

# Site Assessment Summary & Proposed Remediation Plan

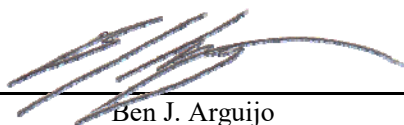
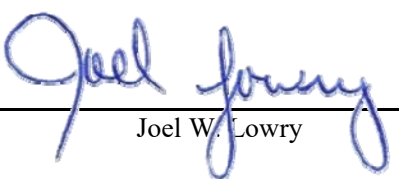
## 3R Operating, LLC Shell State Tank Battery

Eddy County, New Mexico  
Unit Letter A , Section 18, Township 11 South, Range 33 East  
Latitude 33.369742 North, Longitude 103.647038 West  
NMOCD Reference No. nPRS0413152570

Prepared By:

**Etech Environmental & Safety Solutions, Inc.**  
6309 Indiana Ave, Ste. D  
Lubbock, Texas 79413

July 2, 2025

  
Ben J. Arguijo  
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Midland • San Antonio • Lubbock • Hobbs • Lafayette

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## 1.0 PROJECT INFORMATION

Etech Environmental & Safety Solutions, Inc. (Etech), on behalf of 3R Operating, LLC, has prepared this Site Assessment Summary & Proposed Remediation Plan for the release site known as the Shell State Tank Battery (henceforth, "Site"). Details of the release are summarized below:

### Location of Release Source

Latitude: 33.369742 Longitude: -103.647038

Provided GPS are in WGS84 format.

Site Name: <u>Shell State Tank Battery</u>	Site Type: <u>Tank Battery</u>
Date Release Discovered: <u>3/16/2004</u>	API # (if applicable):

Unit Letter	Section	Township	Range	County
A	18	11S	33E	Eddy

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

### Nature and Volume of Release

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) <u>8</u>	Volume Recovered (bbls) <u>0</u>
	Is the concentration of dissolved chloride in the produced water > 10,000 mg/L?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
<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	Volume/Weight Recovered

Cause of Release:

The release was attributed to corrosion, possibly of the dump valve.

### Initial Response

- ☒ The source of the release has been stopped.
- ☒ The impacted area has been secured to protect human health and the environment.
- ☒ Release materials have been contained via the use of berms or dikes, absorbent pad, or other containment devices
- ☒ All free liquids and recoverable materials have been removed and managed appropriately.

Previously submitted portions of the New Mexico Oil Conservation Division (NMOCD) Form C-141 are available in the NMOCD Permitting system.

## 2.0 SITE CHARACTERIZATION

What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (bgs)?	Between 51 and 75 (ft.)
What method was used to determine the depth to groundwater?	NM OSE iWaters Database Search
Did the release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
What is the minimum distance between the closest lateral extents of the release and the following surface areas?	
A continuously flowing watercourse or any other significant watercourse?	Between 1 and 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	Between 1 and 5 (mi.)
An occupied permanent residence, school, hospital, institution or church?	Between 1000 (ft.) and ½ (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	Between 1,000 (ft.) and ½ (mi.)
Any other fresh water well or spring?	Between 1000 (ft.) and ½ (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field?	Greater than 5 (mi.)
A wetland?	Between 1 and 5 (mi.)
A subsurface mine?	Greater than 5 (mi.)
A (non-karst) unstable area?	Between 1 and 5 (mi.)
Categorize the risk of this well/site being in a karst geology.	Low
A 100-year floodplain?	Greater than 5 (mi.)
Did the release impact areas not on an exploration, development, production or storage site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

A search of groundwater databases maintained by the New Mexico Office of the State Engineer (NMOSE) and United States Geological Survey (USGS) was conducted in an effort to determine the horizontal distance to known water sources within a half-mile radius of the Site. Probable groundwater depth was determined using data generated by numeric models based on available water well data and published information. Depth to groundwater information is provided as Appendix A.

Additional NMOCD Siting Criteria data was gathered from available resources including Bureau of Land Management (BLM) and Fish and Wildlife Services (FWS) shapefiles; topographic maps; NMOSE and USGS databases; and aerial imagery. The results are depicted in Figures 1, 2A, 2B, and 4.

## 3.0 CLOSURE CRITERIA FOR SOILS IMPACTED BY A RELEASE

Based on the volume and nature of the release, inferred depth to groundwater, and NMOCD Siting Criteria, the NMOCD Closure Criteria and NMOCD Reclamation Standards for the Site are as listed in the following table:

Probable Depth to Groundwater	Constituent	Laboratory Analytical Method	Closure Criteria**†	Reclamation Standards**‡
Between 51 and 75 (ft.)	Chloride (Cl-)	EPA** 300.0 or SM4500 Cl B	10,000	600
	Total Petroleum Hydrocarbons (TPH)	EPA SW-846 Method 8015M Ext	2,500	100
	Gas Range Organics + Diesel Range Organics (GRO+DRO)	EPA SW-846 Method 8015M	1,000	N/A
	Benzene	EPA SW-846 Methods 8021b or 8260b	10	10
	Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX)	EPA SW-846 Methods 8021b or 8260b	50	50

\* Measured in milligrams per kilogram (mg/kg)

\*\* Environmental Protection Agency

† Table I, Section 19.15.29.12 of the New Mexico Administrative Code (NMAC).

‡ The NMOCD Reclamation Standards apply only to the top 4' of soil in non-production areas. Subsection 19.15.29.13 D.(1) NMAC.

## 4.0 BACKGROUND INFORMATION

The Site can be described as an approximate 0.7-acre active tank battery facility with good access via state highways and traditional caliche oilfield access roads. Prior to being acquired by 3R, the tank battery and associated lease was operated by Read & Steven's, Inc. In response to the lease transfer, a historical aerial imagery review was conducted by the NMSLO's realty group, where they identified evidence of a historical release in the north-central portion of the tank battery facility that would require further investigation. Further review suggested impacts may be related to an open reportable release (nPRS0413152570) that had occurred under previous ownership. Review of environmental records indicates that on May 16, 2004, the failure of a dump valve resulted in the release of eight (8) barrels of produced water. Environmental records suggests that by July 26, 2004, limited remediation activities were conducted, including the excavation and disposition of chloride contaminated soil. Based on a review of available records and aerial imagery, it appears limited remediation activities have been conducted, although environmental records are not readily available and the incident remains open.

On April 30, 2025, 3R submitted a *Site Assessment and Proposed Interim Reclamation Plan* to the NMSLO detailing site characteristics and the results of the environmental review including the discovery of the open environmental incident. The *Site Assessment and Proposed Interim Reclamation Plan* proposed the collection of soil samples from select locations in an effort to investigate historical impacts discovered during the historical aerial review along with the open environmental incident. The *Site Assessment and Proposed Interim Reclamation Plan* was approved with the condition that an additional soil sample be collected proximate to the drip bucket on the load line and that sample locations be moved or added based on field observations. A copy of the *Site Assessment and Proposed Interim Reclamation Plan* is provided in Appendix E - Regulatory Correspondence.

## 5.0 SITE ASSESSMENT

On May 30, 2025, upon conducting the necessary archeological survey, Etech conducted an initial assessment at the Site. During the initial site assessment, a hand-auger was utilized to advance eight (8) investigative soil borings (SP 1 through SP 8) within and proximate to the active tank battery facility. During the advancement of the hand-augered soil bores, soil samples were collected and field-screened for the presence of Volatile Organic Compounds (VOCs) utilizing olfactory/visual senses and/or concentrations of chloride utilizing a Hach Quantab® chloride test kit. The hand-augered soil bores were advanced until field test results suggested BTEX, TPH and chloride concentrations were below the NMOCD Reclamation Standard, or the maximum extent practicable given the presence of a resilient rock layer. Photographs of the Site are provided in Appendix C. Cultural Properties Protection Rule Documentation is provided as Appendix F.

Based on field observations and field test data, sixteen (16) delineation soil samples (SP 1 @ SUR, SP 1 @ 1', SP 2 @ SUR, SP 2 @ 2', SP 3 @ SUR, SP 3 @ 2'- R, SP 4 @ SUR, SP 4 @ 2', SP 5 @ SUR, SP 5 @ 1', SP 6 @ SUR, SP 6 @ 1'- R, SP 7 @ SUR, SP 7 @ 2'- R, SP 8 @ SUR and SP 8 @ 2') were submitted to a certified, commercial laboratory (henceforth, "the laboratory") for analysis of BTEX, TPH, and chloride. Laboratory analytical results indicated BTEX, TPH and chloride concentrations were below the NMOCD Closure Criteria in each of the submitted soil samples with the exception of SP 2 @ SUR (1,120 mg/kg GRO+DRO), SP 3 @ SUR (10,300 mg/kg chloride), SP 4 @ 2' (1,020 mg/kg GRO+DRO) and SP 7 @ SUR (11,900 mg/kg). Based on a review of laboratory analytical results it appears limited remediation activities were conducted but they did not meet the objectives of the NMOCD and NMSLO.

During a site visit, a hand-auger was utilized to collect six (6) soil samples (NH @ S, NH @ 1', EH @ S, EH @ 1', WH @ S and WH @ 1') from the inferred edges of the affected area. The collected soil samples were submitted to the laboratory for analysis of BTEX, TPH, and chloride. Laboratory analytical results indicated BTEX, TPH and chloride concentrations were below the NMOCD Reclamation Standards in each of the submitted soil samples. A Site and Sample Location Map is provided as Figure 3. Soil chemistry data is summarized in Table 1. Field data is provided in Appendix B. Laboratory analytical reports are provided in Appendix D.

## 6.0 PROPOSED REMEDIAL ACTIVITIES

Based on laboratory analytical results, site characteristics, and field observations made during the initial site assessment, 3R Operating, LLC, proposes the following remediation activities designed to advance the Site toward regulatory compliance:

- Excavate impacted material affected above the NMOCD Closure Criteria in the areas characterized by soil samples SP 2 @ SUR, SP 3 @ SUR, SP 4 @ 2' and SP 7 @ SUR. The floor and sidewalls of the excavated areas will be advanced until laboratory analytical results from excavation confirmation soil samples indicate concentrations of BTEX, TPH and chloride are below the applicable NMOCD Closure Criteria and/or Reclamation Standards.
- Excavated material will be temporarily stockpiled on-site, atop an impermeable liner pending final disposition at an NMOCD-permitted surface waste facility.
- Upon completion of excavation activities, collect the requisite excavation confirmation soil samples on approximate 200 sq. ft. increments for BTEX, TPH and chloride analysis.
  - It should be noted that in the event excavation activities encroach to within an unsafe distance from active tank battery equipment including but not limited to the above ground storage tanks and heater treaters, deferral characterization soil samples will be collected as necessary.
- Upon receiving laboratory analytical results from excavation confirmation soil samples, backfill the excavated area with locally sourced, non-impacted "like" material. Excavated areas within the affected pasture will be compacted to achieve erosion control, stability and the preservation of surface water flow to the extent practicable. Excavated areas within the active tank battery facility will be backfilled, compacted and contoured to achieve erosion control, stability, prevent ponding and meet the needs of the facility.
- Upon completion of remediation activities, a *Remediation Summary and Soil Closure* (or *Deferral Request*) will be prepared detailing field activities and laboratory analytical results from confirmation soil samples.

Requesting a remediation plan approval with this submission?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Requesting a deferral of remediation closure due date with the approval of this submission?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Have the lateral and vertical extents of contamination been fully delineated?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Was this release entirely contained within a lined containment area?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
On what estimated date will (or did) the remediation commence?	9/26/2025	
On what date will (or did) the final sampling or liner inspection occur?	10/26/2025	
On what date will (or was) the remediation complete(d)?	11/7/2025	
What is the total surface area (sq. ft.) in need of or that will <i>eventually</i> be reclaimed?	16,200	
What is the total volume (cy) in need of or that will <i>eventually</i> be reclaimed?	2,225	
What was the total surface area (sq. ft.) that has or will be remediated?	6,400	
What was the total volume (cy) that has or will be remediated?		
This remediation utilized the following processes to remediate/reduce contaminants:		
(Ex Situ) Excavation and off-site disposal (i.e. dig and haul, hydrovac, etc.)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
(Ex Situ) Excavation and on-site remediation (i.e. On-Site Land Farms)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(In Situ) Soil Vapor Extraction	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(In Situ) Biological processing (i.e. Microbes/Fertilizer, etc.)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Ground Water Abatement pursuant to 19.15.30 NMAC	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Other (Non-listed remedial process)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Which OCD approved facility was or will be used for off-site disposal?	Gandy Marley Inc.	
NMOCD Disposal Facility ID?	fEEM0112338393	
Summarize any additional remediation activities not included by answers above.	N/A	

## 7.0 RESTORATION, RECLAMATION & RE-VEGETATION PLAN

Upon completion of the proposed remedial activities and receipt of laboratory analytical results from confirmation soil samples, affected areas will be substantially restored to the condition that existed prior to the release, to the extent practicable. Excavated areas will be backfilled with locally sourced, non-impacted, "like" material emplaced at or near original relative positions. The affected areas will be compacted and contoured to achieve erosion control, stability, and preservation of surface water flow, to the extent practicable.

Disturbed areas within the affected pasture will be revegetated with the NMSLO State Coarse seed mix during the first favorable growing season following closure of incident. The seed mix will be certified as weed-free and installed at the prescribed rate utilizing either a seed drill or a broadcaster and harrow. Final reclamation and revegetation of the affected facility will be conducted upon decommissioning and abandonment of the location in accordance with Sections 19.15.29.12 and 19.15.29.13 NMAC.

All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the site's existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste containing earthen material with concentrations of less than 600 mg/kg chloride, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg benzene?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Requesting a remediation closure approval with this submission?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Requesting a reclamation approval with this submission?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Requesting a restoration complete approval with this submission?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
What was the total surface area (sq. ft.) remediated?	<u>0 (To be completed)</u>	
What was the total volume (cy) remediated?	<u>0 (To be completed)</u>	
What was the total surface area (in square feet) reclaimed?	<u>0 (To be completed)</u>	
What was the total volume (in cubic yards) reclaimed?	<u>0 (To be completed)</u>	

## 8.0 LIMITATIONS

Etech Environmental & Safety Solutions, Inc., has prepared this Site Assessment Summary & Proposed Remediation Plan to the best of its ability. No other warranty, expressed or implied, is made or intended. Etech has examined and relied upon documents referenced in the report and on oral statements made by certain individuals. Etech has not conducted an independent examination of the facts contained in referenced materials and statements. Etech has presumed the genuineness of these documents and statements and that the information provided therein is true and accurate. Etech has prepared the report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Etech notes that the facts and conditions referenced in this report may change over time, and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of 3R Operating, LLC. Use of the information contained in this report is prohibited without the consent of Etech and/or 3R Operating, LLC.

## **9.0 DISTRIBUTION**

***3R Operating, LLC***

*20405 State Highway 249*

*Ste 820*

*Houston, TX 77070*

***New Mexico Energy, Minerals and Natural Resources Department***

*Oil Conservation Division, District 1*

*1220 South St. Francis Drive*

*Santa Fe, NM 87505*

***Hobbs Field Office***

*New Mexico State Land Office*

*2827 North Dal Paso Street*

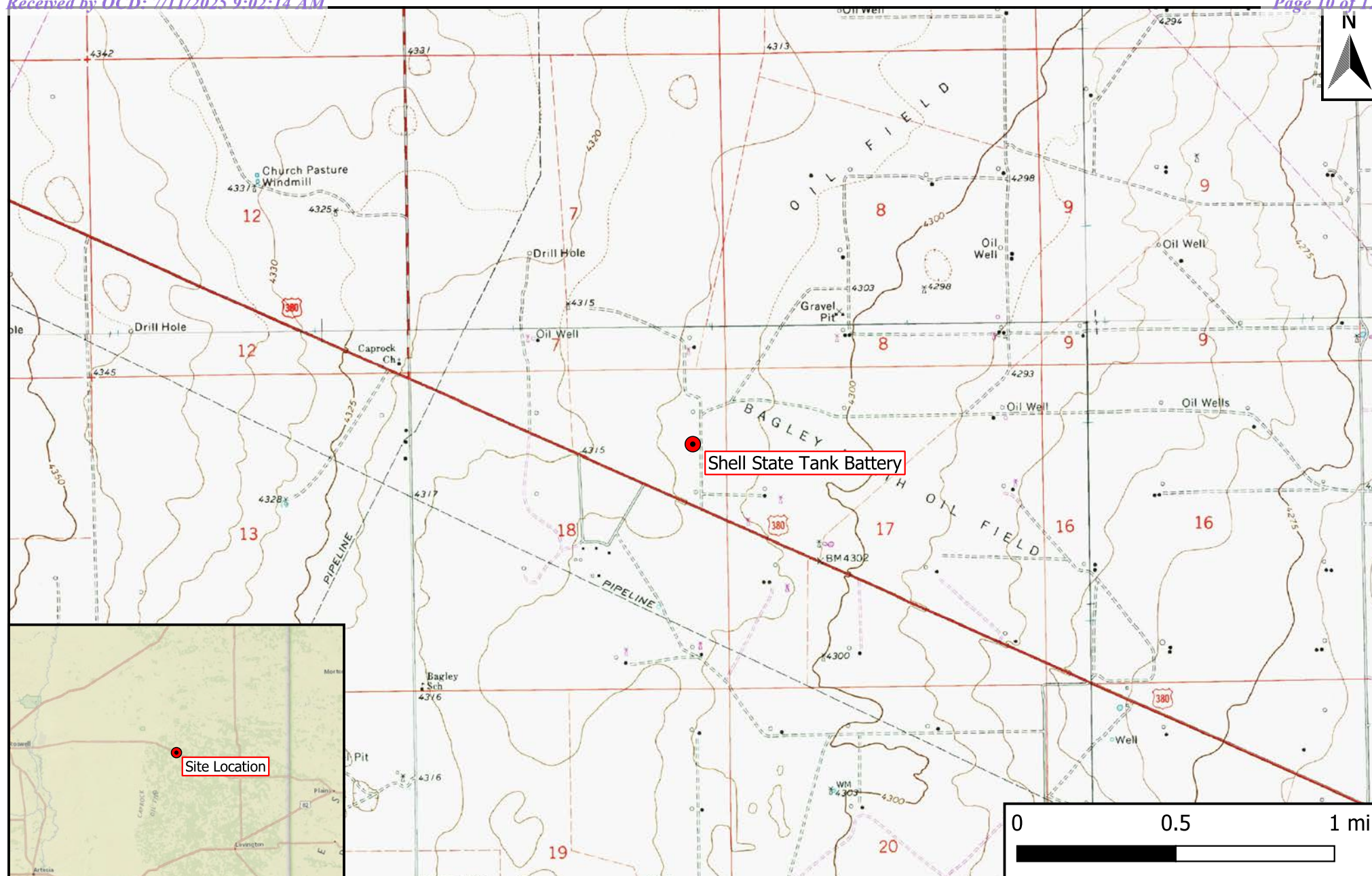
*Suite 117*

*Hobbs, NM 88240*

*(Electronic Submission)*

## **Figure 1**

### **Site Location Map**



## Legend

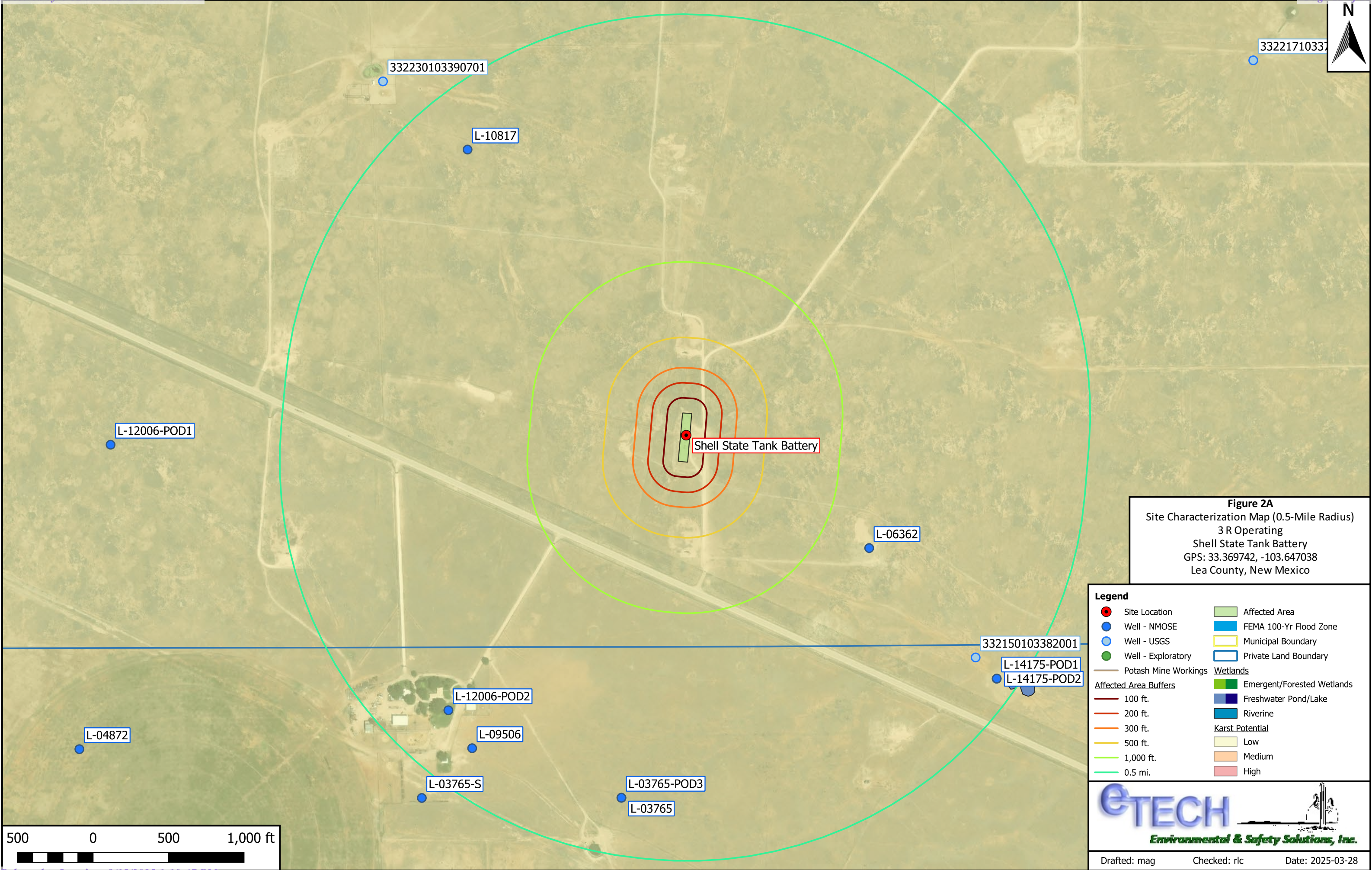
- Site Location

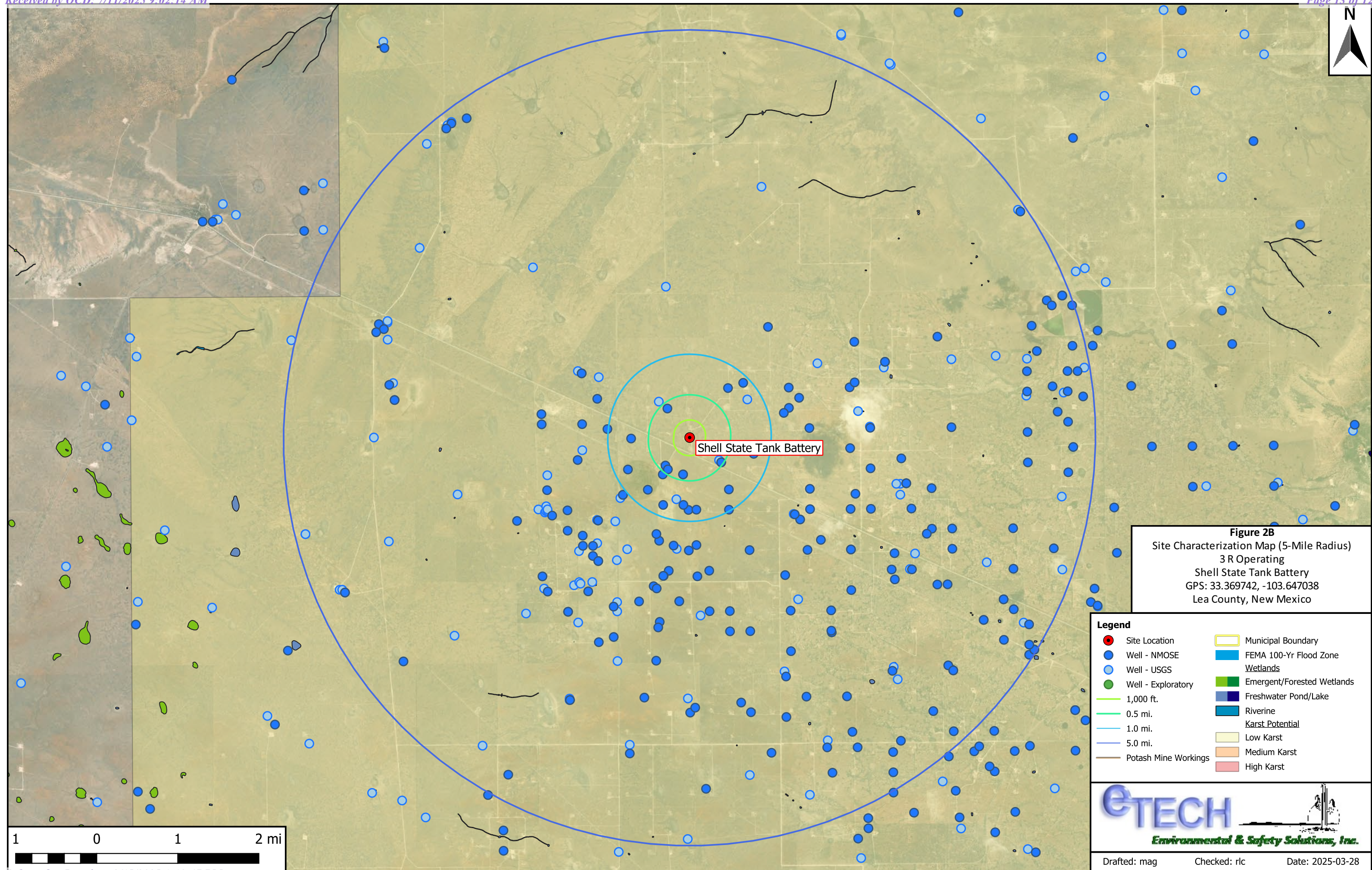
**Figure 1**  
 Site Location Map  
 3 R Operating  
 Shell State Tank Battery  
 GPS: 33.369742, -103.647038  
 Lea County, New Mexico



## **Figures 2A & 2B**

### **Site Characterization Maps**





**Figure 2B**  
Site Characterization Map (5-Mile Radius)  
3 R Operating  
Shell State Tank Battery  
GPS: 33.369742, -103.647038  
Lea County, New Mexico

- Legend**
- |                      |                            |
|----------------------|----------------------------|
| Site Location        | Municipal Boundary         |
| Well - NMOSE         | FEMA 100-Yr Flood Zone     |
| Well - USGS          | Wetlands                   |
| Well - Exploratory   | Emergent/Forested Wetlands |
| 1,000 ft.            | Freshwater Pond/Lake       |
| 0.5 mi.              | Riverine                   |
| 1.0 mi.              | Karst Potential            |
| 5.0 mi.              | Low Karst                  |
| Potash Mine Workings | Medium Karst               |
|                      | High Karst                 |



Drafted: mag

Checked: rlc

Date: 2025-03-28

## **Figure 3**

### **Site and Sample Location Map**



Legend:	
	Sample Point
	Affected Area
	Buried Pipeline
	Test Trench
	Excavated Area

**Figure 3**  
Site and Sample Location Map  
3R Operating, LLC  
Shell State Tank Battery  
GPS: 33.369742, -103.647038  
Eddy County



**Environmental & Safety Solutions, Inc.**

Drafted:

Checked: jwl      Date: 7/2/25

**Table 1**  
**Concentrations of BTEX, TPH & Chloride in Soil**

**Table 1**  
**Concentrations of BTEX, TPH, and Chloride in Soil**  
**3R Operating, LLC**  
**Shell State Tank Battery**  
**NMOCD Ref. #: nPRS0413152570**

<b>NMOCD Closure Criteria</b>				<b>10</b>	<b>50</b>	<b>-</b>	<b>-</b>	<b>1,000</b>	<b>-</b>	<b>2,500</b>	<b>10,000</b>
<b>NMOCD Reclamation Standard</b>				<b>10</b>	<b>50</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100</b>	<b>600</b>
Sample ID	Date	Depth (Feet)	Soil Status	SW 846 8021B		SW 846 8015M Ext.					4500 Cl
				Benzene (mg/kg)	BTEX (mg/kg)	GRO C <sub>6</sub> -C <sub>10</sub> (mg/kg)	DRO C <sub>10</sub> -C <sub>28</sub> (mg/kg)	GRO + DRO C <sub>6</sub> -C <sub>28</sub> (mg/kg)	ORO C <sub>28</sub> -C <sub>36</sub> (mg/kg)	TPH C <sub>6</sub> -C <sub>36</sub> (mg/kg)	Chloride (mg/kg)
EH @ 1'	6/27/2025	1	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	128
EH @ S	6/27/2025	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	<16.0
NH @ 1'	6/27/2025	1	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	16.0
NH @ S	6/27/2025	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	48.0
WH @ 1'	6/27/2025	1	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	64.0
WH @ S	6/27/2025	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	128
SP 1 @ SUR	5/30/2025	0	In-Situ	<0.050	<0.300	<10.0	300	300	104	404	144
SP 1 @ 1'	5/30/2025	1	In-Situ	<0.050	<0.300	<10.0	209	209	83.8	293	32.0
SP 2 @ SUR	5/30/2025	0	In-Situ	<0.050	<0.300	<10.0	1,120	<b>1,120</b>	267	1,390	64.0
SP 2 @ 2'	5/30/2025	2	In-Situ	<0.050	<0.300	<10.0	142	142	55.8	198	112
SP 3 @ SUR	5/30/2025	0	In-Situ	<0.050	<0.300	<10.0	15.0	15.0	<10.0	15.0	<b>10,300</b>
SP 3 @ 2'- R	5/30/2025	2	In-Situ	<0.050	<0.300	<10.0	271	271	59.9	331	3,440
SP 4 @ SUR	5/30/2025	0	In-Situ	<0.050	<0.300	<10.0	722	722	210	932	640
SP 4 @ 2'	5/30/2025	2	In-Situ	<0.050	2.27	81.5	940	<b>1,020</b>	113	1,130	752
SP 5 @ SUR	5/30/2025	0	In-Situ	<0.050	<0.300	<10.0	21.8	21.8	29.1	50.9	672
SP 5 @ 1'	5/30/2025	1	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	480
SP 6 @ SUR	5/30/2025	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	1,640
SP 6 @ 1'- R	5/30/2025	1	In-Situ	<0.050	<0.300	<10.0	206	206	66.8	273	2,360
SP 7 @ SUR	5/30/2025	0	In-Situ	<0.050	<0.300	<10.0	9,820	<b>9,820</b>	2,040	<b>11,900</b>	2,140
SP 7 @ 2' - R	5/30/2025	1	In-Situ	<0.050	<0.300	<10.0	248	248	59.6	308	2,130
SP 8 @ SUR	5/30/2025	0	In-Situ	<0.050	<0.300	<10.0	186	186	121	307	80.0
SP 8 @ 2'	5/30/2025	2	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	128

Dash (-): Sample not analyzed for that constituent.

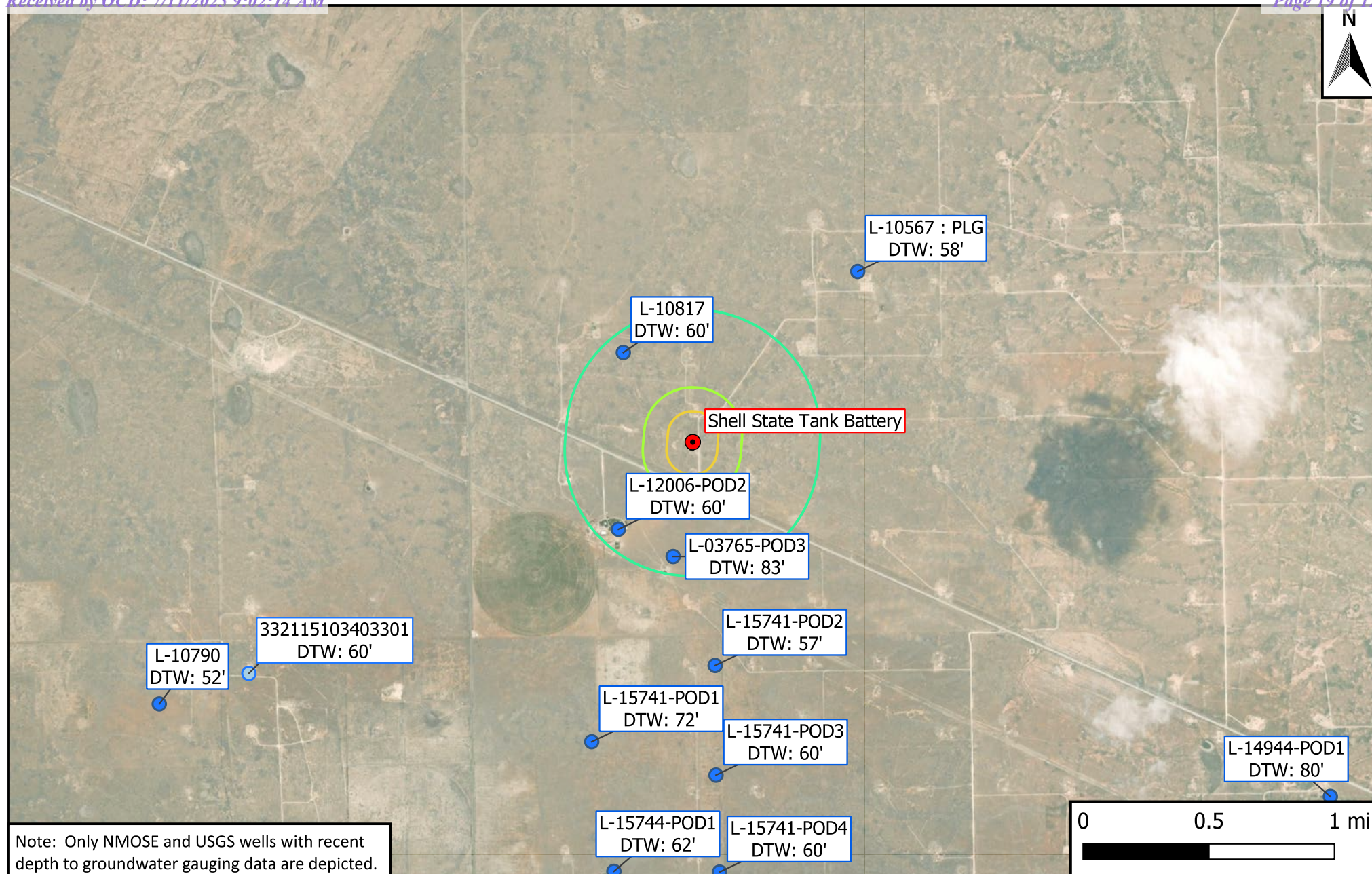
Bold: NMOCD Closure Criteria exceedance.

Red: NMOCD Reclamation Standard exceedance.

Red Border with Shading: Highest observed concentration.

## **Appendix A**

### **Depth to Groundwater Information**



## Legend

- |                         |                 |
|-------------------------|-----------------|
| ● Active Site Locations | ■ Affected Area |
| ● Well - NMOSE          | — 500 ft.       |
| ● Well - USGS           | — 1,000 ft.     |
| ● Well - Exploratory    | — 0.5 mi.       |

**Figure 4**  
Inferred Depth to Groundwater Map  
3 R Operating  
Shell State Tank Battery  
GPS: 33.369742, -103.647038  
Lea County, New Mexico




Drafted: mag

Checked: rlc

Date: 2025-03-28

# Point of Diversion Summary

quarters are 1=NW 2=NE 3=SW 4=SE  
quarters are smallest to largest NAD83 UTM in meters

Well Tag	POD Nbr	Q64	Q16	Q4	Sec	Tws	Rng	X	Y	Map
	L 10817		SW	SE	07	11S	33E	625418.0	3693669.0 *	

\* UTM location was derived from PLSS - see Help

Driller License:	421	Driller Company:	GLENN'S WATER WELL SERVICE		
Driller Name:	GLENN, CLARK A. "CORKY" (LD)				
Drill Start Date:	1998-06-05	Drill Finish Date:	1998-06-05	Plug Date:	
Log File Date:	1998-06-17	PCW Rcv Date:		Source:	Shallow
Pump Type:		Pipe Discharge Size:		Estimated Yield:	40
Casing Size:	5.50	Depth Well:	125	Depth Water:	60

## Water Bearing Stratifications:

Top	Bottom	Description
65	122	Other/Unknown

## Casing Perforations:

Top	Bottom
65	125

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

3/28/25 12:12 PM MST

Point of Diversion Summary

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STATE ENGINEER OFFICE

WELL RECORD

Revised June 1972

Section 1. GENERAL INFORMATION

148170

(A) Owner of well Pearce Ranch Owner's Well No. \_\_\_\_\_

Street or Post Office Address West Star Box 52

City and State Tatum, New Mexico 88267

Well was drilled under Permit No. #1-10,817 and is located in the:

a. \_\_\_\_\_  $\frac{1}{4}$  \_\_\_\_\_  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  of Section 7 Township 11-S. Range 33-E. N.M.P.M.

b. Tract No. \_\_\_\_\_ of Map No. \_\_\_\_\_ of the \_\_\_\_\_

c. Lot No. \_\_\_\_\_ of Block No. \_\_\_\_\_ of the \_\_\_\_\_

Subdivision, recorded in \_\_\_\_\_ County.

d. X= \_\_\_\_\_ feet, Y= \_\_\_\_\_ feet, N.M. Coordinate System \_\_\_\_\_ Zone in the \_\_\_\_\_ Grant.

(B) Drilling Contractor Glenn's Wager Well Service License No. WD-421

Address P.O. Box 692 Tatum, New Mexico 88267

Drilling Began 6/5/98 Completed 6/5/98 Type tools rotary Size of hole 9 7/8 in.

Elevation of land surface or \_\_\_\_\_ at well is \_\_\_\_\_ ft. Total depth of well 125 ft.

Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well 60 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			
65	122	57	Sand	40 GPM

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To
5 $\frac{1}{2}$ "	.250	T&C			125	none	65	125

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet		Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
From	To				

Section 5. PLUGGING RECORD

Plugging Contractor \_\_\_\_\_

Address \_\_\_\_\_

Plugging Method \_\_\_\_\_

Date Well Plugged \_\_\_\_\_

Plugging approved by: \_\_\_\_\_

State Engineer Representative

No.	Depth in Feet		Cubic Feet of Cement
	Top	Bottom	
1			
2			
3			
4			

Date Received 06/17/98

FOR USE OF STATE ENGINEER ONLY

507088

Quad \_\_\_\_\_ FWL \_\_\_\_\_ FSL \_\_\_\_\_

File No. L-10,817 Use Stock Location No. 11.33.7.4330

[illegible]

## Section 7. REMARKS AND ADDITIONAL INFORMATION

98 JUN 17 AM 10 23

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Corby Henry  
Driller

**INSTRUCTIONS:** This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1(a) and Section 5 need be completed.

STATE ENGINEER OFFICE  
WELL RECORD

June 15 '98  
Revised June 1972

Section 1. GENERAL INFORMATION

(A) Owner of well Pearce Ranch Owner's Well No. \_\_\_\_\_  
Street or Post Office Address West Star Box 52  
City and State Tatum, New Mexico 88267

Well was drilled under Permit No. #1-10,817 and is located in the:  
a. \_\_\_\_\_  $\frac{1}{4}$  \_\_\_\_\_  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  of Section 7 Township 11-S. Range 33-E. N.M.P.M.  
b. Tract No. \_\_\_\_\_ of Map No. \_\_\_\_\_ of the \_\_\_\_\_  
c. Lot No. \_\_\_\_\_ of Block No. \_\_\_\_\_ of the \_\_\_\_\_  
Subdivision, recorded in \_\_\_\_\_ County.  
d. X= \_\_\_\_\_ feet, Y= \_\_\_\_\_ feet, N.M. Coordinate System \_\_\_\_\_ Zone in  
the \_\_\_\_\_ Grant.

(B) Drilling Contractor Glenn's Wafer Well Service License No. WD-421  
Address P.O. Box 692 Tatum, New Mexico 88267  
Drilling Began 6/5/98 Completed 6/5/98 Type tools rotary Size of hole 9 7/8 in.  
Elevation of land surface or \_\_\_\_\_ at well is \_\_\_\_\_ ft. Total depth of well 125 ft.  
Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well 60 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			
65	122	57	Sand	40 GPM

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To
5 1/2"	.250	T&C			125	none	65	125

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet		Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
From	To				

Section 5. PLUGGING RECORD

Plugging Contractor \_\_\_\_\_  
Address \_\_\_\_\_  
Plugging Method \_\_\_\_\_  
Date Well Plugged \_\_\_\_\_  
Plugging approved by: \_\_\_\_\_  
State Engineer Representative

No.	Depth in Feet		Cubic Feet of Cement
	Top	Bottom	
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received 11/7/00

Quad \_\_\_\_\_ FWL \_\_\_\_\_ FSL \_\_\_\_\_

Section 7. REMARKS AND ADDITIONAL INFORMATION


Cosky Blum  
Driller

Released to Imaging: 8/15/2025 1:10:47 PM

# Point of Diversion Summary

quarters are 1=NW 2=NE 3=SW 4=SE  
quarters are smallest to largest

NAD83 UTM in meters

Well Tag	POD Nbr	Q64	Q16	Q4	Sec	Tws	Rng	X	Y	Map
L 12006	POD2	SE	NW	NW	18	11S	33E	625386.5	3692537.3	

\* UTM location was derived from PLSS - see Help

Driller License:	421	Driller Company:	GLENN'S WATER WELL SERVICE
Driller Name:	CORKY GLENN		
Drill Start Date:	2008-08-27	Drill Finish Date:	2008-08-27
Log File Date:	2008-09-04	PCW Rcv Date:	
		Source:	Shallow
Pump Type:		Pipe Discharge Size:	
		Estimated Yield:	
Casing Size:	6.63	Depth Well:	155
		Depth Water:	60

## Casing Perforations:

Top	Bottom
60	152

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

3/28/25 12:10 PM MST

Point of Diversion Summary

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9/3/08

OSE FILE NUMBER \_\_\_\_\_

For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER  
WELL RECORD and DRILLING LOG

## 1. PERMIT HOLDER(S)

Name: PEARCE TRUST

Name: \_\_\_\_\_

Address: 1717 JACKSON

Address: \_\_\_\_\_

City: PECOS

City: \_\_\_\_\_

State: TX Zip: 79772

State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Phone: \_\_\_\_\_

Contact: \_\_\_\_\_

Contact Phone: \_\_\_\_\_

## 2. STATE ENGINEER REFERENCE NUMBERS:

File # L-12006, Well # 1

## 3. LOCATION OF WELL (The Datum Is Assumed To Be WGS 84 Unless Otherwise Specified)

Latitude: N 33° Deg 21 Min 53.16 Sec

Longitude: W 103° Deg 39 Min 8.05 Sec

(Enter Lat/Long To At Least 1/10<sup>th</sup> Of A Second)

Datum If Not WGS 84: SE 1/4 NW 1/4 SEC. 18, T11-S, R33-EAST

## 4. DRILLING CONTRACTOR

License Number: WD 421

Name: GLENN'S WATER WELL SERVICE, Work Phone: 505-398-2424

Drill Rig Serial Number: 0582

List The Name Of Each Drill Rig Supervisor That Managed On-Site Operations During The Drilling Process:

CORKY GLENN

## 5. DRILLING RECORD

Drilling Began: 8/27/08; Completed: 8/27/08; Drilling Method: ROTARY MUD

Diameter Of Bore Hole: \_\_\_\_\_ (in);

Total Depth Of Well: 155 (ft);

Completed Well Is (Circle One) Shallow Artesian;

Depth To Water First Encountered: 60' (ft);

Depth To Water Upon Completion Of Well: 60' (ft).

Do Not Write Below This Line

TRN Number: 485546

File Number: L-12206

Form: wr-20 May 07

L-12006

page 1 of 4

CLW

12

STATE ENGINEER OFFICE  
ROSSELL, NEW MEXICO

2008 SEP -4 P 12:01

OSE FILE NUMBER \_\_\_\_\_  
For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER  
WELL RECORD and DRILLING LOG

6. RECORD OF CASING

Diameter (inches)	Pounds (per ft.)	Threads (per inch)	Depth (feet)	Length Top to Bottom (feet)	Type of Shoe	Perforations (from to)
10 3/4	1/4 WELL	PE		21	NONE	NONE
6 5/8	.188	PE		152	NONE	60-152

RECORD OF MUDDING AND CEMENTING

Depth (feet)	Hole (diameter)	Mud Used (# of sacks)	Cement (cubic feet)	Method of Placement
0-21	14 3/4		14 SACKS	POUR

Do Not Write Below This Line

Trn Number: \_\_\_\_\_  
Form: wr-20 May 07

File Number: \_\_\_\_\_

page 2 of 4

-----  
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**8. LOG OF HOLE.** For Each Water Bearing Strata, Estimate The Yield Of The Formation In Gallons Per Minute.

[illegible]

Do Not Write Below This Line

File Number:

OSE FILE NUMBER \_\_\_\_\_

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NEW MEXICO OFFICE OF THE STATE ENGINEER  
WELL RECORD

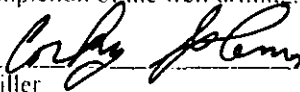
## 9. ADDITIONAL STATEMENTS OR EXPLANATIONS:

DRILLED 14 3/4" HOLE TO 21' AND SET 21' OF 10 3/4"  
CASING AND CEMENTED TO TOP OF WELL

STATE OF NEW MEXICO  
OFFICE OF THE STATE ENGINEER  
WELL RECORD

The undersigned hereby certifies that, to the best of his or her knowledge and belief, the foregoing is a true and correct record of the above described bore hole. The undersigned further certifies that he or she will file this well record with the Office Of The State Engineer and permit holder within 20 days after completion of the well drilling.

Driller

9/3/08  
(mm/dd/year)

Do Not Write Below This Line

Trn Number: \_\_\_\_\_

Form wr-20 May 07


page 4 of 4

File Number: \_\_\_\_\_

# Point of Diversion Summary

quarters are 1=NW 2=NE 3=SW 4=SE  
quarters are smallest to largest

NAD83 UTM in meters

Well Tag	POD Nbr	Q64	Q16	Q4	Sec	Tw	Rng	X	Y	Map
L 03765	POD3	SW	NE	SE	18	11S	33E	625737.0	3692363.0	

\* UTM location was derived from PLSS - see Help

Driller License:	1058	Driller Company:	KEY'S DRILLING & PUMP SERVICE
Driller Name:	KEY, CLINTON		
Drill Start Date:	2011-10-20	Drill Finish Date:	2011-10-28
Log File Date:	2011-11-16	PCW Rcv Date:	
		Source:	Shallow
Pump Type:		Pipe Discharge Size:	
		Estimated Yield:	
Casing Size:	13.25	Depth Well:	160
		Depth Water:	83

## Water Bearing Stratifications:

Top	Bottom	Description
83	90	Sandstone/Gravel/Conglomerate
90	120	Sandstone/Gravel/Conglomerate
130	155	Sandstone/Gravel/Conglomerate

## Casing Perforations:

Top	Bottom
45	125

## Meter Information

Meter Number:	17331	Meter Make:	MCCROMETER
Meter Serial Number:	18-03392-06	Meter Multiplier:	100.0000
Number of Dials:	6	Meter Type:	Diversion
Unit of Measure:	Gallons	Reading Frequency:	Monthly

## Meter Readings (in Acre-Feet)

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount	Online
2012-01-01	2012	0.000	A	RPT		0.000	
2012-04-01	2012	163274.000	A	RPT		50.107	
2012-07-01	2012	289711.000	A	RPT		38.802	
2012-12-03	2012	589764.000	A	RPT		92.083	
2013-04-08	2013	892561.000	A	RPT		92.925	
2013-11-08	2013	169906.000	R	RPT	Meter Rollover	85.114	
2014-04-01	2014	326143.000	A	RPT		47.947	
2014-07-01	2014	360719.000	A	RPT		10.611	
2014-10-01	2014	372652.000	A	RPT		3.662	
2015-01-01	2015	373282.000	A	RPT		0.193	
2015-04-01	2015	469793.000	A	RPT		29.618	
2015-07-01	2015	586490.000	A	RPT		35.813	
2015-10-01	2015	597347.000	A	RPT		3.332	
2016-01-01	2016	605145.000	A	RPT		2.393	
2016-07-01	2016	642600.000	A	RPT		11.495	
2016-10-01	2016	742827.000	A	RPT		30.759	
2017-01-02	2017	769841.000	A	RPT		8.290	
2017-04-01	2017	801270.000	A	RPT		9.645	
2018-01-01	2018	801270.000	A	ap		0.000	
2018-04-13	2018	0.000	A	ap		0.000	
2018-07-01	2018	150468.000	A	ap		46.177	
2019-01-01	2019	337273.000	A	ap		57.328	
2019-04-01	2019	444952.000	A	ap		33.045	
2019-07-01	2019	535886.000	A	ap		27.907	
2020-04-01	2020	730920.000	A	ap		59.854	
2020-07-01	2020	952059.000	A	dd		67.865	
2020-10-01	2020	133020.000	R	dd	Meter Rollover	55.535	
2021-01-01	2020	203424.000	A	dd		21.606	
2021-04-01	2021	229906.000	A	dd		8.127	

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount	Online
2021-07-01	2021	275780.000	A	dd		14.078	
2021-10-01	2021	426379.000	A	dd		46.217	
2022-01-01	2021	490297.000	A	dd		19.616	
2022-04-01	2022	509551.000	A	dd		5.909	
2022-07-01	2022	666601.000	A	dd		48.197	
2022-10-01	2022	764835.000	A	dd		30.147	
2023-01-01	2022	805862.000	A	dd		12.591	
2023-08-13	2023	36378.000	R	jb	Meter Rollover	70.743	

YTD Meter Amounts:

Year	Amount
2012	180.992
2013	178.039
2014	62.220
2015	68.956
2016	44.647
2017	17.935
2018	46.177
2019	118.280
2020	204.860
2021	88.038
2022	96.844
2023	70.743

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## **Appendix B**

### **Field Data & Soil Profile Logs**



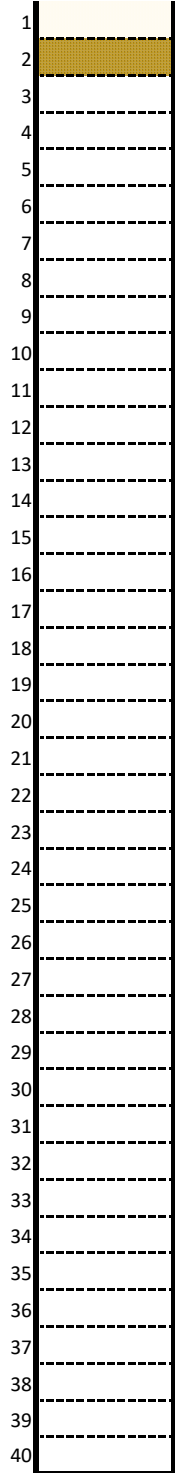
# Soil Profile

Date: 7/2/2025

Project: Whitten SWD ROW #2

Project Number: 21343 Latitude: 32.574814 Longitude: -103.536446

Depth (ft. bgs)

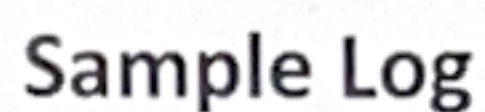


Description

Imported Fill

Brown Topsoil

Resilient Rock/Calcrete



Project: Shell State Tank Battery

Project Number: 22036      Latitude: 33.369742      Longitude: -103.647038

Sample Point = SP #1 @ ## etc

Sidewall = SW #1 etc

Refusal = SP #1 @ 4'-R

Soil Intended to be Deferred = SP #1 @ 4' In-Situ

Resamples= SP #1 @ 5b or SW #1b

Stockpile = Stockpile #1

GPS Sample Points, Center of Comp Areas

## **Appendix C**

### **Photographic Log**

## Photographic Log



## Photographic Log



## Photographic Log



## **Appendix D**

### **Laboratory Analytical Reports**



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

June 06, 2025

JOEL LOWRY

Etech Environmental & Safety Solutions

2617 W MARLAND

HOBBS, NM 88240

RE: SHELL STATE TANK BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 06/02/25 14:47.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C25-00101. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	06/02/2025	Sampling Date:	05/30/2025
Reported:	06/06/2025	Sampling Type:	Soil
Project Name:	SHELL STATE TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	22036	Sample Received By:	Alyssa Parras
Project Location:	3R OP 32.369742, -103.647038		

**Sample ID: SP 1 @ SUR (H253271-01)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/02/2025	ND	2.06	103	2.00	3.61	
Toluene*	<0.050	0.050	06/02/2025	ND	2.09	105	2.00	4.26	
Ethylbenzene*	<0.050	0.050	06/02/2025	ND	2.05	102	2.00	4.01	
Total Xylenes*	<0.150	0.150	06/02/2025	ND	6.03	100	6.00	4.55	
Total BTX	<0.300	0.300	06/02/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.0 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	06/03/2025	ND	480	120	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2025	ND	191	95.4	200	1.00	
DRO >C10-C28*	300	10.0	06/03/2025	ND	183	91.7	200	1.57	
EXT DRO >C28-C36	104	10.0	06/03/2025	ND					

Surrogate: 1-Chlorooctane 73.9 % 44.4-145

Surrogate: 1-Chlorooctadecane 71.4 % 40.6-153

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/02/2025  
 Reported: 06/06/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 05/30/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: SP 1 @ 1' (H253271-02)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/02/2025	ND	2.06	103	2.00	3.61	
Toluene*	<0.050	0.050	06/02/2025	ND	2.09	105	2.00	4.26	
Ethylbenzene*	<0.050	0.050	06/02/2025	ND	2.05	102	2.00	4.01	
Total Xylenes*	<0.150	0.150	06/02/2025	ND	6.03	100	6.00	4.55	
Total BTEx	<0.300	0.300	06/02/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.4 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	06/03/2025	ND	480	120	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2025	ND	191	95.4	200	1.00	
DRO >C10-C28*	209	10.0	06/03/2025	ND	183	91.7	200	1.57	
EXT DRO >C28-C36	83.8	10.0	06/03/2025	ND					

Surrogate: 1-Chlorooctane 77.2 % 44.4-145

Surrogate: 1-Chlorooctadecane 72.6 % 40.6-153

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/02/2025  
 Reported: 06/06/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 05/30/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: SP 2 @ SUR (H253271-03)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/02/2025	ND	2.06	103	2.00	3.61		
Toluene*	<0.050	0.050	06/02/2025	ND	2.09	105	2.00	4.26		
Ethylbenzene*	<0.050	0.050	06/02/2025	ND	2.05	102	2.00	4.01		
Total Xylenes*	<0.150	0.150	06/02/2025	ND	6.03	100	6.00	4.55		
Total BTEX	<0.300	0.300	06/02/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.5 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	06/03/2025	ND	480	120	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2025	ND	191	95.4	200	1.00	
DRO >C10-C28*	1120	10.0	06/03/2025	ND	183	91.7	200	1.57	
EXT DRO >C28-C36	267	10.0	06/03/2025	ND					

Surrogate: 1-Chlorooctane 74.9 % 44.4-145

Surrogate: 1-Chlorooctadecane 91.9 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/02/2025  
 Reported: 06/06/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 05/30/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: SP 2 @ 2' (H253271-04)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/02/2025	ND	2.06	103	2.00	3.61	
Toluene*	<0.050	0.050	06/02/2025	ND	2.09	105	2.00	4.26	
Ethylbenzene*	<0.050	0.050	06/02/2025	ND	2.05	102	2.00	4.01	
Total Xylenes*	<0.150	0.150	06/02/2025	ND	6.03	100	6.00	4.55	
Total BTEx	<0.300	0.300	06/02/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.4 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	06/03/2025	ND	480	120	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2025	ND	191	95.4	200	1.00	
DRO >C10-C28*	142	10.0	06/03/2025	ND	183	91.7	200	1.57	
EXT DRO >C28-C36	55.8	10.0	06/03/2025	ND					

Surrogate: 1-Chlorooctane 80.3 % 44.4-145

Surrogate: 1-Chlorooctadecane 76.0 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/02/2025  
 Reported: 06/06/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 05/30/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: SP 3 @ SUR (H253271-05)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/02/2025	ND	2.06	103	2.00	3.61	
Toluene*	<0.050	0.050	06/02/2025	ND	2.09	105	2.00	4.26	
Ethylbenzene*	<0.050	0.050	06/02/2025	ND	2.05	102	2.00	4.01	
Total Xylenes*	<0.150	0.150	06/02/2025	ND	6.03	100	6.00	4.55	
Total BTEX	<0.300	0.300	06/02/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.7 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	10300	16.0	06/03/2025	ND	480	120	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2025	ND	191	95.4	200	1.00	
DRO >C10-C28*	15.0	10.0	06/03/2025	ND	183	91.7	200	1.57	
EXT DRO >C28-C36	<10.0	10.0	06/03/2025	ND					

Surrogate: 1-Chlorooctane 82.9 % 44.4-145

Surrogate: 1-Chlorooctadecane 76.3 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/02/2025  
 Reported: 06/06/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 05/30/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: SP 3 @ 2'- R (H253271-06)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/02/2025	ND	2.06	103	2.00	3.61	
Toluene*	<0.050	0.050	06/02/2025	ND	2.09	105	2.00	4.26	
Ethylbenzene*	<0.050	0.050	06/02/2025	ND	2.05	102	2.00	4.01	
Total Xylenes*	<0.150	0.150	06/02/2025	ND	6.03	100	6.00	4.55	
Total BTEX	<0.300	0.300	06/02/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.0 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3440	16.0	06/03/2025	ND	480	120	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2025	ND	191	95.4	200	1.00	
DRO >C10-C28*	271	10.0	06/03/2025	ND	183	91.7	200	1.57	
EXT DRO >C28-C36	59.9	10.0	06/03/2025	ND					

Surrogate: 1-Chlorooctane 80.8 % 44.4-145

Surrogate: 1-Chlorooctadecane 77.9 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/02/2025  
 Reported: 06/06/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 05/30/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: SP 4 @ SUR (H253271-07)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/02/2025	ND	2.06	103	2.00	3.61	
Toluene*	<0.050	0.050	06/02/2025	ND	2.09	105	2.00	4.26	
Ethylbenzene*	<0.050	0.050	06/02/2025	ND	2.05	102	2.00	4.01	
Total Xylenes*	<0.150	0.150	06/02/2025	ND	6.03	100	6.00	4.55	
Total BTEX	<0.300	0.300	06/02/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	640	16.0	06/03/2025	ND	480	120	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2025	ND	191	95.4	200	1.00	
DRO >C10-C28*	722	10.0	06/03/2025	ND	183	91.7	200	1.57	
EXT DRO >C28-C36	210	10.0	06/03/2025	ND					

Surrogate: 1-Chlorooctane 61.7 % 44.4-145

Surrogate: 1-Chlorooctadecane 66.7 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/02/2025  
 Reported: 06/06/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 05/30/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: SP 4 @ 2' (H253271-08)**

BTEx 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/02/2025	ND	2.06	103	2.00	3.61	
Toluene*	<0.050	0.050	06/02/2025	ND	2.09	105	2.00	4.26	GC-NC
Ethylbenzene*	<0.050	0.050	06/02/2025	ND	2.05	102	2.00	4.01	GC-NC
Total Xylenes*	2.27	0.150	06/02/2025	ND	6.03	100	6.00	4.55	GC-NC1
Total BTEx	2.27	0.300	06/02/2025	ND					GC-NC1

Surrogate: 4-Bromofluorobenzene (PID) 195 % 71.5-134

Chloride, SM4500Cl-B			mg/kg					Analyzed By: HM	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>752</b>	16.0	06/03/2025	ND	480	120	400	0.00	

TPH 8015M			mg/kg					Analyzed By: MS	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>81.5</b>	10.0	06/03/2025	ND	191	95.4	200	1.00	
<b>DRO &gt;C10-C28*</b>	<b>940</b>	10.0	06/03/2025	ND	183	91.7	200	1.57	
<b>EXT DRO &gt;C28-C36</b>	<b>113</b>	10.0	06/03/2025	ND					

Surrogate: 1-Chlorooctane 84.7 % 44.4-145

Surrogate: 1-Chlorooctadecane 84.8 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/02/2025  
 Reported: 06/06/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 05/30/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: SP 5 @ SUR (H253271-09)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/02/2025	ND	2.06	103	2.00	3.61		
Toluene*	<0.050	0.050	06/02/2025	ND	2.09	105	2.00	4.26		
Ethylbenzene*	<0.050	0.050	06/02/2025	ND	2.05	102	2.00	4.01		
Total Xylenes*	<0.150	0.150	06/02/2025	ND	6.03	100	6.00	4.55		
Total BTEX	<0.300	0.300	06/02/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	672	16.0	06/03/2025	ND	480	120	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2025	ND	191	95.4	200	1.00	
DRO >C10-C28*	21.8	10.0	06/03/2025	ND	183	91.7	200	1.57	
EXT DRO >C28-C36	29.1	10.0	06/03/2025	ND					

Surrogate: 1-Chlorooctane 71.2 % 44.4-145

Surrogate: 1-Chlorooctadecane 62.2 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/02/2025  
 Reported: 06/06/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 05/30/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: SP 5 @ 1' (H253271-10)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/02/2025	ND	2.06	103	2.00	3.61	
Toluene*	<0.050	0.050	06/02/2025	ND	2.09	105	2.00	4.26	
Ethylbenzene*	<0.050	0.050	06/02/2025	ND	2.05	102	2.00	4.01	
Total Xylenes*	<0.150	0.150	06/02/2025	ND	6.03	100	6.00	4.55	
Total BTX	<0.300	0.300	06/02/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.3 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	480	16.0	06/03/2025	ND	480	120	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2025	ND	191	95.4	200	1.00	
DRO >C10-C28*	<10.0	10.0	06/03/2025	ND	183	91.7	200	1.57	
EXT DRO >C28-C36	<10.0	10.0	06/03/2025	ND					

Surrogate: 1-Chlorooctane 77.6 % 44.4-145

Surrogate: 1-Chlorooctadecane 68.2 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/02/2025  
 Reported: 06/06/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 05/30/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: SP 6 @ SUR (H253271-11)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/02/2025	ND	2.06	103	2.00	3.61	
Toluene*	<0.050	0.050	06/02/2025	ND	2.09	105	2.00	4.26	
Ethylbenzene*	<0.050	0.050	06/02/2025	ND	2.05	102	2.00	4.01	
Total Xylenes*	<0.150	0.150	06/02/2025	ND	6.03	100	6.00	4.55	
Total BTX	<0.300	0.300	06/02/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.3 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1640	16.0	06/03/2025	ND	480	120	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2025	ND	191	95.4	200	1.00	
DRO >C10-C28*	<10.0	10.0	06/03/2025	ND	183	91.7	200	1.57	
EXT DRO >C28-C36	<10.0	10.0	06/03/2025	ND					

Surrogate: 1-Chlorooctane 65.7 % 44.4-145

Surrogate: 1-Chlorooctadecane 54.8 % 40.6-153

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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:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/02/2025  
 Reported: 06/06/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 05/30/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: SP 6 @ 1'- R (H253271-12)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/02/2025	ND	2.06	103	2.00	3.61		
Toluene*	<0.050	0.050	06/02/2025	ND	2.09	105	2.00	4.26		
Ethylbenzene*	<0.050	0.050	06/02/2025	ND	2.05	102	2.00	4.01		
Total Xylenes*	<0.150	0.150	06/02/2025	ND	6.03	100	6.00	4.55		
Total BTEX	<0.300	0.300	06/02/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2360	16.0	06/03/2025	ND	480	120	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2025	ND	191	95.4	200	1.00	
DRO >C10-C28*	206	10.0	06/03/2025	ND	183	91.7	200	1.57	
EXT DRO >C28-C36	66.8	10.0	06/03/2025	ND					

Surrogate: 1-Chlorooctane 75.2 % 44.4-145

Surrogate: 1-Chlorooctadecane 70.6 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/02/2025  
 Reported: 06/06/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 05/30/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: SP 7 @ SUR (H253271-13)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/02/2025	ND	2.06	103	2.00	3.61		
Toluene*	<0.050	0.050	06/02/2025	ND	2.09	105	2.00	4.26		
Ethylbenzene*	<0.050	0.050	06/02/2025	ND	2.05	102	2.00	4.01		
Total Xylenes*	<0.150	0.150	06/02/2025	ND	6.03	100	6.00	4.55		
Total BTEx	<0.300	0.300	06/02/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.2 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2140	16.0	06/03/2025	ND	368	92.0	400	16.0	QM-07	

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2025	ND	191	95.4	200	1.00	
DRO >C10-C28*	9820	10.0	06/03/2025	ND	183	91.7	200	1.57	
EXT DRO >C28-C36	2040	10.0	06/03/2025	ND					

Surrogate: 1-Chlorooctane 77.9 % 44.4-145

Surrogate: 1-Chlorooctadecane 497 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/02/2025  
 Reported: 06/06/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 05/30/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: SP 7 @ 2' - R (H253271-14)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/02/2025	ND	2.06	103	2.00	3.61		
Toluene*	<0.050	0.050	06/02/2025	ND	2.09	105	2.00	4.26		
Ethylbenzene*	<0.050	0.050	06/02/2025	ND	2.05	102	2.00	4.01		
Total Xylenes*	<0.150	0.150	06/02/2025	ND	6.03	100	6.00	4.55		
Total BTEX	<0.300	0.300	06/02/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2130	16.0	06/03/2025	ND	368	92.0	400	16.0		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2025	ND	191	95.4	200	1.00	
DRO >C10-C28*	248	10.0	06/03/2025	ND	183	91.7	200	1.57	
EXT DRO >C28-C36	59.6	10.0	06/03/2025	ND					

Surrogate: 1-Chlorooctane 75.5 % 44.4-145

Surrogate: 1-Chlorooctadecane 71.7 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/02/2025  
 Reported: 06/06/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 05/30/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: SP 8 @ SUR (H253271-15)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/02/2025	ND	2.06	103	2.00	3.61		
Toluene*	<0.050	0.050	06/02/2025	ND	2.09	105	2.00	4.26		
Ethylbenzene*	<0.050	0.050	06/02/2025	ND	2.05	102	2.00	4.01		
Total Xylenes*	<0.150	0.150	06/02/2025	ND	6.03	100	6.00	4.55		
Total BTEX	<0.300	0.300	06/02/2025	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.9 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	06/03/2025	ND	368	92.0	400	16.0		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2025	ND	191	95.4	200	1.00	
DRO >C10-C28*	186	10.0	06/03/2025	ND	183	91.7	200	1.57	
EXT DRO >C28-C36	121	10.0	06/03/2025	ND					

Surrogate: 1-Chlorooctane 78.3 % 44.4-145

Surrogate: 1-Chlorooctadecane 71.3 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/02/2025  
 Reported: 06/06/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 05/30/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: SP 8 @ 2' (H253271-16)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/02/2025	ND	2.06	103	2.00	3.61	
Toluene*	<0.050	0.050	06/02/2025	ND	2.09	105	2.00	4.26	
Ethylbenzene*	<0.050	0.050	06/02/2025	ND	2.05	102	2.00	4.01	
Total Xylenes*	<0.150	0.150	06/02/2025	ND	6.03	100	6.00	4.55	
Total BTX	<0.300	0.300	06/02/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.6 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	06/03/2025	ND	368	92.0	400	16.0	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/03/2025	ND	191	95.4	200	1.00	
DRO >C10-C28*	<10.0	10.0	06/03/2025	ND	183	91.7	200	1.57	
EXT DRO >C28-C36	<10.0	10.0	06/03/2025	ND					

Surrogate: 1-Chlorooctane 72.3 % 44.4-145

Surrogate: 1-Chlorooctadecane 63.4 % 40.6-153

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
GC-NC1	8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are biased high with interfering compounds.
GC-NC	8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are reported as ND.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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

Celey D. Keene, Lab Director/Quality Manager



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

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 2

<b>Company Name:</b> Etech Environmental & Safety Solutions, Inc. <b>Project Manager:</b> Joel Lowry <b>Address:</b> 2617 West Marland <b>City:</b> Hobbs <b>State:</b> NM <b>Zip:</b> 88240 <b>Phone #:</b> (575) 264-9884 <b>Fax #:</b> <b>Project #:</b> 22036 <b>Project Owner:</b> 3R Operating, LLC <b>Project Name:</b> Shell State Tank Battery <b>Project Location:</b> 33.369742, -103.647038 <b>Sample Name:</b> Martin Sepulveda		<b>P.O. #:</b> <b>Company:</b> Permian Resources <b>Attn:</b> Montgomery Floyd <b>Address:</b> <b>City:</b> <b>State:</b> <b>Zip:</b> <b>Phone #:</b> <b>Fax #:</b>		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>									
<b>FOR LAB USE ONLY</b>		<b>Sample I.D.</b>		<b>Matrix</b> (G) GRAB OR (C) COMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER :		<b>PRESERV.</b>		<b>SAMPLING</b>		<b>Chloride</b> <b>TPH (8015M)</b> <b>BTEX (8021B)</b>					
<b>Lab I.D.</b>		<b>Sample I.D.</b>		<b>DATE</b>		<b>TIME</b>									
SP 1 @ Sur SP 1 @ 1' SP 2 @ Sur SP 2 @ 2' SP 3 @ Sur SP 3 @ 2' - R SP 4 @ Sur SP 4 @ 2' SP 5 @ Sur SP 5 @ 1'		G 1 G 1 G 1 G 1 G 1 G 1 G 1 G 1 G 1		X X X X X X X X X		5/30/25 5/30/25 5/30/25 5/30/25 5/30/25 5/30/25 5/30/25 5/30/25 5/30/25		X X X X X X X X X		X X X X X X X X X					
PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.															
<b>Relinquished By:</b>		<b>Date:</b> 6-3-25 <b>Time:</b> 1447		<b>Received By:</b>		<b>Verbal Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #:		<b>Turnaround Time:</b> 48-72 hrs <b>Thermometer ID #140</b> <b>Correction Factor: -0.5°C to 0.3°C</b>		<b>Standard</b> <input checked="" type="checkbox"/> <b>Rush</b> <input type="checkbox"/> <b>Bacteria (only) Sample Condition</b> Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>					
<b>Relinquished By:</b>		<b>Date:</b> 6-3-25 <b>Time:</b> 1447		<b>Received By:</b>		<b>REMARKS:</b>		<b>Observed Temp. °C</b> 8.0-3.5 <b>Corrected Temp. °C</b> -8.0°C		<b>Observed Temp. °C</b> <b>Corrected Temp. °C</b>					
<b>Delivered By: (Circle One)</b> Sampler - UPS - Bus - Other:		<b>Observed Temp. °C</b> 8.0-3.5 <b>Corrected Temp. °C</b> -8.0°C		<b>Sample Condition</b> Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>		<b>CHECKED BY:</b> (Initials)		<b>Turnaround Time:</b> 48-72 hrs <b>Thermometer ID #140</b> <b>Correction Factor: -0.5°C to 0.3°C</b>		<b>Observed Temp. °C</b> <b>Corrected Temp. °C</b>					



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

<b>Company Name:</b> Etech Environmental & Safety Solutions, Inc. <b>Project Manager:</b> Joel Lowry <b>Address:</b> 2617 West Marland <b>City:</b> Hobbs <b>State:</b> NM <b>Zip:</b> 88240 <b>Phone #:</b> (575) 264-9884 <b>Fax #:</b> <b>Project #:</b> 22036 <b>Project Owner:</b> 3R Operating, LLC <b>Project Name:</b> Shell State Tank Battery <b>Project Location:</b> 33,369742, -103,647038 <b>Sampler Name:</b> Martin Sepulveda		<b>P.O. #:</b> <b>Company:</b> Permian Resources <b>Attn:</b> Montgomery Floyd <b>Address:</b> <b>City:</b> <b>State:</b> <b>Zip:</b> <b>Phone #:</b> <b>Fax #:</b>		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>											
<b>FOR LAB USE ONLY</b>		<b>Lab I.D.</b>		<b>Sample I.D.</b>		<b>Matrix</b> (G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER :		<b>PRESERV.</b>		<b>SAMPLING</b>		Chloride TPH (8015M) BTEX (8021B)					
SP 6 @ Sur SP 6 @ 1' - R SP 7 @ Sur SP 7 @ 2' - R SP 8 @ Sur SP 8 @ 2'		G G G G G G		1 1 1 1 1 1		X X X X X X		X X X X X X		X X X X X X		X X X X X X					
11 12 13 14 15 16		4053371		DATE TIME		5/30/25 5/30/25 5/30/25 5/30/25 5/30/25 5/30/25		X X X X X X		X X X X X X		X X X X X X					

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<b>Relinquished By:</b> Date: 6-3-25 Time: 1447 Received By: [Signature] Date: 6-3-25 Time: 1447	<b>Turnaround Time:</b> Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> Thermometer ID #140 Correction Factor -0.6°C to 3.3°C	<b>Verbal Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #: All Results are emailed. Please provide Email address: pm@etechenv.com REMARKS:
---	---	--

**Delivered By:** (Circle One) **Observed Temp. °C** -8.3- **Sample Condition**  
 Cooler Intact ☒ Yes ☐ No ☐ Yes ☐ No  
**Sampler - UPS - Bus - Other:** **Corrected Temp. °C** -8.0-



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

July 08, 2025

JOEL LOWRY

Etech Environmental & Safety Solutions

2617 W MARLAND

HOBBS, NM 88240

RE: SHELL STATE TANK BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 07/01/25 14:41.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C25-00101. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 07/01/2025  
 Reported: 07/08/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 06/27/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: NH @ S (H253975-01)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/02/2025	ND	2.00	99.9	2.00	13.9		
Toluene*	<0.050	0.050	07/02/2025	ND	2.00	99.9	2.00	11.5		
Ethylbenzene*	<0.050	0.050	07/02/2025	ND	2.01	100	2.00	9.56		
Total Xylenes*	<0.150	0.150	07/02/2025	ND	6.00	100	6.00	9.56		
Total BTEx	<0.300	0.300	07/02/2025	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	07/02/2025	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/02/2025	ND	209	105	200	2.94	
DRO >C10-C28*	<10.0	10.0	07/02/2025	ND	205	102	200	2.67	
EXT DRO >C28-C36	<10.0	10.0	07/02/2025	ND					

Surrogate: 1-Chlorooctane 78.8 % 44.4-145

Surrogate: 1-Chlorooctadecane 79.3 % 40.6-153

Cardinal Laboratories

\*=Accredited Analyte

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



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 07/01/2025  
 Reported: 07/08/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 06/27/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: NH @ 1' (H253975-02)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/02/2025	ND	2.00	99.9	2.00	13.9	
Toluene*	<0.050	0.050	07/02/2025	ND	2.00	99.9	2.00	11.5	
Ethylbenzene*	<0.050	0.050	07/02/2025	ND	2.01	100	2.00	9.56	
Total Xylenes*	<0.150	0.150	07/02/2025	ND	6.00	100	6.00	9.56	
Total BTX	<0.300	0.300	07/02/2025	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	07/02/2025	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/02/2025	ND	209	105	200	2.94	
DRO >C10-C28*	<10.0	10.0	07/02/2025	ND	205	102	200	2.67	
EXT DRO >C28-C36	<10.0	10.0	07/02/2025	ND					

Surrogate: 1-Chlorooctane 80.0 % 44.4-145

Surrogate: 1-Chlorooctadecane 82.0 % 40.6-153

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\*=Accredited Analyte

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



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 07/01/2025  
 Reported: 07/08/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 06/27/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: EH @ S (H253975-03)**

BTX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/02/2025	ND	2.00	99.9	2.00	13.9		
Toluene*	<0.050	0.050	07/02/2025	ND	2.00	99.9	2.00	11.5		
Ethylbenzene*	<0.050	0.050	07/02/2025	ND	2.01	100	2.00	9.56		
Total Xylenes*	<0.150	0.150	07/02/2025	ND	6.00	100	6.00	9.56		
Total BTX	<0.300	0.300	07/02/2025	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	07/02/2025	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/02/2025	ND	209	105	200	2.94	
DRO >C10-C28*	<10.0	10.0	07/02/2025	ND	205	102	200	2.67	
EXT DRO >C28-C36	<10.0	10.0	07/02/2025	ND					

Surrogate: 1-Chlorooctane 80.6 % 44.4-145

Surrogate: 1-Chlorooctadecane 78.9 % 40.6-153

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\*=Accredited Analyte

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



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 07/01/2025  
 Reported: 07/08/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 06/27/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: EH @ 1' (H253975-04)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/02/2025	ND	2.00	99.9	2.00	13.9		
Toluene*	<0.050	0.050	07/02/2025	ND	2.00	99.9	2.00	11.5		
Ethylbenzene*	<0.050	0.050	07/02/2025	ND	2.01	100	2.00	9.56		
Total Xylenes*	<0.150	0.150	07/02/2025	ND	6.00	100	6.00	9.56		
Total BTEX	<0.300	0.300	07/02/2025	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	07/02/2025	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/02/2025	ND	209	105	200	2.94	
DRO >C10-C28*	<10.0	10.0	07/02/2025	ND	205	102	200	2.67	
EXT DRO >C28-C36	<10.0	10.0	07/02/2025	ND					

Surrogate: 1-Chlorooctane 77.0 % 44.4-145

Surrogate: 1-Chlorooctadecane 76.7 % 40.6-153

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\*=Accredited Analyte

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



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 07/01/2025  
 Reported: 07/08/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 06/27/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WH @ S (H253975-05)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/02/2025	ND	2.00	99.9	2.00	13.9		
Toluene*	<0.050	0.050	07/02/2025	ND	2.00	99.9	2.00	11.5		
Ethylbenzene*	<0.050	0.050	07/02/2025	ND	2.01	100	2.00	9.56		
Total Xylenes*	<0.150	0.150	07/02/2025	ND	6.00	100	6.00	9.56		
Total BTEX	<0.300	0.300	07/02/2025	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	07/02/2025	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/02/2025	ND	209	105	200	2.94	
DRO >C10-C28*	<10.0	10.0	07/02/2025	ND	205	102	200	2.67	
EXT DRO >C28-C36	<10.0	10.0	07/02/2025	ND					

Surrogate: 1-Chlorooctane 80.7 % 44.4-145

Surrogate: 1-Chlorooctadecane 79.7 % 40.6-153

Cardinal Laboratories

\*=Accredited Analyte

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



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 JOEL LOWRY  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 07/01/2025  
 Reported: 07/08/2025  
 Project Name: SHELL STATE TANK BATTERY  
 Project Number: 22036  
 Project Location: 3R OP 32.369742, -103.647038

Sampling Date: 06/27/2025  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Alyssa Parras

**Sample ID: WH @ 1' (H253975-06)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/02/2025	ND	2.00	99.9	2.00	13.9	
Toluene*	<0.050	0.050	07/02/2025	ND	2.00	99.9	2.00	11.5	
Ethylbenzene*	<0.050	0.050	07/02/2025	ND	2.01	100	2.00	9.56	
Total Xylenes*	<0.150	0.150	07/02/2025	ND	6.00	100	6.00	9.56	
Total BTEX	<0.300	0.300	07/02/2025	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	07/02/2025	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/02/2025	ND	209	105	200	2.94	
DRO >C10-C28*	<10.0	10.0	07/02/2025	ND	205	102	200	2.67	
EXT DRO >C28-C36	<10.0	10.0	07/02/2025	ND					

Surrogate: 1-Chlorooctane 82.2 % 44.4-145

Surrogate: 1-Chlorooctadecane 80.9 % 40.6-153

Cardinal Laboratories

\*=Accredited Analyte

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

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

---

### Notes and Definitions

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

---

Cardinal Laboratories

\*=Accredited Analyte

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

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



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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

## **Appendix E**

### **Regulatory Correspondence**

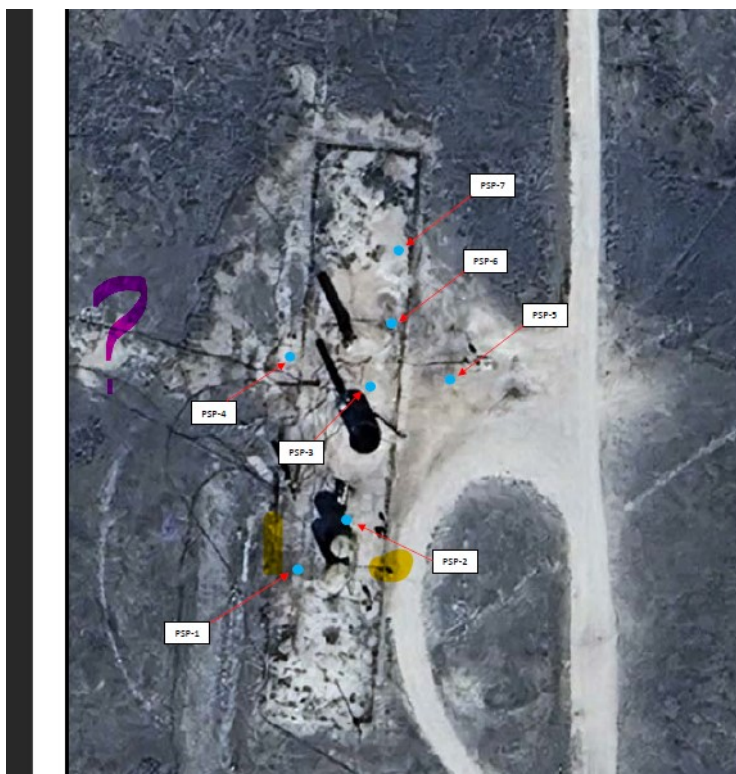
**Joel Lowry**

**From:** Knight, Tami C. <tknight@nmslo.gov>  
**Sent:** Monday, May 5, 2025 3:42 PM  
**To:** Austin Tramell; Joel Lowry  
**Cc:** Biernoff, Ari; Heltman, Elaine G.; Bisbey-Kuehn, Elizabeth A.  
**Subject:** SA & REM WP- 3R/Read & Stevens - Shell State Tank Battery- Approved w/ conditions

Austin

ECO has review the site assessment and remediation workplan for the subject tank battery located on K038360002 at 33.369742, -103.647038. We have approved the workplan with the following conditions.

1. Site assessment sample locations must be moved or added based on actual site conditions. For example, the loading area in front of the battery at the drip buckets are typically release areas. The aeriels are inconclusive but highly suspect.
2. The flow line scar coming into the tank battery is likely contiguous. If PS-4 is over regulatory standard for any contaminant of concern, compliance with the CPP Rule will be require so the investigation can advance further west.



Please respond to this email that you understand and agree to the conditions of approval. Submit the remediation closure report to [eco@nmslo.gov](mailto:eco@nmslo.gov)

Lessee and/or their contractor are responsible for ensuring the project manager and field personnel performing the work follow the approved work plan.



## Environmental Compliance Office

New Mexico State Land Office

[eco@nmslo.gov](mailto:eco@nmslo.gov)

[nmstatelands.org](http://nmstatelands.org)



.....  
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---

**From:** Austin Tramell <atramell@3ROperating.com>

**Sent:** Wednesday, April 30, 2025 3:54 PM

**To:** SLO Spills <spills@nmslo.gov>

**Subject:** [EXTERNAL] FW: Shell State Lease - Site Assessment and Proposed Interim Reclamation Plans

---

**From:** Austin Tramell

**Sent:** Wednesday, April 30, 2025 3:47 PM

**To:** Knight, Tami C.

**Cc:** Joel Lowry

**Subject:** FW: Shell State Lease - Site Assessment and Proposed Interim Reclamation Plans

Tami,

Please see attached site assessment and reclamation plans for the Shell State 3, 4, and Shell State Tank Battery.

Please let me know if you have any questions.

Thanks

Austin Tramell

Director Environmental & Regulatory

832-810-1037 (Office)

575-499-4919 (Cell)





2617 W. Marland  
Hobbs, NM 88240  
Office: (575) 964-2880

**April 11, 2025**

**Attn. Tami Knight**

New Mexico State Land Office  
Environmental Compliance Office  
1300 W. Broadway Avenue, Suite A  
Bloomfield, NM 87413

**RE: Site Assessment and Interim Reclamation Plan  
3R Operating, LLC  
Shell State Tank Battery  
U/L A, Sec. 18, T11S, R33E  
API No. 30-025-21842  
SLO Lease No. KO-38360002**

Ms. Knight,

Etech Environmental & Safety Solutions (Etech), on behalf of 3R Operating, LLC (3R), has prepared this *Site Assessment and Interim Reclamation Plan* for the site known as the Shell State Tank Battery (henceforth, "Site"). The Site is located approximately 18.5 miles northwest of Tatum in U/L "A," Section 18, Township 11 South, Range 33 East, in Lea County, on land owned by the State of New Mexico and administered by the New Mexico State Land Office. The GPS coordinates of the site are 33.36974, -103.64703. A "Site Location Map" is provided as Attachment #1.

## **BACKGROUND AND SITE CONDITIONS**

The Site can be described as an approximate 0.7-acre active tank battery facility with good access via state highways and traditional caliche oilfield access roads. Prior to being acquired by 3R, the tank battery and associated lease was operated by Read & Steven's, Inc. In response to the lease transfer, a historical aerial imagery review was conducted, where members of the NMSLO's realty group identified evidence of a historical release in the north-central portion of the tank battery facility. Based on a review of available records and aerial imagery, it appears limited remediation activities have been conducted, although environmental records are not readily available. A "Historical Aerial" depicting the area of concern is provided as Attachment #2. A "Proposed

Sample Location Map” depicting the active facility and proposed sampling locations is provided as Attachment #3.

Review of available New Mexico Oil Conservation Division (NMOCD) Permitting data suggests that there have been no environmental field inspection violations at the facility. Review of incident records suggests that there has been one (1) reportable incident (nPRS0413152570) associated with the tank battery. Review of environmental records indicates that on May 16, 2004, the failure of a dump valve resulted in the release of eight (8) barrels of produced water. Environmental records suggests that by July 26, 2004, limited remediation activities were conducted, including the excavation and disposition of chloride contaminated soil; there is no “Release Notification and Correction Action” (NMOCD Form C-141) of closure documentation currently available. Given this, interim remediation/reclamation activities will be conducted in accordance with the NMOCD and NMSLO, as necessary. NMOCD Permitting details are provided as Attachment #4.

The soil in the vicinity of the Site can be described as Kimbrough-Lea complex with 0 to 3 percent slopes. Additional information regarding soil types is provided as Attachment #5.

Based on a review of historical aerial imagery, reclamation activities are not expected to affect natural habitat or previously undisturbed areas where the Cultural Properties Protection Rule is applicable. In the event interim reclamation/remediation activities lead to previously undisturbed areas, the Cultural Properties Protection Rule will be complied with, as necessary.

Based on a review of groundwater databases maintained by the New Mexico Office of the State Engineer and United States Geological Survey, as well as local drilling, the probable depth to groundwater was determined to be approximately (60) feet (ft) below ground surface (bgs) at the Site.

Additionally, the Site is not proximate to other sensitive receptors identified in Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC), such as continuously flowing watercourses, lakebeds, sinkholes, playas, occupied permanent residences, schools, hospitals, institutions, churches, springs, freshwater wells, municipal freshwater well fields, wetlands, subsurface mines, unstable areas, and/or 100-year floodplains. NMOCD Siting information is provided as Attachment #6.

The Site is not located in any critical habitat. In the event wildlife or other sensitive species such as migratory birds or the Lesser Prairie-Chicken are encountered during the course of reclamation activities, the project scope will be reevaluated to ensure compliance with applicable rules, as necessary. Details regarding protected species and/or habitats are provided as Attachment #7.

## RECLAMATION ACTIVITIES

Etech proposes the following interim reclamation activities designed to allow for the transfer of the lease at the Site:

- Upon notifying the NMSLO, conduct an initial soil investigation at the Site. The initial soil investigation will include the collection of soil samples from the surface and at 1 ft. bgs from the areas of concern in the active tank battery facility identified by the NMLSO's realty group during the historical aerial review. The collected soil samples will be analyzed for concentrations of benzene, toluene, ethylbenzene, and total xylenes (BTEX) utilizing EPA SW-846 Method 8021, total petroleum hydrocarbons (TPH) utilizing Environmental Protection Agency (EPA) SW-846 Method 8015M Ext., and chloride utilizing EPA 300.0 and/or SM 4500 Cl B, if applicable. The NMSLO will be notified at least two (2) business days prior to the commencement of any reclamation and/or confirmation sampling activities.
- Upon receiving laboratory analytical results from the initial soil investigation samples, excavate visibly and non-visibly impacted portions of the tank battery facility affected above the NMOCD Remediation Standards and/or NMOCD Reclamation Standards, as described in the "Procedures for Implementation of the Spill Rule (19.15.29 NMAC)", dated September 6, 2019 (10 ppm benzene, 50 ppm BTEX, 100 ppm TPH, and 600 ppm chloride). The floors and sidewalls of the excavated area(s) will be advanced until laboratory analytical results from 5-point composite excavation confirmation soil samples (representing no more than 200 sq. ft.) indicate concentrations of benzene, BTEX, TPH, and chloride are below the NMOCD Reclamation Standards and/or the NMOCD Remediation Standards, whichever is applicable.
  - It should be noted that if the excavation encroaches on the active tank battery equipment, deferral characterization soil samples will be collected, as necessary, and material affected above the NMOCD Reclamation Standards/Remediation Standards remaining in-situ will be treated with a Microblaze ® or similar solution. Final remediation/reclamation will be conducted in accordance with the NMOCD and NMSLO once the facility is decommissioned.
- Upon receiving laboratory analytical results from excavation confirmation soil samples, the excavated areas will be backfilled with locally-sourced, non-impacted "like" material. Affected areas within the active facility will be backfilled, compacted and graded to meet the needs of the facility.
- Interim reclamation/remediation activities are not expected to affect the adjacent pasture area. In the event interim reclamation/remediation activities lead into the adjacent pasture, disturbed areas will be reseeded with State Coarse Sites Seed Mixture, as necessary.

- Upon completion of interim reclamation/remediation activities, a *Remediation Summary and Closure (or Deferral Request, if applicable)* detailing field activities and laboratory analytical results from confirmation soil samples will be prepared and submitted to the NMSLO and NMOCD.

## PROPOSED SCHEDULE AND TIMELINE

Reclamation activities are expected to commence within 30 days of receiving NMSLO approval and are estimated to take three (3) weeks to complete.

If you have any questions or need any additional information, please feel free to contact me or Austin Tramell by phone or email.

Sincerely,


A handwritten signature in blue ink that reads "Joel Lowry". The signature is cursive and fluid.

Joel Lowry  
Etech Environmental & Safety Solutions

### Attachments:

- Attachment #1 - Site Location Map
- Attachment #2 - Historical Aerial
- Attachment #3 - Proposed Sample Location Map
- Attachment #4 - NMOCD Permitting Details
- Attachment #5 - Soil Type Information
- Attachment #6 - NMOCD Siting Information
- Attachment #7 - Protected Species and/or Habitat Details



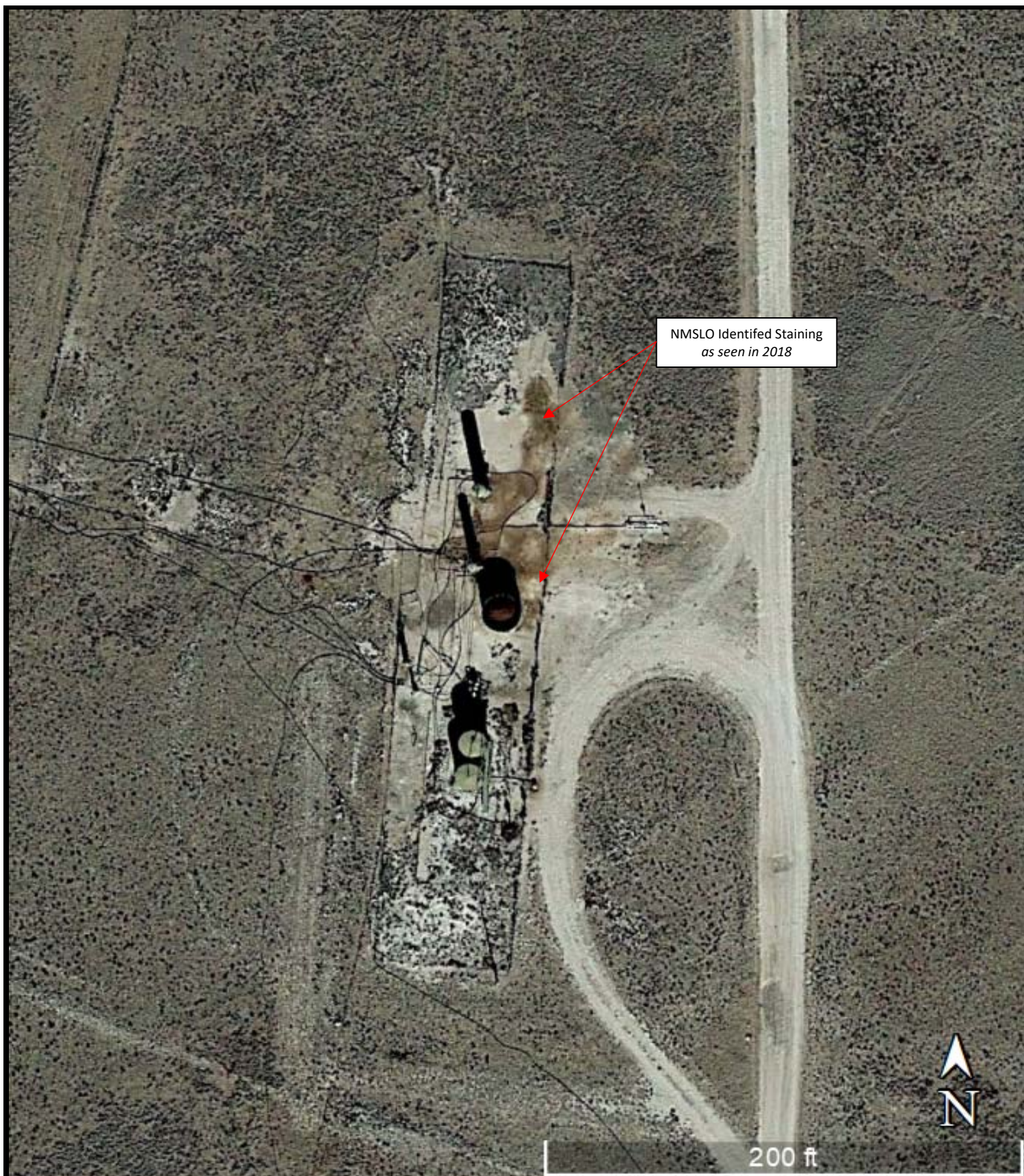
Legend:	
	Site Location

**Attachment #1**  
Site Location Map  
3 R Operating  
Shell State Tank Battery  
GPS: 33.369742, -103.647038  
Lea Co, NM



**Environmental & Safety Solutions, Inc.**

Drafted: jwl      Checked: client      Date: 4/4/25



## Legend:

N/A

**Attachment #2**  
Historical Aerial  
3 R Operating  
Shell State Tank Battery  
GPS: 33.369742, -103.647038  
Lea Co, NM

**eTECH**   
**Environmental & Safety Solutions, Inc.**

Drafted:

Checked: jwl

Date: 4/4/25



**Legend:**

● Proposed Sample Point

**Attachment #3**  
Proposed Sample Location Map  
3 R Operating  
Shell State Tank Battery  
GPS: 33.369742, -103.647038  
Lea Co, NM

**eTECH**   
*Environmental & Safety Solutions, Inc.*

Drafted:  
Checked: jwl Date: 4/4/25

OCD Permitting

Home    Searches    Incidents    Incident Details

NPRS0413152570 SHELL STATE #001 @ 30-025-22409

General Incident Information

Site Name: SHELL STATE #001

Well: [\[30-025-22409\]](#) SHELL STATE #001

Facility:

Operator: [\[331569\]](#) 3R Operating, LLC

Status: Closure Not Approved, Pending submission of C-141 from the operator

Type: Produced Water Release

Severity: Minor

Surface Owner: State

County: Lea (25)

District: Hobbs

Incident Location: A-18-11S-33E    660 FNL    510 FEL

Lat/Long: 33.3713417,-103.6469498 NAD83

Directions:

Notes

Source of Referral: Industry Rep

Action / Escalation: Other - Specify in Notes

Resulted In Fire: ☐

Resulted In Injury: ☐

Endangered Public Health: ☐

Will or Has Reached Watercourse: ☐

Fresh Water Contamination: ☐

Property Or Environmental Damage: ☐

Contact Details

Contact Name:

Contact Title:

Event Dates

Date of Discovery: 03/16/2004

Initial C-141 Report Due: 3/31/2004

Remediation Closure Report Due: 11/13/2018

Incident Dates

Type	Action	Received	Denied	Approved
Remediation Closure Report Extension		08/15/2018		08/15/2018
Sampling Notice	<a href="#">[403610]</a>	11/15/2024		11/15/2024

Compositional Analysis of Vented and/or Flared Natural Gas

No Compositional Analysis Found

Quic

- [Gene](#)
- [Mater](#)
- [Event](#)
- [Order](#)
- [Actior](#)

Asso

- [Incide](#)
- [Well F](#)

New

- [New f](#)
- [New l](#)
- [New C](#)
- [New f](#)
- [New 5](#)
- [New 1](#)
- [New \](#)

Corrosion	Dump Valve	Produced Water	<input type="checkbox"/>	8	0	8	BBL
The concentration of dissolved chloride in the produced water >10,000 mg/l: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No							

Incident Events

Date	Detail
11/15/2024	The (11/15/2024, C-141N) application <a href="#">[403610]</a> was assigned to this incident.
07/26/2004	W. Palmer sent chloride contaminated soil to landfarm. No sample data submitted.

Incident Severity

Major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
--

Incident Corrective Actions

- No initial response data was found for this incident.
- No site characterization data was found for this incident.
- No remediation plan data was found for this incident.
- No active remediation deferral request was found for this incident.
- No remediation closure report data was found for this incident.
- No reclamation report data was found for this incident.
- No re-vegetation report data was found for this incident.

Orders

No Orders Found

Map Unit Description: Kimbrough-Lea complex, dry, 0 to 3 percent slopes---Lea County, New Mexico

Shell State #003

## Lea County, New Mexico

### KU—Kimbrough-Lea complex, dry, 0 to 3 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2tw46

*Elevation:* 2,500 to 4,800 feet

*Mean annual precipitation:* 14 to 16 inches

*Mean annual air temperature:* 57 to 63 degrees F

*Frost-free period:* 180 to 220 days

*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Kimbrough and similar soils:* 45 percent

*Lea and similar soils:* 25 percent

*Minor components:* 30 percent

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

#### Description of Kimbrough

##### Setting

*Landform:* Playa rims, plains

*Down-slope shape:* Convex, linear

*Across-slope shape:* Concave, linear

*Parent material:* Loamy eolian deposits derived from sedimentary rock

##### Typical profile

*A - 0 to 3 inches:* gravelly loam

*Bw - 3 to 10 inches:* loam

*Bkkm1 - 10 to 16 inches:* cemented material

*Bkkm2 - 16 to 80 inches:* cemented material

##### Properties and qualities

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* 4 to 18 inches to petrocalcic

*Drainage class:* Well drained

*Runoff class:* Very high

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.01 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 95 percent

*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Sodium adsorption ratio, maximum:* 1.0

*Available water supply, 0 to 60 inches:* Very low (about 1.4 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

Map Unit Description: Kimbrough-Lea complex, dry, 0 to 3 percent slopes---Lea County, New Mexico

Shell State #003

*Land capability classification (nonirrigated): 7s*  
*Hydrologic Soil Group: D*  
*Ecological site: R077DY049TX - Very Shallow 12-17" PZ*  
*Hydric soil rating: No*

## Description of Lea

### Setting

*Landform: Plains*  
*Down-slope shape: Convex*  
*Across-slope shape: Linear*  
*Parent material: Calcareous, loamy eolian deposits from the blackwater draw formation of pleistocene age over indurated caliche of pliocene age*

### Typical profile

*A - 0 to 10 inches: loam*  
*Bk - 10 to 18 inches: loam*  
*Bkk - 18 to 26 inches: gravelly fine sandy loam*  
*Bkkm - 26 to 80 inches: cemented material*

### Properties and qualities

*Slope: 0 to 3 percent*  
*Depth to restrictive feature: 22 to 30 inches to petrocalcic*  
*Drainage class: Well drained*  
*Runoff class: High*  
*Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)*  
*Depth to water table: More than 80 inches*  
*Frequency of flooding: None*  
*Frequency of ponding: None*  
*Calcium carbonate, maximum content: 90 percent*  
*Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)*  
*Sodium adsorption ratio, maximum: 3.0*  
*Available water supply, 0 to 60 inches: Very low (about 2.9 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*  
*Land capability classification (nonirrigated): 7s*  
*Hydrologic Soil Group: D*  
*Ecological site: R077DY047TX - Sandy Loam 12-17" PZ*  
*Hydric soil rating: No*

## Minor Components

### Douro

*Percent of map unit: 12 percent*  
*Landform: Plains*  
*Down-slope shape: Linear*  
*Across-slope shape: Linear*  
*Ecological site: R077DY047TX - Sandy Loam 12-17" PZ*  
*Other vegetative classification: Unnamed (G077DH000TX)*  
*Hydric soil rating: No*

Map Unit Description: Kimbrough-Lea complex, dry, 0 to 3 percent slopes---Lea County, New Mexico

Shell State #003

**Kenhill**

*Percent of map unit:* 12 percent

*Landform:* Plains

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* R077DY038TX - Clay Loam 12-17" PZ

*Hydric soil rating:* No

**Spraberry**

*Percent of map unit:* 6 percent

*Landform:* Playa rims, plains

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear

*Ecological site:* R077DY049TX - Very Shallow 12-17" PZ

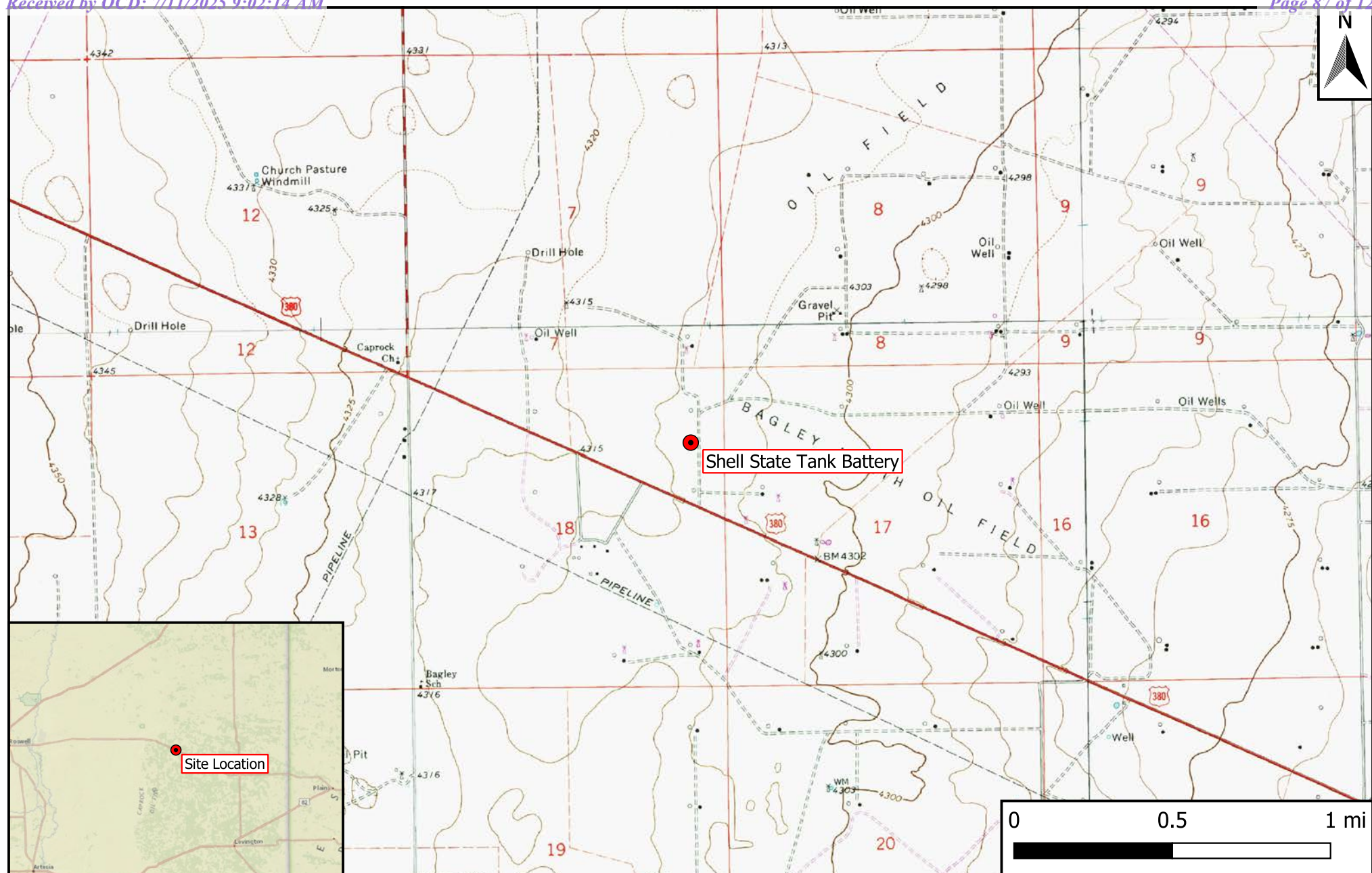
*Other vegetative classification:* Unnamed (G077DH000TX)

*Hydric soil rating:* No

## Data Source Information

Soil Survey Area: Lea County, New Mexico

Survey Area Data: Version 21, Sep 3, 2024

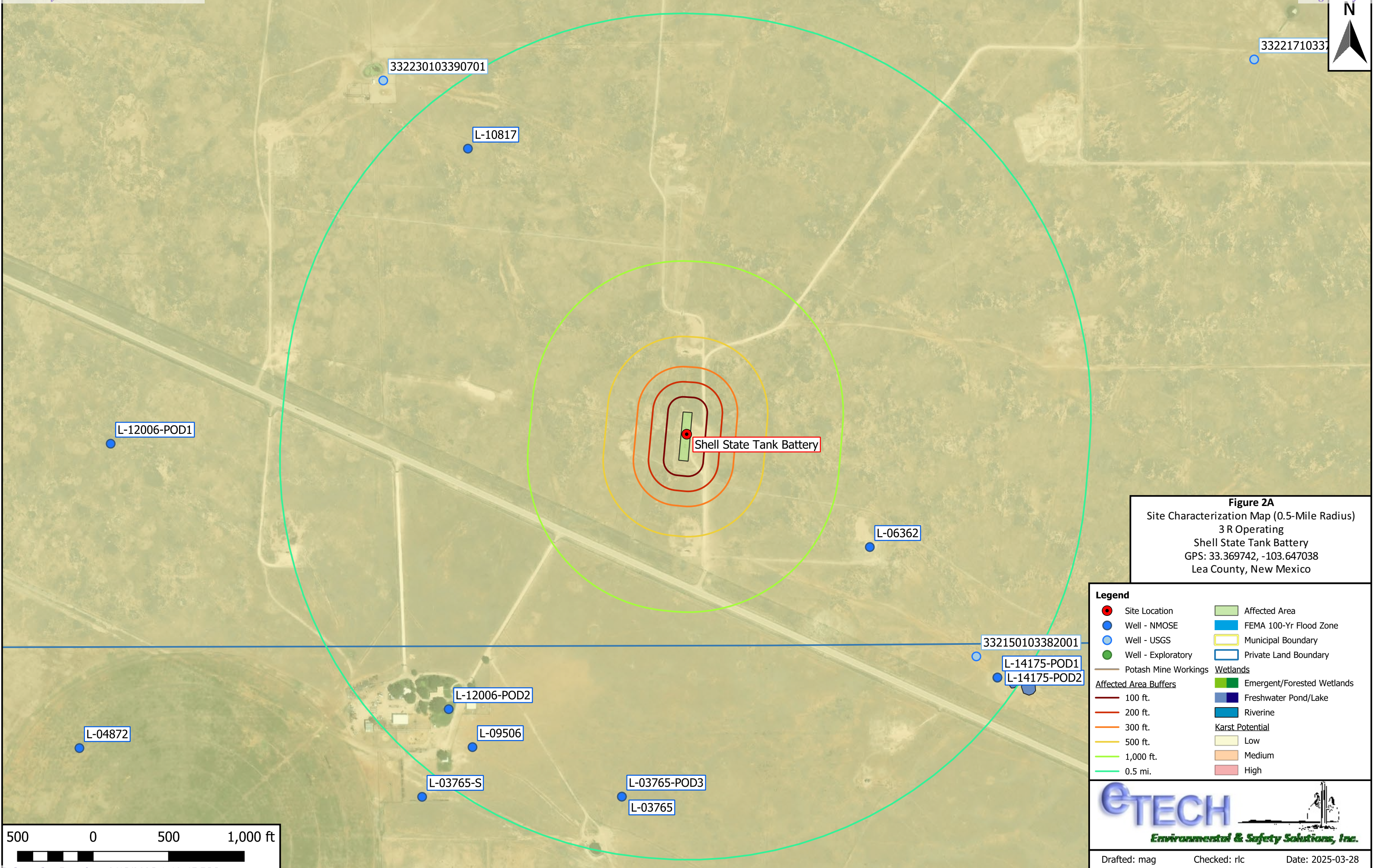


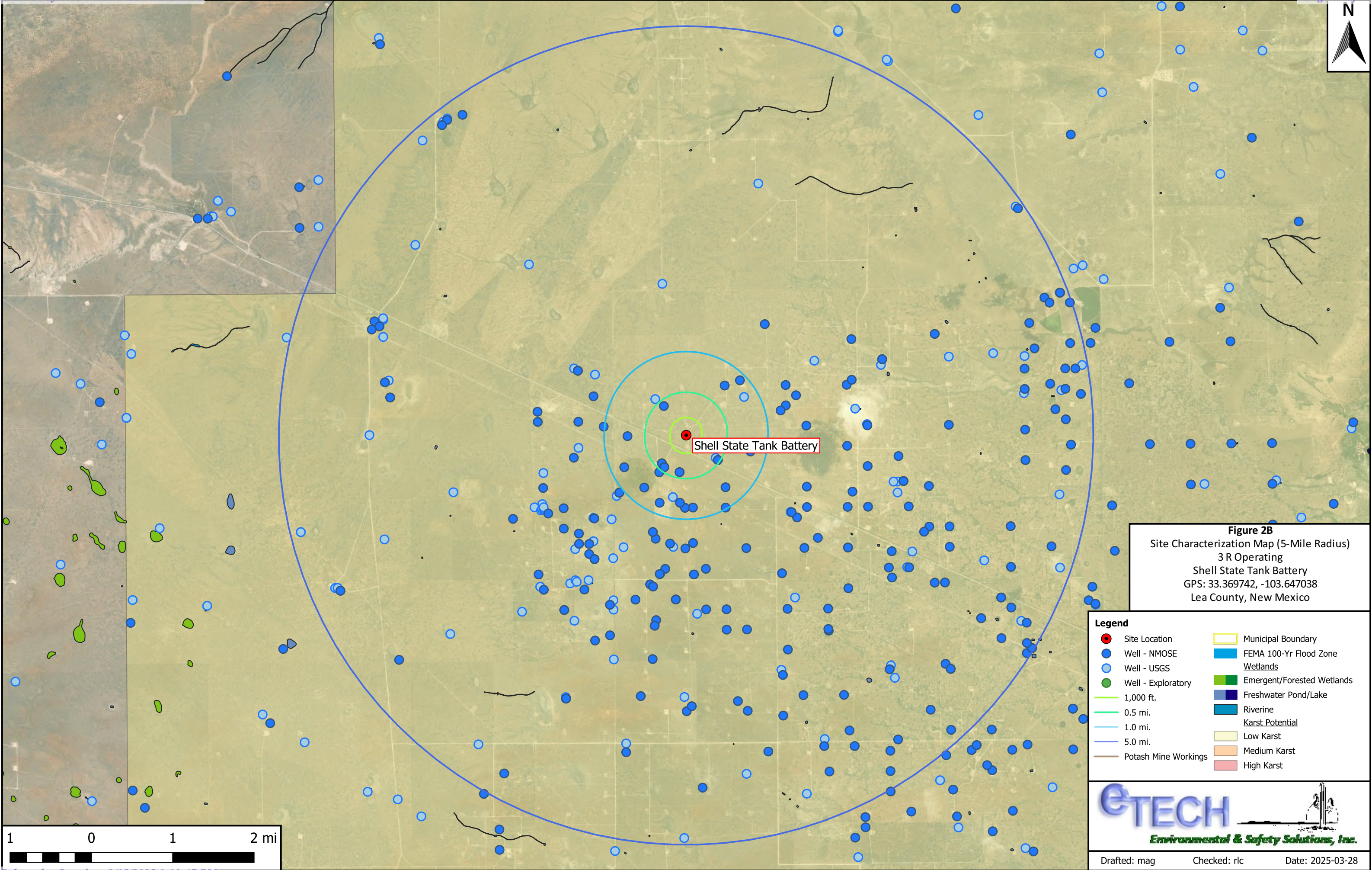
## Legend

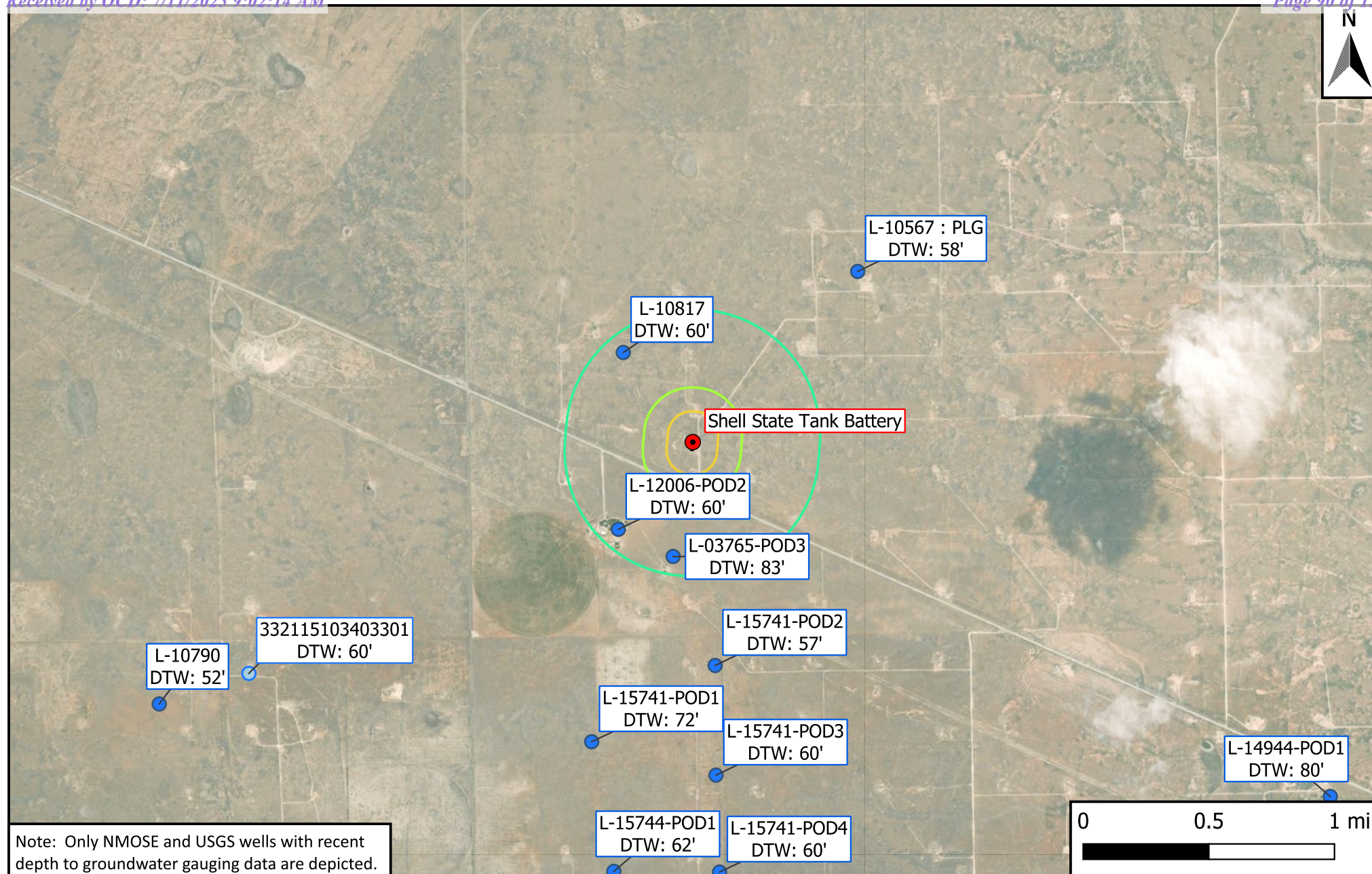
- Site Location

**Figure 1**  
 Site Location Map  
 3 R Operating  
 Shell State Tank Battery  
 GPS: 33.369742, -103.647038  
 Lea County, New Mexico









## Legend

- |                         |                 |
|-------------------------|-----------------|
| ● Active Site Locations | ■ Affected Area |
| ● Well - NMOSE          | — 500 ft.       |
| ● Well - USGS           | — 1,000 ft.     |
| ● Well - Exploratory    | — 0.5 mi.       |

**Figure 4**  
Inferred Depth to Groundwater Map  
3 R Operating  
Shell State Tank Battery  
GPS: 33.369742, -103.647038  
Lea County, New Mexico



Drafted: mag


Checked: rlc

Date: 2025-03-28

# Point of Diversion Summary

quarters are 1=NW 2=NE 3=SW 4=SE  
quarters are smallest to largest

NAD83 UTM in meters

Well Tag	POD Nbr	Q64	Q16	Q4	Sec	Tws	Rng	X	Y	Map
	L 10817		SW	SE	07	11S	33E	625418.0	3693669.0 *	

\* UTM location was derived from PLSS - see Help

Driller License:	421	Driller Company:	GLENN'S WATER WELL SERVICE		
Driller Name:	GLENN, CLARK A. "CORKY" (LD)				
Drill Start Date:	1998-06-05	Drill Finish Date:	1998-06-05	Plug Date:	
Log File Date:	1998-06-17	PCW Rcv Date:		Source:	Shallow
Pump Type:		Pipe Discharge Size:		Estimated Yield:	40
Casing Size:	5.50	Depth Well:	125	Depth Water:	60

## Water Bearing Stratifications:

Top	Bottom	Description
65	122	Other/Unknown

## Casing Perforations:

Top	Bottom
65	125

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.

STATE ENGINEER OFFICE

WELL RECORD

Revised June 1972

Section 1. GENERAL INFORMATION

148170

(A) Owner of well Pearce Ranch Owner's Well No. \_\_\_\_\_

Street or Post Office Address West Star Box 52

City and State Tatum, New Mexico 88267

Well was drilled under Permit No. #1-10,817 and is located in the:

a. \_\_\_\_\_  $\frac{1}{4}$  \_\_\_\_\_  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  of Section 7 Township 11-S. Range 33-E. N.M.P.M.

b. Tract No. \_\_\_\_\_ of Map No. \_\_\_\_\_ of the \_\_\_\_\_

c. Lot No. \_\_\_\_\_ of Block No. \_\_\_\_\_ of the \_\_\_\_\_

Subdivision, recorded in \_\_\_\_\_ County.

d. X= \_\_\_\_\_ feet, Y= \_\_\_\_\_ feet, N.M. Coordinate System \_\_\_\_\_ Zone in the \_\_\_\_\_ Grant.

(B) Drilling Contractor Glenn's Wager Well Service License No. WD-421

Address P.O. Box 692 Tatum, New Mexico 88267

Drilling Began 6/5/98 Completed 6/5/98 Type tools rotary Size of hole 9 7/8 in.

Elevation of land surface or \_\_\_\_\_ at well is \_\_\_\_\_ ft. Total depth of well 125 ft.

Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well 60 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			
65	122	57	Sand	40 GPM

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To
5 $\frac{1}{2}$ "	.250	T&C			125	none	65	125

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet		Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
From	To				

Section 5. PLUGGING RECORD

Plugging Contractor \_\_\_\_\_

Address \_\_\_\_\_

Plugging Method \_\_\_\_\_

Date Well Plugged \_\_\_\_\_

Plugging approved by: \_\_\_\_\_

State Engineer Representative

No.	Depth in Feet		Cubic Feet of Cement
	Top	Bottom	
1			
2			
3			
4			

Date Received 06/17/98

FOR USE OF STATE ENGINEER ONLY

507088

Quad \_\_\_\_\_ FWL \_\_\_\_\_ FSL \_\_\_\_\_

File No. L-10,817 Use Stock Location No. 11.33.7.4330

[illegible]

## Section 7. REMARKS AND ADDITIONAL INFORMATION

98 JUN 17 AM 10 23

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Corby Henry  
Driller

**INSTRUCTIONS:** This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1(a) and Section 5 need be completed.

STATE ENGINEER OFFICE  
WELL RECORD

June 15 '98  
Revised June 1972

Section 1. GENERAL INFORMATION

(A) Owner of well Pearce Ranch Owner's Well No. \_\_\_\_\_  
Street or Post Office Address West Star Box 52  
City and State Tatum, New Mexico 88267

Well was drilled under Permit No. #1-10,817 and is located in the:  
a. \_\_\_\_\_  $\frac{1}{4}$  \_\_\_\_\_  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  of Section 7 Township 11-S. Range 33-E. N.M.P.M.  
b. Tract No. \_\_\_\_\_ of Map No. \_\_\_\_\_ of the \_\_\_\_\_  
c. Lot No. \_\_\_\_\_ of Block No. \_\_\_\_\_ of the \_\_\_\_\_  
Subdivision, recorded in \_\_\_\_\_ County.  
d. X= \_\_\_\_\_ feet, Y= \_\_\_\_\_ feet, N.M. Coordinate System \_\_\_\_\_ Zone in  
the \_\_\_\_\_ Grant.

(B) Drilling Contractor Glenn's Wafer Well Service License No. WD-421  
Address P.O. Box 692 Tatum, New Mexico 88267  
Drilling Began 6/5/98 Completed 6/5/98 Type tools rotary Size of hole 9 7/8 in.  
Elevation of land surface or \_\_\_\_\_ at well is \_\_\_\_\_ ft. Total depth of well 125 ft.  
Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well 60 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			
65	122	57	Sand	40 GPM

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To
5 1/2"	.250	T&C			125	none	65	125

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet		Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
From	To				

Section 5. PLUGGING RECORD

Plugging Contractor \_\_\_\_\_  
Address \_\_\_\_\_  
Plugging Method \_\_\_\_\_  
Date Well Plugged \_\_\_\_\_  
Plugging approved by: \_\_\_\_\_  
State Engineer Representative

No.	Depth in Feet		Cubic Feet of Cement
	Top	Bottom	
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received 11/7/00

Quad \_\_\_\_\_ FWL \_\_\_\_\_ FSL \_\_\_\_\_

Section 7. REMARKS AND ADDITIONAL INFORMATION


Cosky Blum  
Driller

Released to Imaging: 8/15/2025 1:10:47 PM

# Point of Diversion Summary

quarters are 1=NW 2=NE 3=SW 4=SE  
quarters are smallest to largest

NAD83 UTM in meters

Well Tag	POD Nbr	Q64	Q16	Q4	Sec	TwS	Rng	X	Y	Map
L 12006	POD2	SE	NW	NW	18	11S	33E	625386.5	3692537.3	

\* UTM location was derived from PLSS - see Help

Driller License:	421	Driller Company:	GLENN'S WATER WELL SERVICE
Driller Name:	CORKY GLENN		
Drill Start Date:	2008-08-27	Drill Finish Date:	2008-08-27
Log File Date:	2008-09-04	PCW Rcv Date:	
		Source:	Shallow
Pump Type:		Pipe Discharge Size:	
		Estimated Yield:	
Casing Size:	6.63	Depth Well:	155
		Depth Water:	60

## Casing Perforations:

Top	Bottom
60	152

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

3/28/25 12:10 PM MST

Point of Diversion Summary

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9/3/08

OSE FILE NUMBER \_\_\_\_\_

For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER  
WELL RECORD and DRILLING LOG

## 1. PERMIT HOLDER(S)

Name: PEARCE TRUST

Name: \_\_\_\_\_

Address: 1717 JACKSON

Address: \_\_\_\_\_

City: PECOS

City: \_\_\_\_\_

State: TX Zip: 79772

State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Phone: \_\_\_\_\_

Contact: \_\_\_\_\_

Contact Phone: \_\_\_\_\_

## 2. STATE ENGINEER REFERENCE NUMBERS:

File # L-12006, Well # 1

## 3. LOCATION OF WELL (The Datum Is Assumed To Be WGS 84 Unless Otherwise Specified)

Latitude: N 33° Deg 21 Min 53.16 Sec

Longitude: W 103° Deg 39 Min 8.05 Sec

(Enter Lat/Long To At Least 1/10<sup>th</sup> Of A Second)

Datum If Not WGS 84: SE 1/4 NW 1/4 SEC. 18, T11-S, R33-EAST

## 4. DRILLING CONTRACTOR

License Number: WD 421

Name: GLENN'S WATER WELL SERVICE, Work Phone: 505-398-2424

Drill Rig Serial Number: 0582

List The Name Of Each Drill Rig Supervisor That Managed On-Site Operations During The Drilling Process:

CORKY GLENN

## 5. DRILLING RECORD

Drilling Began: 8/27/08; Completed: 8/27/08; Drilling Method: ROTARY MUD

Diameter Of Bore Hole: \_\_\_\_\_ (in);

Total Depth Of Well: 155 (ft);

Completed Well Is (Circle One) Shallow Artesian;

Depth To Water First Encountered: 60' (ft);

Depth To Water Upon Completion Of Well: 60' (ft).

Do Not Write Below This Line

TRN Number: 485546

File Number: L-12206

Form: wr-20 May 07

L-12006

page 1 of 4

CLW

12

STATE ENGINEER OFFICE  
ROSWELL, NEW MEXICO

2008 SEP -4 P 12:01

OSE FILE NUMBER \_\_\_\_\_  
For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER  
WELL RECORD and DRILLING LOG

6. RECORD OF CASING

Diameter (inches)	Pounds (per ft.)	Threads (per inch)	Depth (feet)	Length Top to Bottom (feet)	Type of Shoe	Perforations (from to)
10 3/4	1/4 WELL	PE		21	NONE	NONE
6 5/8	.188	PE		152	NONE	60-152

RECORD OF MUDDING AND CEMENTING

Depth (feet)	Hole (diameter)	Mud Used (# of sacks)	Cement (cubic feet)	Method of Placement
0-21	14 3/4		14 SACKS	POUR

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Trn Number: \_\_\_\_\_

File Number: \_\_\_\_\_

Form: wr-20 May 07

page 2 of 4

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For OSE Use Only

**8. LOG OF HOLE.** For Each Water Bearing Strata, Estimate The Yield Of The Formation In Gallons Per Minute.

[illegible]

Do Not Write Below This Line

File Number:

OSE FILE NUMBER \_\_\_\_\_

For OSE Use Only

NEW MEXICO OFFICE OF THE STATE ENGINEER  
WELL RECORD

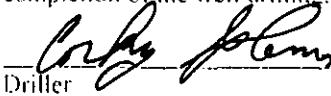
## 9. ADDITIONAL STATEMENTS OR EXPLANATIONS:

DRILLED 14 3/4" HOLE TO 21' AND SET 21' OF 10 3/4"  
CASING AND CEMENTED TO TOP OF WELL

STATE OF NEW MEXICO  
OFFICE OF THE STATE ENGINEER  
DIVISION OF WATER RESOURCES

The undersigned hereby certifies that, to the best of his or her knowledge and belief, the foregoing is a true and correct record of the above described bore hole. The undersigned further certifies that he or she will file this well record with the Office Of The State Engineer and permit holder within 20 days after completion of the well drilling.

Driller

9/3/08  
(mm/dd/year)

Do Not Write Below This Line

Trn Number: \_\_\_\_\_

Form wr-20 May 07


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File Number: \_\_\_\_\_

# Point of Diversion Summary

quarters are 1=NW 2=NE 3=SW 4=SE  
quarters are smallest to largest

NAD83 UTM in meters

Well Tag	POD Nbr	Q64	Q16	Q4	Sec	Tw	Rng	X	Y	Map
	L 03765 POD3	SW	NE	SE	18	11S	33E	625737.0	3692363.0	

\* UTM location was derived from PLSS - see Help

Driller License:	1058	Driller Company:	KEY'S DRILLING & PUMP SERVICE
Driller Name:	KEY, CLINTON		
Drill Start Date:	2011-10-20	Drill Finish Date:	2011-10-28
Log File Date:	2011-11-16	PCW Rcv Date:	
		Source:	Shallow
Pump Type:		Pipe Discharge Size:	
		Estimated Yield:	
Casing Size:	13.25	Depth Well:	160
		Depth Water:	83

## Water Bearing Stratifications:

Top	Bottom	Description
83	90	Sandstone/Gravel/Conglomerate
90	120	Sandstone/Gravel/Conglomerate
130	155	Sandstone/Gravel/Conglomerate

## Casing Perforations:

Top	Bottom
45	125

## Meter Information

Meter Number:	17331	Meter Make:	MCCROMETER
Meter Serial Number:	18-03392-06	Meter Multiplier:	100.0000
Number of Dials:	6	Meter Type:	Diversion
Unit of Measure:	Gallons	Reading Frequency:	Monthly

## Meter Readings (in Acre-Feet)

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount	Online
2012-01-01	2012	0.000	A	RPT		0.000	
2012-04-01	2012	163274.000	A	RPT		50.107	
2012-07-01	2012	289711.000	A	RPT		38.802	
2012-12-03	2012	589764.000	A	RPT		92.083	
2013-04-08	2013	892561.000	A	RPT		92.925	
2013-11-08	2013	169906.000	R	RPT	Meter Rollover	85.114	
2014-04-01	2014	326143.000	A	RPT		47.947	
2014-07-01	2014	360719.000	A	RPT		10.611	
2014-10-01	2014	372652.000	A	RPT		3.662	
2015-01-01	2015	373282.000	A	RPT		0.193	
2015-04-01	2015	469793.000	A	RPT		29.618	
2015-07-01	2015	586490.000	A	RPT		35.813	
2015-10-01	2015	597347.000	A	RPT		3.332	
2016-01-01	2016	605145.000	A	RPT		2.393	
2016-07-01	2016	642600.000	A	RPT		11.495	
2016-10-01	2016	742827.000	A	RPT		30.759	
2017-01-02	2017	769841.000	A	RPT		8.290	
2017-04-01	2017	801270.000	A	RPT		9.645	
2018-01-01	2018	801270.000	A	ap		0.000	
2018-04-13	2018	0.000	A	ap		0.000	
2018-07-01	2018	150468.000	A	ap		46.177	
2019-01-01	2019	337273.000	A	ap		57.328	
2019-04-01	2019	444952.000	A	ap		33.045	
2019-07-01	2019	535886.000	A	ap		27.907	
2020-04-01	2020	730920.000	A	ap		59.854	
2020-07-01	2020	952059.000	A	dd		67.865	
2020-10-01	2020	133020.000	R	dd	Meter Rollover	55.535	
2021-01-01	2020	203424.000	A	dd		21.606	
2021-04-01	2021	229906.000	A	dd		8.127	

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount	Online
2021-07-01	2021	275780.000	A	dd		14.078	
2021-10-01	2021	426379.000	A	dd		46.217	
2022-01-01	2021	490297.000	A	dd		19.616	
2022-04-01	2022	509551.000	A	dd		5.909	
2022-07-01	2022	666601.000	A	dd		48.197	
2022-10-01	2022	764835.000	A	dd		30.147	
2023-01-01	2022	805862.000	A	dd		12.591	
2023-08-13	2023	36378.000	R	jb	Meter Rollover	70.743	

YTD Meter Amounts:

Year	Amount
2012	180.992
2013	178.039
2014	62.220
2015	68.956
2016	44.647
2017	17.935
2018	46.177
2019	118.280
2020	204.860
2021	88.038
2022	96.844
2023	70.743

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.



# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Lea County, New Mexico



## Local office

New Mexico Ecological Services Field Office

☎ (505) 346-2525

📠 (505) 346-2542

2105 Osuna Road Ne

Albuquerque, NM 87113-1001

NOT FOR CONSULTATION

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

- 
1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
  2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

## Birds

NAME	STATUS
Lesser Prairie-chicken <i>Tympanuchus pallidicinctus</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/1924">https://ecos.fws.gov/ecp/species/1924</a>	Endangered
Northern Aplomado Falcon <i>Falco femoralis septentrionalis</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/1923">https://ecos.fws.gov/ecp/species/1923</a>	<a href="#">EXPN</a>

## Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> Wherever found There is <b>proposed</b> critical habitat for this species. Your location does not overlap the critical habitat. <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Proposed Threatened

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

## Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2](#) and the Migratory Bird Treaty Act (MBTA) [1](#). Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds  
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds  
<https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC  
<https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are Bald Eagles and/or Golden Eagles in your [project](#) area.

### Measures for Proactively Minimizing Eagle Impacts

For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the [National Bald Eagle Management Guidelines](#). You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

If disturbance or take of eagles cannot be avoided, an [incidental take permit](#) may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the [Do I Need A Permit Tool](#). For assistance making this determination for golden eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

### Ensure Your Eagle List is Accurate and Complete

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

### Review the FAQs

The FAQs below provide important additional information and resources.

## NAME

## BREEDING SEASON

Golden Eagle *Aquila chrysaetos*

Breeds Dec 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

## Survey Effort (I)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

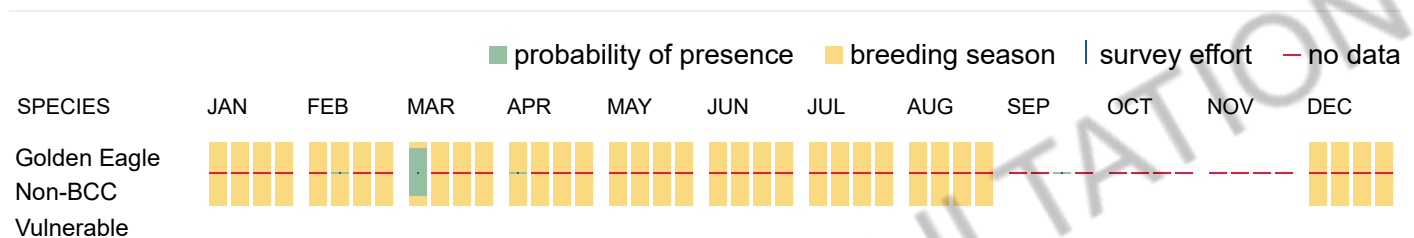
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

## No Data (-)

A week is marked as having no data if there were no survey events for that week.

## Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



## Bald & Golden Eagles FAQs

### What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply).

### Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

### How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird

species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

#### **How is the probability of presence score calculated? The calculation is done in three steps:**

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

#### **Breeding Season ()**

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

#### **Survey Effort ()**

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

#### **No Data ()**

A week is marked as having no data if there were no survey events for that week.

#### **Survey Timeframe**

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

## Migratory birds

The Migratory Bird Treaty Act (MBTA) <sup>1</sup> prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds  
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC  
<https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

### Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases [birds of concern](#), including [Birds of Conservation Concern \(BCC\)](#), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the [Nationwide avoidance and minimization measures for birds](#) document, and any other project-specific avoidance and minimization measures suggested at the link [Measures for avoiding and minimizing impacts to birds](#) for the birds of concern on your list below.

### Ensure Your Migratory Bird List is Accurate and Complete

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles document](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

### Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
Ferruginous Hawk <i>Buteo regalis</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/6038">https://ecos.fws.gov/ecp/species/6038</a>	Breeds Mar 15 to Aug 15

**Golden Eagle *Aquila chrysaetos***

Breeds Dec 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

**Long-billed Curlew *Numenius americanus***

Breeds Apr 1 to Jul 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/5511>

**Northern Harrier *Circus hudsonius***

Breeds Apr 1 to Sep 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/8350>

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the

maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

**Breeding Season (■)**

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

**Survey Effort (|)**

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

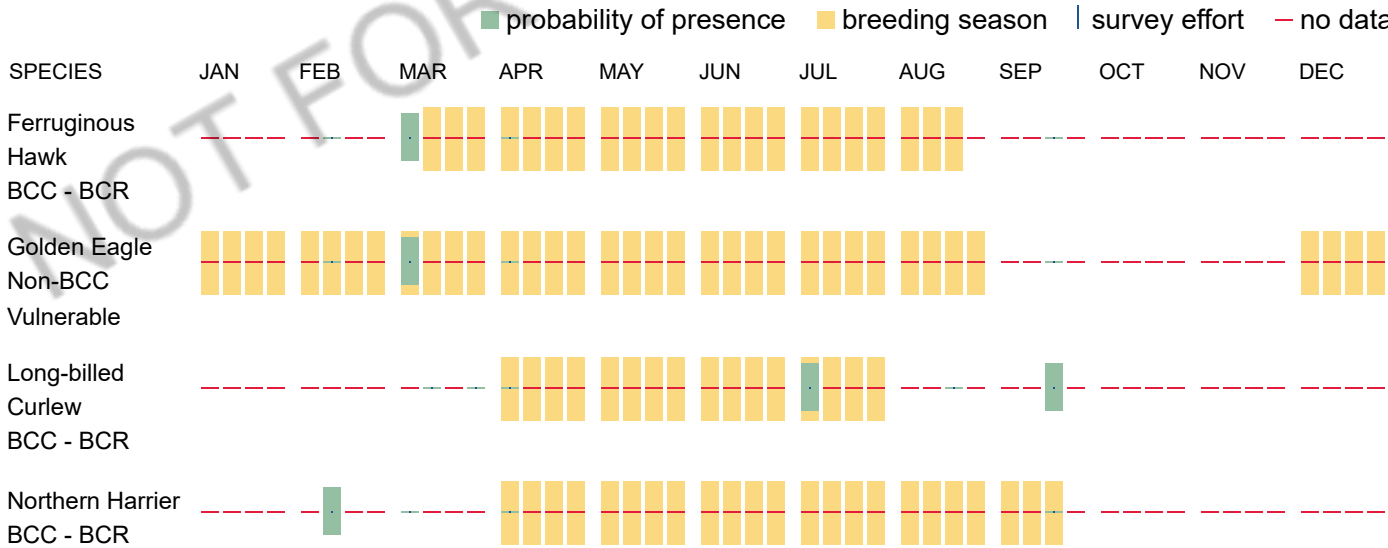
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

**No Data (—)**

A week is marked as having no data if there were no survey events for that week.

**Survey Timeframe**

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



**Migratory Bird FAQs**

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Avoidance & Minimization Measures for Birds](#) describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

### **What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?**

The Migratory Bird Resource List is comprised of [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the [Bald and Golden Eagle Protection Act](#) and those species marked as "Vulnerable". See the FAQ "What are the levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

### **Why are subspecies showing up on my list?**

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

### **What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### **How do I know if a bird is breeding, wintering, or migrating in my area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird

species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### **What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Bald and Golden Eagle Protection Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

### **Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

### **Proper interpretation and use of your migratory bird report**

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

### Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

#### **How is the probability of presence score calculated? The calculation is done in three steps:**

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

#### **Breeding Season ()**

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

#### **Survey Effort ()**

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

#### **No Data ()**

A week is marked as having no data if there were no survey events for that week.

#### **Survey Timeframe**

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

## Fish hatcheries

There are no fish hatcheries at this location.

## Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

This location did not intersect any wetlands mapped by NWI.

**NOTE:** This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

### Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

### Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

### **Data precautions**

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

## **Appendix F**

### **Cultural Properties Protection Rule Documentation**



Stephanie Garcia Richard  
COMMISSIONER

*State of New Mexico*  
*Commissioner of Public Lands*

310 OLD SANTA FE TRAIL  
P.O. BOX 1148  
SANTA FE, NEW MEXICO 87504-1148

COMMISSIONER'S OFFICE

Phone (505) 827-5760  
Fax (505) 827-5766  
www.nmstatelands.org

MEMORANDUM

TO: E-Tech Environmental and Safety Solutions LLC

FROM: Carlyn Stewart, *Trust Land Archaeologist*  
(505) 365-3800  
cstewart@nmslo.gov

SUBJECT: E-Tech Environmental and Safety Solutions LLC  
Remediation for: Shell State Tank Battery  
T11S R33E S18 N.M.P.M. Lea County

REFERENCE: NMSLO Cultural Properties Protection Rule (19.2.24 NMAC)

DATE: 6/26/2025

Thank you for your submission relating to the Proponent's proposed remediation activities at Shell State Tank Battery Reclamation.. An archaeological survey of the entire area of potential effect has been completed (NMCRIS Activity No. 158512) and no cultural properties were identified. Pursuant to NMSLO 19.2.24.8 (C) NMAC, remediation may proceed.

If any cultural materials are inadvertently encountered during surface disturbance, work must cease within 50 feet and the NMSLO Cultural Resources Office must be notified immediately by emailing ([CROinfo@slo.state.nm.us](mailto:CROinfo@slo.state.nm.us)). Please reach out if you have questions or need additional clarification.

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

QUESTIONS

Action 484084

**QUESTIONS**

Operator: 3R Operating, LLC 20405 State Highway 249 Houston, TX 77070	OGRID: 331569
	Action Number: 484084
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

**QUESTIONS**

<b>Prerequisites</b>	
Incident ID (n#)	nPRS0413152570
Incident Name	NPRS0413152570 SHELL STATE #001 @ 30-025-22409
Incident Type	Produced Water Release
Incident Status	Remediation Plan Received
Incident Well	[30-025-22409] SHELL STATE #001

**Location of Release Source***Please answer all the questions in this group.*

Site Name	SHELL STATE #001
Date Release Discovered	03/16/2004
Surface Owner	State

**Incident Details***Please answer all the questions in this group.*

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

**Nature and Volume of Release***Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.*

Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Cause: Corrosion   Dump Valve   Produced Water   Released: 8 BBL   Recovered: 0 BBL   Lost: 8 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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QUESTIONS, Page 2

Action 484084

**QUESTIONS (continued)**

Operator: 3R Operating, LLC 20405 State Highway 249 Houston, TX 77070	OGRID: 331569
	Action Number: 484084
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

**QUESTIONS**

<b>Nature and Volume of Release (continued)</b>	
Is this a gas only submission (i.e. only significant Mcf values reported)	<b>No, according to supplied volumes this does not appear to be a "gas only" report.</b>
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	<b>No</b>
Reasons why this would be considered a submission for a notification of a major release	<i>Unavailable.</i>
<i>With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.</i>	

**Initial Response**

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

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

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

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

I hereby agree and sign off to the above statement	Name: Austin Trammell Title: Director of environmental and regulatory Email: atrammell@3roperating.com Date: 07/11/2025
--	--

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QUESTIONS, Page 3

Action 484084

**QUESTIONS (continued)**

Operator: 3R Operating, LLC 20405 State Highway 249 Houston, TX 77070	OGRID: 331569
	Action Number: 484084
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

**QUESTIONS**

<b>Site Characterization</b>	
<i>Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 51 and 75 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Between 1 and 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1 and 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1000 (ft.) and ½ (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1000 (ft.) and ½ (mi.)
Any other fresh water well or spring	Between 1000 (ft.) and ½ (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Between 1 and 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Greater than 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

<b>Remediation Plan</b>	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
Requesting a remediation plan approval with this submission	Yes
<i>Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.</i>	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
<b>Soil Contamination Sampling:</b> (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	10300
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	11900
GRO+DRO (EPA SW-846 Method 8015M)	9820
BTEX (EPA SW-846 Method 8021B or 8260B)	2.3
Benzene (EPA SW-846 Method 8021B or 8260B)	0
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
On what estimated date will the remediation commence	09/26/2025
On what date will (or did) the final sampling or liner inspection occur	10/26/2025
On what date will (or was) the remediation complete(d)	11/07/2025
What is the estimated surface area (in square feet) that will be reclaimed	16200
What is the estimated volume (in cubic yards) that will be reclaimed	2225
What is the estimated surface area (in square feet) that will be remediated	6400
What is the estimated volume (in cubic yards) that will be remediated	22800
<i>These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.</i>	
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

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QUESTIONS, Page 4

Action 484084

**QUESTIONS (continued)**

Operator: 3R Operating, LLC 20405 State Highway 249 Houston, TX 77070	OGRID: 331569
	Action Number: 484084
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

**QUESTIONS**

<b>Remediation Plan (continued)</b>	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
<b>This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:</b>	
<i>(Select all answers below that apply.)</i>	
(Ex Situ) Excavation and <b>off-site</b> disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for <b>off-site</b> disposal	GANDY MARLEY LANDFARM/LANDFILL [FEEM0112338393]
<b>OR</b> which OCD approved well (API) will be used for <b>off-site</b> disposal	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, out-of-state	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and <b>on-site</b> remediation (i.e. On-Site Land Farms)	No
(In Situ) Soil Vapor Extraction	No
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	No
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	No
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	No
Ground Water Abatement pursuant to 19.15.30 NMAC	No
OTHER (Non-listed remedial process)	No
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
I hereby agree and sign off to the above statement	Name: Austin Tramell Title: Director of environmental and regulatory Email: atramell@3roperating.com Date: 07/11/2025
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

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QUESTIONS, Page 5

Action 484084

QUESTIONS (continued)

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	Action Number:  484084
	Action Type:  [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

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

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Action 484084

QUESTIONS (continued)

Operator:  3R Operating, LLC 20405 State Highway 249 Houston, TX 77070	OGRID:  331569
	Action Number:  484084
	Action Type:  [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	403610
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	11/19/2024
What was the (estimated) number of samples that were to be gathered	30
What was the sampling surface area in square feet	3000

Remediation Closure Request	
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.	
Requesting a remediation closure approval with this submission	No

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CONDITIONS

Action 484084

**CONDITIONS**

Operator: 3R Operating, LLC 20405 State Highway 249 Houston, TX 77070	OGRID: 331569
	Action Number: 484084
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

**CONDITIONS**

Created By	Condition	Condition Date
rhamlet	The Remediation Plan is Conditionally Approved. All samples must be analyzed for all constituents listed in Table I of 19.15.29.12 NMAC. Floor confirmation samples should be delineated/excavated to meet closure criteria standards from Table 1 of the OCD Spill Rule for site assessment/characterization/proven depth to water determination. All sidewall samples should be taken from the sidewall of the excavation. Please make sure that the edge of the release extent is accurately defined. Sidewall/edge samples should be delineated/excavated to 600 mg/kg for chlorides and 100 mg/kg for TPH to define the edge of the release. Please collect confirmation samples, representing no more than 200 ft2.	8/15/2025
rhamlet	If fluid reached tanks/equipment, sample up against tanks/equipment to ensure contaminants didn't go underneath. If the removal of contaminants under tanks/equipment could cause a major facility deconstruction, a formal deferral request will need to be submitted to the OCD Permitting Portal. All off-pad areas must meet reclamation standards in the OCD Spill Rule. The work will need to be completed in 90 days after the report has been reviewed.	8/15/2025