0.050	03/13/2019	ND	1.93	96.4	2.00	1.65	
Ethylbenzene*	<0.050	0.050	03/13/2019	ND	2.06	103	2.00	1.32	
Total Xylenes*	<0.150	0.150	03/13/2019	ND	6.29	105	6.00	1.03	
Total BTEX	<0.300	0.300	03/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 89.3 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4320	16.0	03/14/2019	ND	416	104	400	3.77	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	03/12/2019	ND	202	101	200	1.71	
DRO >C10-C28*	97.6	10.0	03/12/2019	ND	205	102	200	2.37	
EXT DRO >C28-C36	<10.0	10.0	03/12/2019	ND					

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 106 % 37.6-147

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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

Cardinal Laboratories

\*=Accredited Analyte

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

Caley D. Keene, Lab Director/Quality Manager



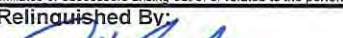
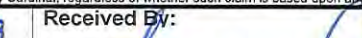

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

(575) 393-2326 FAX (575) 393-2476

[illegible]

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Relinquished By: 		Date: 3-11-19	Received By: 		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:
Relinquished By:		Time: 10:50	Received By:		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Fax #:
Relinquished By:		Date:	Received By:		REMARKS:
Relinquished By:		Time:	Received By:		
Delivered By: (Circle One) Sampler - UPS - Bus - Other:			Sample Condition Cool Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	CHECKED BY: (Initials) 	

4.4 e #97

Please e-mail results to [ben@trinityoilfieldservices.com](mailto:ben@trinityoilfieldservices.com)

FORM-006  
Revision 1.0

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476



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

---

April 12, 2019

BEN ARGUIJO

TRINITY OILFIELD SERVICES & RENTALS, LLC

P. O. BOX 2587

HOBBS, NM 88241

RE: GEM 4,5,7,10 BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 04/10/19 9:07.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 04/10/2019  
 Reported: 04/12/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 04/02/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 4 @ 7' (H901298-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1280	16.0	04/11/2019	ND	400	100	400	3.92	

**Sample ID: SP - 4 @ 8' (H901298-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	7760	16.0	04/11/2019	ND	400	100	400	3.92	

**Sample ID: SP - 4 @ 10' (H901298-03)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6480	16.0	04/11/2019	ND	400	100	400	3.92	

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 04/10/2019  
 Reported: 04/12/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 04/02/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 4 @ 13' (H901298-04)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/10/2019	ND	1.93	96.4	2.00	7.46	
Toluene*	<0.050	0.050	04/10/2019	ND	1.97	98.4	2.00	8.17	
Ethylbenzene*	<0.050	0.050	04/10/2019	ND	1.98	99.1	2.00	9.97	
Total Xylenes*	<0.150	0.150	04/10/2019	ND	5.86	97.6	6.00	10.1	
Total BTEX	<0.300	0.300	04/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.8 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	7760	16.0	04/11/2019	ND	400	100	400	3.92		

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	04/10/2019	ND	209	104	200	0.845	
DRO >C10-C28*	<10.0	10.0	04/10/2019	ND	194	97.2	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	04/10/2019	ND					

Surrogate: 1-Chlorooctane 96.7 % 41-142

Surrogate: 1-Chlorooctadecane 92.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 04/10/2019  
 Reported: 04/12/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 04/03/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 8 @ 14' (H901298-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2360	16.0	04/11/2019	ND	400	100	400	3.92	

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TRINITY OILFIELD SERVICES & RENTALS, LLC  
 BEN ARGUIJO  
 P. O. BOX 2587  
 HOBBS NM, 88241  
 Fax To: NONE

Received: 04/10/2019  
 Reported: 04/12/2019  
 Project Name: GEM 4,5,7,10 BATTERY  
 Project Number: NONE GIVEN  
 Project Location: BTA - LEA CO NM

Sampling Date: 04/03/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SP - 8 @ 16' (H901298-06)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/10/2019	ND	1.93	96.4	2.00	7.46	
Toluene*	<0.050	0.050	04/10/2019	ND	1.97	98.4	2.00	8.17	
Ethylbenzene*	<0.050	0.050	04/10/2019	ND	1.98	99.1	2.00	9.97	
Total Xylenes*	<0.150	0.150	04/10/2019	ND	5.86	97.6	6.00	10.1	
Total BTEX	<0.300	0.300	04/10/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 90.7 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	880	16.0	04/11/2019	ND	400	100	400	3.92	

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	04/10/2019	ND	209	104	200	0.845	
DRO >C10-C28*	<10.0	10.0	04/10/2019	ND	194	97.2	200	3.96	
EXT DRO >C28-C36	<10.0	10.0	04/10/2019	ND					

Surrogate: 1-Chlorooctane 91.8 % 41-142

Surrogate: 1-Chlorooctadecane 89.6 % 37.6-147

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

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### Notes and Definitions

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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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\*=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





## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

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Relinquished By: <i>Daniel Raster</i>		Date: <i>04/10/19</i>	Received By: <i>[Signature]</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
		Time: <i>9:07</i>		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By: <i>Felix Palmero</i>		Date: <i>4/10/19</i>	Received By: <i>[Signature]</i>	REMARKS:	
		Time: <i>9:07</i>			
Delivered By: (Circle One)			Sample Condition	CHECKED BY:	
Sampler - UPS - Bus - Other:			Cool Intact	(Initials)	
<i>4.92 #97</i>			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<i>TO</i>	
			<input type="checkbox"/> No <input type="checkbox"/> No		

Please e-mail results to [ben@trinityoilfieldservices.com](mailto:ben@trinityoilfieldservices.com)

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476

Released to Imaging: 7/7/2023 3:02:31 PM



APPENDIX C

Form C-141

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

State of New Mexico  
Energy Minerals and Natural  
Resources Department

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

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

Incident ID	NCH1903263128
District RP	1RP-5309
Facility ID	
Application ID	pCH1903263832

## Release Notification

### Responsible Party

Responsible Party: BTA Oil Producers, LLC	OGRID: 260297
Contact Name: Bob Hall	Contact Telephone: 432-682-3753
Contact email: bhall@btaoil.com	Incident # NCH1903263128 GEM 4, 5, 7, 10 BATTERY, 8705 JV-P @ 30-025-31209
Contact mailing address: 104 S. Pecos St., Midland, TX 79701	

### Location of Release Source

Latitude: 32.59584° Longitude: -103.63667°

(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Gem 4, 5, 7, 10 Battery, 8705 JV-P	Site Type: Tank Battery
Date Release Discovered: 12/7/2018	API# (if applicable) Nearest well: Gem #4 API #30-025-31209

Unit Letter	Section	Township	Range	County
N	2	20S	33E	Lea

Surface Owner: ☒ State ☐ Federal ☐ Tribal ☐ Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 6 BBL	Volume Recovered (bbls) 1 BBL
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

#### Cause of Release

Failure at a 45 degree connection in a 2-7/8" flowline leaving the Gem 4, 5, 7, 10 Battery, 8705 JV-P that connects to the SWD well.


State of New Mexico  
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

**Initial Response**

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
If all the actions described above have <u>not</u> been undertaken, explain why:
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.
Printed Name: <b>Bob Hall</b> Title: <b>Environmental Manager</b>  Signature:  Date: <b>12/18/2018</b>  email: <b>bhall@btaoil.com</b> Telephone: <b>432-682-3753</b>
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <b>OCD Only</b>             Received by:         </div> <div style="border: 2px solid blue; padding: 5px; background-color: #e6f2ff;"> <b>RECEIVED</b>  <b>By CHernandez at 5:27 pm, Feb 01, 2019</b> </div> </div>



Incident ID	nCH1903263128
District RP	1RP-5309
Facility ID	
Application ID	pCH1903263832

## Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>&gt;105</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

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

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



Form C-141

Page 4

State of New Mexico  
Oil Conservation Division

Incident ID	nCH1903263128
District RP	1RP-5309
Facility ID	
Application ID	pCH1903263832

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

Printed Name: Kelton BeairdTitle: Environmental ManagerSignature: Date: 6-9-23email: kbeaird@btaoil.comTelephone: 432-312-2203**OCD Only**Received by: Jocelyn HarimonDate: 06/09/2023

Form C-141

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State of New Mexico  
Oil Conservation Division

Incident ID	nCH1903263128
District RP	1RP-5309
Facility ID	
Application ID	pCH1903263832

## Remediation Plan

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

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

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

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

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

Printed Name: Kelton BeardTitle: Environmental ManagerSignature: Date: 6-9-23email: kbeaird@btaoil.comTelephone: 432-312-2203**OCD Only**Received by: Jocelyn Harimon Date: 06/09/2023☐ Approved ☒ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral ApprovedSignature: Date: 07/07/2023

**District I**

1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**

811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**

1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**

1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS

Action 225743

**CONDITIONS**

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 225743
	Action Type: [C-141] Release Corrective Action (C-141)

**CONDITIONS**

Created By	Condition	Condition Date
jharimon	<ul style="list-style-type: none"><li>• The proposed delineation plan is approved with the following conditions: Please make sure the floor confirmation samples are delineated/excavated to meet closure criteria standards for proven depth to water determination. Sidewall samples should be delineated to 600 mg/kg for chlorides and 100 mg/kg for TPH to define the edge of the release.</li><li>• The proposed excavation activities are approved with the following conditions: Regarding the proposed installation of a liner at SP5 and SP8, operators may request a variance for any requirement of 19.15.29 NMAC. The variance request must include a detailed statement explaining the need for a variance and a detailed written demonstration that the variance will provide equal or better protection of fresh water, public health, and the environment. Before a request for Variance can be considered the release must be fully delineated.</li><li>• A revised Remediation/Closure report should be submitted no later than 10/05/2023</li></ul>	7/7/2023