



February 19, 2026

District Supervisor
Oil Conservation Division, District 2
811 S. First St.
Artesia, NM 88210

**Re: Release Characterization, Remediation Summary, and Deferral Request
REVISION 2
ConocoPhillips
Willow A State #001 Tank Battery Release
Unit Letter J, Section 03, Township 25 South, and Range 28 East
Eddy County, New Mexico
Incident ID NAPP2221332553
Landowner: NMSLO**

Sir or Madam:

Tetra Tech, Inc. (Tetra Tech) was contacted by ConocoPhillips to assess and evaluate a release that occurred at the Willow State Tank Battery associated with the Willow A State #001 well (API # 30-015-33012). The release footprint is located in Public Land Survey System (PLSS) Unit Letter J, Section 03, Township 25 South, and Range 28 East, Eddy County, New Mexico (Site). The approximate release point occurred at coordinates 32.157654°, -104.074715°, as shown on Figures 1 and 2.

A REVISED Site Characterization, Remediation Summary, and Deferral Request dated October 7, 2025 was prepared for the Site by Tetra Tech on behalf of ConocoPhillips and submitted to the New Mexico Oil Conservation Division (NMOCD) for review. This deferral request was rejected by the NMOCD on November 3, 2025. This revised report was prepared to address the reasons for the rejection provided by the NMOCD.

BACKGROUND

According to the State of New Mexico C-141 Initial Report (Appendix A), the Willow A State #001 Tank Battery release was discovered on July 17, 2022. The release was caused by a failed gasket on the facility's free water knockout unit. The initial C-141 reports that 195 barrels (bbls) of crude oil were released within the gravel lined facility, and 100 bbls were recovered with a vacuum truck. Of note, the Spill Volume Estimate Form included as an attachment to the C-141 noted the release volume as 95 bbls of oil, rather than 195 bbls. The C-141 was submitted to the NMOCD on August 1, 2022 and assigned the Incident ID NAPP2221332553.

SITE CHRONOLOGY OF ACTIVITY

Below is the Site chronology, highlighting the main events and milestones for clarity. These are described in greater detail later in this report.

- **July 2022 - January 2023** - Carmona Resources performed the initial site assessment of the release.
- **May 4, 2023** - Carmona Resources submitted a Deferment Report to the NMOCD with a deferral request for no further action or remediation of the release due to safety concerns.

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- **October 18, 2023** – The NMOCD rejected Deferment Report on October 18, 2023.
- **February 22, 2024** – ConocoPhillips re-submitted a revised Deferment Report prepared by Carmona Resources to NMOCD that included minor changes.
- **July 5, 2024** – The Deferment Report was rejected by the NMOCD on July 5, 2025.
- **August 1, 2024** - Tetra Tech conducted a site inspection and ConocoPhillips tasked Tetra Tech to manage site.
- **August 6, 2024** – The NMOCD approved a 60-day extension to complete reporting for the incident.
- **September 26, 2024** - Tetra Tech on behalf of ConocoPhillips submitted a Release Characterization and Remediation Work Plan to the NMOCD and the New Mexico State Land Office (NMSLO). The NMOCD approved the remediation plan on September 26, 2025.
- **October 23, 2024** – The NMSLO approved the September 26, 2025 Release Characterization and Remediation Work Plan.
- **December 9-18, 2024** - Tetra Tech personnel were onsite to supervise the remedial activities proposed in the approved Work Plan.
- **December 23, 2024** - The Remediation Summary and Deferral Request was submitted to the NMOCD fee portal on December 23, 2024.
- **January 23, 2025** - The Remediation Summary and Deferral Request was rejected by the NMOCD due to high karst and limited groundwater information.
- **March 10, 2025** - Southwest Geophysical Consulting perform an environmental karst study and found no karst features.
- **May 13, 2025** - The NMOCD rejected a 90-day extension on May 13, 2024.
- **July 29, 2025** - A groundwater determination borehole was installed and demonstrated that the depth to groundwater at the Site is greater than 55 feet below surface.
- **October 7, 2025** – Tetra Tech on behalf of ConocoPhillips submitted a REVISED Release Characterization, Remediation Summary, and Deferral Request to the NMOCD and the New Mexico State Land Office (NMSLO).
- **October 16, 2025** – The NMSLO approved the October 7, 2025 REVISED Release Characterization, Remediation Summary, and Deferral Request.
- **November 3, 2025** – The REVISED Release Characterization, Remediation Summary, and Deferral Request was rejected by the NMOCD due to the exclusion of a document stamped by a certified civil engineer that includes an evaluation of the soil type and minimum distance the excavation needs to be from the tanks and how deep the excavation can be.
- **January 5, 2026** – The NMOCD rejected a 60-day extension to complete the civil engineering evaluation and associated reporting.
- **January 8, 2026** – A geotechnical investigation was performed at the Site to evaluate the soil type.

LAND OWNERSHIP

According to the NMOCD Oil and Gas Map, the Site is located on State Trust Lands. A review of the NMSLO Land Status Map was completed and the Site is located within active oil and gas lease ID VA29640002, which is listed under Concho Oil & Gas LLC/COG Operating LLC. Based on guidance provided by the NMSLO, as the release footprint is located on an active oil and gas lease, and the footprint is wholly located within the boundaries of the active oil and gas lease, no Remediation Right of Entry (ROE) is required at the Site. This deferral request will be submitted to the NMSLO for review.

CULTURAL PROPERTIES PROTECTION

In order to meet the requirements to perform reclamation activities on State Trust Lands, compliance with the cultural properties protection rule and legal authorization to work on State Trust Land needed to be addressed. The New Mexico Administrative Code (NMAC) 19.2.24.8 states “*Any persons engaged in activities on state trust lands are subject to the requirements of the Cultural Properties Act, the Cultural Properties Protection Act, and 19.2.24.13 NMAC. Persons shall not disturb, dislodge, damage, destroy, or remove any cultural properties on state trust lands. Any project on state trust lands that has the potential to directly or indirectly damage cultural properties is additionally subject to the requirements of Subsections B, C, D, and E of 19.2.24.8 NMAC.*”

Tetra Tech, on behalf of ConocoPhillips, contracted SWCA Environmental Consultants (SWCA) to conduct an Archeological Resources Management Section (ARMS) review in the release area to comply with 19.2.24 NMAC. On September 4, 2024, SWCA completed a literature and file search using the State of New Mexico's New Mexico Cultural Resources Information System online database which included a review of known historic resources, including the built environment, archaeological sites, and State/National Register listed properties. Other sources reviewed include the BLM GLO Records website, which contains land patent and general land office survey data.

The project area and surrounding 500 meters (0.31 miles) have been subject to 25 cultural resource surveys, 23 of which were conducted within the last 10 years (NMCRIS 154124). One previously recorded site is located within the 500 meter search buffer, but outside of the project area. The project area is entirely located on NMSLO-managed lands. The project area is not completely covered by previous qualifying survey; however, it is located on previously disturbed land from oil and gas construction activities. SWCA consulted with the NMSLO, per Anne Curry at NMSLO, since all ground disturbing activities will remain within the disturbed area, no additional survey is required (8/16/2024). All remediation and reclamation work will remain within the approved existing disturbance. A redacted copy of the ARMS letter is included in Appendix B.

REVISED SITE CHARACTERIZATION

A site characterization was performed and no sinkholes, residences, schools, hospitals, institutions, churches, stream bodies, springs, playa lakes, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the distances specified in 19.15.29.11 New Mexico Administrative Code (NMAC). The site characterization data are presented in Appendix C.

Due to the Site's location in a high karst potential occurrence zone, Tetra Tech contracted Southwest Geophysical Consulting, LLC on behalf of ConocoPhillips to perform an environmental karst study at the Willow A State #001 Tank Battery. The survey consisted of a desk study, aerial surface karst inventory survey, and a geophysical survey with two orthogonal lines of resistivity in the release area. The aerial survey imagery was collected on March 10, 2025 using a small, uncrewed aerial system flown by a qualified, FAA-licensed drone pilot that meet the Bureau of Land Management – Carlsbad Field Office requirements for karst surveys. The geophysical survey was completed on April 10, 2025. No surface karst features were identified from the aerial survey, and no anomalies consistent with air-filled subsurface voids were found within the geophysical survey area. An Environmental Karst Study Report dated April 28, 2025, was prepared by Southwest Geophysical Consulting, LLC stating that karst is negative within 200 feet of the spill delineation boundary and karst is stable. A copy of this report is included in Appendix C.

Due to the limit of groundwater monitoring wells within 800 meters of the Site, a licensed well drilling subcontractor was onsite on July 29, 2025, to drill a groundwater determination borehole (DTW-1) to 55 feet bgs, at a location approximately 398 feet west of the approximate release point southwest of the Willow A State #001 Battery. The borehole location is indicated on Figure 5. The borehole was temporarily set and screened using 2-inch PVC well materials: 20 feet of blank casing and 35 feet of 0.010-inch slotted screen. The borehole was left for 72 hours and checked for the presence of groundwater. The borehole was dry upon drilling, and no water was present in the well after 72 hours. The well screen and casing were removed, and the borehole was plugged with 3/8-inch bentonite chips. The site characterization data, boring log, and temporary well diagram are presented in Appendix C.

REGULATORY FRAMEWORK

Based upon the release footprint and in accordance with Subsection E of 19.15.29.12 NMAC, per 19.15.29.11 NMAC, the site characterization data was used to determine recommended remedial action levels (RRALs) for benzene, toluene, ethylbenzene, and xylene (collectively referred to as BTEX), total petroleum hydrocarbons (TPH), and chlorides in soil.

Based on the updated site characterization and in accordance with Table I of 19.15.29.12 NMAC, the RRALs for the Site are as follows:

Constituent	Site RRALs
Chloride	10,000 mg/kg
TPH (GRO+DRO+ORO)	2,500 mg/kg
TPH (GRO+DRO)	1,000 mg/kg
BTEX	50 mg/kg
Benzene	10 mg/kg

INITIAL ASSESSMENT ACTIVITIES, SAMPLING RESULTS, AND 2023 DEFERMENT REPORT

Carmona Resources, LLC (Carmona) performed release assessment activities on behalf of ConocoPhillips from July 2022 through January 2023. On July 20, 2022, a total of four (4) interior sample points (S-1 through S-4) and seven (7) horizontal samples (H-1 through H-7) were advanced to depths ranging from the surface to 4.5 feet below ground surface (bgs) to evaluate the vertical and horizontal extent of the release. The release was successfully delineated horizontally, but vertical delineation of the release was not achieved in the first sampling event.

On September 21, 2022, four (4) soil test trenches (T-1 through T-4) were installed within the release footprint at locations coinciding with S-1 through S-4. Vertical delineation was still not achieved at 9 feet bgs, so on January 16, 2023, a total of four (4) boreholes (BH-1 through BH-4) were advanced in the release footprint at the same coincident locations to depths ranging from 20 to 25 feet bgs to complete vertical delineation of the release. Sample locations and the approximate release extent are indicated in Figure 3.

Soil samples collected during the three assessment mobilizations were submitted to Eurofins Laboratories in Midland, Texas and analyzed for TPH via EPA Method 8015B, BTEX via EPA Method 8021B, and chloride via EPA Method 300.0.

The analytical results associated with BH-1 through BH-3 exceeded the Site RRALs for chloride, BTEX and/or TPH to depths of 15 feet bgs. Analytical results associated with BH-4 exceeded the Site RRALs for chloride, BTEX and/or TPH to a depth of 20 feet bgs. Analytical results from the initial assessment are summarized in Table 1.

The soil analytical results from the various assessment activities were compiled into a Deferment Report prepared by Carmona, dated May 4, 2023, and submitted to the NMOCD for approval. The conclusion of this report stated: "Based on safety concerns of destabilizing the production equipment within the facility, COG requests to defer the BTEX, chloride, and total TPH impacts until the tank batteries are decommissioned, or the facility equipment is removed."

The Deferment Report prepared by Carmona was rejected by the NMOCD on October 18, 2023 with the following comments:

- *"The Deferral Request is Denied. Only sample points on pad that require a major facility deconstruction will be deferred. Continue to remove contaminants safely with alternative methods (shovel, hydrovac, etc.). The OCD needs to see that every measure has been taken to remediate the release before a deferral can be granted. The deferral may be granted so long as the contamination is fully delineated and does not cause an imminent risk to human health, the environment, or ground water. The surface contaminants/staining will need to be cleaned up to prevent danger to wildlife. If this has been accomplished, include pictures in the updated report. After all possible contaminated soil has been removed, a formal deferral request will need to be uploaded to the OCD Permitting Portal for review. The work will need to occur 90 days after the report has been reviewed."*

A copy of the deferment report submitted by Carmona and associated NMOCD rejection is included in the NMOCD Permitting online incident files.

2024 DEFERRAL RESUBMITTAL

The original Deferment Report appears to have been resubmitted to the NMOCD on February 22, 2024. It appears to have been resubmitted with minimal changes to the figures set, and no revisions to the remedy, as requested. It was again rejected by the NMOCD on July 5, 2024, with the following comments:

- *“Deferral denied. The previous denial on 10/18/23 advised that COG remove contaminants safely with alternative methods (shovel, hydrovac, etc.) as well as provide photographic evidence that the surface staining has been cleaned up. Neither has occurred.*
- *As COG OPERATING LLC (229137) is responsible for the remediation, reclamation, and revegetation of this release, it is the responsible party’s duty to include letters from the pipeline operators who are requesting a buffer zone around their pipelines to take responsibility for any contamination left in place due to their buffer zone request. If the pipeline operators are unwilling to take responsibility for the contamination located within their requested buffer zones, the responsible party will be required to remediate, reclaim, and revegetate the release pursuant to 19.15.29 NMAC. Furthermore, pursuant to 19.15.29.7C NMAC, OCD may consider a person causing the release or controlling the location of the release as the responsible party. If any pipeline operator refuses to allow the remediation, reclamation, and revegetation of this release, please include the refusal in writing. OCD reserves the right to hold the pipeline operator as the responsible party.*
- *Until COG removes contaminants to the MEP a deferral will not be granted. Resubmit report to the OCD by 8/5/24.”*

Tetra Tech requested an extension to complete reporting in an email dated August 5, 2024. The NMOCD approved an extension to October 3, 2024 in an email response dated August 6, 2024. A copy of the regulatory correspondence is included in Appendix B.

TETRA TECH - SITE EVALUATION

On behalf of ConocoPhillips, Tetra Tech conducted a visual Site inspection on August 1, 2024 to assess current Site conditions, document any observable impact, and photograph the area and surrounding equipment. Tetra Tech personnel observed an area of minor staining largely coinciding with the approximate release footprint. The staining was observed to remain within the existing facility berm.

The release appeared to have flowed east from the free water knockout vessel across an unoccupied portion of the pad, predominantly remaining north of several steel production lines, and terminating north of the westernmost tank in the tank battery. Surrounding the release footprint are several vertical separators (including the free water knockout vessel), multiple sets of surface steel lines, a transfer pump and associated electrical conduit, and a tank battery with connecting surface polylines, all within the interior of the facility berm.

Outside the facility berm, several sets of surface polylines are spread across the ground surface north and west of the facility berm, hampering access for machine equipment to the release footprint. A Solaris Water Midstream, LLC tinhorn is located amongst the surface polylines, with a single polyline emerging from the tinhorn running westward. However, pending the removal of the northern berm, Tetra Tech observed that several areas of the release extent could be accessible to heavy equipment without destabilizing the production vessels and or piping. The facility equipment is indicated in Figure 3. Photographic documentation from the Site evaluation is included in Appendix D.

2024 REMEDIATION WORK PLAN AND NMOCD APPROVAL

Tetra Tech, on behalf of ConocoPhillips, submitted a Release Characterization and Remediation Work Plan (Work Plan) dated September 26, 2024 to the NMOCD and to the NMSLO for approval. The Work Plan summarized the assessment results, which indicated that soil chloride and/or TPH concentrations exceed Site RRALs to depths ranging from 15-20 feet bgs in portions of the release extent. The Work Plan proposed

excavating soils to a maximum depth of 5-8 feet below ground surface (or until a representative sample from the walls and bottom of the excavation is below the Site RRALs) in areas accessible to heavy equipment. If deeper excavation cannot be performed due to infrastructure or safety concerns, any remaining deeper impact will be deferred until facility abandonment. The estimated volume of material to be remediated was approximately 215 cubic yards.

The Work Plan was approved by the NMOCD on September 26, 2024, with the following comments:

- *“Remediation plan approved. Submit deferral request or remediation closure report to OCD by 12/25/24.”*

The Work Plan was approved by the NMSLO on October 23, 2024 with the following conditions:

- *“Excavations where TPH remains above regulatory standard, due to equipment obstruction, apply an in-situ treatment that will aid in the breakdown of residual hydrocarbons prior to backfill.”*

A copy of the regulatory correspondence is included in Appendix B.

REMEDIAL ACTIVITIES AND CONFIRMATION SAMPLING

From December 9-18, 2024, Tetra Tech personnel were onsite to supervise the remedial activities proposed in the approved Work Plan, including excavation, disposal, and confirmation sampling. Prior to confirmation sampling, on December 10, 2024, the NMOCD district office was notified via the OCD Portal in accordance with Subsection D of 19.15.29.12 NMAC. Tetra Tech sent a request for a variance to continue confirmation sampling outside of the initial notice period in an email dated December 19, 2024. A C-141N for the additional confirmation sampling was submitted to the OCD Portal on December 18, 2024. On December 12, 2024, Tetra Tech notified the NMSLO of the remedial activities in progress. Documentation of associated regulatory correspondence is included in Appendix B.

Impacted soils were excavated as indicated in Figure 4. The areas within the release footprint were excavated to depths ranging from 0.5 to 8 feet below surrounding grade. Due to safety concerns, the excavation activities avoided disturbing the structural integrity of production equipment including the vertical separator, transfer pump and associated electrical conduit, tanks, and surface steel lines. The area immediately beneath the subsurface lines and north of the tank were hand dug to the maximum possible depth of 0.5 feet bgs, as these areas were not safely accessible to mechanical equipment. Photographs from the excavated areas prior to backfill are provided in Appendix D.

All excavated material was transported offsite for proper disposal. Approximately 274 cubic yards of material were transported to the R360 Red Bluff Facility. Copies of the waste manifests are included in the previous deferral request report.

Following excavation, confirmation floor and sidewall samples were collected and submitted for laboratory analysis to verify efficacy of remediation activities. Per the NMOCD-approved confirmation sampling plan, confirmation samples were collected such that each 5-point composite floor sample was representative of no more than 200 square feet of excavated area, and each 5-point composite sidewall sample was representative of no more than 200 square feet of excavated area. The base of the excavation was comprised of approximately 1,400 square feet. The exterior sidewalls were comprised of approximately 320 square feet. The interior sidewalls were comprised of approximately 765 square feet.

Seven (7) 5-point composite confirmation floor samples and six (6) 5-point composite confirmation sidewall sample locations were collected for laboratory analysis during remedial activities. Confirmation floor sample locations were labeled with “FS”-#. Confirmation sidewall sample locations were labeled with the cardinal direction (N, E, S, W) followed by SW-#. Five (5) additional 5-point composite confirmation internal sidewall samples were collected from the vertical faces of the excavation and labeled with “ISW”-#.

Initial confirmation soil sampling analytical results associated with locations FS-2 and NSW-1 exceeded the chloride RRAL of 600 mg/kg. The excavation floor was deepened, and sidewalls were expanded in these areas, and iterative confirmation samples were collected to encompass the original sample locations that triggered removal (nomenclature defined in Table 2) post-additional excavation. Final excavated areas, depths, and representative confirmation sample locations are indicated in Figure 4.

Collected confirmation samples were placed into laboratory-provided sample containers, transferred under chain-of-custody, and analyzed within appropriate holding times by Cardinal. The soil samples were analyzed for TPH (GRO+DRO+MRO) by EPA Method 8015M, BTEX by EPA Method 8021B, and chlorides by SM4500Cl-B. The analytical results were directly compared to the established Site RRALs to demonstrate compliance.

The results of the December 2024 confirmation sampling events are summarized in Table 2. Final confirmation soil samples (floor and sidewall) were below applicable cleanup levels for chloride, TPH, and BTEX, at the base of the 8-foot, 4-foot, and 2-foot excavation areas and the associated interior sidewalls and northern sidewall. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix E.

Once acceptable confirmation sample results were received, the excavation was backfilled with clean material to pre-release grade. In accordance with 19.15.29.12 NMAC, the reclaimed area contained a minimum of four feet of non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg as analyzed by SM4500Cl-B. One (1) representative 5-point composite sample was collected from the backfill material used for the reclamation of the project site. Soil backfill composite sampling results are summarized in Table 3. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix E.

2024 REMEDIATION SUMMARY AND DEFERRAL REQUEST AND NMOCD REJECTION

A Remediation Summary and Deferral Request dated December 23, 2024, was prepared documenting remediation activities, including excavation, disposal, confirmation sampling and a deferral request. The Remediation Summary and Deferral Request was submitted to the NMOCD fee portal on December 23, 2024. The report was rejected by NMOCD on January 23, 2025, with the following comments:

- *“Deferral denied. Pursuant to 19.15.29.12(C)2 NMAC, a “deferral may be granted so long as the contamination is fully delineated and does not cause an imminent risk to human health, the environment, or groundwater.” This site is located in a high karst potential occurrence zone and OCD has recently reevaluated karst potential zones and will not approve deferrals in these areas as high karst may cause an imminent risk to groundwater. The operator may choose to have karst surveys performed by a BLM approved karst/cave contractor, in order to determine if karst features are present at the site. A desktop survey, aerial/pedestrian survey, AND a geophysical survey must be performed. If no karst features are located during any of the surveys AND the geophysical survey shows no other indications of unstable ground, the closure criteria can be based on Table 1 Closure Criteria found in 19.15.29 NMAC. Sites located on BLM or State Land Office (SLO) owned surface will need surface owner approval.*
- *A certified civil engineer will also need to evaluate the soil type and provide the minimum distance the excavation(s) needs to be from the tanks and how deep the excavation(s) can be prior to requesting a deferral. This document must be stamped by the engineer.*
- *In addition, a depth to groundwater boring must be drilled just north of the release location prior to a deferral being requested. If groundwater is encountered, collect a sample to submit for laboratory testing for chlorides and TDS. Include these results with your next submission.*
- *Submit deferral request or remediation closure report to the OCD by 4/23/25.”*

Tetra Tech requested guidance and an extension to complete the requested action items in an email dated May 9, 2025. The NMOCD rejected the extension to May 13, 2024, with the following comments:

- *“A remediation closure report for NAPP2221332553 was due to the OCD by 4/23/2025. An extension is required to be requested prior to the deadline, therefore your request for an extension is denied. As to comment 2, here is a link to an approved deferral request that was in high karst. Refer to pg. 45 of the report for the Engineer stamped letter.
[napp2415825281_02_07_2025_08_53_08.pdf](#)”*
- *In reference to comment 3, if the depth to groundwater boring is to be drilled to the south, the placement the OCD would like to see is 32.1566, -104.0751. COG Operating must operate in accordance with 19.15.29 NMAC. OCD may use its enforcement discretion, which may include civil penalties. The report for NAPP2221332553 must be submitted as soon as possible. Continued cooperation and communication from COG Operating is appreciated and will be considered prior to any enforcement action.”*

A copy of the regulatory correspondence is included in Appendix B.

2025 REVISED RELEASE CHARACTERIZATION, REMEDIATION SUMMARY, AND DEFERRAL REQUEST AND NMOCD REJECTION

A REVISED Release Characterization, Remediation Summary, and Deferral Request dated October 7, 2025, was prepared to incorporate the revised Site characterization data, including the depth-to-water determination boring establishing that groundwater is not present at 50 feet bgs, and the environmental karst study establishing that there are no karst features within 200 feet of the spill delineation boundary and that karst is stable.

The REVISED Release Characterization, Remediation Summary, and Deferral Request was submitted to the NMOCD fee portal and to the NMSLO via email on October 7, 2025. The NMSLO approved the deferral request via email dated October 16, 2025. A copy of the NMSLO approval is included in Appendix B.

The deferral request was rejected by NMOCD on November 3, 2025, with the following comments:

“Deferral denied for the following reasons:

- 1) *In the 1/23/25 deferral rejection, COG was told that this release would require the following: A certified civil engineer will need to evaluate the soil type and provide the minimum distance the excavation(s) needs to be from the tanks and how deep the excavation(s) can be prior to requesting a deferral. This document must be stamped by the engineer. This document has not been submitted.*
- 2) *On pg. 8 in the paragraph immediately above Proposed Reclamation Plan, it states: “The requested deferral area is in close proximity to heavy equipment which does allow adequate space to slope or trench.” Is this statement correct?*
- 3) *Include an updated Figure showing the area of requested deferral to include all sample points requested in the deferral, all horizontal delineation sample points, and only the site infrastructure that impedes remediation efforts and is the reason for the deferral request. Submit updated report to the OCD by 1/2/26.”*

Tetra Tech requested an extension to complete the requested action items in an email dated January 5, 2026. The NMOCD rejected the extension with the following comments:

“Extension request received and denied on 1/5/26 as it is requested after the fact. Email from Sam Abbott of Tetra Tech: On behalf of ConocoPhillips, Tetra Tech is requesting a 60-day extension (until March 3, 2026) to complete reporting associated with the Willow A State 001 Tank Battery Release (nAPP2221332553) in Eddy County, NM. A REVISED Release Characterization, Remediation Summary, and Deferral Request dated October 7, 2025 was prepared by Tetra Tech on behalf of ConocoPhillips and submitted to the NMOCD portal. The Revised Deferral Request was rejected by the NMOCD on November 3, 2025, with the following comments: • “Deferral denied for the following reasons: 1. In the 1/23/25 deferral rejection, COG was told that this release would require the following: A certified civil engineer will need to evaluate the soil type and provide the minimum distance the excavation(s) needs to be from the tanks and

how deep the excavation(s) can be prior to requesting a deferral. This document must be stamped by the engineer. This document has not been submitted. 2. On pg. 8 in the paragraph immediately above Proposed Reclamation Plan, it states: "The requested deferral area is in close proximity to heavy equipment which does allow adequate space to slope or trench." Is this statement correct? 3. Include an updated Figure showing the area of requested deferral to include all sample points requested in the deferral, all horizontal delineation sample points, and only the site infrastructure that impedes remediation efforts and is the reason for the deferral request. • Submit updated report to the OCD by 1/2/26." Based on the rejection, ConocoPhillips with Tetra Tech have identified and contracted a civil engineer to conduct a geotechnical investigation needed to evaluate the soil type and identify the appropriate deferral areas in the tank battery facility. The geotechnical investigation is currently scheduled for this Thursday, January 8, 2026. Therefore, additional time is required to perform the following items: • The engineering subcontractor to complete the geotechnical investigation and prepare the certified civil engineering letter. • Tetra Tech to update the deferral request based on the civil engineering letter for OCD review."

A copy of the regulatory correspondence is included in Appendix B.

2026 RELEASE CHARACTERIZATION, REMEDIATION SUMMARY, AND DEFERRAL REQUEST (REVISION 2)

On behalf of ConocoPhillips, Tetra Tech contracted Pettigrew & Associates, P.A., to complete a geotechnical investigation at the Site to evaluate the soil type and prepare a certified civil engineering letter to identify the appropriate deferral areas in the tank battery facility. The soil sampling and testing was conducted at the Site on December 30, 2025 and January 8, 2026. The excavation recommendations provided in the associated report include the following:

- For excavation within the containment area, it is recommended to protect existing structures in place and that no excavation occurs within 5 feet of load bearing structures.
- Existing pipe/conduits shall be protected in place. It may not be feasible to excavate around these areas without compromising the soil stability. Therefore, it is recommended that no excavations occur within 3 feet of known underground utilities.
- Temporary excavations deeper than 1' must be sloped at 3H:1V.
- Excavations deeper than 20' will require a site specific plan to be stamped/sealed by an Engineer. Due to space limitations, shoring or benching systems may be required.
- During all earthwork operations, it is recommended to provide erosion control during construction.

A copy of the letter report, dated February 2, 2026 and stamped by a New Mexico Professional Engineer, is included as Appendix F.

The release remediation activities were conducted in December 2024 in accordance with the NMOCD- and NMSLO-approved Work Plan. The entire footprint of the July 17, 2022 release incident was removed during the excavation activities, except in the areas immediately beneath production equipment. Historical impacts were encountered during the excavation activities. The analytical results for confirmation soil samples FS-7, ESW-1, ISW-5, NSW-2, SSW-1, SSW-2, and WSW-1 indicate concentrations of Table 1 constituents above the established RRALs (see Table 2). As confirmed from the results of the geotechnical soil assessment and civil engineering letter, these soils were left in place to support the production infrastructure, including the vertical separator, transfer pump and associated electrical conduit, tanks, and surface steel lines.

Specific facility impediments to each confirmation sampling location are listed below:

- FS-7: This floor sample was collected in an area constrained by electrical and surface steel lines and tanks to the south, active production flowlines to the west and east, and the facility berm and Solaris tin horn exclusion zone to the north. This area was not accessible for heavy machinery. The upper 0.5' of affected soil were removed by hand digging. A lithified layer was encountered at 0.5' bgs and impeded further hand digging in this area. In accordance with the NMSLO- and NMOCD-approved Work Plan, this area was treated with 3% Micro-Blaze solution mixed with water prior to backfilling.

- ESW-1: This sidewall sample was collected in an area constrained by active production flowlines to the east. This area was not accessible for heavy machinery. There were no TPH detections in this sample. Horizontal delineation sample H-4 was collected immediately east of the active production flowline and was below Site RRALs for all constituents.
- ISW-5: This internal sidewall sample was collected from the internal sidewall between the 0.5' and 2' excavation areas. Further expansion of the 2' excavation to the south was impeded by facility infrastructure including a pump and steel surface lines. In accordance with the NMSLO- and NMOCD-approved Work Plan, this area was treated with 3% Micro-Blaze solution mixed with water prior to backfilling.
- NSW-2: This sidewall sample was collected in an area constrained by the facility berm/fencing. In accordance with the NMSLO- and NMOCD-approved Work Plan, this area was treated with 3% Micro-Blaze solution mixed with water prior to backfilling. Horizontal delineation sample H-3 was collected immediately north of this sidewall and was below Site RRALs for all constituents.
- SSW-1: This sidewall location is located within approximately 3' of steel surface lines to the south. There were no TPH detections in this sample. Horizontal delineation sample H-7 is located immediately south of this sidewall and was below Site RRALs for all constituents.
- SSW-2: This sidewall sample is located in an area constrained by a partially buried production line to the south. In accordance with the NMSLO- and NMOCD-approved Work Plan, this area was treated with 3% Micro-Blaze solution mixed with water prior to backfilling. Horizontal delineation sample H-6 was collected south of the steel flowlines and west of the pump and was below Site RRALs for all constituents.
- WSW-1: This sidewall location is located in an area constrained by a production vessel, electrical conduits, and surface piping to the west and south. In accordance with the NMSLO- and NMOCD-approved Work Plan, this area was treated with 3% Micro-Blaze solution mixed with water prior to backfilling. Horizontal delineation sample H-1 was collected immediately west of this sidewall and was below Site RRALs for all constituents.

ConocoPhillips respectfully requests that final remediation of these soils be deferred until facility deconstruction. In accordance with the NMOCD directives provided in the rejection of the previous deferral report, Figure 6 presents the sample points requested in the deferral, all horizontal delineation sample points, and only the Site infrastructure that impedes remediation efforts.

In accordance with the approved Work Plan and NMSLO conditions of approval, the excavation area was treated with approximately 2,000 gallons of 3% Micro-Blaze solution mixed with water prior to backfilling, as documented in the photographic log in Appendix D. The areas proposed for deferral are fully delineated. A depth to groundwater boring was drilled and verified that groundwater is not present at 55 feet bgs or less and the remaining contamination does not pose a threat to freshwater, human health, or the environment. The conditions of 19.15.29.13 NMAC will be implemented when completing abandonment of the facility and associated equipment.

PROPOSED RECLAMATION PLAN

Final reclamation activities will take place upon facility deconstruction in accordance with 19.15.29.13 NMAC. All production equipment on pad will be removed, and the caliche material will be scraped and removed to expose the underlying material. The removed material will be replaced to the near original relative landform positions and contoured to achieve erosion control, long-term stability, and preservation of surface water flow patterns.

Soil samples will be collected to demonstrate that the reclaimed area will contain a minimum of four feet of non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg. The soil cover will include a top layer which is either the background thickness of topsoil or one foot of suitable material to establish vegetation at the Site, whichever is greater. The area will be seeded with a seed mix suitable for the area in the first favorable growing season following the reclamation activities. Site inspections will be performed periodically to assess the re-vegetation process and evaluate the Site for the presence of noxious weeds.

Restoration, reclamation, and re-vegetation will be considered complete when the reclaimed areas reach a vegetation density of greater than 70% of pre-disturbance coverage, not including invasive or noxious weeds. ConocoPhillips will submit a Re-Vegetation Closure Report to the NMOCD for final incident closure at that time.

CONCLUSION

As described above, the subject line release footprint is located at Willow State #001 Tank Battery facility, which is currently active. The remedial work completed was successful in removing soils above the Site RRALs from the release footprint outside of the areas proposed for deferral.

ConocoPhillips respectfully requests approval of the remediation activities performed in accordance with the approved remediation plan and the final confirmation sampling results. The areas proposed for deferral were treated with Micro-Blaze prior to backfilling. Remaining impacts are located in areas immediately under or around production equipment such as production vessels, tanks, and flowlines where remediation could cause a major facility deconstruction. The contamination is fully delineated and does not cause an imminent risk to human health, the environment, or groundwater, as demonstrated by the revised site characterization.

Final remediation and reclamation shall take place in accordance with 19.15.29.12 and 19.15.29.13 NMAC once the Site is no longer being used for oil and gas operations. Thus, ConocoPhillips requests deferral of the remaining impacted soils associated with incident NAPP2221332553 immediately under or around the production equipment.

If you have any questions concerning the remediation activities performed at the Site, please call me at (512) 739-7874 or email at sam.abbott@tetrattech.com.

Sincerely,
Tetra Tech, Inc.



Samantha K. Abbott, P.G.
Senior Project Manager



Lisbeth Chavira
Project Manager

cc:
Mr. Ike Tavarez, RMR – ConocoPhillips
NMSLO ECO

LIST OF ATTACHMENTS

Figures:

- Figure 1 – Overview Map
- Figure 2 – Site Location/Topographic Map
- Figure 3 – Approximate Release Extent and Site Assessment
- Figure 4 – Remediation Extents and Confirmation Sampling Locations
- Figure 5 – Site Location and Depth to Groundwater Location
- Figure 6 – Extent of Requested Deferral Area and Horizontal Delineation Sampling Locations

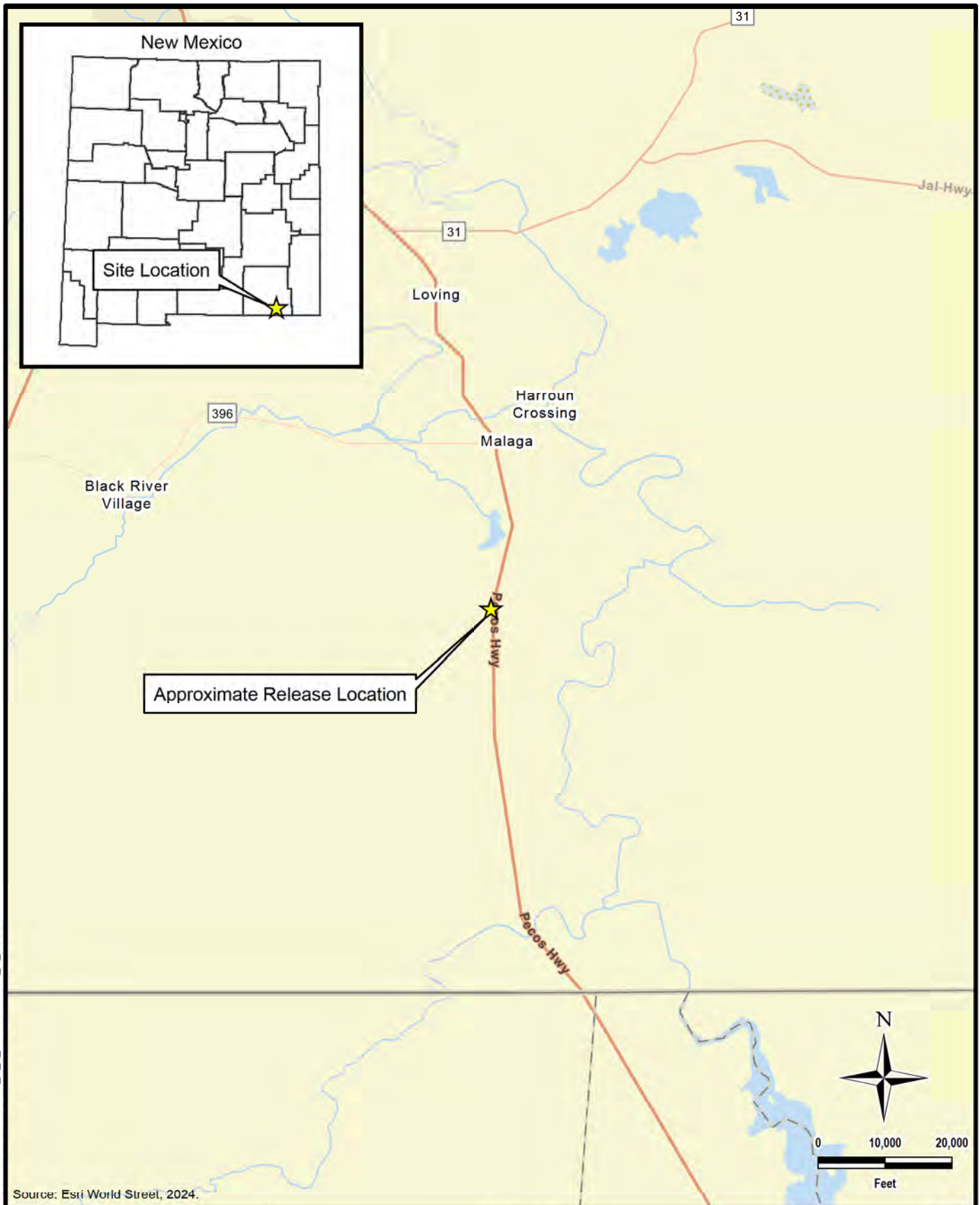
Tables:

- Table 1 – Summary of Analytical Results – Soil Assessment (Carmona Resources)
- Table 2 – Summary of Analytical Results – Soil Remediation
- Table 3 – Summary of Analytical Results – Soil Backfill

Appendices:

- Appendix A – C-141 Forms
- Appendix B – Regulatory Correspondence
- Appendix C – Revised Site Characterization Data
- Appendix D – Photographic Documentation
- Appendix E – Laboratory Analytical Data
- Appendix F – Civil Engineering Letter

FIGURES



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Source: Esri World Street, 2024.



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 LEA COUNTY, NEW MEXICO

**WILLOW A STATE #001 TANK BATTERY RELEASE
 OVERVIEW MAP**

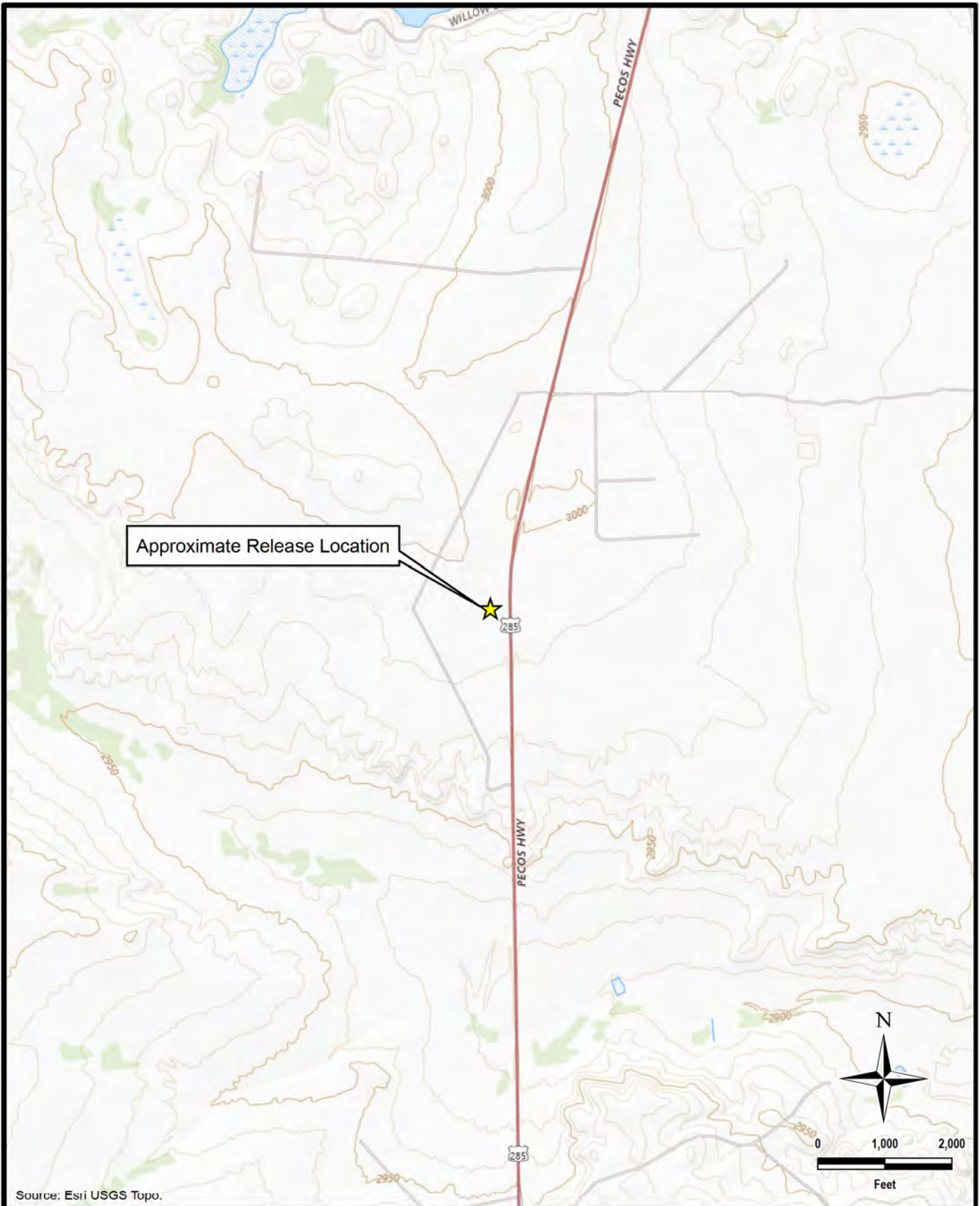
PROJECT NO.: 212C-MD-03573

DATE: AUGUST 22, 2024

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Figure No.

1



Source: Esri USGS Topo.

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**WILLOW A STATE #001 TANK BATTERY RELEASE
 TOPOGRAPHIC MAP**

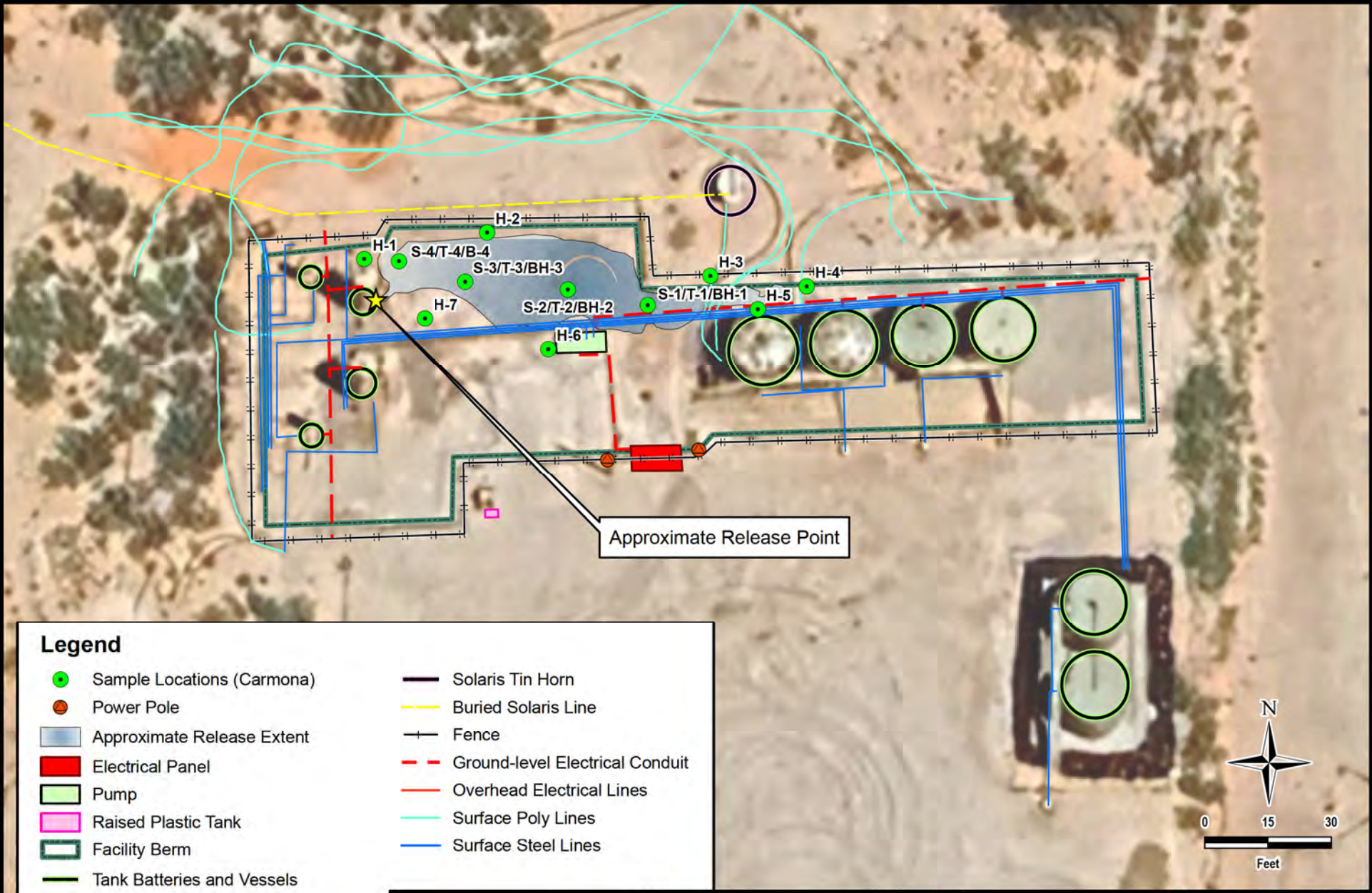
PROJECT NO.: 212C-MD-0XXX

DATE: AUGUST 22, 2024

DESIGNED BY: LMV

Figure No.

2



Legend

- Sample Locations (Carmona)
- Power Pole
- Approximate Release Extent
- Electrical Panel
- Pump
- Raised Plastic Tank
- Facility Berm
- Tank Batteries and Vessels
- Solaris Tin Horn
- Buried Solaris Line
- Fence
- Ground-level Electrical Conduit
- Overhead Electrical Lines
- Surface Poly Lines
- Surface Steel Lines

Image Source: Google Earth, 2024.

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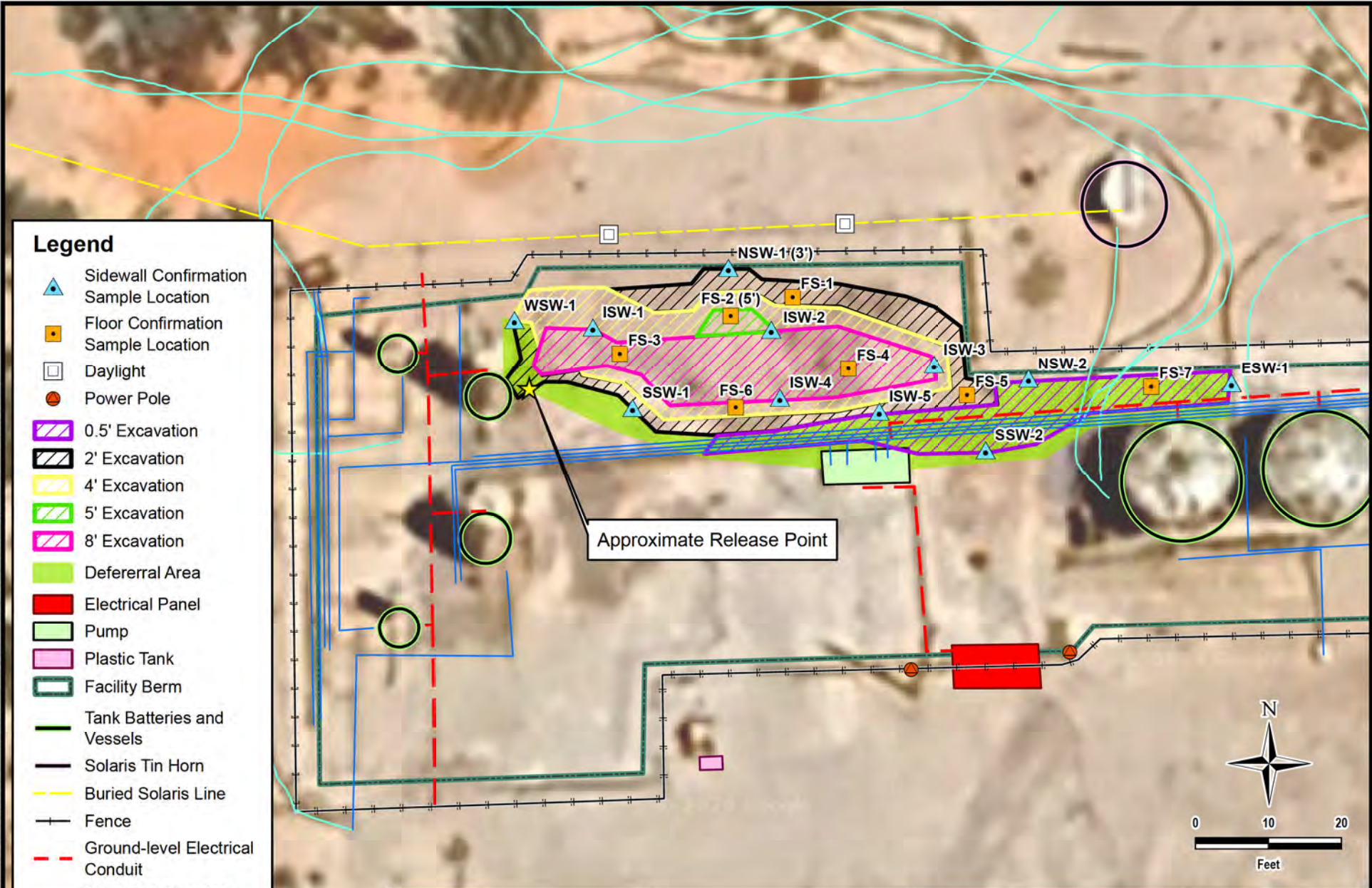
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**WILLOW A STATE #001 TANK BATTERY RELEASE
 APPROXIMATE RELEASE EXTENT AND SITE ASSESSMENT**

PROJECT NO.:	212C-MD-03573
DATE:	SEPTEMBER 19, 2024
DESIGNED BY:	LMV
Figure No.	3

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 LEA COUNTY, NEW MEXICO

**WILLOW A STATE #001 TANK BATTERY RELEASE
 REMEDIATION EXTENTS AND CONFIRMATION SAMPLING LOCATIONS**

PROJECT NO.:	212C-MD-03573
DATE:	DECEMBER 20, 2024
DESIGNED BY:	LMV
Figure No.	4



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Legend

-  Well
-  Depth to Groundwater Location

Source: Google Earth, 2024.



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 (32.157656°, -104.074720°)
 LEA COUNTY, NEW MEXICO

**WILLOW A STATE #001 TANK BATTERY RELEASE
 SITE LOCATION AND DEPTH TO GROUNDWATER LOCATION**

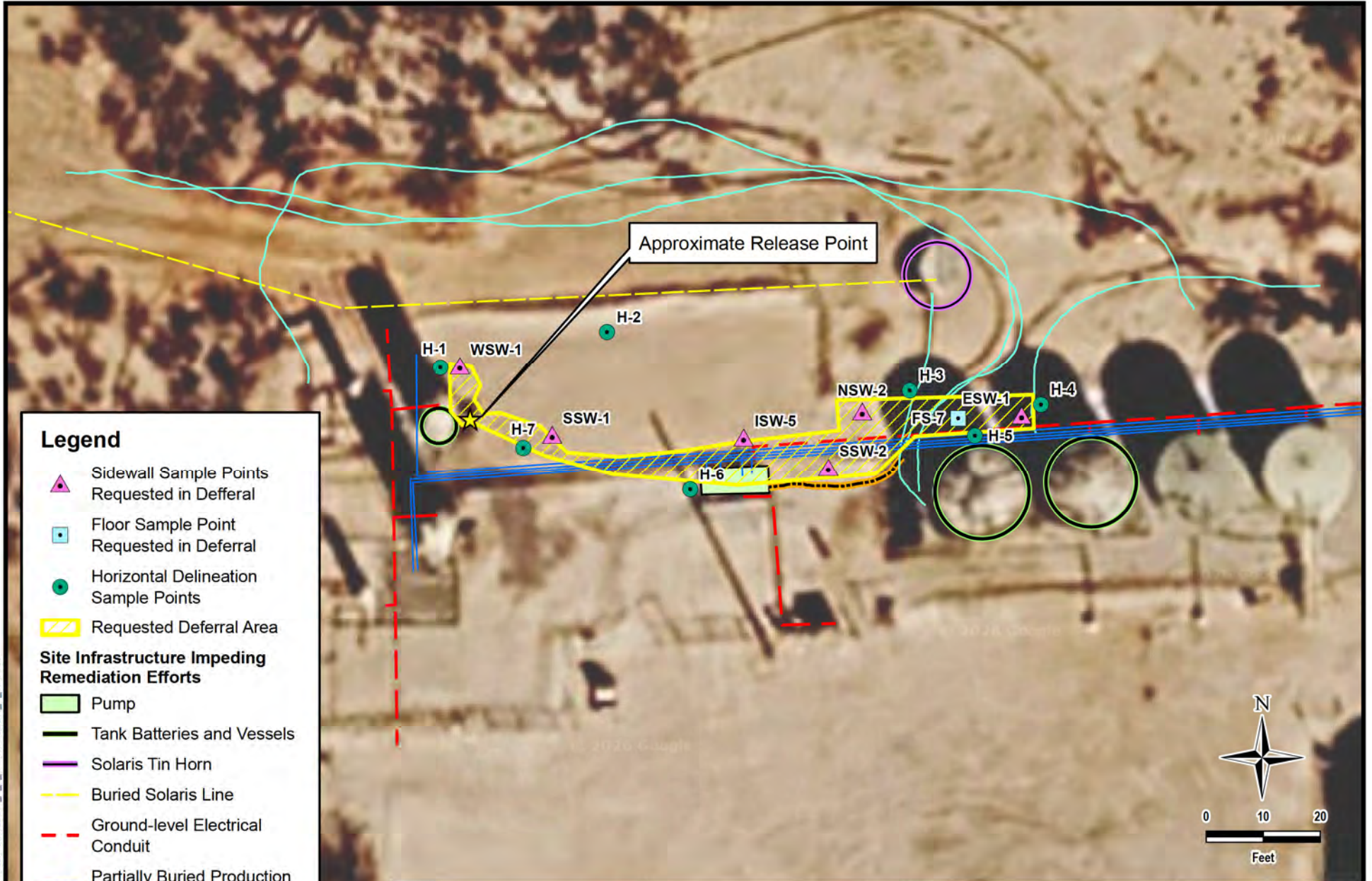
PROJECT NO.: 212C-MD-03573

DATE: SEPTEMBER 03, 2025

DESIGNED BY: LMV

Figure No.

5



Legend

- Sidewall Sample Points Requested in Deferral
- Floor Sample Point Requested in Deferral
- Horizontal Delineation Sample Points
- Requested Deferral Area

Site Infrastructure Impeding Remediation Efforts

- Pump
- Tank Batteries and Vessels
- Solaris Tin Horn
- Buried Solaris Line
- Ground-level Electrical Conduit
- Partially Buried Production Line
- Surface Poly Lines
- Surface Steel Lines

Image Source: Google Earth, 2024.



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**WILLOW A STATE #001 TANK BATTERY RELEASE
 REQUESTED DEFFERAL AREA**

PROJECT NO.:	212C-MD-03573
DATE:	FEBRUARY 13, 2026
DESIGNED BY:	LMV
Figure No.	6

TABLES

TABLE 1
SUMMARY OF ANALYTICAL RESULTS
SOIL ASSESSMENT (CARMONA RESOURCES) - NAPP2221332553
CONOCOPHILLIPS
WILLOW A STATE #001 TANK BATTERY RELEASE
EDDY COUNTY, NM

Sample ID	Sample Date	Sample Depth	Chloride ¹	BTEX ²					TPH ³			
				Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	GRO	DRO	MRO	Total TPH
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	C ₆ - C ₁₀	> C ₁₀ - C ₂₈	> C ₂₈ - C ₃₆	(GRO+DRO+EXT DRO)
		ft. bgs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
S-1	7/20/2022	0-1	3410	13.6	87.4	59.3	171	331	12100	6030	<499	18100
		1.5	1470	17.4	76.8	51.1	152	298	11700	6860	<500	18600
		2.5	1090	<2.00	15.8	11.8	27.9	55.5	1020	493	<250	1510
		3.5	983	<0.0398	0.0919	0.155	0.402	0.649	60.3	64.6	<49.9	125
		4.5	1010	<0.0399	<0.0399	<0.0399	<0.0798	<0.0798	<49.9	<49.9	<49.9	<49.9
T-1	9/21/2022	0-1	1880	<0.101	<0.101	2.06	6.08	8.14	1660	22000	<500	23700
		1.5	2650	<0.0990	<0.0990	2.5	1.88	4.38	1760	21200	<498	23000
		2	2000	<0.0399	<0.0399	0.464	0.73	1.19	165	714	<49.9	879
		3	2170	<0.0403	<0.0403	0.529	1.16	1.69	140	526	<49.8	666
		4	2660	<0.0396	<0.0396	<0.0396	<0.0792	<0.0792	<50.0	76.8	<50.0	76.8
		5	2750	<0.00199	<0.00199	<0.00199	<0.00398	<0.00398	<50.0	154	<50.0	154
		6	124	<0.00201	<0.00201	0.00355	0.0124	0.016	<49.8	248	<49.8	248
		7	1590	<0.00202	0.00315	0.0384	0.0362	0.0777	103	301	<49.9	404
		8	208	<0.0497	1.21	5.33	10.6	17.2	924	1420	<50.0	2340
BH-1	1/16/2023	0-1	15000	<0.00201	<0.00201	<0.00201	<0.00402	<0.00402	<49.9	1440	207	1650
		2-3	4310	<0.00202	<0.00202	<0.00202	0.0734	0.0734	<49.8	142	<49.8	142
		4-5	834	<0.00199	<0.00199	<0.00199	0.0107	0.0107	<49.9	173	<49.9	173
		6-7	765	<0.00199	<0.00199	<0.00199	0.012	0.012	<49.8	154	<49.8	154
		9-10	1540	<0.00200	<0.00200	<0.00200	0.0222	0.0222	<49.9	<49.9	<49.9	<49.9
		11-12	1510	<0.00201	<0.00201	<0.00201	<0.00402	<0.00402	<50.0	<50.0	<50.0	<50.0
		14-15	1250	<0.00200	<0.00200	<0.00200	<0.00401	<0.00401	<50.0	<50.0	<50.0	<50.0
		20	72.2	<0.00199	<0.00199	<0.00199	<0.00398	<0.00398	<50.0	<50.0	<50.0	<50.0
S-2	7/20/2022	0-1	20900	4.67	53.1	30.6	87	175	7000	7930	<499	14900
		1.5	15600	0.537	6.4	6.01	12.6	25.6	733	1260	<249	1990
		2.5	15600	1.16	8.97	5.92	16.5	32.6	348	236	<50.0	584
		3.5	1160	0.256	1.45	2.06	4.17	7.93	148	154	<50.0	302
		4.5	2020	<0.0401	0.109	<0.0401	0.081	0.19	<49.9	<49.9	<49.9	<49.9
T-2	9/21/2022	0-1	5100	<0.0994	<0.0994	2.79	3.87	6.66	1660	28700	<499	30400
		1.5	4380	<0.101	0.122	2.88	6.23	9.23	1940	32500	<499	34400
		2	1380	<0.00198	0.0385	0.138	0.155	0.332	428	4610	<250	5040
		3	1310	<0.00200	0.0179	0.048	0.0711	0.137	188	2000	<49.9	2190
		4	1470	<0.00199	0.128	0.144	0.304	0.576	221	1490	<50.0	1710
		5	778	<0.00200	0.0213	0.0552	0.0911	0.168	143	1040	<50.0	1180
		6	394	<0.00201	0.00443	0.0378	0.154	0.197	74.2	257	<50.0	331
		7	435	<0.00200	<0.00200	0.0115	0.0373	0.0488	98.1	369	<49.9	467
		8	308	<0.00200	0.00288	0.026	0.143	0.171	90	317	<50.0	407
BH-2	1/16/2023	0-1	15300	0.216	<0.0398	<0.0398	<0.0795	0.216	<49.9	879	126	1010
		2-3	1810	<0.00198	<0.00198	<0.00198	<0.00396	<0.00396	<49.9	272	<49.9	272
		4-5	1460	<0.00201	<0.00201	<0.00201	<0.00402	<0.00402	<49.8	267	<49.8	267
		6-7	825	<0.00200	<0.00200	<0.00200	<0.00401	<0.00401	<50.0	120	<50.0	120
		9-10	1730	<0.00199	<0.00199	<0.00199	<0.00398	<0.00398	<49.9	<49.9	<49.9	<49.9
		11-12	997	<0.00200	<0.00200	<0.00200	<0.00401	<0.00401	<49.9	<49.9	<49.9	<49.9
		14-15	1460	<0.00200	<0.00200	<0.00200	<0.00399	<0.00399	<49.9	<49.9	<49.9	<49.9
		20	62	<0.00199	<0.00199	<0.00199	<0.00398	<0.00398	<50.0	<50.0	<50.0	<50.0

TABLE 1
SUMMARY OF ANALYTICAL RESULTS
SOIL ASSESSMENT (CARMONA RESOURCES) - NAPP2221332553
CONOCOPHILLIPS
WILLOW A STATE #001 TANK BATTERY RELEASE
EDDY COUNTY, NM

Sample ID	Sample Date	Sample Depth	Chloride ¹	BTEX ²					TPH ³			
				Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	GRO	DRO	MRO	Total TPH
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	C ₆ - C ₁₀	> C ₁₀ - C ₂₈	> C ₂₈ - C ₃₆	(GRO+DRO+EXT DRO)
		ft. bgs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
S-3	7/20/2022	0-1	3280	13.6	157	54.6	164	389	12200	8280	<498	20500
		1.5	1390	17.4	102	55.8	168	343	8890	5390	<500	14300
		2.5	26.5	<0.0401	0.0613	0.705	1.5	2.28	67.8	68.6	<49.8	136
		3.5	3320	<0.0399	<0.0399	<0.0399	<0.0798	<0.0798	<49.9	97.2	<49.9	97.2
		4.5	862	<0.0401	<0.0401	<0.0401	<0.0802	<0.0802	<49.9	<49.9	<49.9	<49.9
T-3	9/21/2022	0-1	5140	<0.101	0.234	1.47	6.66	8.36	984	29400	5050	35400
		1.5	5000	<0.101	0.184	0.933	4.46	5.58	1090	33800	6390	41300
		2	3010	0.13	<0.0399	0.586	1.54	2.26	272	1090	163	1530
		3	2780	0.0297	0.1	0.607	1.63	2.37	217	746	120	1080
		4	3450	0.0395	0.0802	<0.0201	<0.0402	0.12	<50.0	141	<50.0	141
		5	3150	0.154	<0.0404	0.0506	0.175	0.379	55.5	723	114	893
		6	2360	0.135	0.0745	0.72	1.98	2.91	177	1260	202	1640
		7	2660	0.129	0.131	0.855	2.33	3.44	108	825	115	1050
		8	2510	0.147	0.135	0.948	2.59	3.82	205	1080	157	1440
BH-3	1/16/2023	0-1	9940	0.153	0.24	1.92	4.59	6.9	329	1840	288	2460
		2-3	4420	<0.0399	<0.0399	0.182	0.512	0.694	72.2	930	137	1140
		4-5	4570	<0.0401	<0.0401	0.14	0.384	0.524	143	1590	231	1960
		6-7	3410	0.165	0.0461	0.35	1.04	1.6	79.6	814	102	996
		9-10	1400	<0.00200	<0.00200	<0.00200	<0.00399	<0.00399	<50.0	222	<50.0	222
		11-12	1450	<0.00201	0.00337	0.00691	0.0238	0.034	<49.9	183	<49.9	183
		14-15	1070	<0.00200	<0.00200	<0.00200	<0.00401	<0.00401	<49.9	280	<49.9	280
		20	490	<0.00199	<0.00199	<0.00199	<0.00398	<0.00398	<49.8	86.4	<49.8	86.4
25	65.9	<0.00199	<0.00199	<0.00199	<0.00398	<0.00398	<50.0	<50.0	<50.0	<50.0		
S-4	7/20/2022	0-1	293	7.47	76.5	49	142	275	11300	21700	3220	36200
		1.5	135	8.01	81.5	55.4	167	312	5710	11500	1820	19000
		2.5	43.9	9.56	69.9	40.3	116	236	6550	7770	1170	15500
		3.5	39.8	7.05	58.4	33.4	97.9	197	5020	5750	856	11600
		4.5	79.3	6.4	55.4	31.200	95.2	188	3970	2940	<498	6910
T-4	9/21/2022	0-1	4220	<0.0998	0.143	0.951	3.8	4.89	941	32900	6060	39900
		1.5	2760	<0.0996	0.107	1.22	2.92	4.24	914	33700	6150	40800
		2	3320	<0.100	0.11	1.15	2.79	4.05	892	38200	6610	45700
		3	392	0.158	2.21	3.54	7.2	13.1	541	2510	369	3420
		4	261	0.0504	0.507	4.45	8.22	13.2	658	2220	350	3230
		5	251	<0.0398	0.394	3.38	6.43	10.2	691	2170	341	3200
		6	2990	0.116	0.103	0.662	1.77	2.65	174	1240	183	1600
		7	164	<0.00202	<0.00202	0.00473	0.0257	0.0304	<49.9	420	60	480
		8	240	0.00766	0.16	0.237	0.428	0.832	813	1960	304	3080
9	319	<0.00199	<0.00199	0.00349	0.0184	0.0219	<50.0	312	<50.0	312		
BH-4	1/16/2023	0-1	954	<0.00200	<0.00200	0.0148	0.00419	0.019	<249	4360	<249	4360
		2-3	1040	<0.00201	<0.00201	0.0208	0.00482	0.0256	239	1890	<49.9	2130
		4-5	656	<0.00200	<0.00200	0.00364	<0.00401	<0.00401	<49.9	137	<49.9	137
		6-7	999	<0.00199	<0.00199	<0.00199	<0.00398	<0.00398	<50.0	<50.0	<50.0	<50.0
		9-10	1070	<0.00198	<0.00198	<0.00198	<0.00396	<0.00396	<49.9	<49.9	<49.9	<49.9
		11-12	885	<0.00199	<0.00199	<0.00199	<0.00398	<0.00398	<50.0	<50.0	<50.0	<50.0
		14-15	1610	<0.00200	<0.00200	<0.00200	<0.00399	<0.00399	<50.0	<50.0	<50.0	<50.0
		20	2000	<0.00201	<0.00201	<0.00201	<0.00402	<0.00402	<50.0	<50.0	<50.0	<50.0
25	<4.98	<0.00200	<0.00200	<0.00200	<0.00399	<0.00399	<49.9	<49.9	<49.9	<49.9		

TABLE 1
 SUMMARY OF ANALYTICAL RESULTS
 SOIL ASSESSMENT (CARMONA RESOURCES) - NAPP2221332553
 CONOCOPHILLIPS
 WILLOW A STATE #001 TANK BATTERY RELEASE
 EDDY COUNTY, NM

Sample ID	Sample Date	Sample Depth	Chloride ¹	BTEX ²					TPH ³			
				Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	GRO	DRO	MRO	Total TPH
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	C ₆ - C ₁₀	> C ₁₀ - C ₂₈	> C ₂₈ - C ₃₆	(GRO+DRO+EXT DRO)
		ft. bgs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
H-1	7/20/2022	0-0.5	35	<0.00201	<0.00201	<0.00201	<0.00402	<0.00402	<50.0	<50.0	<50.0	<50.0
H-2	7/20/2022	0-0.5	28.6	<0.00199	<0.00199	<0.00199	<0.00398	<0.00398	<49.9	<49.9	<49.9	<49.9
H-3	7/20/2022	0-0.5	<4.97	<0.00198	<0.00198	<0.00198	<0.00397	<0.00397	<50.0	<50.0	<50.0	<50.0
H-4	7/20/2022	0-0.5	<4.99	<0.00199	<0.00199	<0.00199	<0.00398	<0.00398	<50.0	<50.0	<50.0	<50.0
H-5	7/20/2022	0-0.5	14.7	<0.00200	<0.00200	<0.00200	<0.00399	<0.00399	<49.9	<49.9	<49.9	<49.9
H-6	7/20/2022	0-0.5	<4.96	<0.00199	<0.00199	<0.00199	<0.00398	<0.00398	<49.9	<49.9	<49.9	<49.9
H-7	7/20/2022	0-0.5	<5.02	<0.00200	<0.00200	<0.00200	<0.00399	<0.00399	<49.9	<49.9	<49.9	<49.9

NOTES:

- ft. Feet
- bgs Below ground surface
- mg/kg Milligrams per kilogram
- TPH Total Petroleum Hydrocarbons
- GRO Gasoline range organics
- DRO Diesel range organics
- 1 Method SM4500CI-B
- 2 Method 8021B
- 3 Method 8015M

Bold and italicized values indicate exceedance of proposed Site RRALs.

Shaded rows indicate intervals proposed for excavation.

QUALIFIERS:

- U Indicates the analyte was analyzed but not detected
- F1 MS and/or MSD recovery exceeds control limits
- *+

TABLE 2
SUMMARY OF ANALYTICAL RESULTS
SOIL REMEDIATION - NAPP2221332553
CONOCOPHILLIPS
WILLOW A STATE #001 TANK BATTERY RELEASE
EDDY COUNTY, NM

Sample ID	Sample Date	Sample Depth ft. bgs	Chloride ¹ mg/kg	BTEX ²					TPH ³				
				Benzene mg/kg	Toluene mg/kg	Ethylbenzene mg/kg	Total Xylenes mg/kg	Total BTEX mg/kg	GRO C ₆ - C ₁₀ mg/kg	DRO > C ₁₀ - C ₂₈ mg/kg	MRO > C ₂₈ - C ₃₆ mg/kg	Total TPH (GRO+DRO+EXT DRO) mg/kg	
				Reclamation Closure Criteria for Surface (0-4 ft bgs) Soils:				<i>600 mg/kg</i>	<i>10 mg/kg</i>	--	--	--	<i>50 mg/kg</i>
Site RRALs for Subsurface (>4 ft bgs) Soils (GW <50 ft):				<i>600 mg/kg</i>	<i>10 mg/kg</i>	--	--	--	<i>50 mg/kg</i>	--	--	--	<i>100 mg/kg</i>
FS-1	12/13/2024	2'	112	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	14.1	<10.0	14.1	
FS-2	12/13/2024	2'	704	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	-	
FS-2 (5')*	12/16/2024	5'	32.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	-	
FS-3	12/13/2024	8'	48.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	-	
FS-4	12/13/2024	8'	80.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	-	
FS-5	12/13/2024	2'	80.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	-	
FS-6	12/13/2024	4'	32.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	-	
ISW-1	12/13/2024	-	16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	-	
ISW-2	12/13/2024	-	256	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	-	
ISW-3	12/13/2024	-	512	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	-	
ISW-4	12/13/2024	-	16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	-	
NSW-1	12/13/2024	-	1600	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	-	
NSW-1 (3')*	12/16/2024	-	240	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	-	
Areas Proposed for Deferral of Remedial Action													
FS-7	12/13/2024	0.5'	2800	<0.050	<0.050	1.15	4.96	6.11	1210	21200	4250	26660	
ESW-1	12/13/2024	-	16200	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	-	
ISW-5	12/13/2024	-	80.0	<0.050	<0.050	<0.050	<0.150	<0.300	<100.0	4740	1710	6450	
NSW-2	12/13/2024	-	2760	<0.050	<0.050	0.053	<0.150	<0.300	<50.0	1810	423	2233	
SSW-1	12/13/2024	-	1060	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	-	
SSW-2	12/13/2024	-	3720	<0.050	<0.050	<0.050	<0.150	<0.300	<50.0	2240	496	2736	
WSW-1	12/13/2024	-	240	<0.050	<0.050	<0.050	<0.150	<0.300	864	4140	759	5763	

NOTES:

- ft. Feet
- bgs Below ground surface
- mg/kg Milligrams per kilogram
- TPH Total Petroleum Hydrocarbons
- GRO Gasoline range organics
- DRO Diesel range organics
- 1 Method SM4500C1-B
- 2 Method 8021B
- 3 Method 8015M

Bold and italicized values indicate exceedance of proposed Site RRALs.

Gold highlight represents soil horizons that were removed during deepening of excavation floors.

Green highlight represents soil intervals that were removed during horizontal expansion of excavation sidewalls.

* These iterative samples are located to encompass the original sample location that triggered removal, with further excavation in each area indicated in ().

TABLE 3
SUMMARY OF ANALYTICAL RESULTS
PULLEY PIT - SOIL BACKFILL
CONOCOPHILLIPS
32.183759, -104.060876
EDDY COUNTY, NM

Sample ID	Sample Date	Chloride ¹		BTEX ²								TPH ³								
				Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO		DRO		EXT DRO		Total TPH (GRO+DRO+EXT DRO)
				mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	
BACKFILL - COMPOSITE	12/16/2024	128.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-

NOTES:

- ft. Feet
- bgs Below ground surface
- mg/kg Milligrams per kilogram
- TPH Total Petroleum Hydrocarbons
- GRO Gasoline range organics
- DRO Diesel range organics
- 1 Method SM4500Cl-B
- 2 Method 8021B
- 3 Method 8015M

APPENDIX A C-141 Forms

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

State of New Mexico
Energy Minerals and Natural
Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	COG Operating, LLC	OGRID	229137
Contact Name	Jacqui Harris	Contact Telephone	(575) 496-0780
Contact email	Jacqui.Harris@ConocoPhillips.com	Incident # (assigned by OCD)	NAPP2221332553
Contact mailing address	600 West Illinois Avenue, Midland, Texas 79701		

Location of Release Source

Latitude 32.15769 Longitude -104.07471
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Willow A State 001	Site Type	Tank Battery
Date Release Discovered	July 17, 2022	API# (if applicable)	30-015-33012

Unit Letter	Section	Township	Range	County
J	03	25S	28E	Eddy

Surface Owner: State Federal Tribal Private (Name: _____)

Nature and Volume of Release

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

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls)	195	Volume Recovered (bbls)	100
<input type="checkbox"/> Produced Water	Volume Released (bbls)		Volume Recovered (bbls)	
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No		
<input type="checkbox"/> Condensate	Volume Released (bbls)		Volume Recovered (bbls)	
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)		Volume Recovered (Mcf)	
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)		Volume/Weight Recovered (provide units)	

Cause of Release

The release was caused by a left open valve.
The release occurred within a gravel lined facility. A vacuum truck was dispatched to remove all freestanding fluids. Evaluation will be made of the spill area for any possible impact from the release.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Release was greater than 25 barrels.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Immediate Notification was made by Jacqui Harris on July 18, 2022 at 12:32 pm to ocd.enviro@state.nm.us.	

Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: 	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: Brittany N. Esparza	Title: Environmental Technician
Signature: 	Date: 8/1/2022
email: Brittany.Esparza@ConocoPhillips.com	Telephone: (432) 221-0398
<u>OCD Only</u>	
Received by: Jocelyn Harimon	Date: 08/01/2022

NAPP2221332553

L48 Spill Volume Estimate Form

Facility Name & Number: Willow A State Battery

Asset Area: DBWN

Release Discovery Date & Time: 7.18.22

Release Type: Oil

Provide any known details about the event: Gasket on free water Knockout and causing the spill

Spill Calculation - Subsurface Spill - Rectangle

Was the release on pad or off-pad?

See reference table below

Has it rained at least a half inch in the last 24 hours?

See reference table below

Convert Irregular shape into a series of rectangles	Length (ft.)	Width (ft.)	Depth (in.)	Soil Spilled-Fluid Saturation	Estimated volume of each area (bbl.)	Total Estimated Volume of Spill (bbl.)	Percentage of Oil if Spilled Fluid is a Mixture	Total Estimated Volume of Spilled Oil (bbl.)	Total Estimated Volume of Spilled Liquid other than Oil (bbl.)
Rectangle A	50.0	15.0	30.00	10.50%	333.750	35.044			
Rectangle B	50.0	16.0	48.00	10.50%	569.600	59.808			
Rectangle C					0.000	0.000			
Rectangle D					0.000	0.000			
Rectangle E					0.000	0.000			
Rectangle F					0.000	0.000			
Rectangle G					0.000	0.000			
Rectangle H					0.000	0.000			
Rectangle I					0.000	0.000			
Rectangle J					0.000	0.000			
Total Volume Release:						94.852			

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

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

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

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

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

CONDITIONS
 Action 130068

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 130068
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	8/1/2022

Incident ID	napp2221332553
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	35 (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

- Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- Field data
- Data table of soil contaminant concentration data
- Depth to water determination
- Determination of water sources and significant watercourses within 1/2-mile of the lateral extents of the release
- Boring or excavation logs
- Photographs including date and GIS information
- Topographic/Aerial maps
- Laboratory data including chain of custody


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

State of New Mexico
Oil Conservation Division

Page 4

Incident ID	napp2221332553
District RP	
Facility ID	
Application ID	

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

Printed Name: Ike Tavarez Title: Program Manager, Remediation
 Signature:  Date: 12/23/2024
 email: ike.tavarez@conocophillips.com Telephone: 432-685-2573

OCD Only

Received by: _____ Date: _____

Incident ID	napp2221332553
District RP	
Facility ID	
Application ID	

Remediation Plan


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

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

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

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

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

Printed Name: Ike Tavaréz Title: Program Manager, Remediation
 Signature:  Date: 12/23/2024
 email: ike.tavaréz@conocophillips.com Telephone: 432-685-2573

OCD Only

Received by: _____ Date: _____

- Approved Approved with Attached Conditions of Approval Denied Deferral Approved

Signature: _____ Date: _____

APPENDIX B

Regulatory Correspondence



7770 Jefferson Street NE, Suite 410
Albuquerque, New Mexico 87109
Tel 505.254.1115 Fax 505.254.1116
www.swca.com

Date: September 9, 2024

TO: Ethan O. Ortega
Assistant Commissioner of Cultural Resources and Lead Agency Archaeologist
Cultural Resources Office
New Mexico State Land Office

FROM: SWCA Environmental Consultants

SUBJECT: Completion of an Archaeological Records Management Section (ARMS) Review for the Willow A State #001 Inadvertent Release Project in Eddy County, NM

Company Ref No: None-Provided

PROJECT DESCRIPTION:

Tetra Tech, Inc has subcontracted SWCA Environmental Consultants (SWCA) to conduct an Archaeological Records Management Section (ARMS) review for the Willow A State #001 Inadvertent Release Project in Eddy County, New Mexico. The proposed project is on lands managed by the New Mexico State Land Office (NMSLO) approximately 7.42 kilometers (4.61 miles) south of Malaga, NM in T25S, R28E, Section 3.

A literature and file search were conducted on September 4, 2024, using the New Mexico Cultural Resources Information System (NMCRIS) online database which included a review of known cultural resources, such as the built environment, archaeological sites, and State/National Register listed properties. Other sources reviewed include the BLM GLO Records web site, <http://www.glorerecords.blm.gov>, which include land patent and general land office survey data. As this area was not settled by Spain, land grant records were not reviewed. The review was conducted for the Area of Potential Effects (APE) and 500 meters (m) (0.31 mile) surrounding the APE. The land the proposed project is located on is part of the June 21, 1898: New Mexico Territorial Grant (30 Stat. 484) patented on November 22, 1912, and October 29, 1913.

Information regarding the findings can be found in Table 1 and 2 and Figure 1.

Recommendation:

The APE and surrounding 500 m (0.31 mile) have been subject to 25 cultural resource surveys, 23 of which were conducted within the last 10 years (NMCRIS 154124). One previously recorded site (LA 197049) is within the 500 m (0.31 mile) search buffer, but outside of the APE. The project area is entirely located on NMSLO-managed lands. The project area is not completely covered by previous survey; however, it is located on previously disturbed land from oil and gas construction activities. Per Anne Curry at NMSLO, because all ground disturbing activities will remain within the disturbed area, no additional survey is required (8/16/2024). SWCA recommends the completion of an ARMS letter to satisfy the requirements of the reclamation area. All reclamation work will remain within the approved existing disturbance. If cultural materials are identified during ground disturbing activities, work must stop and the NMSLO must be contacted.



ENVIRONMENTAL CONSULTANTS

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Albuquerque, New Mexico 87109
Tel 505.254.1115 Fax 505.254.1116
www.swca.com

A handwritten signature in black ink, appearing to be "P. J. ...".

Principal Investigator: _____

Enclosure:

(1) Review Results Tables (2) ARMS Map

From: [Lull, Christian](#)
To: [Chavira, Lisbeth](#)
Cc: [Poole, Nicholas](#)
Subject: [EXTERNAL]The Oil Conservation Division (OCD) has rejected the application, Application ID: 316552
Date: Thursday, July 18, 2024 10:08:00 AM

Willow A State 001 (07-17-2022)

From: OCDOnline@state.nm.us <OCDOnline@state.nm.us>
Sent: Friday, July 5, 2024 3:22 PM
To: Esparza, Brittany <Brittany.Esparza@conocophillips.com>
Subject: [EXTERNAL]The Oil Conservation Division (OCD) has rejected the application, Application ID: 316552

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To whom it may concern (c/o Brittany Esparza for COG OPERATING LLC),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action (C-141)*, for incident ID (n#) nAPP2221332553, for the following reasons:

- **Deferral denied.** The previous denial on 10/18/23 advised that COG remove contaminants safely with alternative methods (shovel, hydrovac, etc.) as well as provide photographic evidence that the surface staining has been cleaned up. Neither has occurred.
- **As COG OPERATING LLC (229137) is responsible for the remediation, reclamation, and revegetation of this release, it is the responsible party's duty to include letters from the pipeline operators who are requesting a buffer zone around their pipelines to take responsibility for any contamination left in place due to their buffer zone request. If the pipeline operators are unwilling to take responsibility for the contamination located within their requested buffer zones, the responsible party will be required to remediate, reclaim, and revegetate the release pursuant to 19.15.29 NMAC. Furthermore, pursuant to 19.15.29.7C NMAC, OCD may consider a person causing the release or controlling the location of the release as the responsible party. If any pipeline operator refuses to allow the remediation, reclamation, and revegetation of this release, please include the refusal in writing. OCD reserves the right to hold the pipeline operator as the responsible party.**
- **Until COG removes contaminants to the MEP a deferral will not be granted. Resubmit report to the OCD by 8/5/24.**

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 316552.

Please review and make the required correction(s) prior to resubmitting.

If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you,

Shelly Wells

Environmental Specialist-A

505-469-7520

Shelly.Wells@emnrd.nm.gov

New Mexico Energy, Minerals and Natural Resources Department

1220 South St. Francis Drive

Santa Fe, NM 87505

From: [Wells, Shelly, EMNRD](#)
To: [Abbott, Sam](#)
Cc: [Lull, Christian](#); [Bratcher, Michael, EMNRD](#)
Subject: RE: [EXTERNAL] Extension Request - Willow A State 001 Tank Battery (NAPP2221332553)
Date: Tuesday, August 6, 2024 10:44:55 AM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)

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Good morning Sam,

The extension request for NAPP2221332553 WILLOW A STATE 001 is approved. The new due date to submit your remediation closure report to the OCD is October 3, 2024. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Kind regards,

Shelly

[Shelly Wells](#) * Environmental Specialist-Advanced
Environmental Bureau
EMNRD-Oil Conservation Division
1220 S. St. Francis Drive|Santa Fe, NM 87505
(505)469-7520|Shelly.Wells@emnrd.nm.gov
<http://www.emnrd.state.nm.us/OCD/>

From: Abbott, Sam <Sam.Abbott@tetrattech.com>
Sent: Monday, August 5, 2024 8:39 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Lull, Christian <Christian.Lull@tetrattech.com>
Subject: [EXTERNAL] Extension Request - Willow A State 001 Tank Battery (NAPP2221332553)

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To Whom it May Concern,

On behalf of ConocoPhillips, Tetra Tech is requesting a 60-day extension (October 3, 2024) to complete reporting for the Willow A State 001 Tank Battery Release (NAPP2221332553).

Due to the site complexity, this release is now being investigated and handled by the ConocoPhillips

Risk Management team. Additional time is needed to coordinate with adjacent pipeline operators to prepare a remediation plan to safely remove contaminants associated with the release to the maximum extent practicable.

A complete report will be submitted to the NMOCD within the proposed timeframe pursuant to the conditions specified by the NMOCD on July 5, 2024.

Thank you in advance.

Sam

Samantha Abbott, PG | Project Manager

Direct Mobile +1 (512) 739-7874 | Business +1 (512) 338-1667 | Sam.Abbott@tetrattech.com

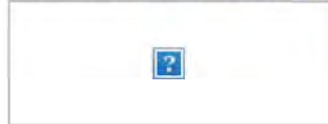
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From: OCDOnline@state.nm.us
To: [Lull, Christian](#)
Subject: The Oil Conservation Division (OCD) has approved the application, Application ID: 387437
Date: Thursday, September 26, 2024 5:55:34 PM

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To whom it may concern (c/o Christian Lull for COG OPERATING LLC),

The OCD has approved the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2221332553, with the following conditions:

- **Remediation plan approved. Submit deferral request or remediation closure report to OCD by 12/25/24.**

The signed C-141 can be found in the OCD Online: Imaging under the incident ID (n#).

If you have any questions regarding this application, please contact me.

Thank you,
Shelly Wells
Environmental Specialist-A
505-469-7520
Shelly.Wells@emnrd.nm.gov

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

From: [Knight, Tami C.](#)
To: [Abbott, Sam](#)
Cc: [Lull, Christian](#); [Bisbey-Kuehn, Elizabeth A.](#); [Griffin, Becky R.](#); [David, Deon W.](#)
Subject: RE: (Remediation Work Plan) - Willow A State #001 Tank Battery Release (NAPP2221332553) - 7-17-2022 - approved w/ Condition
Date: Wednesday, October 23, 2024 12:53:12 PM
Attachments: [image006.png](#)
[image007.png](#)
[image008.jpg](#)
[image009.jpg](#)
[image010.png](#)
[image011.png](#)
[image012.png](#)
[image013.png](#)
[image014.png](#)

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Sam

NMSLO Environmental Compliance Office (ECO) has reviewed the subject remediation plan and has approved the plan with the following conditions:

1. Excavations where TPH remains above regulatory standard, due to equipment obstruction, apply an in-situ treatment that will aid in the breakdown of residual hydrocarbons prior to backfill.

Please respond to this email that you understand the conditions of approval and that you will comply with the conditions of approval.

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

Please submit a Remediation Closure Report to eco@nmslo.gov and include photos showing application of TPH treatment.

We appreciate the efforts being taken to reclaim State Trust Land.

Thank you,

Environmental Compliance Office

Surface Resources Division

eco@nmslo.gov

nmstatelands.org

.....

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From: Abbott, Sam <Sam.Abbott@tetrattech.com>
Sent: Tuesday, October 22, 2024 8:55 AM
To: SLO Spills <spills@nmslo.gov>
Cc: Knight, Tami C. <tknight@nmslo.gov>; Llull, Christian <Christian.Llull@tetrattech.com>
Subject: [EXTERNAL] (Remediation Work Plan) - Willow A State #001 Tank Battery Release (NAPP2221332553) - 7-17-2022

Tami:

Attached is one pdf file Remediation Work Plan report that includes the written narrative and associated attachments regarding proposed remedial activities at the Willow A State #001 Tank Battery Release, Incident ID NAPP2221332553, for your review and approval.

Incident ID NAPP2221332553 Details:

- Release Location: 32.157654°, -104.074715°
- Site is located in Eddy County, NM.
- Landowner: NMSLO
 - Located within active oil and gas lease ID VA29640002, which is listed under Concho Oil & Gas LLC/COG Operating LLC.
- Date of Release: 7/17/2022
- According to the C-141, approximately 195 barrels (bbls) of oil were reported released, of which 100 bbls of oil were recovered.
 - Noted discrepancy: the Spill Volume Estimate indicates that only 95 bbls of oil were released.
 - The C-141 states that the release was the result of a valve that was left open. According to information provided by COP, the release was caused by a failed gasket on the facility's free water knockout unit.
 - The release occurred within a lined facility.
- The Site is located in a high karst area.
- COP contracted Carmona Resources to conduct the initial site assessment activities between July 2022 and January 2023.
 - Assessment activities consisted of eleven (11) hand auger borings, four (4) soil test trenches, and four (4) boreholes.
 - Additionally, four (4) hand auger borings (H-1 through H-4) for horizontal delineation installed to a maximum depth of 0-0.5' bgs.
 - The release was fully delineated following all three phases of the assessment.
- Carmona Resources prepared a Deferment Report based on the assessment results and submitted to the NMOCD in May 2023.

The NMOCD rejected the deferral request on October 18, 2023 and requested that the release be remediated to the maximum extent practicable before deferral of remaining impacts may be granted.

- The Deferment Report was resubmitted to the NMOCD on February 22, 2024, and again rejected for the same stated reason.
- The release footprint is located on State Trust Lands, so Tetra Tech contracted SWCA to complete an Archeological Resources Management Section (ARMS) review in the release area to comply with 19.2.24 NMAC before conducting any additional assessment or remedial actions.
- Tetra Tech completed a site visit to develop a remediation work plan for the site. Tetra Tech did not complete any additional assessment activities.
- Tetra Tech on behalf of COP prepared a Remediation Work Plan dated September 26, 2024 in accordance with the NMOCD rejection and submitted to the NMOCD for approval.
- The Remediation Work Plan was approved by the NMOCD on September 26, 2024 with the following comments:
 - *“Remediation plan approved. Submit deferral request or remediation closure report to OCD by 12/25/24.”*
- [19.15.29.13](#) NMAC will be met, and reclamation details are provided in the attached plan.
- Please let me know at your earliest convenience if we are cleared to proceed.

If you have any questions, please let me know.

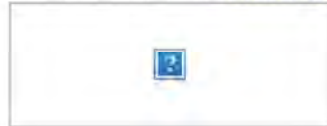
Thank you,
Sam

Samantha Abbott, PG | Project Manager
Direct Mobile +1 (512) 739-7874 | Business +1 (512) 338-1667 | Sam.Abbott@tetrattech.com

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From: OCDOnline@state.nm.us
To: [Lull, Christian](#)
Subject: The Oil Conservation Division (OCD) has accepted the application. Application ID: 410407
Date: Tuesday, December 10, 2024 1:33:43 PM

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

To whom it may concern (c/o Christian Lull for COG OPERATING LLC),

The OCD has received the submitted *Notification for (Final) Sampling of a Release* (C-141N), for incident ID (n#) nAPP2221332553.

The sampling event is expected to take place:

When: 12/13/2024 @ 09:00

Where: J-03-25S-28E 0 FNL 0 FEL (32.15769,-104.07471)

Additional Information: Please contact Samantha Abbott, Project Manager, Mobile +1 (512) 739-7874

Additional Instructions: Approximate Release Point: 32.157654°, -104.074715°

An OCD representative may be available onsite at the date and time reported. In the absence or presence of an OCD representative, sampling pursuant to 19.15.29.12.D NMAC is required. Sampling must be performed following an approved sampling plan or pursuant to 19.15.29.12.D.(1).(c) NMAC. Should there be a change in the scheduled date and time of the sampling event, then another notification should be resubmitted through OCD permitting as soon as possible.

- **Failure to notify the OCD of sampling events including any changes in date/time per the requirements of 19.15.29.12.D.(1).(a) NMAC, may result in the remediation closure samples not being accepted.**

If you have any questions regarding this application, or don't know why you have received this email, please contact us.

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

From: OCDOnline@state.nm.us
To: [Lull, Christian](#)
Subject: The Oil Conservation Division (OCD) has accepted the application. Application ID: 413591
Date: Wednesday, December 18, 2024 3:20:12 PM

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

To whom it may concern (c/o Christian LLuLL for COG OPERATING LLC),

The OCD has received the submitted *Notification for (Final) Sampling of a Release (C-141N)*, for incident ID (n#) nAPP2221332553.

The sampling event is expected to take place:

When: 12/16/2024 @ 10:00

Where: J-03-25S-28E 0 FNL 0 FEL (32.15769,-104.07471)

Additional Information: Time and Date Sampling is a portion of a variance request. The initial round of sampling results were not able to meet the action levels required for the Site, therefore an additional sampling event was conducted on Monday, after widening and deepening the excavation area. An email will be submitted to the NMOCD with further information on the variance.

Additional Instructions: Approximate Release Point: 32.157654°, -104.074715°

An OCD representative may be available onsite at the date and time reported. In the absence or presence of an OCD representative, sampling pursuant to 19.15.29.12.D NMAC is required. Sampling must be performed following an approved sampling plan or pursuant to 19.15.29.12.D.(1).(c) NMAC. Should there be a change in the scheduled date and time of the sampling event, then another notification should be resubmitted through OCD permitting as soon as possible.

- **Failure to notify the OCD of sampling events including any changes in date/time per the requirements of 19.15.29.12.D.(1).(a) NMAC, may result in the remediation closure samples not being accepted.**

If you have any questions regarding this application, or don't know why you have received this email, please contact us.

New Mexico Energy, Minerals and Natural Resources Department

1220 South St. Francis Drive

Santa Fe, NM 87505

From: [Wells, Shelly, EMNRD](#)
To: [Abbott, Sam](#)
Cc: [Bratcher, Michael, EMNRD](#)
Subject: RE: [EXTERNAL] C-141N Variance Request - NAPP2221332553
Date: Thursday, December 19, 2024 3:36:43 PM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)

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Hi Sam,

The variance request to use samples collected on 12/16/24, without a prior sampling notification is approved. In the future, please request any variance prior to sample collection, even if concurrent to sample collection.

Kind regards,

Shelly

Shelly Wells * Environmental Specialist-Advanced
Environmental Bureau
EMNRD-Oil Conservation Division
1220 S. St. Francis Drive|Santa Fe, NM 87505
(505)469-7520|Shelly.Wells@emnrd.nm.gov
<http://www.emnrd.state.nm.us/OCD/>

From: Abbott, Sam <Sam.Abbott@tetrattech.com>
Sent: Thursday, December 19, 2024 2:26 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Subject: [EXTERNAL] C-141N Variance Request - NAPP2221332553

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Good afternoon,

I am requesting a variance to the two business day notification to continue confirmation sampling outside of the initial notice period. We received exceedances in our initial confirmation sampling and had to continue sampling on Monday (12/16/2024).

Attached is the sampling notice through the OCD Permitting, please let me know if any additional

information is needed.

Thank you in advance.

Samantha Abbott, PG | Project Manager

Direct Mobile +1 (512) 739-7874 | Business +1 (512) 338-1667 | Sam.Abbott@tetrattech.com

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From: [Abbott, Sam](#)
To: eco@nmslo.gov; [SLO Spills](#)
Cc: [Knight, Tami C.](#); [Llull, Christian](#)
Subject: FW: Willow A State #001 Tank Battery Release (NAPP2221332553) - Notice of Confirmation Sampling
Date: Thursday, December 12, 2024 12:56:00 PM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)

I am forwarding the below sampling notification email because I believe I used the incorrect/out-of-date email addresses in my original message.

Thank you,
Sam

Samantha Abbott, PG | Project Manager
Direct Mobile +1 (512) 739-7874 | Business +1 (512) 338-1667 | Sam.Abbott@tetrattech.com

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From: Abbott, Sam
Sent: Thursday, December 12, 2024 12:36 PM
To: eco@slo.state.nm.us; SLO Spills <spills@slo.state.nm.us>
Cc: Knight, Tami C. <tknight@nmslo.gov>; Llull, Christian <Christian.Llull@tetrattech.com>
Subject: Willow A State #001 Tank Battery Release (NAPP2221332553) - Notice of Confirmation Sampling

To Whom it May Concern,

RE: **Willow A State #001 Tank Battery Release (NAPP2221332553)**

On Wednesday 10/23/2024, ECO approved the NAPP2221332553 Work Plan via email with conditions: *“Excavations where TPH remains above regulatory standard, due to equipment obstruction, apply an in-situ treatment that will aid in the breakdown of residual hydrocarbons prior to backfill.”*

In accordance with recent guidance, sampling notification is being provided for the site remediation.

Willow A State #001 Tank Battery Release
ConocoPhillips

Incident ID: NAPP2221332553

Eddy County, NM

Approximate Release Point: 32.157654°, -104.074715°

Confirmation sampling will begin on Friday, December 13, 2024.

My apologies for not providing 2-day notice, please let me know if this causes any issues with our proposed schedule.

Please let me know if you have any questions.

Thank you in advance.

Samantha Abbott, PG | Project Manager

Direct Mobile +1 (512) 739-7874 | Business +1 (512) 338-1667 | Sam.Abbott@tetratech.com

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TETRA TECH

From: [David, Deon W.](#)
To: [Abbott, Sam](#)
Cc: [Lull, Christian](#); [Bisbey-Kuehn, Elizabeth A.](#); [Knight, Tami C.](#); [Honea, Tammy](#); [Biernoff, Ari](#); [Heltman, Elaine G.](#)
Subject: COG OPERATING LLC - WILLOW A STATE 001. Remediation Summary, and Deferral Request - Approved.
Date: Thursday, October 16, 2025 4:54:35 PM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)

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RE: 30-015-33012 (COG OPERATING LLC); WILLOW A STATE 001; VA-2964-0002 (CONCHO OIL & GAS LLC/COG OPERATING LLC)

Incident #: NAPP2221332553

ROE #: N/A

Remediation Summary, and Deferral Request Received: October 07, 2025.

Report Status: **Approved.**

For a detailed breakdown of the review, please refer to the table below.

Remediation Closure Documented in Detail in Report	Completed	Not Completed	Not Required
Remediation Activity			
CPP & Bio Statements	Completed.		
Spill Delineation Information	Completed.		
Remediation Method Details	The <i>Deferral Request</i> for final remediation of impacted soil due to the presence of active production equipment and process piping, is <i>approved</i> by NMSLO. The deferred remediation must be completed during the final reclamation of the well pad, during decommission, or major reconstruction of the facility, whichever occurs first.		
Confirmation Sampling Notification Received	Completed.		
Confirmation Sampling	Completed.		

Results/Data Summary Table			
Backfill of Excavation	Completed.		
Photographs (before and after backfill)	Completed.		
Reclamation/Reseeding			Not Required.
Vegetation Monitoring			Not Required.

**The conclusions of this report review are based on the documentation provided by the submitter. ECO may conduct a field verification of the information provided, though it is not obligated to do so. In the event that field conditions or subsequent information reveal discrepancies, ECO may require additional corrective work.*

If reported conditions change that result in potential impact to State Trust Land surface, please submit a written notification to eco@nmslo.gov. We appreciate your commitment and efforts in remediating and reclaiming State Trust Land.

Thank you,

Environmental Compliance Office
 New Mexico State Land Office
eco@nmslo.gov
nmstatelands.org

.....

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From: [Chavira, Lisbeth](#)
To: [Abbott, Sam](#)
Subject: FW: The Oil Conservation Division (OCD) has rejected the application, Application ID: 512986
Date: Friday, February 13, 2026 3:28:54 PM

From: OCDOnline@state.nm.us <OCDOnline@state.nm.us>
Sent: Monday, November 3, 2025 4:03 PM
To: Chavira, Lisbeth <Lisbeth.chavira@tetrattech.com>
Subject: The Oil Conservation Division (OCD) has rejected the application, Application ID: 512986

⚠ **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. ⚠

To whom it may concern (c/o Lisbeth Chavira for COG OPERATING LLC),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2221332553, for the following reasons:

- **Deferral denied for the following reasons:**
- **1) In the 1/23/25 deferral rejection, COG was told that this release would require the following: A certified civil engineer will need to evaluate the soil type and provide the minimum distance the excavation(s) needs to be from the tanks and how deep the excavation(s) can be prior to requesting a deferral. This document must be stamped by the engineer. This document has not been submitted.**
- **2) On pg. 8, in the paragraph immediately above Proposed Reclamation Plan, it states: "The requested deferral area is in close proximity to heavy equipment which does allow adequate space to slope or trench." Is this statement correct?**
- **3) Include an updated Figure showing the area of requested deferral to include all sample points requested in the deferral, all horizontal delineation sample points, and only the site infrastructure that impedes remediation efforts and is the reason for the deferral request.**
- **Submit updated report to the OCD by 1/2/26.**

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 512986.

Please review and make the required correction(s) prior to resubmitting.

If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you,
Shelly Wells
Environmental Specialist-A
505-469-7520
Shelly.Wells@emnrd.nm.gov

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

From: [Wells, Shelly, EMNRD](#)
To: [Abbott, Sam](#)
Cc: [Bratcher, Michael, EMNRD](#)
Subject: RE: [EXTERNAL] nAPP2221332553 WILLOW A STATE 001 Extension Request
Date: Monday, January 5, 2026 11:19:13 AM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

Good morning Sam,

As a report was due to the OCD by 1/2/26, your request for an extension for nAPP2221332553 WILLOW A STATE 001 is denied. Extensions must be requested prior to the deadline. Continue with the deferral activities and submit a report as soon as possible to OCD Permitting. Please include a copy of this and all notifications in the report to ensure the notifications are documented in the project file.

Kind regards,

Shelly

Shelly Wells * Senior Environmental Scientist
Environmental Bureau
EMNRD-Oil Conservation Division
1220 S. St. Francis Drive|Santa Fe, NM 87505
(505)469-7520 Shelly.Wells@emnrd.nm.gov
<http://www.emnrd.state.nm.us/OCD/>

From: Abbott, Sam <Sam.Abbott@tetratech.com>
Sent: Monday, January 5, 2026 9:31 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Subject: [EXTERNAL] nAPP2221332553 WILLOW A STATE 001 Extension Request

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Good morning,

On behalf of ConocoPhillips, Tetra Tech is requesting a 60-day extension (until March 3, 2026) to complete reporting associated with the Willow A State 001 Tank Battery Release (nAPP2221332553) in Eddy County, NM.

A REVISED Release Characterization, Remediation Summary, and Deferral Request dated October 7, 2025 was prepared by Tetra Tech on behalf of ConocoPhillips and submitted to the NMOCD portal. The Revised Deferral Request was rejected by the NMOCD on November 3, 2025, with the following comments:

- *“Deferral denied for the following reasons:*
 1. *In the 1/23/25 deferral rejection, COG was told that this release would require the following: A certified civil engineer will need to evaluate the soil type and provide the minimum distance the excavation(s) needs to be from the tanks and how deep the excavation(s) can be prior to requesting a deferral. This document must be stamped by the engineer. This document has not been submitted.*
 2. *On pg. 8 in the paragraph immediately above Proposed Reclamation Plan, it states: “The requested deferral area is in close proximity to heavy equipment which does allow adequate space to slope or trench.” Is this statement correct?*
 3. *Include an updated Figure showing the area of requested deferral to include all sample points requested in the deferral, all horizontal delineation sample points, and only the site infrastructure that impedes remediation efforts and is the reason for the deferral request.*
- *Submit updated report to the OCD by 1/2/26.”*

Based on the rejection, ConocoPhillips with Tetra Tech have identified and contracted a civil engineer to conduct a geotechnical investigation needed to evaluate the soil type and identify the appropriate deferral areas in the tank battery facility.

The geotechnical investigation is currently scheduled for this Thursday, January 8, 2026.

Therefore, additional time is required to perform the following items:

- The engineering subcontractor to complete the geotechnical investigation and prepare the certified civil engineering letter.
- Tetra Tech to update the deferral request based on the civil engineering letter for OCD review.

Thank you in advance.

Sam

Samantha Abbott, P.G. | Project Manager

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APPENDIX C

Revised Site Characterization Data

212C-MD-03573	TETRA TECH	LOG OF BORING Willow A State 001 DTW	Page 1 of 1
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Project Name: Willow A State #001

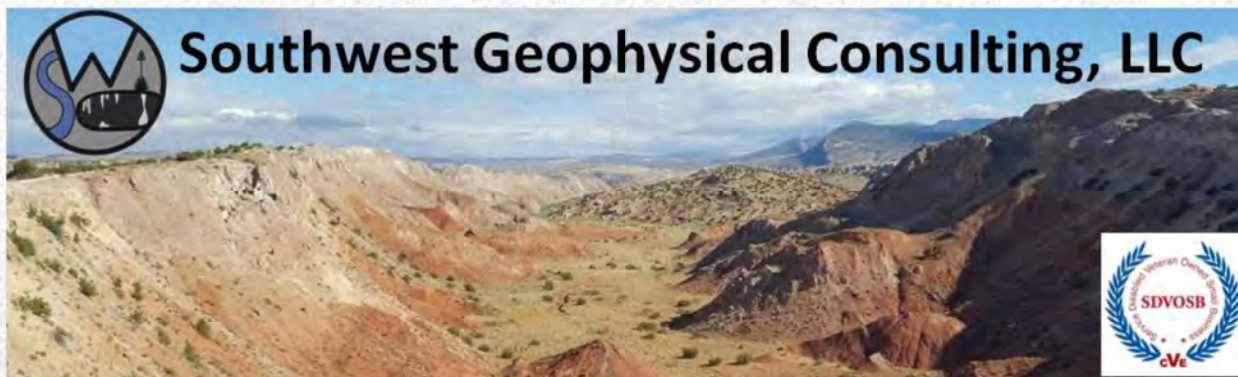
Borehole Location: GPS Coordinates: 32.156600°, -104.075100° Surface Elevation: 2997'

Borehole Number: **Willow A State 001 DTW** Borehole Diameter (in.): 8" Date Started: Date Finished: 7/29/2025

DEPTH (ft)	OPERATION TYPES	SAMPLE	CHLORIDE CONCENTRATION (ppm)	VOC CONCENTRATION (ppm)	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT	PLASTICITY INDEX	MINUS NO. 200 (%)	GRAPHIC LOG	WATER LEVEL OBSERVATIONS		DEPTH (ft)	WELL DIAGRAM
												While Drilling	24 Hours After Completion of Drilling		
												While Drilling <input checked="" type="checkbox"/> DRY 24 Hours After Completion of Drilling <input checked="" type="checkbox"/> DRY			
												Remarks:			
												MATERIAL DESCRIPTION			
5												-SC- TOPSOIL (Clayey Sand): Light brown, loose, dry, fine-grained, with poorly sorted subrounded gravel-sized caliche	1		
												-SM- SAND: Light brown, loose, dry, very fine- to fine-grained, with moderately sorted subrounded gravel-sized caliche	3		
												-SM- SAND: Light brown, loose, dry, fine-grained, trace gypsum, with poorly sorted subangular gravel	4		
												-SP- SAND: Light brown, loose, dry, fine-grained, with gypsum fragments, with very poorly sorted angular gravel	6		
												-- Transitions to Brown	8		
												-SC-SM- SAND: Brown to dark brown, loose, dry, fine- to coarse-grained, with frequent gypsum fragments, intermixed with clayey sand, with very poorly sorted gravel	10		
												-SC- CLAYEY SAND: Light brown, loose, dry, fine-grained, with gypsum fragments, with poorly sorted subangular gravel	15		
												-SM- SAND: Light brown, loose, dry, fine- to medium-grained, with occasional clayey sand layers, with gravel	20		
												-SM- SAND: Light brown to brown, very loose to loose, dry, fine- to medium-grained, trace gravel	24		
												-SC- CLAYEY SAND: Brown, loose to medium dense, dry, fine-grained, weakly cemented, travel gravel	29		
												-CL- SANDY CLAY: Light brown to brown, stiff to very stiff, dry, moderately indurated	39		
												-- Transitions to dark brown, trace gypsum	45		
												-SC-SM- SAND: Light brown to brown, medium dense, dry, fine-grained, with occasional clayey sand layers, weakly cemented, trace gravel	50		
													55		

Sampler Types: Split Spoon Shelby Bulk Sample Grab Sample Acetate Liner Vane Shear California Test Pit	Operation Types: Auger Hollow Stem Auger Continuous Flight Auger Mud Rotary Air Rotary Direct Push Drive Casing	Bottom of borehole at 55.0 feet. Notes: Surface elevation is an approximate value obtained from Google Earth data.
---	---	--

Logger: Colton Bickerstaff Drilling Equipment: Air Rotary Driller: Scarborough Drilling



Environmental Karst Study Report Willow A State Battery Eddy County, New Mexico

**Prepared For:
Tetra Tech, Inc.
8911 North Capital of Texas Highway, #2310
Austin, TX 78759**

- Positive within 200 feet of spill delineation boundary
- Negative within 200 feet of spill delineation boundary
- Stable Unstable Ground
- Karst Monitor Recommended

April 28, 2025

TTRA-001-20250227

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TABLE OF CONTENTS

FRONT MATTER..... i

TABLE OF CONTENTS.....ii

LIST OF FIGURES.....iii

LIST OF TABLES.....iii

1.0 INTRODUCTION..... 1

 1.1 Goals of this Study..... 1

 1.2 Summary of Findings..... 1

 1.3 Affected Environment..... 1

 1.4 Limitations of Report..... 3

2.0 LOCATION AND DESCRIPTION OF STUDY AREA..... 4

 2.1 Description of Site..... 4

 2.2 Local Geology Summary..... 5

 2.3 Description of Survey..... 6

 2.3.1 Surface Karst Survey..... 6

 2.3.2 Geophysical Survey..... 8

3.0 RESULTS..... 10

 3.1 Surface Karst Survey..... 10

 3.2 Geophysical Survey..... 11

4.0 DISCUSSION..... 12

5.0 SUMMARY..... 14

6.0 DISCLOSURE STATEMENT..... 14

7.0 REFERENCES..... 16

8.0 GLOSSARY OF TERMS..... 18

9.0 ATTESTATION..... 20

LIST OF FIGURES

Figure 1: Karst occurrence zone overview 2

Figure 2: Land ownership and PLSS overview 4

Figure 3: Geology overview 5

Figure 4: Surface survey overview 6

Figure 5: Geophysical survey overview 8

Figure 6: Surface karst survey results 10

Figure 7: 2D inverted resistivity sections 11

Figure 8: Data overlay 13

LIST OF TABLES

Table 1: Survey Line Data Table 9

Table 2: Software Information and Settings 9

1.0 INTRODUCTION

This report was commissioned by Tetra Tech, Inc. (hereinafter referred to as "the client"), on February 27, 2025, for the purpose of conducting an environmental karst study within an area encompassing the Willow A State Battery release site (hereinafter termed "WASB") centered at N 32.157660° W 104.074581°

1.1 Goals of this Study

The goals of this study are to conduct a surface karst inventory and provide the client with the location and description of any surface karst features located within 200 feet (61 meters) of the spill delineation boundary (as defined by 19.15.29.12 NMAC^[1]) and to determine whether stable ground exists (as defined by 19.15.2 NMAC Definitions^[2]) within the spill boundary of the Willow A State Battery release using electrical resistivity imaging^[3].

1.2 Summary of Findings

- **No surface karst features exist within the 200-foot (61-meter) zone surrounding the spill delineation boundary.**
- **No anomalies consistent with air-filled voids are located within the WASB resistivity survey area, indicating the zone beneath the geophysical survey is not subject to collapse.**
- **Well-layered stratigraphy is interpreted to exist beneath the area where the geophysical survey was conducted, indicating stable ground.**

1.3 Affected Environment

The WASB project site is located in evaporite karst terrain, a landform that is characterized by underground drainage through solutionally enlarged conduits. Evaporite karst terrain may contain sinkholes, sinking streams, caves, and springs. Sinkholes leading to underground drainages and voids are common. These karst features, as well as occasional fissures and discontinuities in the bedrock, provide the primary sources for rapid recharge of the groundwater aquifers of the region. Additionally, karst may develop by hypogene processes involving dissolution by upwelling fluids from depth independent of recharge from the overlying or immediately adjacent surface. Hypogene karst systems may not be connected to the surface and can remain undiscovered unless encountered during drilling or excavation.

Karst features are delicate resources that are often of geological, hydrological, biological, and archeological importance, and should be protected. The four primary concerns in these types of terrain are environmental issues, worker safety, equipment damage, and infrastructure integrity.

The Bureau of Land Management (BLM) categorizes all areas within the Carlsbad Field Office (CFO) zone of responsibility as having either low, medium, high, or critical cave potential based on geology, occurrence of known caves, density of karst features, and potential impacts to freshwater aquifers^[4]. These designations are also recognized by the New Mexico State Land Office (NMSLO). This project occurs within a **HIGH** karst occurrence zone (HKOZ)^[5] (**Figure 1**).

A high karst occurrence zone is defined as an area in known soluble rock types that contains a high frequency of significant caves and karst features such as sinkholes, bedrock fractures that provide rapid recharge of karst aquifers, and springs that provide riparian habitat^[4].

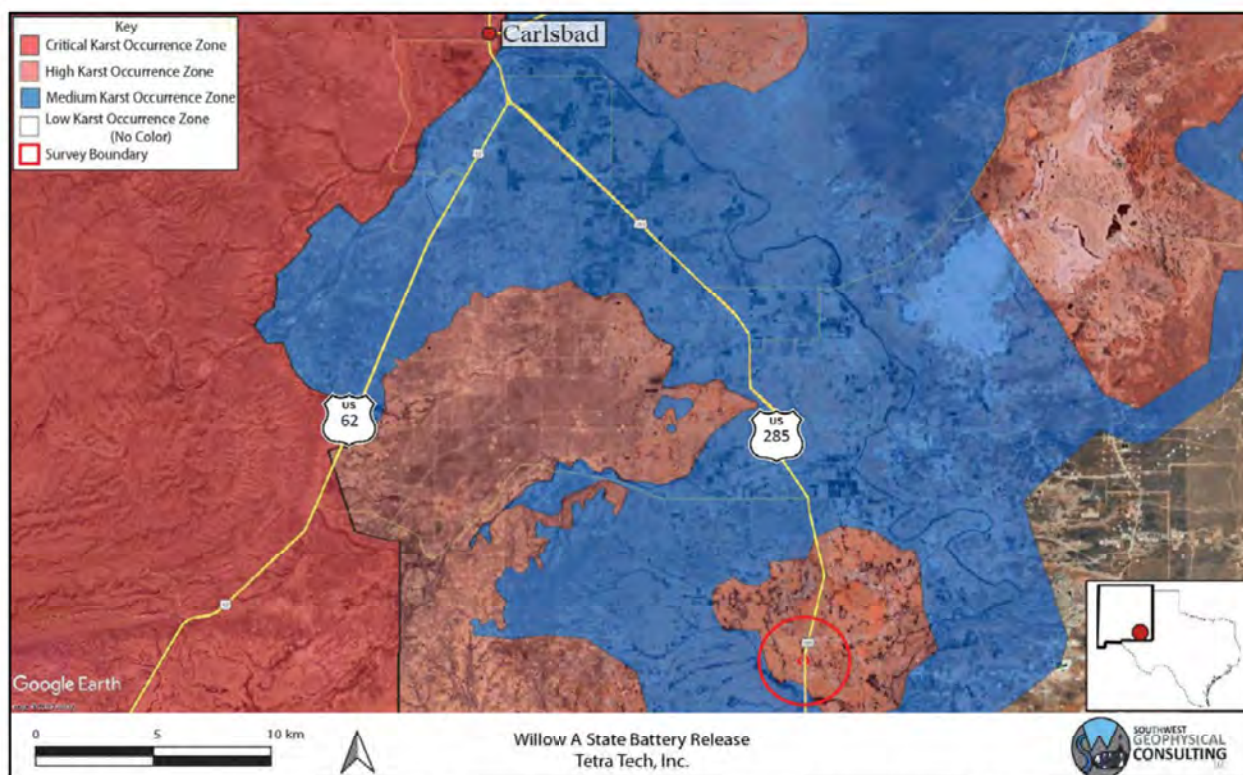


Figure 1: Karst occurrence zone overview. Background image credit: Google Earth. Image date: July 13, 2024. Image datum: WGS-84.

Due to the rapidity with which evaporite karst develops, each location within a BLM-CFO designated karst occurrence zone must be assessed on an individual basis to determine the existence of surface karst features and the possibility of sub-surface karst development each time a release occurs.

1.4 Limitations of Report

This report should be read in full. No responsibility is accepted for the use of any part of this report in any other context or for any other purpose or by third parties. This report does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners.

This report has been prepared for the use of Tetra Tech, Inc., in accordance with generally accepted consulting practices. Every effort has been made to ensure the information in this report is accurate as of the time of its writing. This report has not been prepared for use by parties other than the client, their contracting party, and their respective consulting advisors. It may not contain sufficient information for the purposes of other parties or for other uses.

This report was prepared upon completion of the associated fieldwork using a standard template prepared by Southwest Geophysical Consulting and is based on information collected prior to fieldwork, conditions encountered on site, and data collected during the fieldwork and reviewed at the time of preparation. Southwest Geophysical Consulting disclaims responsibility for any changes that might have occurred at the site after this time. The interpreted results, locations, and depths noted in this report (if applicable) should be taken as an interpretation only and no decision should be based solely on this information. Physical verification of aerial imagery analysis results should be conducted in the field prior to using this information for remediation planning. Physical verification of geophysical results using geotechnical methods should be conducted.

To the best of our knowledge, the information contained in this report is accurate at the date of issue. Due to the nature of karst terrain, the information in this report shall not be used beyond two years past the dates of the field work provided in section **2.3 Description of Survey**. Large weather events can shorten this time period as areas subject to karst development can rapidly form new features subsequent to these events.

2.0 LOCATION AND DESCRIPTION OF STUDY AREA

2.1 Description of Site

The site is located 32.3 kilometers (20.1 miles) southeast of Carlsbad, New Mexico, immediately west of U.S. Highway 285. The release area is located within section 3 of NM T25S R28E^[6] (Figure 1 and Figure 2). The region has rolling terrain with karstification occurring in the gypsite soils and underlying gypsum and dolomite bedrock^[7] (see section 2.2 **Local Geology Summary** for further information). The climate in this area of southeast New Mexico is semi-arid with an average annual precipitation of approximately 13 inches, of which about two-thirds falls as rain during summer thunderstorms from June to October. Summers are hot and sunny while winters are generally mild, with an average maximum temperature of 96°F in July and an average minimum temperature of 28°F in January^[8]. This area is within the Chihuahuan Desert Thornscrub as defined by the Southwestern Regional ReGAP Vegetation map^[9] and the vegetation consists mostly of areas of blue grama, nine-awned pappus grass, burro grass and low scrub including yucca. The spill delineation boundary is located within an HKOZ^[5] (Figure 1) and NMSLO managed land^[10] (Figure 2).

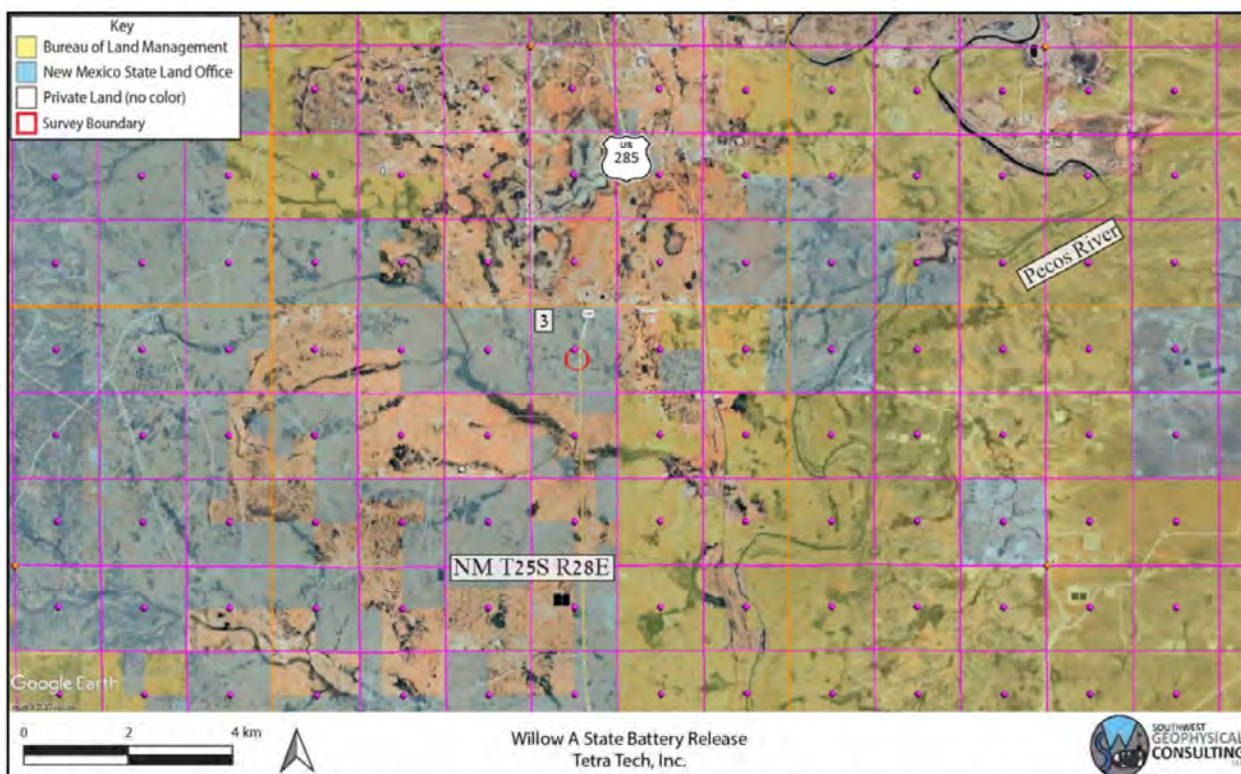


Figure 2: Land ownership and PLSS overview. Background image credit: Google Earth. Image date: July 13, 2024. Image datum: WGS-84.

2.2 Local Geology Summary

The site for the WASB survey is located at an elevation of 913 meters (2,995 feet), \pm 1 meter (3.3 feet). This region is entirely underlain by the Permian Rustler Formation (Pru). The area is mantled by thin gypsiferous soils (gypsite), Quaternary eolian deposits (Qe), and Quaternary alluvium (Qal)^[11] up to 5 meters in depth (**Figure 3**).

The Rustler Formation is an evaporite facies composed mainly of thin siltstones and sandstones interbedded with claystones, dolomite, and gypsum, and contains both karst-forming strata (the Forty-niner and Tamarisk members) and two shallow aquifers (the Magenta and Culebra Dolomite members)^[12].

The Pru overlies the Permian Salado Formation (Psl – not shown), a layer of extremely soluble halite which can readily dissolve to create caves, sinkholes, and other karst features; however, due to its extremely soluble nature, only non-soluble silt and sand remain from the dissolution of this layer at the surface^[12]. The Rustler Formation may be subject to collapse if a void has developed beneath it in the Salado Formation^[13].

The survey area is covered by the easily accessible Geologic Map of New Mexico (2003) at 1:500,000 scale^[14] and the Digital Geologic Map of New Mexico in ARC/INFO Format^[11].

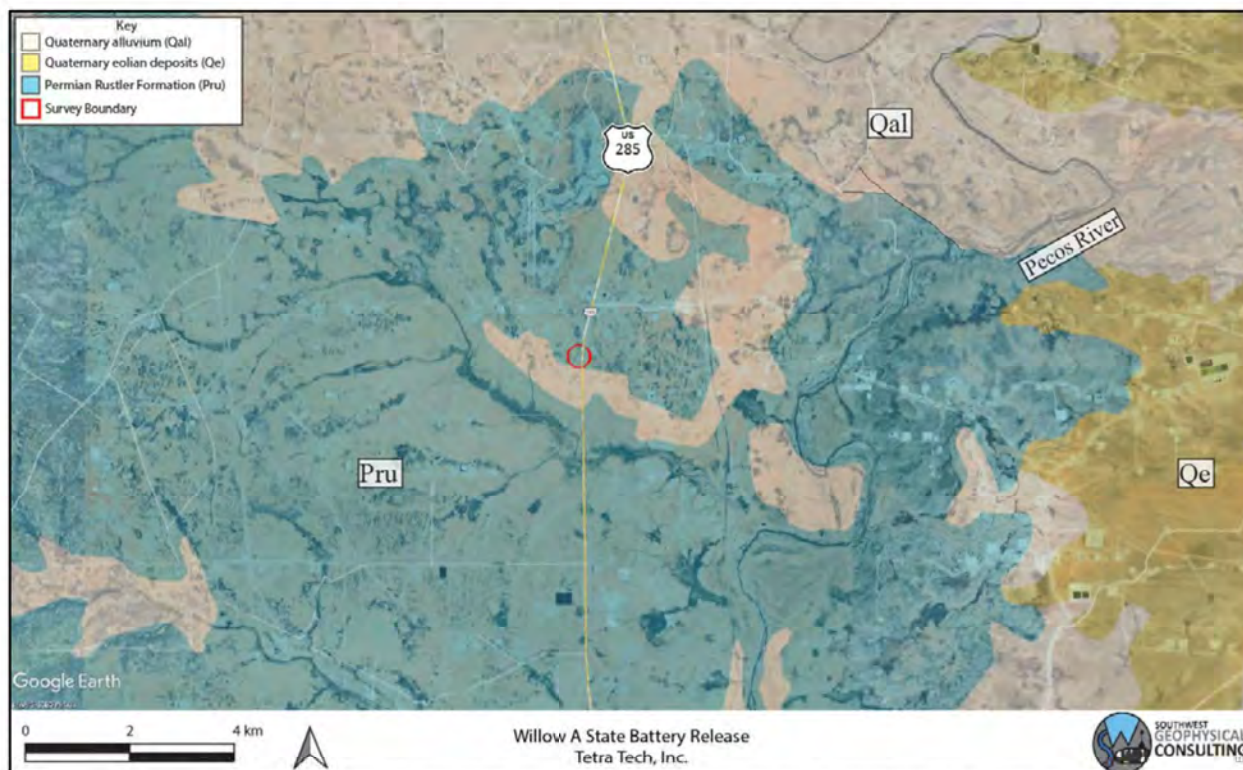


Figure 3: Geology overview. Geology map credit: The Digital Geologic Map of New Mexico in ARC/INFO Format. Background image credit: Google Earth. Image date: July 13, 2024. Image datum: WGS-84.

2.3 Description of Survey

2.3.1 Surface Karst Survey

Southwest Geophysical Consulting, in partnership with SWCA Environmental Consultants, provides surface karst surveys using small, uncrewed aerial systems (sUAS) that are flown by qualified, FAA licensed drone pilots and that meet the stringent Bureau of Land Management – Carlsbad Field Office requirements for both pedestrian and aerial karst surveys.

The surface karst survey includes a desk study prior to the flight which allows us to provide client feedback in the event of any previously known karst features in the area. The desk study is performed out to 305 meters (1,000 feet) from the spill delineation boundary per New Mexico Oil Conservation Division guidance^[1] (**Figure 4**). The study was performed using satellite and aerial imagery from Google Earth Pro dated July 13, 2024 (please note features less than one meter in diameter are generally not visible using this method); the Southwest Geophysical Cave and Karst Database dated March 20, 2025^[15]; the Malaga, NM, 1:24,000 quad, 1985, USGS topographic map; and the latest lidar imagery from CalTopo.com. Please note that we use older topographic maps because newer maps have had caves removed from them. These searches and queries returned no previously recorded karst features within the 305-meter survey boundary.

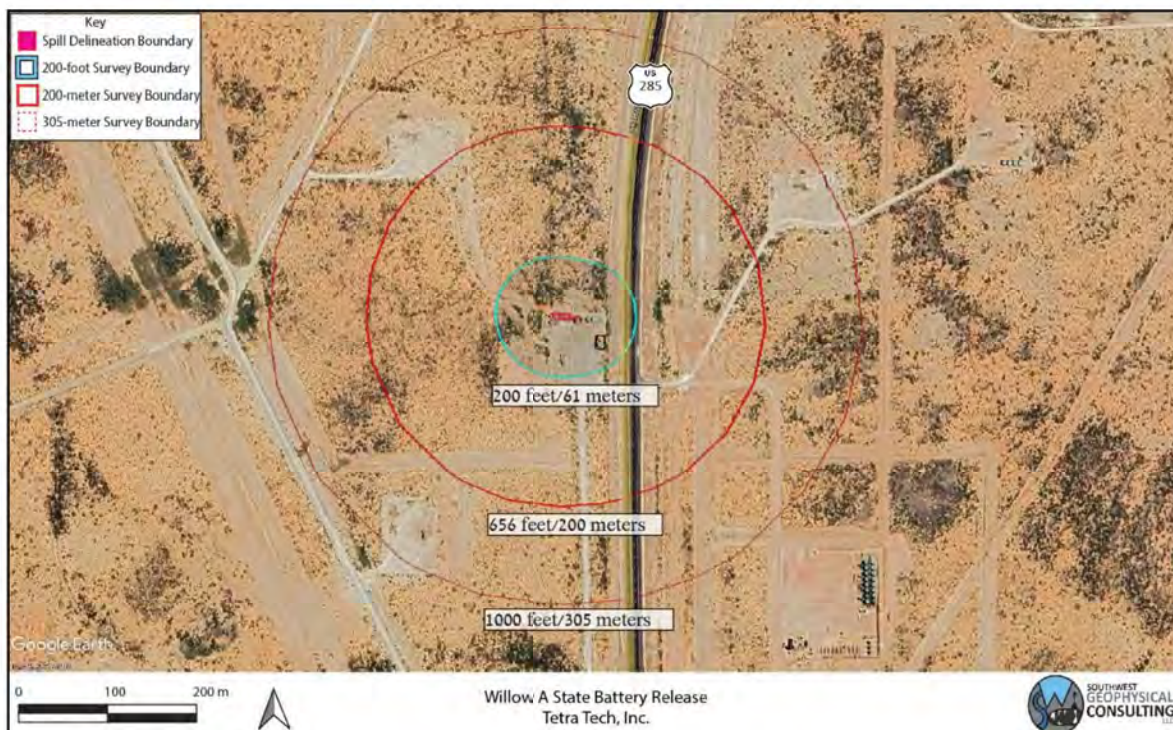


Figure 4: Surface survey overview. Background image credit: Google Earth. Image date: July 13, 2024. Datum: WGS-84.

Surface karst surveys are conducted by sUAS at low elevation within 200 meters of the spill delineation boundary^[4] (**Figure 4**) following a preplanned raster pattern flightpath designed for the purpose of generating at least 75% imagery overlap. The collected high-resolution, georeferenced imagery is stitched together to develop orthomosaic imagery which is further developed into a digital elevation model (DEM); the DEM is then processed into a local relief model (LRM) (**Figure 6**). This LRM is color coded to enhance differences in elevation of as little as five centimeters. The orthoimagery, DEM, and LRM are uploaded to a server where they are analyzed by an experienced karst geologist. Finally, the data is reviewed by a senior karst geologist for quality assurance and downloaded into a table for inclusion in a written report^[16].

The resolution of the orthoimagery is clear enough that features as small as 10 centimeters can be positively identified in most circumstances. Occasionally there are ambiguous features identified during a surface survey conducted via sUAS that will need to be checked in the field if they are impacted by the proposed remediation efforts. Specifically, it is difficult to tell the difference between solution tubes, abandoned uncased well bores, and some burrows in drone imagery. If an ambiguous feature is located during imagery analysis, it is marked with a yellow dot in **Figure 6**. If a feature of any likelihood is subsequently verified in the field prior to publication of the report, the dot will be changed to a red triangle if confirmed as a karst feature or deleted if not.

The imagery for this study was collected via aerial survey by Pat Lagodney of SWCA on March 10, 2025. Surface karst features may have developed after this date and will not be noted in this report. Imagery analysis was completed by Britt Bommer of Southwest Geophysical Consulting on April 4, 2025.

2.3.2 Geophysical Survey

For this survey, an Advanced Geosciences Inc. (AGI) SuperSting™ Wifi R8 with a multi-electrode switchbox, a 28-electrode array of 40-centimeter-long electrodes, and a tablet controller were used to image the subsurface. This survey consisted of two resistivity lines in a dipole-dipole strong-gradient configuration; line one is laid out west to east while line two is laid out south to north. Both lines consisted of 28 electrodes at 5-meter spacing, resulting in 135-meter-long arrays (Figure 5, Table 1). A preconfigured command file was used to run the data collection (DDSG28). This electrode configuration provided a depth of investigation of 27 meters (89 feet) and a resolution of 2.5 to 3.0 meters (8.2 to 9.8 feet) within the first 5 to 8 meters (16 to 26 feet) from the surface. A Leica GS18 GPS was used to record electrode locations and elevations.



Figure 5: Geophysical survey overview. Two survey lines were conducted with 28 electrodes at 5-meter spacing (yellow dots denoted with blue numbers). Background image credit: Google Earth. Image date: July 13, 2024. Image datum: WGS-84.

Table 1 provides basic line data. Detailed information including electrode number, location in latitude/longitude (decimal degree format), and elevation in meters can be found in the accompanying data files.

Table 1: Survey Line Data Table. The .kmz file contains all the points for the survey line listed in the file name. These data are available in the accompanying files WASB_ERI_Points.xlsx and TTRA-001-20250227_WASB_Data_Files.kmz.

File Name:	Completed By:	Date:
WASB01.kmz	Garrett Jorgensen Olague – Senior Field Geologist Britt Bommer – Field Geologist Michael Jones – Field Geologist	4/10/2025
WASB02.kmz		

EarthImager™ 2D software was used to download and process the data and to provide the model used to make our interpretations. The design of the survey and the orientation of each of the lines provides the information necessary to make the determination of “stable” or “unstable” ground at this site.

A typical starting model was used for the data processing due to the two-layer model of the geology in the area; specifically, generally high-resistivity gypsum and dolomite at the surface and low-resistivity saturated gypsum and dolomite bedrock at depth. The starting model used was “average apparent resistivity” and a default inversion setting of “surface,” with a minimum apparent resistivity set to 0.1 Ohm-meters (Ohm-m or Ω-m) and a max apparent resistivity set to 100,000 Ω-m (**Table 2**).

Table 2: Software Information and Settings

Software Name:	EarthImager™ 2D
Version:	2.4.4.649
Starting Model:	Average Apparent Resistivity
Default Inversion Settings:	Surface
Changes to Default Inversion Settings:	Max Apparent Resistivity = 100 kΩ-m Min Apparent Resistivity = 0.1 Ω-m

Note: Raw data files (.stg files for EarthImager™ 2D) and processed data (.trn files, terrain files for surface correction in EarthImager™ 2D and .out files, the processed .stg files) are available upon request.

All field work, including setup, stow, and travel, was completed by Garrett Jorgensen Olague, Britt Bommer, and Michael Jones on April 10, 2025.

3.0 RESULTS

3.1 Surface Karst Survey

The desk study and surface karst survey showed no surface karst features within the 305-meter (1,000 foot)^[1] survey area surrounding the spill delineation boundary (Figure 6).

No springs exist within the 305-meter (1,000 foot) survey boundary (Figure 6).

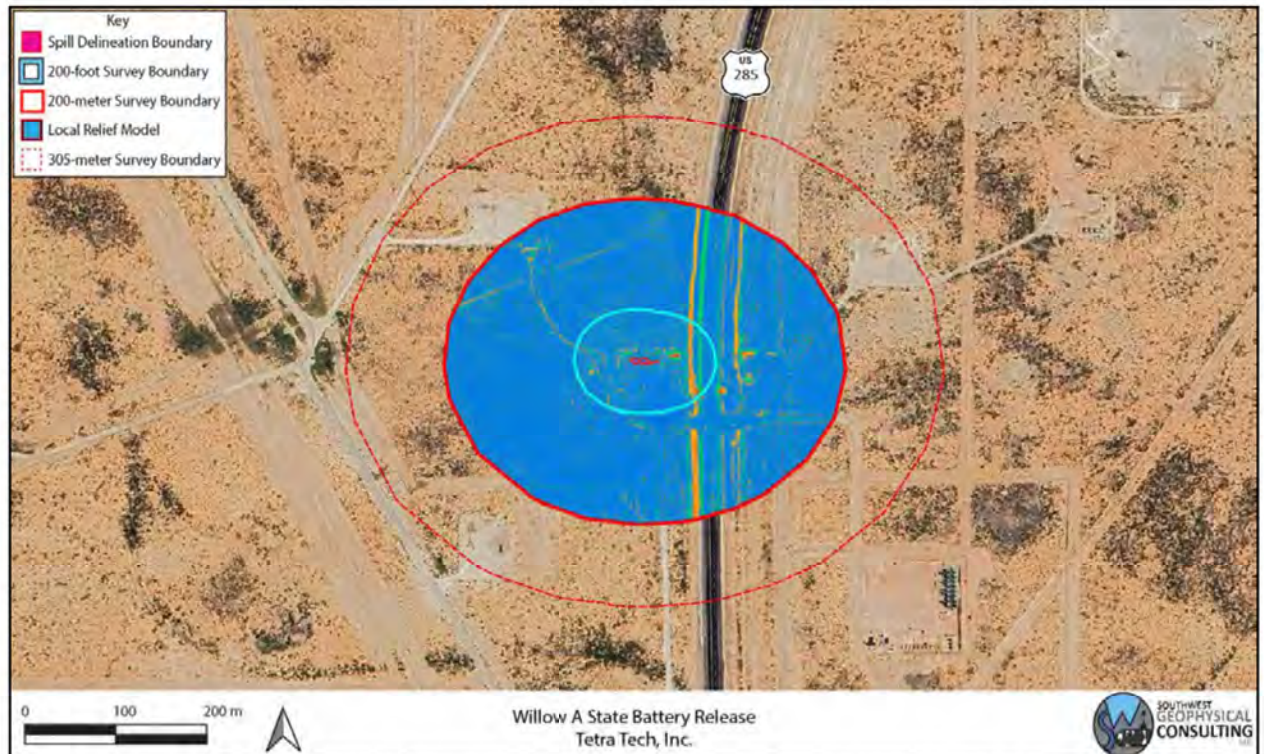


Figure 6: Surface karst survey results. Background image credit: Google Earth. Image date: March 20, 2023. Image datum: WGS-84.

Caution should still be exercised while operating in this area due to the possibility of near-surface voids. Employing a BLM-CFO approved karst monitor on site during remediation activities should be considered.

3.2 Geophysical Survey

Electrical resistivity tomography forms images of the subsurface by causing a current to flow through the rock and soil and then measuring the resistance of these materials as the current flows through them. This measurement is taken many times and the resulting data, once processed, is used to produce a model of the subsurface (**Figure 7**). This model is produced using "non-unique" solutions, which means that there are many models and interpretations which will satisfy the data. Using experience and knowledge of the local geology, a high-confidence model can be established and used to develop an accurate understanding of what lies below the surface. This survey was conducted with the express purpose of locating subsurface voids and does not purport to find paleokarst (old, non-active karst features that have been filled in with sand and sediment) or nascent karst features below the resolution limit of the survey.

The results of this study indicate a well-layered geologic system with resistivities between 1 and 341 Ohm-m (**Figure 7**). Please keep in mind when viewing the 2D inverted resistivity sections that color maps can be widely different for each view. Always check the color map located on the right side of the image when viewing the 2D images to ensure you understand the range of resistivities presented. Distances along the top and depths along the left side are in meters. The color map along the right side is in Ohm-m. Due to the nature of the survey, shallower zones have higher resolution between electrodes than deeper zones; therefore, small features at depth will not be visible.

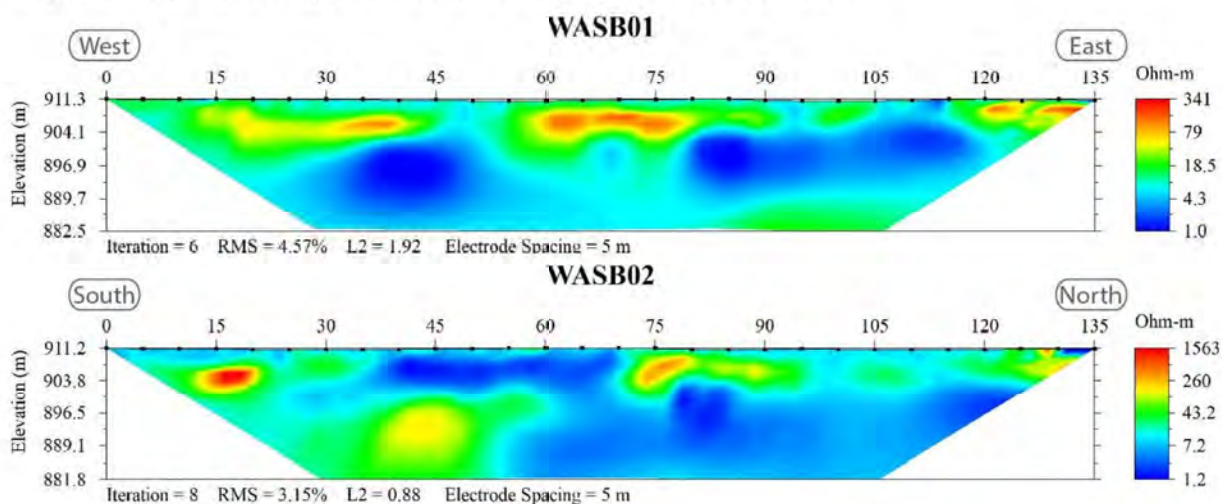


Figure 7: 2D inverted resistivity sections. Reds and oranges indicate higher resistivity values. Yellows and greens are medium-resistivity values. Blues are low-resistivity values. Please note that the color scale is relative.

4.0 DISCUSSION

No surface karst features were identified during the surface survey and no anomalies consistent with air-filled subsurface voids were found within the WASB survey area. However, small solutionally enlarged voids or fractures at or near the resolution limit of the survey (2.5 – 3.0 meters) may be present. Slightly higher-than-average resistivity areas less than 10 meters beneath the surface are interpreted as dry caliche or gypsite soils. Due to their low resistivity values when compared with significant subsurface voids, these features should not be a concern during remediation efforts. Areas of moderate resistivity (yellows, and greens) near the surface are interpreted as dry gypsite soils and gypsum bedrock of the Rustler Formation^[17] (**Figure 7** and **Figure 8**). The low-resistivity areas between 1 to 10 Ohm-m are interpreted as a layer of either clays and halite lenses or moist or saturated layers within the Rustler Formation (**Figure 7**).

Please remember that these are interpretations made from knowledge of the local subsurface materials and experience. **They remain interpretations until verified by geotechnical methods.** Employing a BLM-CFO approved karst monitor on site during any drilling and/or remediation activities that require excavation below four feet in depth should be considered.

Fracture sets within the subsurface can act as hydrologic pathways to the water table. Rapid dissolution of gypsum can occur along these pathways creating solution-enlarged fractures, and in some cases, voids within months to years. For this reason, this survey is valid only for this remediation event.

Within karst terrains like the project site, small air- or sediment-filled voids and/or brecciated zones and solutionally enlarged fractures that are below the resolution limit of the survey (2.5– 3.0 meters) may exist; these may be encountered during excavation, and if so, should be evaluated by a karst specialist prior to continued work.

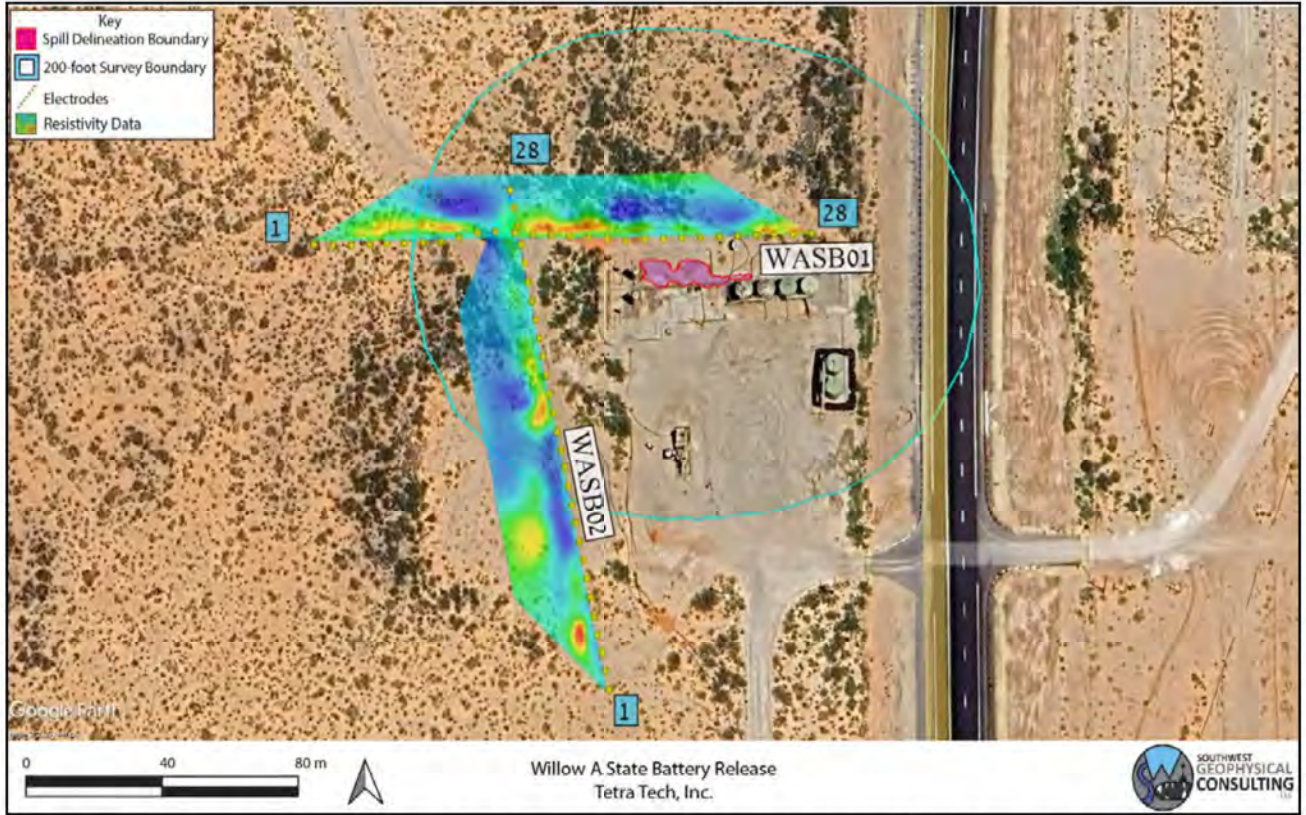


Figure 8: Data overlay. Colored trapezoids are the 2D inverted resistivity lines. Background image credit: Google Earth. Image date: July 13, 2024.

5.0 SUMMARY

- **The WASB survey contains no surface karst features within 200 feet (61 meters) of the spill delineation boundary.**
- **No shallow anomalies interpreted as large voids or related karst features that would present a danger to equipment operators are located beneath the geophysical survey lines.**
- Intercepting a void during remediation is unlikely, but still possible. Small voids or solutionally enlarged fractures below the resolution limit of the survey may be encountered.
- **Well-layered stratigraphy is interpreted to exist beneath the area where the geophysical survey was conducted, indicating stable ground.**
- When conducting any remediation activities in this area, employing a BLM-CFO approved karst monitor on site should be considered.

6.0 DISCLOSURE STATEMENT

Karst occurrence zones are prone to rapid karst formation and warrant careful planning and engineering to mitigate karst-forming processes that could be accelerated by removal of surface cover or the vibrations associated with heavy equipment used in the remediation process.

Mitigation measures for any karst features revealed during excavation shall be approved by the Bureau of Land Management – Carlsbad Field Office and follow the Natural Resources Conservation Service Conservation Practice Standard for Karst Sinkhole Treatment, Code 527, or the Bureau of Land Management Cave and Karst Management Handbook, H-8380-1.

Vigilance during remediation activities is paramount. If voids are encountered during excavation, contact the Bureau of Land Management Karst Division at (575) 234-5972, the New Mexico State Land Office Surface Resources Division at (505) 827-5768, or a BLM-CFO approved karst contractor and request an on-site investigation from a karst expert if one is not already on site. A karst consultant can generally be available in Eddy County within five hours.

Approved karst monitors should have karst feature identification training, at least two years of supervised experience identifying karst features, wilderness first aid training, SRT training, confined space training, gas monitor training, and a minimum of SPAR cave rescue training through NCRC. They should have with them the proper gear and be prepared both physically and mentally to enter a collapse feature within minutes to perform a rescue if needed. Monitoring services with qualified karst monitors, as well as cave surveys and geophysical surveys, are available from Southwest Geophysical Consulting.

Under no circumstances should an untrained, inexperienced person enter a cave, pit, sinkhole, or collapse feature. All field employees of Southwest Geophysical Consulting have extensive caving experience and the ability to determine whether entry into a karst feature is safe or presents a hazard. In the event it is necessary to enter a karst feature, Southwest Geophysical Consulting can provide these services on request.

Cave and karst resource inventory reports, karst feature investigations, and geophysical reports commissioned at the request of the land manager should be submitted to:

BLM-CFO: blm_nm_karst@blm.gov

Cave and karst resource inventory reports for the NMSLO should be submitted to the respective project manager.

7.0 REFERENCES

- 1 Division, O. C. *Title 19, Chapter 15, Part 29* (Oil Conservation Division, 2018).
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- 15 Decker, D. D., Jorgensen, G. L. & Palmer, R. in *Southwest Geophysical Cave and Karst Database* (ed LLC Southwest Geophysical Consulting) (Albuquerque, NM, 2025).
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- 17 Hill, C. A. *Geology of the Delaware Basin, Guadalupe, Apache and Glass Mountains, New Mexico and West Texas*. Vol. 96-39 (Permian Basin Section - SEPM, 1996).

8.0 GLOSSARY OF TERMS

AGI	Advanced Geosciences Inc.
BLM-CFO	Bureau of Land Management - Carlsbad Field Office
brecciated	Fractured rock caused by faulting or collapse.
caprock-collapse sinkhole	Collapse of roof-spanning rock into a cave or void.
cave	Natural opening at the surface large enough for a person to enter.
cover-collapse sinkhole	Collapse of roof-spanning soil or clay ground cover into a subsurface void.
ERI	Electrical Resistivity Imaging
GPS	Global Positioning System
grike	A solutionally enlarged, vertical, or sub-vertical joint or fracture.
(H)	High confidence modifier for a PKF. This is typically reserved for a feature that is definitely karst but has not been confirmed in the field.
HKOZ	High Karst Occurrence Zone
karst	A landscape containing solutional features such as caves, sinkholes, swallets, and springs.
(L)	Low confidence modifier for a PKF. This is typically a feature that cannot be ruled out as karst but is most likely NOT karst related. This modifier may also be used for pseudokarst features.
(M)	Medium confidence modifier for PKF. This is an ambiguous feature that can't be positively identified as karst without a field visit (e.g., burrows, abandoned unlined wells, solution tubes, pseudokarst).
MKOZ	Medium Karst Occurrence Zone
NCRC	National Cave Rescue Commission
NKF	Non-karst feature. Used for features originally identified as PKF that have been subsequently identified in the field as non-karst related. This term may also be used for pseudokarst features.
NMSLO	New Mexico State Land Office
Ohm-m	Ohm-meter, a unit of measurement for resistivity. Sometimes abbreviated Ω -m.
paleokarst	Previously formed karst features that have been filled in by erosion and/or deposition of minerals.
Pat	Permian Artesia Group
Pc	Permian Capitan Formation
Pcs	Permian Castile Formation

Pdl	Permian Dewey Lake Formation
PKF	Possible karst feature. This term is reserved for features identified in satellite or aerial imagery that have NOT been visited in the field. Further modifiers include (H) for high confidence, (M) for medium confidence, and (L) for low confidence. These confidence levels are based on field experience.
PLSS	Public Land Survey System
Pqg	Permian Queen/Greyburg Formation
Pru	Permian Rustler Formation
pseudokarst	Karst-like features (sinkholes, conduits, voids etc.) that are not formed by dissolution. These types of features include soil piping, lava tubes, and some cover-collapse and suffosion sinkholes.
Psl	Permian Salado Formation
Psr	Permian Seven Rivers Formation
Pt	Permian Tansill Formation
Py	Permian Yates Formation
Qal	Quaternary alluvium
Qe	Quaternary eolian deposits
Qp	Quaternary piedmont deposits
Qpl	Quaternary playa lake deposits
RKF	Recognized karst feature. This term is reserved for karst features that have been physically verified in the field.
SPAR	Small Party Assisted Rescue
sUAS	Small, uncrewed aerial system
suffosion sinkhole	Raveling of soil into a pre-existing void or fracture.
swallet	A natural opening in the surface, too small for a person, that drains water to an aquifer. Some are "open," meaning a void can be seen below; some are "closed," meaning they are full of sediment.
SWG	Southwest Geophysical Consulting, LLC
UTM	Universal Transverse Mercator (projected coordinates)
(V)	Field verified modifier for a RKF. This indicates that the feature has been visited by a qualified karst professional in the field and fully identified
WGS	World Geodetic System (geographic coordinates)

9.0 ATTESTATION

David D. Decker, PhD, PG, CPG

Chief Executive Officer, Principal Geologist

Southwest Geophysical Consulting, LLC

5117 Fairfax Dr. NW

Albuquerque, NM 87114

dave@swgeophys.com

(505) 585-2550

CERTIFICATE OF AUTHOR

I, David D. Decker, a Licensed Professional Geologist and a Certified Professional Geologist, do certify that:

- I am currently employed as a consulting geologist in the specialty of caves and karst with an office address of 5117 Fairfax Dr. NW, Albuquerque, NM, USA, 87114.
- I graduated with a Master of Science in Applied Physics with a specialization in Sensor Systems from the Naval Post Graduate School in Monterey, California, in 2003, and a Doctor of Philosophy in Earth and Planetary Sciences from the University of New Mexico, Albuquerque, New Mexico, in 2018.
- I am a Licensed Professional Geologist in the State of Texas, USA (PG-15242) and have been since 2021. I am a Certified Professional Geologist through the American Institute of Professional Geologists (CPG-12123) and have been since 2021.
- I have been employed as a geologist continuously since 2016. I was previously employed as a Fire Controlman, Naval Flight Officer, and Aerospace Engineering Duty Officer in the U.S. Navy and operated, maintained, and installed various sensor systems including magnetic, electromagnetic, radar, communications, and acoustic systems in various capacities from 1986 through 2010.
- I have been involved in various aspects of cave and karst studies continuously since 1985, including exploration, mapping, and scientific studies.
- I have read the definition of “qualified karst professional” set out in the ASTM Standard Practice for Preliminary Karst Terrain Assessment for Site Development (ASTM E-1527). I meet the definition of “qualified professional” for the purposes of this standard.
- I am responsible for the content, compilation, and editing of all sections of report number TTRA-001-20250227 entitled, “Environmental Karst Study Report, Willow A State Battery, Eddy County, New Mexico.” I or a duly authorized and qualified representative of Southwest Geophysical Consulting, LLC, have personally visited this site and/or reviewed the aerial imagery on the date or dates mentioned in section **2.3 Description of Survey**.

- I have no prior involvement nor monetary interest in the described property or project, save for my fee for conducting this investigation and providing the report.

Dated in Albuquerque, New Mexico, May 8, 2025.



David D. Decker
PhD, CPG-12123




OCD Land Ownership



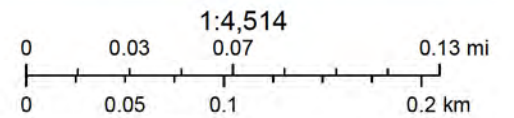
8/5/2024, 2:04:48 PM

Mineral Ownership

 N-No minerals are owned by the U.S.

Land Ownership

 S



U.S. BLM, Esri, HERE, Garmin, iPC, Maxar



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

(quarters are smallest to largest)

(meters)

(In feet)

POD Number	Code	Sub basin	County	Q64	Q16	Q4	Sec	Tws	Range	X	Y	Map	Distance	Well Depth	Depth Water	Water Column
C 04680 POD1		C	ED	SW	NW	SW	03	25S	28E	586440.1	3558089.5		833	105	52	53
C 01411 POD2		C	ED	SE	NE	SE	04	25S	28E	586373.8	3558036.3		911	90	50	40
C 01411	R	C	ED	SE	SE	NE	04	25S	28E	586289.0	3558522.0 *		989	69	35	34
C 04715 POD1		CUB	ED	SW	SE	SE	34	24S	28E	587786.5	3559440.3		1272	40		
C 02668		C	ED	NE	NW	NE	09	25S	28E	585890.0	3557525.0 *		1558	150		

Average Depth to Water: **45 feet**

Minimum Depth: **35 feet**

Maximum Depth: **52 feet**

Record Count: 5

Basin/County Search:

County: ED

UTM Filters (in meters):

Easting: 587250.00

Northing: 3558286.00

Radius: 001600



* UTM location was derived from PLSS - see Help

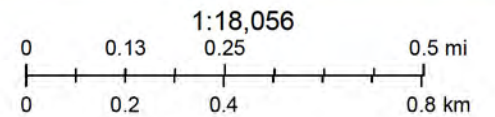
The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

OCD Water Bodys

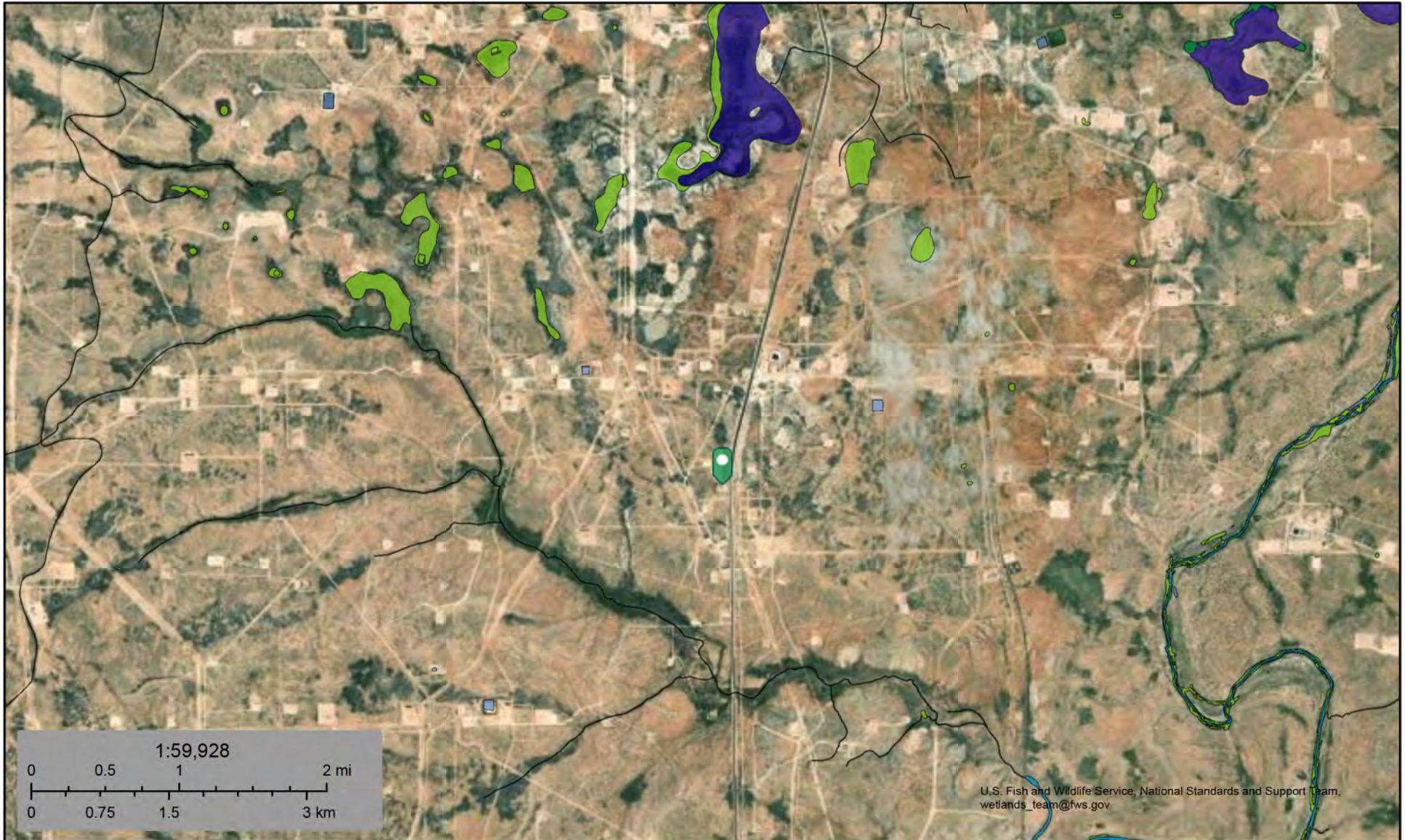


8/5/2024, 2:12:15 PM

-  OSW Water Bodys
-  OSE Streams



Esri, HERE, Garmin, iPC, Maxar, NM OSE



U.S. Fish and Wildlife Service, National Standards and Support Team,
wetlands_team@fws.gov

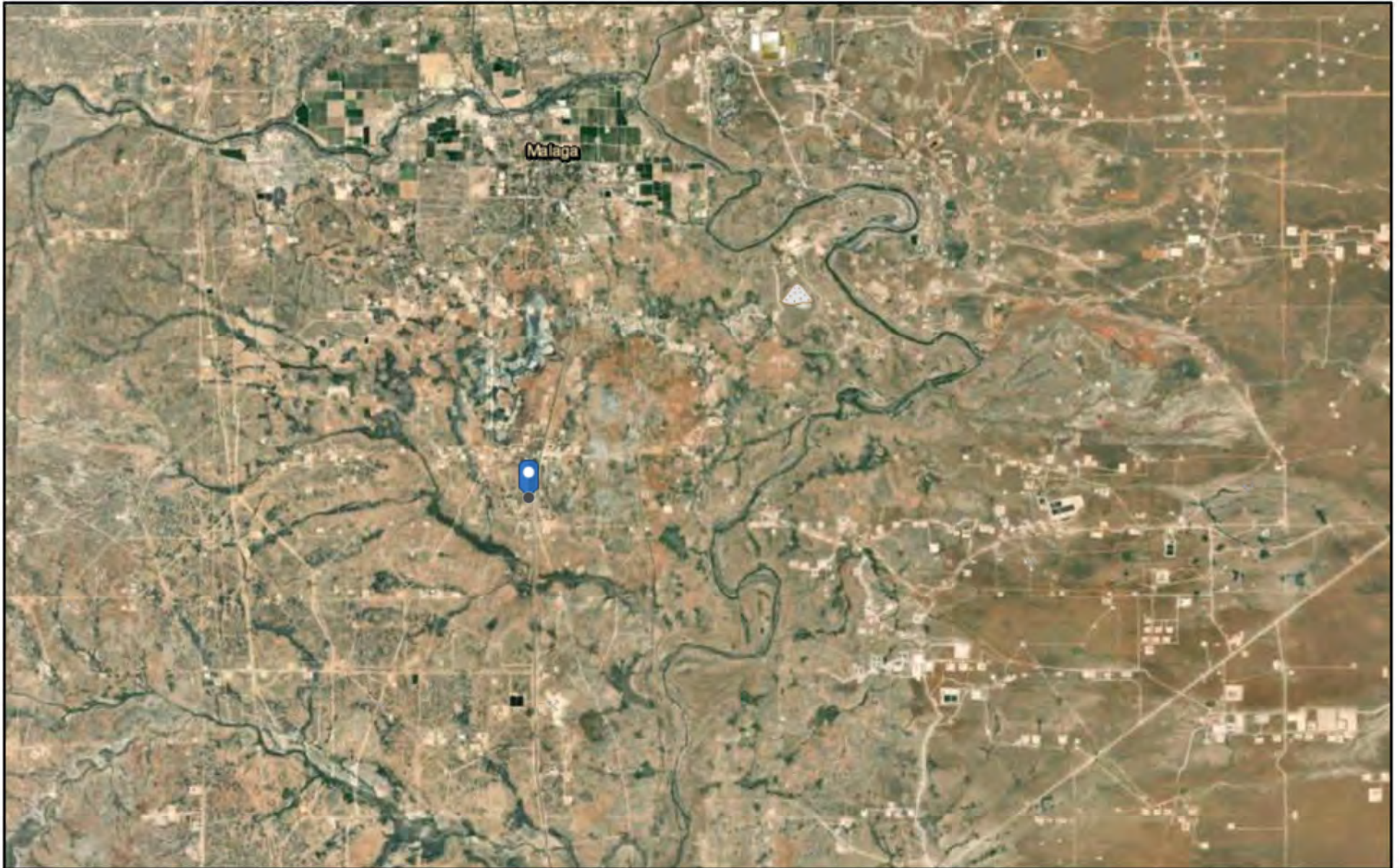
August 5, 2024

Wetlands

-  Estuarine and Marine Deepwater
-  Estuarine and Marine Wetland
-  Freshwater Emergent Wetland
-  Freshwater Forested/Shrub Wetland
-  Freshwater Pond
-  Lake
-  Other
-  Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

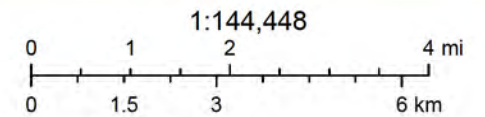
Active Mines in New Mexico



8/5/2024, 2:22:08 PM

Registered Mines

- ✕ Aggregate, Stone etc.
- ✕ Aggregate, Stone etc.
- ✕ Aggregate, Stone etc.
- ✕ Aggregate, Stone etc.
- ✕ Salt



Esri, HERE, Garmin, Earthstar Geographics

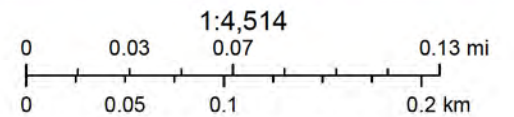
OCD Potential Karst Areas



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Karst Occurrence Potential

 High

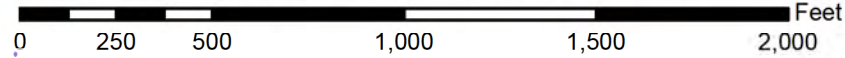
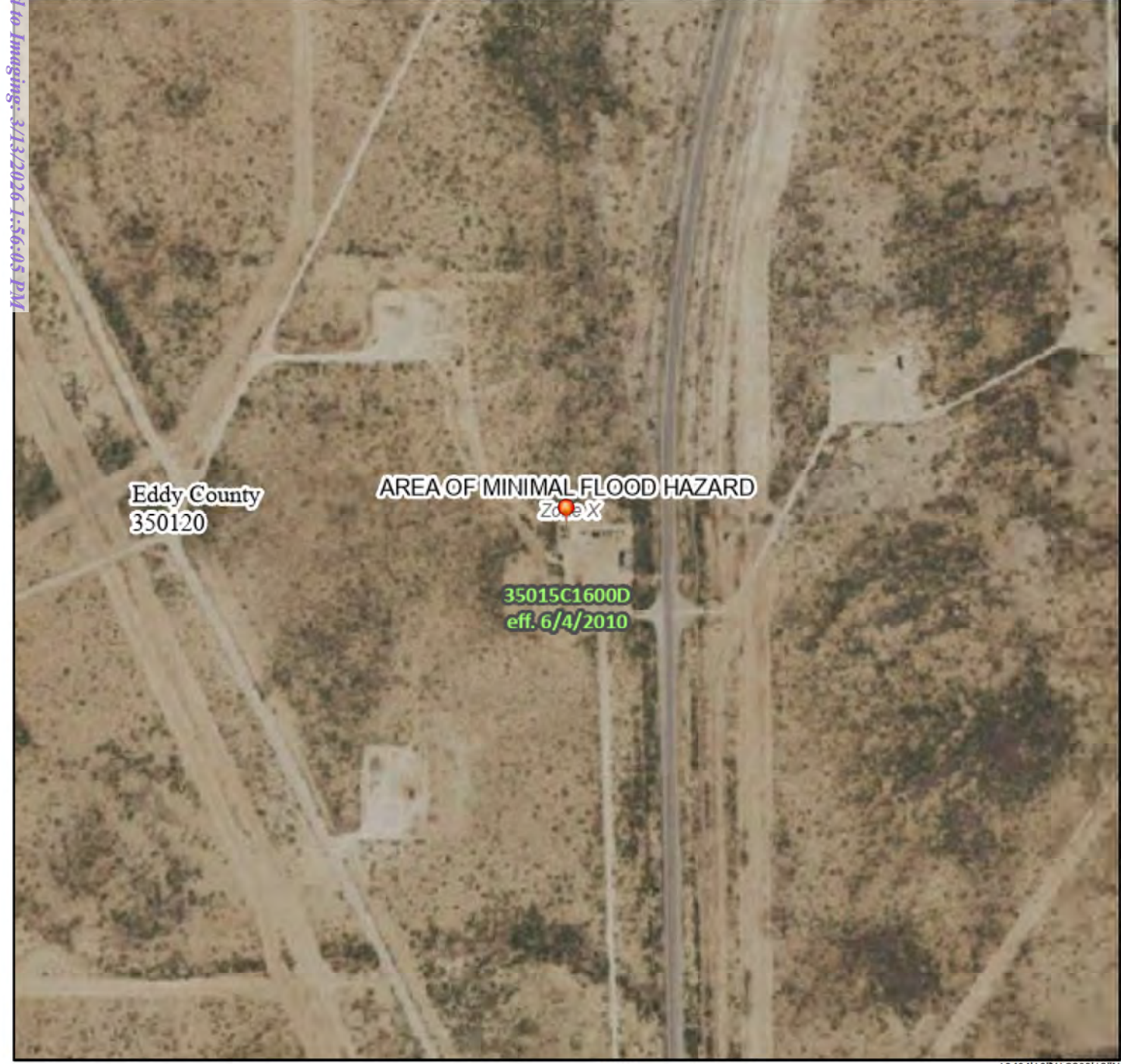


BLM, OCD, New Mexico Tech, Esri, HERE, Garmin, IPC, Maxar

National Flood Hazard Layer FIRMette



104°4'48"W 32°9'43"N



1:6,000

104°4'10"W 32°9'12"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone Z</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/5/2024 at 3:13 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Released to Imaging: 3/13/2026 1:56:05 PM

Received by OCD: 2/19/2026 2:13:55 PM

Page 90 of 155

APPENDIX D

Photographic Documentation



TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View of site signage.	1
	SITE NAME	Willow A State #001 Tank Battery Release	8/1/2024



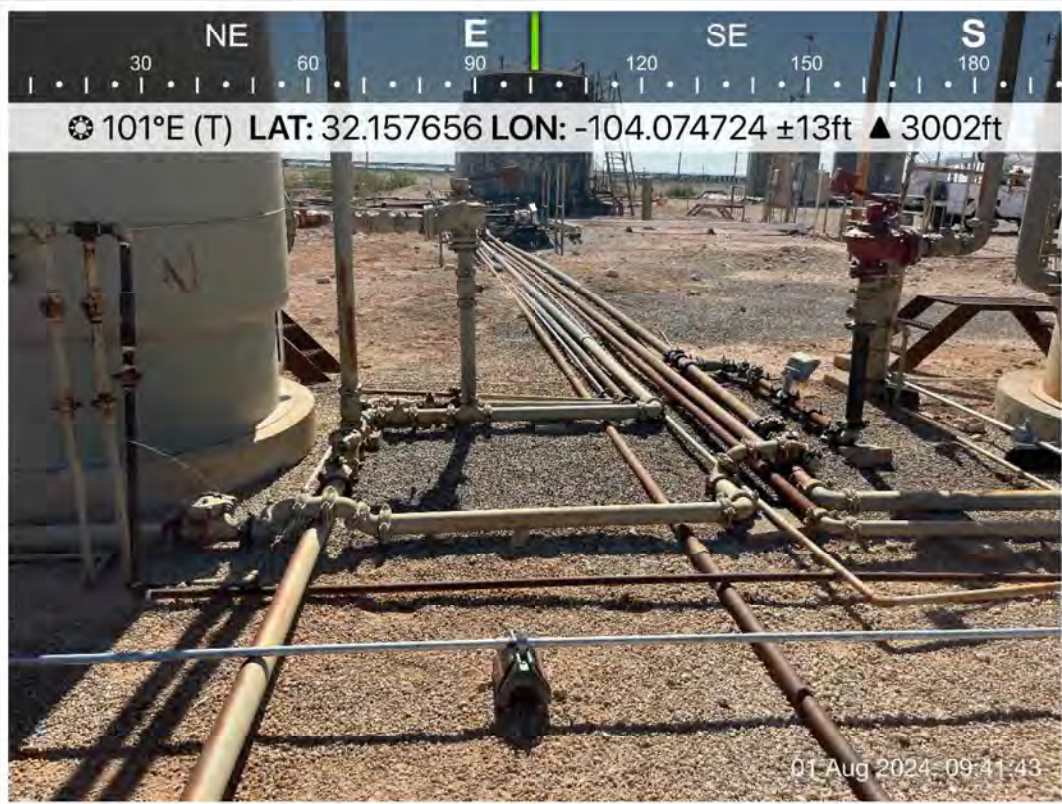
TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View west. View of wellhead area, south of tank battery facilities.	2
	SITE NAME	Willow A State #001 Tank Battery Release	8/1/2024



TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View north. View of tank battery, located in same berm adjacent to release footprint.	3
	SITE NAME	Willow A State #001 Tank Battery Release	8/1/2024



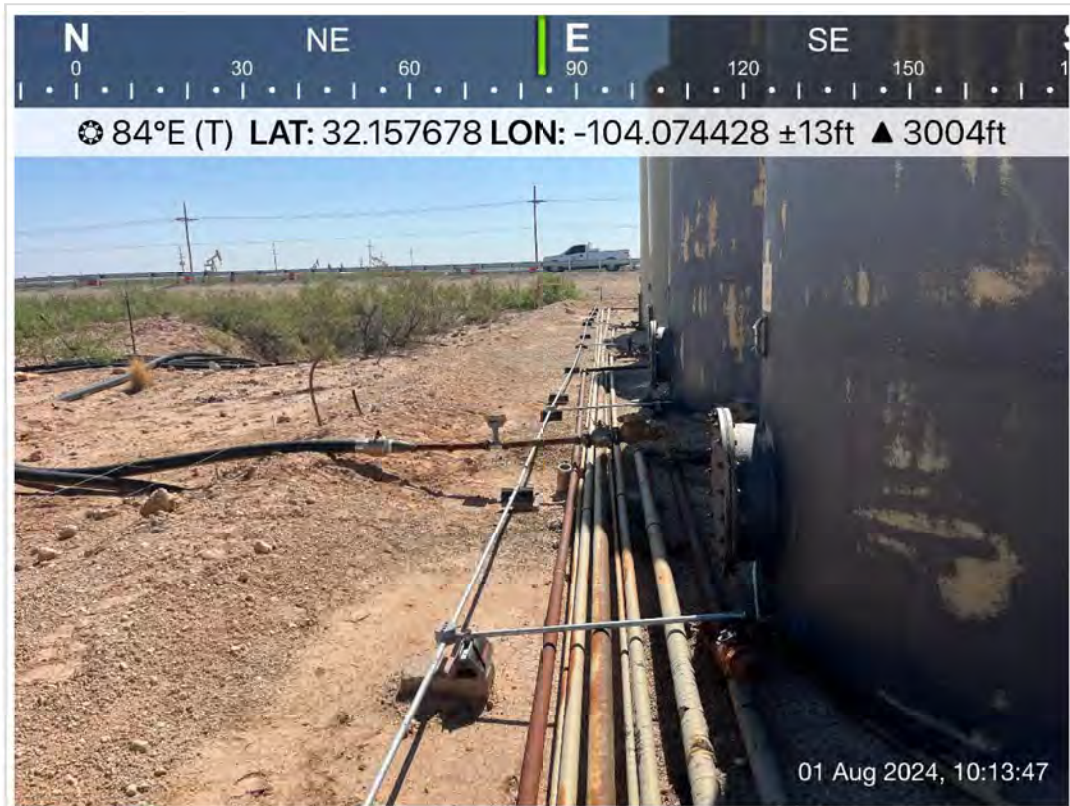
TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View west. Western edge of tank battery with facility berm in foreground and vessels in background.	4
	SITE NAME	Willow A State #001 Tank Battery Release	8/1/2024



TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View east. Raised steel surface lines running between tank battery and vessels.	5
	SITE NAME	Willow A State #001 Tank Battery Release	8/1/2024



TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View northeast. West-side of tank battery with surface steel lines running west from north-side of tank battery.	6
	SITE NAME	Willow A State #001 Tank Battery Release	8/1/2024



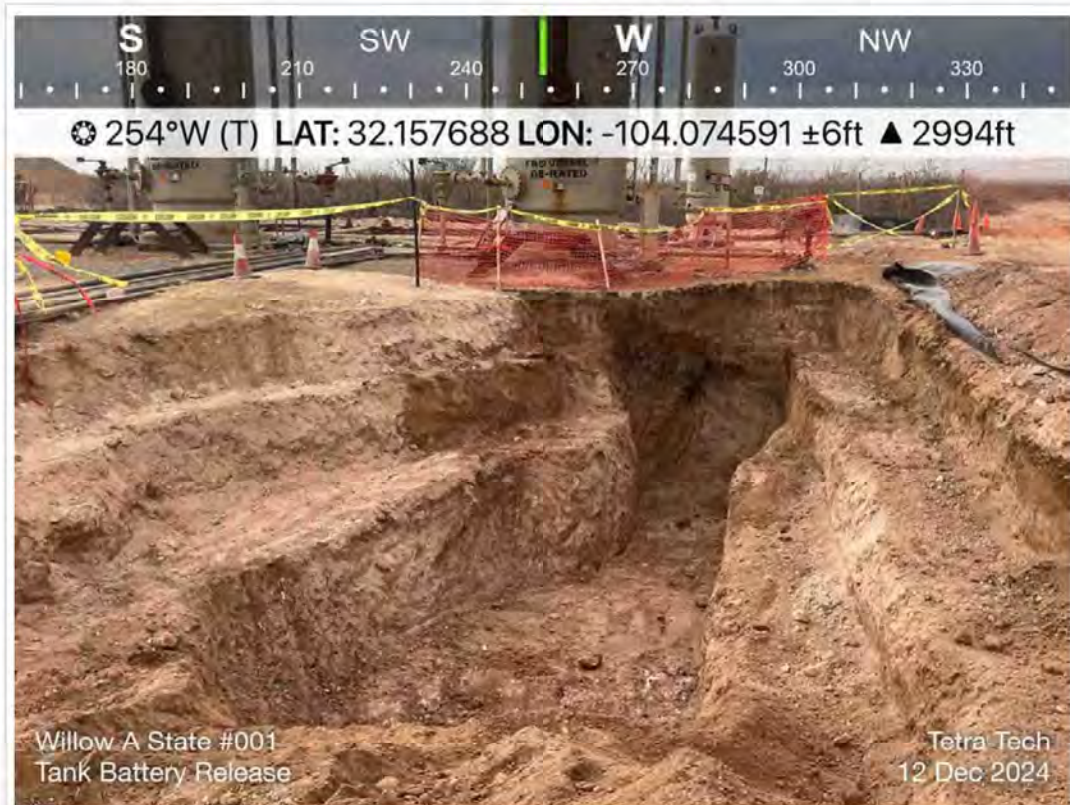
TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View east. North-side of tank battery, raised steel surface lines on north-side of tank battery.	7
	SITE NAME	Willow A State #001 Tank Battery Release	8/1/2024



TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View northwest. North-side of raised steel lines. Area of release.	8
	SITE NAME	Willow A State #001 Tank Battery Release	8/1/2024



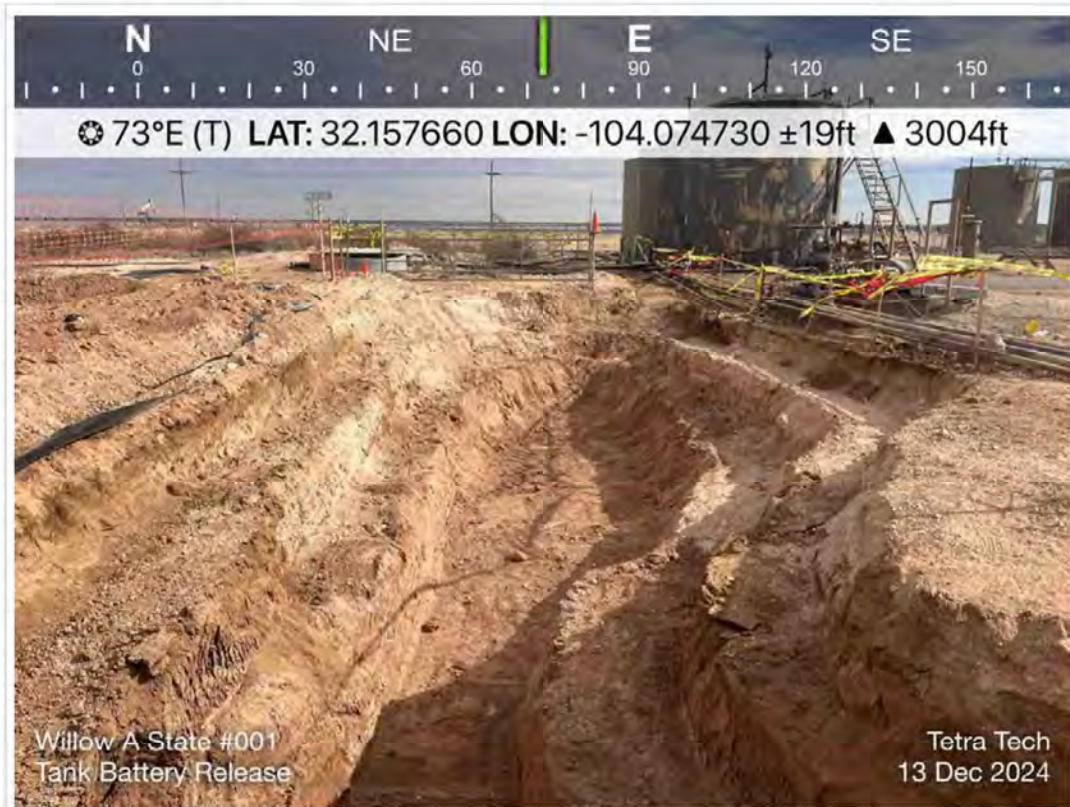
TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View southwest. North-side of tank battery. Surface flowlines emanating from raised steel lines.	9
	SITE NAME	Willow A State #001 Tank Battery Release	8/1/2024



TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View west-southwest of benched 8 foot bgs excavation.	10
	SITE NAME	Willow A State #001 Tank Battery Release	12/12/2024



TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View west of benched excavation.	11
	SITE NAME	Willow A State #001 Tank Battery Release	12/13/2024



TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View northeast of benched 8 foot bgs excavation.	12
	SITE NAME	Willow A State #001 Tank Battery Release	12/13/2024



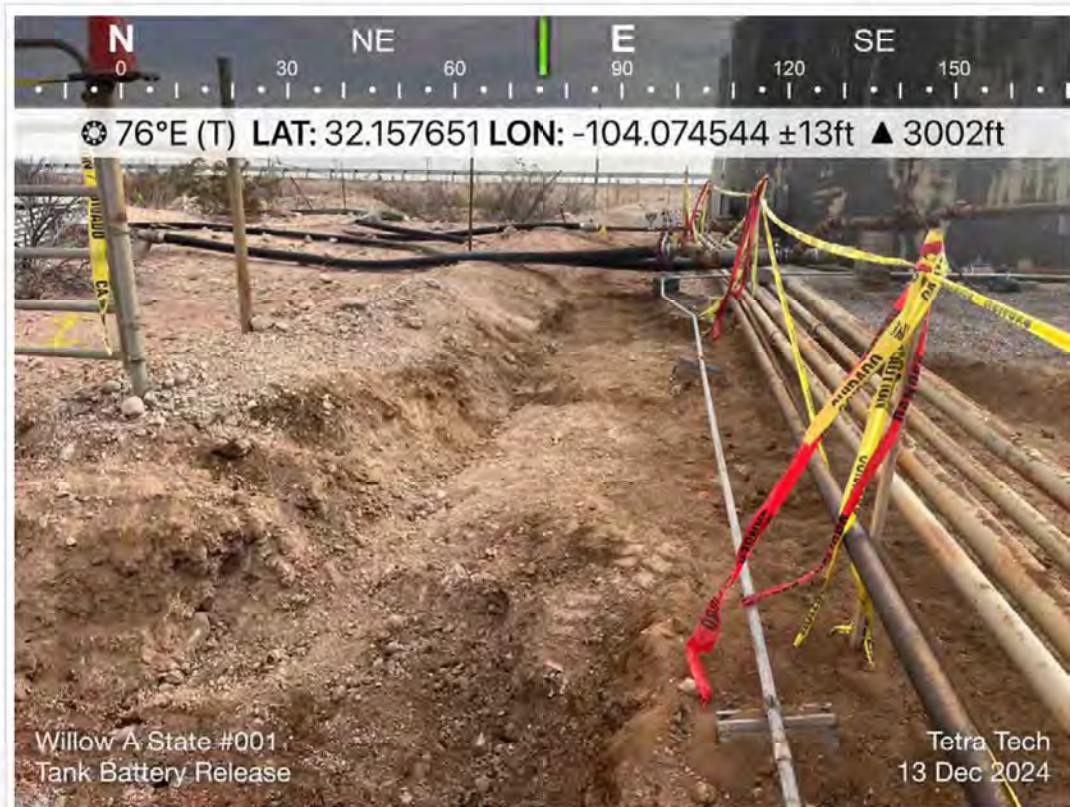
TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View southeast of benched excavation.	13
	SITE NAME	Willow A State #001 Tank Battery Release	12/13/2024



TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View east of east side of the excavation north of the steel lines and tank battery.	14
	SITE NAME	Willow A State #001 Tank Battery Release	12/13/2024



TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View east-southeast of excavation area beneath steel surface lines.	15
	SITE NAME	Willow A State #001 Tank Battery Release	12/13/2024



TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View east of east side of the excavation north of the steel lines and tank battery.	16
	SITE NAME	Willow A State #001 Tank Battery Release	12/13/2024



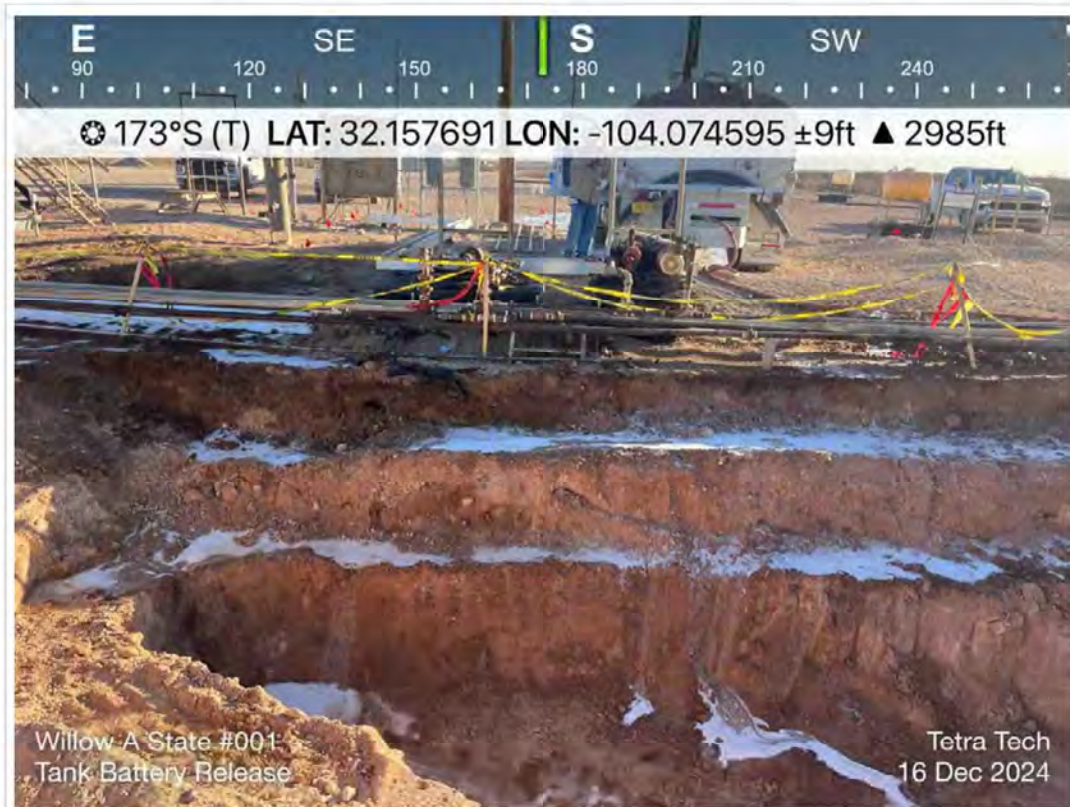
TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View east-southeast of excavation area beneath steel surface lines.	17
	SITE NAME	Willow A State #001 Tank Battery Release	12/13/2024



TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View northeast. Microblaze application in vicinity of SSW-1.	18
	SITE NAME	Willow A State #001 Tank Battery Release	12/16/2024



TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View west. Microblaze application in vicinity of FS-7 and NSW-2.	19
	SITE NAME	Willow A State #001 Tank Battery Release	12/16/2024



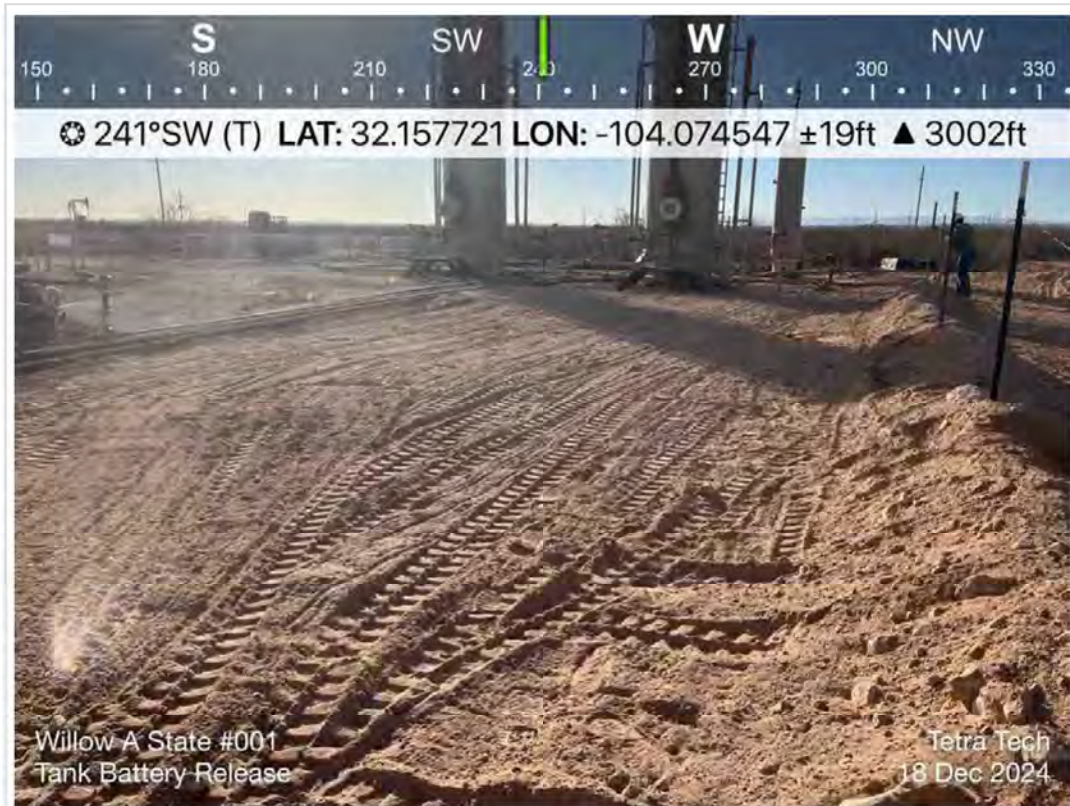
TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View south. Microblaze application in vicinity of ISW-5.	20
	SITE NAME	Willow A State #001 Tank Battery Release	12/16/2024



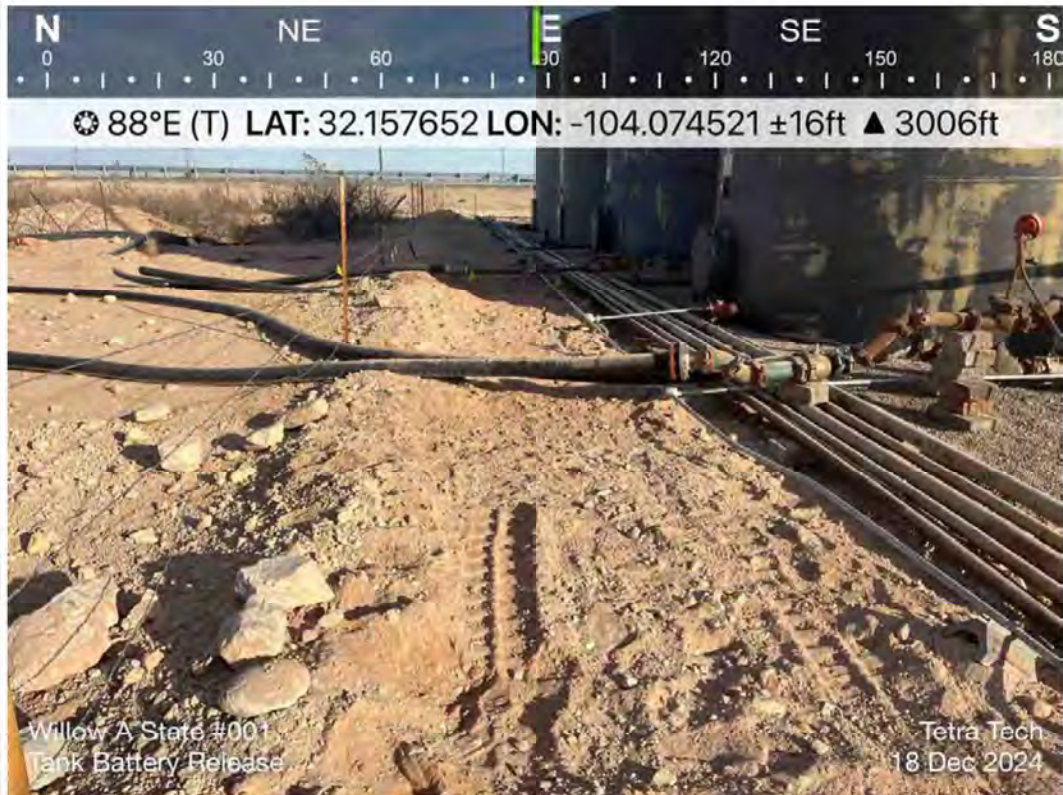
TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View northeast of step-out at NSW-1 and deepening FS-2.	21
	SITE NAME	Willow A State #001 Tank Battery Release	12/17/2024



TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View east-northeast of backfilled excavation.	22
	SITE NAME	Willow A State #001 Tank Battery Release	12/18/2024



TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View southwest of backfilled excavation.	23
	SITE NAME	Willow A State #001 Tank Battery Release	12/18/2024



TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View east of backfilled excavation.	24
	SITE NAME	Willow A State #001 Tank Battery Release	12/18/2024



TETRA TECH, INC. PROJECT NO. 212C-MD-03573	DESCRIPTION	View northwest of backfilled excavation.	25
	SITE NAME	Willow A State #001 Tank Battery Release	12/18/2024

APPENDIX E

Laboratory Analytical Data



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

December 16, 2024

SAM ABBOTT

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: WILLOW A STATE 001 TANK BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 12/13/24 14:32.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

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

Received:	12/13/2024	Sampling Date:	12/13/2024
Reported:	12/16/2024	Sampling Type:	Soil
Project Name:	WILLOW A STATE 001 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

Sample ID: FS - 1 (H247565-01)

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	12/13/2024	ND	2.12	106	2.00	1.68		
Toluene*	<0.050	0.050	12/13/2024	ND	2.04	102	2.00	1.17		
Ethylbenzene*	<0.050	0.050	12/13/2024	ND	2.06	103	2.00	1.18		
Total Xylenes*	<0.150	0.150	12/13/2024	ND	6.16	103	6.00	1.21		
Total BTEX	<0.300	0.300	12/13/2024	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: KV						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	12/16/2024	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	12/14/2024	ND	198	99.2	200	1.83		
DRO >C10-C28*	14.1	10.0	12/14/2024	ND	194	97.1	200	1.85		
EXT DRO >C28-C36	<10.0	10.0	12/14/2024	ND						

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 99.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received:	12/13/2024	Sampling Date:	12/13/2024
Reported:	12/16/2024	Sampling Type:	Soil
Project Name:	WILLOW A STATE 001 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

Sample ID: FS - 2 (H247565-02)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/13/2024	ND	2.12	106	2.00	1.68	
Toluene*	<0.050	0.050	12/13/2024	ND	2.04	102	2.00	1.17	
Ethylbenzene*	<0.050	0.050	12/13/2024	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	12/13/2024	ND	6.16	103	6.00	1.21	
Total BTEX	<0.300	0.300	12/13/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: KV					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	704	16.0	12/16/2024	ND	400	100	400	0.00	QM-07

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/14/2024	ND	198	99.2	200	1.83	
DRO >C10-C28*	<10.0	10.0	12/14/2024	ND	194	97.1	200	1.85	
EXT DRO >C28-C36	<10.0	10.0	12/14/2024	ND					

Surrogate: 1-Chlorooctane 117 % 48.2-134

Surrogate: 1-Chlorooctadecane 106 % 49.1-148

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Analytical Results For:

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

Received:	12/13/2024	Sampling Date:	12/13/2024
Reported:	12/16/2024	Sampling Type:	Soil
Project Name:	WILLOW A STATE 001 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

Sample ID: FS - 3 (H247565-03)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/13/2024	ND	2.12	106	2.00	1.68	
Toluene*	<0.050	0.050	12/13/2024	ND	2.04	102	2.00	1.17	
Ethylbenzene*	<0.050	0.050	12/13/2024	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	12/13/2024	ND	6.16	103	6.00	1.21	
Total BTEX	<0.300	0.300	12/13/2024	ND					

Surrogate: 4-Bromofluorobenzene (PII) 103 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: KV					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	12/16/2024	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/14/2024	ND	198	99.2	200	1.83	
DRO >C10-C28*	<10.0	10.0	12/14/2024	ND	194	97.1	200	1.85	
EXT DRO >C28-C36	<10.0	10.0	12/14/2024	ND					

Surrogate: 1-Chlorooctane 119 % 48.2-134

Surrogate: 1-Chlorooctadecane 110 % 49.1-148

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Analytical Results For:

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

Received:	12/13/2024	Sampling Date:	12/13/2024
Reported:	12/16/2024	Sampling Type:	Soil
Project Name:	WILLOW A STATE 001 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

Sample ID: FS - 4 (H247565-04)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/13/2024	ND	2.12	106	2.00	1.68	
Toluene*	<0.050	0.050	12/13/2024	ND	2.04	102	2.00	1.17	
Ethylbenzene*	<0.050	0.050	12/13/2024	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	12/13/2024	ND	6.16	103	6.00	1.21	
Total BTEX	<0.300	0.300	12/13/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: KV					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	12/16/2024	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/14/2024	ND	198	99.2	200	1.83	
DRO >C10-C28*	<10.0	10.0	12/14/2024	ND	194	97.1	200	1.85	
EXT DRO >C28-C36	<10.0	10.0	12/14/2024	ND					

Surrogate: 1-Chlorooctane 125 % 48.2-134

Surrogate: 1-Chlorooctadecane 114 % 49.1-148

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Analytical Results For:

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

Received:	12/13/2024	Sampling Date:	12/13/2024
Reported:	12/16/2024	Sampling Type:	Soil
Project Name:	WILLOW A STATE 001 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

Sample ID: FS - 5 (H247565-05)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/13/2024	ND	2.12	106	2.00	1.68	
Toluene*	<0.050	0.050	12/13/2024	ND	2.04	102	2.00	1.17	
Ethylbenzene*	<0.050	0.050	12/13/2024	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	12/13/2024	ND	6.16	103	6.00	1.21	
Total BTEX	<0.300	0.300	12/13/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: KV					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	12/16/2024	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/14/2024	ND	198	99.2	200	1.83	
DRO >C10-C28*	<10.0	10.0	12/14/2024	ND	194	97.1	200	1.85	
EXT DRO >C28-C36	<10.0	10.0	12/14/2024	ND					

Surrogate: 1-Chlorooctane 122 % 48.2-134

Surrogate: 1-Chlorooctadecane 113 % 49.1-148

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Analytical Results For:

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

Received:	12/13/2024	Sampling Date:	12/13/2024
Reported:	12/16/2024	Sampling Type:	Soil
Project Name:	WILLOW A STATE 001 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

Sample ID: FS - 6 (H247565-06)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/13/2024	ND	2.12	106	2.00	1.68	
Toluene*	<0.050	0.050	12/13/2024	ND	2.04	102	2.00	1.17	
Ethylbenzene*	<0.050	0.050	12/13/2024	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	12/13/2024	ND	6.16	103	6.00	1.21	
Total BTEX	<0.300	0.300	12/13/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: KV					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	12/16/2024	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/14/2024	ND	198	99.2	200	1.83	
DRO >C10-C28*	<10.0	10.0	12/14/2024	ND	194	97.1	200	1.85	
EXT DRO >C28-C36	<10.0	10.0	12/14/2024	ND					

Surrogate: 1-Chlorooctane 121 % 48.2-134

Surrogate: 1-Chlorooctadecane 111 % 49.1-148

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Analytical Results For:

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

Received:	12/13/2024	Sampling Date:	12/13/2024
Reported:	12/16/2024	Sampling Type:	Soil
Project Name:	WILLOW A STATE 001 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

Sample ID: FS - 7 (H247565-07)

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	12/13/2024	ND	2.12	106	2.00	1.68		
Toluene*	<0.050	0.050	12/13/2024	ND	2.04	102	2.00	1.17	GC-NC	
Ethylbenzene*	1.15	0.050	12/13/2024	ND	2.06	103	2.00	1.18	GC-NC1	
Total Xylenes*	4.96	0.150	12/13/2024	ND	6.16	103	6.00	1.21	GC-NC1	
Total BTEX	6.11	0.300	12/13/2024	ND					GC-NC1	

Surrogate: 4-Bromofluorobenzene (PII) 776 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: KV						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2800	16.0	12/16/2024	ND	400	100	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS				S-06		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	1210	100	12/14/2024	ND	198	99.2	200	1.83		
DRO >C10-C28*	21200	100	12/14/2024	ND	194	97.1	200	1.85		
EXT DRO >C28-C36	4250	100	12/14/2024	ND						

Surrogate: 1-Chlorooctane 245 % 48.2-134

Surrogate: 1-Chlorooctadecane 374 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	12/13/2024	Sampling Date:	12/13/2024
Reported:	12/16/2024	Sampling Type:	Soil
Project Name:	WILLOW A STATE 001 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

Sample ID: NSW - 1 (H247565-08)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/13/2024	ND	2.12	106	2.00	1.68	
Toluene*	<0.050	0.050	12/13/2024	ND	2.04	102	2.00	1.17	
Ethylbenzene*	<0.050	0.050	12/13/2024	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	12/13/2024	ND	6.16	103	6.00	1.21	
Total BTEX	<0.300	0.300	12/13/2024	ND					

Surrogate: 4-Bromofluorobenzene (PII) 103 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: KV					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1600	16.0	12/16/2024	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/14/2024	ND	198	99.2	200	1.83	
DRO >C10-C28*	<10.0	10.0	12/14/2024	ND	194	97.1	200	1.85	
EXT DRO >C28-C36	<10.0	10.0	12/14/2024	ND					

Surrogate: 1-Chlorooctane 117 % 48.2-134

Surrogate: 1-Chlorooctadecane 109 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	12/13/2024	Sampling Date:	12/13/2024
Reported:	12/16/2024	Sampling Type:	Soil
Project Name:	WILLOW A STATE 001 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

Sample ID: NSW - 2 (H247565-09)

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	12/13/2024	ND	2.12	106	2.00	1.68	
Toluene*	<0.050	0.050	12/13/2024	ND	2.04	102	2.00	1.17	
Ethylbenzene*	0.053	0.050	12/13/2024	ND	2.06	103	2.00	1.18	GC-NC1
Total Xylenes*	<0.150	0.150	12/13/2024	ND	6.16	103	6.00	1.21	
Total BTEX	<0.300	0.300	12/13/2024	ND					

Surrogate: 4-Bromofluorobenzene (PII) 138 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: KV					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2760	16.0	12/16/2024	ND	400	100	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*	<50.0	50.0	12/14/2024	ND	198	99.2	200	1.83	
DRO >C10-C28*	1810	50.0	12/14/2024	ND	194	97.1	200	1.85	
EXT DRO >C28-C36	423	50.0	12/14/2024	ND					

Surrogate: 1-Chlorooctane 115 % 48.2-134

Surrogate: 1-Chlorooctadecane 129 % 49.1-148

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Analytical Results For:

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

Received:	12/13/2024	Sampling Date:	12/13/2024
Reported:	12/16/2024	Sampling Type:	Soil
Project Name:	WILLOW A STATE 001 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

Sample ID: ESW - 1 (H247565-10)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/13/2024	ND	2.12	106	2.00	1.68	
Toluene*	<0.050	0.050	12/13/2024	ND	2.04	102	2.00	1.17	
Ethylbenzene*	<0.050	0.050	12/13/2024	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	12/13/2024	ND	6.16	103	6.00	1.21	
Total BTEX	<0.300	0.300	12/13/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: KV					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16200	16.0	12/16/2024	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/14/2024	ND	198	99.2	200	1.83	
DRO >C10-C28*	<10.0	10.0	12/14/2024	ND	194	97.1	200	1.85	
EXT DRO >C28-C36	<10.0	10.0	12/14/2024	ND					

Surrogate: 1-Chlorooctane 123 % 48.2-134

Surrogate: 1-Chlorooctadecane 113 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

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

Received:	12/13/2024	Sampling Date:	12/13/2024
Reported:	12/16/2024	Sampling Type:	Soil
Project Name:	WILLOW A STATE 001 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

Sample ID: SSW - 1 (H247565-11)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/13/2024	ND	2.12	106	2.00	1.68	
Toluene*	<0.050	0.050	12/13/2024	ND	2.04	102	2.00	1.17	
Ethylbenzene*	<0.050	0.050	12/13/2024	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	12/13/2024	ND	6.16	103	6.00	1.21	
Total BTEX	<0.300	0.300	12/13/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: KV					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1060	16.0	12/16/2024	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/14/2024	ND	198	99.2	200	1.83	
DRO >C10-C28*	<10.0	10.0	12/14/2024	ND	194	97.1	200	1.85	
EXT DRO >C28-C36	<10.0	10.0	12/14/2024	ND					

Surrogate: 1-Chlorooctane 82.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 72.7 % 49.1-148

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Analytical Results For:

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

Received:	12/13/2024	Sampling Date:	12/13/2024
Reported:	12/16/2024	Sampling Type:	Soil
Project Name:	WILLOW A STATE 001 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

Sample ID: SSW - 2 (H247565-12)

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	12/13/2024	ND	2.12	106	2.00	1.68	
Toluene*	<0.050	0.050	12/13/2024	ND	2.04	102	2.00	1.17	
Ethylbenzene*	<0.050	0.050	12/13/2024	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	12/13/2024	ND	6.16	103	6.00	1.21	
Total BTEX	<0.300	0.300	12/13/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: KV					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3720	16.0	12/16/2024	ND	400	100	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*	<50.0	50.0	12/14/2024	ND	198	99.2	200	1.83	
DRO >C10-C28*	2240	50.0	12/14/2024	ND	194	97.1	200	1.85	
EXT DRO >C28-C36	496	50.0	12/14/2024	ND					

Surrogate: 1-Chlorooctane 125 % 48.2-134

Surrogate: 1-Chlorooctadecane 146 % 49.1-148

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Analytical Results For:

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

Received:	12/13/2024	Sampling Date:	12/13/2024
Reported:	12/16/2024	Sampling Type:	Soil
Project Name:	WILLOW A STATE 001 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

Sample ID: WSW - 1 (H247565-13)

BTEX 8021B		mg/kg		Analyzed By: JH				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.500	0.500	12/13/2024	ND	2.12	106	2.00	1.68	
Toluene*	<0.500	0.500	12/13/2024	ND	2.04	102	2.00	1.17	GC-NC
Ethylbenzene*	3.88	0.500	12/13/2024	ND	2.06	103	2.00	1.18	GC-NC1
Total Xylenes*	18.3	1.50	12/13/2024	ND	6.16	103	6.00	1.21	GC-NC1
Total BTEX	22.2	3.00	12/13/2024	ND					GC-NC1

Surrogate: 4-Bromofluorobenzene (PII) 229 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: KV					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	12/16/2024	ND	400	100	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*	864	50.0	12/14/2024	ND	198	99.2	200	1.83	
DRO >C10-C28*	4140	50.0	12/14/2024	ND	194	97.1	200	1.85	
EXT DRO >C28-C36	759	50.0	12/14/2024	ND					

Surrogate: 1-Chlorooctane 91.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 102 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	12/13/2024	Sampling Date:	12/13/2024
Reported:	12/16/2024	Sampling Type:	Soil
Project Name:	WILLOW A STATE 001 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

Sample ID: ISW - 1 (H247565-14)

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	12/13/2024	ND	2.12	106	2.00	1.68	
Toluene*	<0.050	0.050	12/13/2024	ND	2.04	102	2.00	1.17	
Ethylbenzene*	<0.050	0.050	12/13/2024	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	12/13/2024	ND	6.16	103	6.00	1.21	
Total BTEX	<0.300	0.300	12/13/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: KV					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	12/16/2024	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/14/2024	ND	198	99.2	200	1.83	
DRO >C10-C28*	<10.0	10.0	12/14/2024	ND	194	97.1	200	1.85	
EXT DRO >C28-C36	<10.0	10.0	12/14/2024	ND					

Surrogate: 1-Chlorooctane 123 % 48.2-134

Surrogate: 1-Chlorooctadecane 114 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	12/13/2024	Sampling Date:	12/13/2024
Reported:	12/16/2024	Sampling Type:	Soil
Project Name:	WILLOW A STATE 001 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

Sample ID: ISW - 2 (H247565-15)

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	12/13/2024	ND	2.12	106	2.00	1.68	
Toluene*	<0.050	0.050	12/13/2024	ND	2.04	102	2.00	1.17	
Ethylbenzene*	<0.050	0.050	12/13/2024	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	12/13/2024	ND	6.16	103	6.00	1.21	
Total BTEX	<0.300	0.300	12/13/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: KV					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	256	16.0	12/16/2024	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/14/2024	ND	198	99.2	200	1.83	
DRO >C10-C28*	<10.0	10.0	12/14/2024	ND	194	97.1	200	1.85	
EXT DRO >C28-C36	<10.0	10.0	12/14/2024	ND					

Surrogate: 1-Chlorooctane 127 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	12/13/2024	Sampling Date:	12/13/2024
Reported:	12/16/2024	Sampling Type:	Soil
Project Name:	WILLOW A STATE 001 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

Sample ID: ISW - 3 (H247565-16)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/13/2024	ND	2.12	106	2.00	1.68	
Toluene*	<0.050	0.050	12/13/2024	ND	2.04	102	2.00	1.17	
Ethylbenzene*	<0.050	0.050	12/13/2024	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	12/13/2024	ND	6.16	103	6.00	1.21	
Total BTEX	<0.300	0.300	12/13/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: KV					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	512	16.0	12/16/2024	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/14/2024	ND	198	99.2	200	1.83	
DRO >C10-C28*	<10.0	10.0	12/14/2024	ND	194	97.1	200	1.85	
EXT DRO >C28-C36	<10.0	10.0	12/14/2024	ND					

Surrogate: 1-Chlorooctane 125 % 48.2-134

Surrogate: 1-Chlorooctadecane 114 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	12/13/2024	Sampling Date:	12/13/2024
Reported:	12/16/2024	Sampling Type:	Soil
Project Name:	WILLOW A STATE 001 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

Sample ID: ISW - 4 (H247565-17)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/13/2024	ND	2.12	106	2.00	1.68	
Toluene*	<0.050	0.050	12/13/2024	ND	2.04	102	2.00	1.17	
Ethylbenzene*	<0.050	0.050	12/13/2024	ND	2.06	103	2.00	1.18	
Total Xylenes*	<0.150	0.150	12/13/2024	ND	6.16	103	6.00	1.21	
Total BTEX	<0.300	0.300	12/13/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: KV					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	12/16/2024	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/14/2024	ND	198	99.2	200	1.83	
DRO >C10-C28*	<10.0	10.0	12/14/2024	ND	194	97.1	200	1.85	
EXT DRO >C28-C36	<10.0	10.0	12/14/2024	ND					

Surrogate: 1-Chlorooctane 118 % 48.2-134

Surrogate: 1-Chlorooctadecane 107 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	12/13/2024	Sampling Date:	12/13/2024
Reported:	12/16/2024	Sampling Type:	Soil
Project Name:	WILLOW A STATE 001 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Tamara Oldaker
Project Location:	EDDY CO NM		

Sample ID: ISW - 5 (H247565-18)

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	12/13/2024	ND	2.12	106	2.00	1.68		
Toluene*	<0.050	0.050	12/13/2024	ND	2.04	102	2.00	1.17		
Ethylbenzene*	<0.050	0.050	12/13/2024	ND	2.06	103	2.00	1.18	GC-NC	
Total Xylenes*	<0.150	0.150	12/13/2024	ND	6.16	103	6.00	1.21	GC-NC	
Total BTEX	<0.300	0.300	12/13/2024	ND						

Surrogate: 4-Bromofluorobenzene (PII) 266 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: KV				S-06		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	12/16/2024	ND	400	100	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS				S-06		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<100	100	12/14/2024	ND	215	108	200	0.589		
DRO >C10-C28*	4740	100	12/14/2024	ND	199	99.7	200	0.628	QM-07, QR-03	
EXT DRO >C28-C36	1710	100	12/14/2024	ND						

Surrogate: 1-Chlorooctane 110 % 48.2-134

Surrogate: 1-Chlorooctadecane 174 % 49.1-148

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-05	The surrogate recovery is outside of lab established statistical control limits but still within method limits. Data is not adversely affected.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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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* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

page 1 of 2

Company Name: Tetra Tech - conoco Phillips Project Manager: Sam Abbott Address: City: State: Zip: Phone #: Fax #: Project #: 212-CD-03573 Project Owner: Project Name: Willow A State 001 Tank Battery Project Location: Eddy Co, NM Sampler Name: Andrew Garcia		P.O. #: Company: Tetra Tech Attn: Sam Abbott Address: City: State: Zip: Phone #: Fax #: State: Zip:	
BILL TO			
ANALYSIS REQUEST			
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 analysis. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.			
Relinquished By: Andrew Garcia Date: 12/13/24 Time: 14:32	Received By: <i>[Signature]</i> Date: _____ Time: _____	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #: All Results are emailed. Please provide Email address: REMARKS: Sam. Hott Abbott@TetraTech.com Andrew Garcia@TetraTech.com	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C: 3.1 Corrected Temp. °C: 2.5	Sample Condition Cool Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Sample Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	CHECKED BY: <i>[Signature]</i> Turnaround Time: Standard <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Thermometer ID #140: 24 TAT Correction Factor -0.8°C: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Bacteria (only) Sample Condition: <input type="checkbox"/> Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No Observed Temp. °C: _____ Corrected Temp. °C: _____
Lab I.D.: H47565	Sample I.D.:	(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER MATRIX SOIL OIL SLUDGE OTHER:	PRESERV. ACID/BASE: ICE / COOL OTHER:
1 FS-1 2 FS-2 3 FS-3 4 FS-4 5 FS-5 6 FS-6 7 FS-7 8 NSW-1 9 NSW-2 10 NSW-1	1 1 1 1 1 1 1 1 1 1	2024 12/13 800 815 830 845 900 915 930 945 1000 1015	X X X X X X X X X X
		TPH BTEX Chlorides	

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



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

P

Company Name: Tetra Tech - Conoco Phillips Project Manager: Sam Abbott		P.O. #: _____ Company: Tetra Tech Attn: Sam Abbott	
Address: _____ City: _____ State: _____ Zip: _____		Address: _____ City: _____ State: _____ Zip: _____	
Project #: 212 C-MD-03573 Project Owner: _____ Project Name: Willow A State Oil Tank Battery		State: _____ Zip: _____ Phone #: _____ Fax #: _____	
Project Location: Eddy Co, NM		State: _____ Zip: _____ Phone #: _____ Fax #: _____	
Sampler Name: Andrew Garcia			
FOR LAB USE ONLY			
Lab I.D. H247565	Sample I.D.	(G)RAB OR (C)OMP. # CONTAINERS MATRIX GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : _____ ACID/BASE: ICE / COOL ✓ OTHER : _____	PRESERV. SAMPLING
11 12 13 14 15 16 17 18	SSW-1 SSW-2 USW-1 ISW-1 ISW-2 ISW-3 ISW-4 ISW-5	C 1 X X X X X X X X X X X	DATE 2024 12/13 1030 1045 1100 1135 1130 1145 1200 1215
TP4 BTEX Chlorides		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 analysis. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruption, 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 remedies or otherwise.			
Relinquished By: Andrew Garcia Date: 12/13/24 Time: 1433		Received By: Sam Abbott Date: _____ Time: _____	
Delivered By: (Circle One) Sampler - UPS - Bus - Other: _____		Observed Temp. °C 31 Corrected Temp. °C 2.5	
Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Bacteria (only) <input type="checkbox"/> Yes <input type="checkbox"/> No		CHECKED BY: _____ (Initials)	
Turnaround Time: _____ Standard Rush <input type="checkbox"/> Add'l Phone #: _____		Thermometer ID #140 24 TAT Correction Factor -0.5°C	
Bacteria (only) Sample Condition Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No Observed Temp. °C _____ Corrected Temp. °C _____		REMARKS: Sam. Hobbs Abbott@TetraTech.com Andrew Garcia@TetraTech.com	

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

December 17, 2024

SAM ABBOTT

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: WILLOW A STATE 001 TANK BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 12/17/24 8:51.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

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

Received:	12/17/2024	Sampling Date:	12/16/2024
Reported:	12/17/2024	Sampling Type:	Soil
Project Name:	WILLOW A STATE 001 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY CO NM		

Sample ID: NSW - 1 (3') (H247597-01)

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	12/17/2024	ND	2.16	108	2.00	3.22		
Toluene*	<0.050	0.050	12/17/2024	ND	2.07	103	2.00	3.64		
Ethylbenzene*	<0.050	0.050	12/17/2024	ND	2.07	103	2.00	3.97		
Total Xylenes*	<0.150	0.150	12/17/2024	ND	6.20	103	6.00	4.33		
Total BTEX	<0.300	0.300	12/17/2024	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 103 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: CT						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	240	16.0	12/17/2024	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	12/17/2024	ND	182	91.1	200	3.10		
DRO >C10-C28*	<10.0	10.0	12/17/2024	ND	179	89.6	200	1.50		
EXT DRO >C28-C36	<10.0	10.0	12/17/2024	ND						

Surrogate: 1-Chlorooctane 125 % 48.2-134

Surrogate: 1-Chlorooctadecane 116 % 49.1-148

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	12/17/2024	Sampling Date:	12/16/2024
Reported:	12/17/2024	Sampling Type:	Soil
Project Name:	WILLOW A STATE 001 TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY CO NM		

Sample ID: FS - 2 (5') (H247597-02)

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/17/2024	ND	2.16	108	2.00	3.22	
Toluene*	<0.050	0.050	12/17/2024	ND	2.07	103	2.00	3.64	
Ethylbenzene*	<0.050	0.050	12/17/2024	ND	2.07	103	2.00	3.97	
Total Xylenes*	<0.150	0.150	12/17/2024	ND	6.20	103	6.00	4.33	
Total BTEX	<0.300	0.300	12/17/2024	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: CT					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	12/17/2024	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/17/2024	ND	182	91.1	200	3.10	
DRO >C10-C28*	<10.0	10.0	12/17/2024	ND	179	89.6	200	1.50	
EXT DRO >C28-C36	<10.0	10.0	12/17/2024	ND					

Surrogate: 1-Chlorooctane 98.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 89.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- S-05 The surrogate recovery is outside of lab established statistical control limits but still within method limits. Data is not adversely affected.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

page 1 of 1

Company Name: Tetre Tech - Conoco Phillips Project Manager: Sam Abbott Address: City: State: Zip: Phone #: Fax #: Project #: 212C-MB-03573 Project Owner: Project Name: Willow A State 001 Tank Battery Project Location: Eddy Co, NM Sampler Name: Andrew Garcia <small>FOR LAB USE ONLY</small>		P.O. #: Company: Tetre Tech Attn: Sam Abbott Address: City: State: Zip: Phone #: Fax #: Project #:	
Lab I.D. HB47597 1 2		Sample I.D. NSW-1 (3') FS-2 (5') C 1 C 1	
(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER :		DATE TIME 12/16/24 1300 12/16/24 1400	
BTEX TPH Chlorides		ANALYSIS REQUEST	
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 analysis. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of data, or loss of profit 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.		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #: All Results are emailed. Please provide Email address: Sam. Abbott@tetretech.com Andrew Garcia@tetretech.com	
Relinquished By: Andrew Garcia Date: 12/31/24 Time: 8:51 Received By: [Signature] Date: 12/16/24 Time:		Turnaround Time: Standard <input type="checkbox"/> Rush <input checked="" type="checkbox"/> Thermometer ID #140 Correction Factor -0.6°C Bacterie(only) Sample Condition Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No Corrected Temp. °C	
Delivered By: (Circle One) UPS - Bus - Other: FORM-006 R.3.5 08/09/24 Observed Temp. °C 0.8°C Corrected Temp. °C 0.2°C Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No CHECKED BY: [Signature]		REMARKS: Standard Rush Same day	

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

December 20, 2024

SAM ABBOTT

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: PULLEY PIT

Enclosed are the results of analyses for samples received by the laboratory on 12/17/24 8:51.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C24-00112. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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Analytical Results For:

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

Received:	12/17/2024	Sampling Date:	12/16/2024
Reported:	12/20/2024	Sampling Type:	Soil
Project Name:	PULLEY PIT	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03573	Sample Received By:	Shalyn Rodriguez
Project Location:	EDDY CO., NM		

Sample ID: BACKFILL-COMPOSITE (H247598-01)

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	12/19/2024	ND	2.05	103	2.00	1.36	
Toluene*	<0.050	0.050	12/19/2024	ND	1.95	97.6	2.00	2.63	
Ethylbenzene*	<0.050	0.050	12/19/2024	ND	1.97	98.3	2.00	3.68	
Total Xylenes*	<0.150	0.150	12/19/2024	ND	5.91	98.6	6.00	4.19	
Total BTEX	<0.300	0.300	12/19/2024	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: KV					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	12/20/2024	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/19/2024	ND	206	103	200	5.43	
DRO >C10-C28*	<10.0	10.0	12/19/2024	ND	185	92.5	200	4.91	
EXT DRO >C28-C36	<10.0	10.0	12/19/2024	ND					

Surrogate: 1-Chlorooctane 96.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 91.0 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

page 1 of 1

Company Name: <i>Tetra Tech - Conaco Phillips</i>		P.O. #:	
Project Manager: <i>Sam Abbott</i>		Company: <i>Tetra Tech</i>	
Address:		Attn: <i>Sam Abbott</i>	
City:	State:	Zip:	Address:
Phone #:	Fax #:	City:	Address:
Project #: <i>212C-MB-03573</i>	Project Owner:	State:	Zip:
Project Name: <i>Pulley Pit</i>	Project Location: <i>Eddy Co, NM</i>	Phone #:	Fax #:
Sampler Name: <i>Andrew Garcia</i>	FOR LAB USE ONLY	MATRIX	PRESERV/ SAMPLING

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	ANALYSIS REQUEST
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :			
<i>1947598</i>	<i>Boatfill-Composite</i>	<i>C</i>	<i>1</i>			<i>X</i>				<i>12/14/24</i>	<i>1500</i>	<i>BTEX</i>
												<i>TPH</i>
												<i>Chlorides</i>
												<i>Hold</i>
												<i>Hold Removed 12-19-24</i>
												<i>24HR Rush go.</i>

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

Relinquished By: <i>Andrew Garcia</i>	Date: <i>12/17/24</i>	Received By: <i>Stacking</i>
Relinquished By: <i>Andrew Garcia</i>	Date: <i>12/17/24</i>	Received By: <i>Stacking</i>
Delivered By: (Circle One)	Observed Temp. °C: <i>8.8</i>	Sample Condition
Sampler - UPS - Bus - Other: <i>FORM-006 R 3.5 08/05/24</i>	Corrected Temp. °C: <i>8.2</i>	Cool Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
		Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
		CHECKED BY: <i>SK</i>
		Turnaround Time: <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush
		Thermometer ID #140 <i>Same day</i>
		Correction Factor -0.6°C
		Bacteria (only) Sample Condition: <input type="checkbox"/> Cool <input type="checkbox"/> Intact
		Observed Temp. °C
		Corrected Temp. °C

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

APPENDIX F

Civil Engineering Letter



February 2, 2026

Revised February 11, 2026

Tetra Tech

Attn: Samantha Abbott

8911 N. Capital of Texas Hwy.

Bldg. 2, Suite 2310

Austin, TX 78759

RE: Soil Sampling and Testing
Project No. 2025.1300 Willow A State 001 Tank Battery

Dear Ms. Abbott,

This letter is to evaluate the existing soil types at the project area and provide recommendations for soil excavation. The following section describes the results of the soils sampling and testing performed December 30, 2025 & January 8, 2026, at the Willow A State 001 Tank Battery.

Site Conditions

The Willow A State 001 Tank Battery project is located in the southeast quarter (SE/4) of Section 03, Township 25S, Range 28E, Lea County, New Mexico. The site is an existing pad containing a pump jack and multiple tanks.

Stratigraphy

Stratum 1 – Stratum 1 resembles* silty gravel with sand. These soils are medium dense and present from 0'0" to 0'5" in depth. Soils in Stratum 1 are typically tan, dry, and non-plastic.

Stratum 2 – Stratum 2 is classified as sandy lean clay (CL). These soils are loose to moderately firm to hard and present from 0'4" to 4'0" in depth. Soils in Stratum 2 are typically brown, moist to wet and plastic.

* Not enough material was obtained to run Atterberg limits required for AASHTO classification. Classification in Report is based off physical soil texture and amount passing the #200 screen.



Stratum 3 – Stratum 3 is classified as lean clay with sand (CL). These soils are moderately firm to hard and present from 4'0" to 16'6" in depth. Soils in Stratum 3 are typically tannish brown, moist to wet and slightly plastic.

TABLE – 2 Soil Parameters

Strata	Unified Soil Classification	Strata Thickness (ft)	Total Unit Weight γ (pcf)	Cohesion C (ksf)	Friction Angle Φ ($^{\circ}$)	Subgrade Modulus K (pci)
S-1	--	0'5"	120.6	0.00	35.9	93.6
S-2	CL	3'7"	134.5	3.36	0.0	1,192.7
S-3	CL	12'6"	139.3	5.16	0.0	2,000.0

Calculated with Allpile 7.

Groundwater

Groundwater was not encountered in any of the boreholes.

Expansive Soils

In accordance with the 2021 International Building Code - Section 1803.5.3 Soil Classification, Stratum 2 and 3 soils may be considered expansive. Additional testing would be required for confirmation. Due to the expansive nature of the native soils in stratum 2 and 3, protection of existing foundations is necessary.

Excavation Recommendations:

- For excavation within the containment area, it is recommended to protect existing structures in place and that no excavation occurs within 5 feet of load bearing structures.
- Existing pipe/conduits shall be protected in place. It may not be feasible to excavate around these areas without compromising the soil stability. Therefore it is recommended that no excavations occur within 3 feet of known underground utilities.
- Temporary excavations deeper than 1' must be sloped at 3H:1V.
- Excavations deeper than 20' will require a site specific plan to be stamped/sealed by an Engineer. Due to space limitations, shoring or benching systems may be required.
- During all earthwork operations, it is recommended to provide erosion control during construction.



Should you have any questions regarding this transmittal, please do not hesitate to contact our office.

Sincerely,

Pettigrew & Associates, P.A.

A handwritten signature in black ink, appearing to read "David Roybal".

David Roybal, PE
Engineering Manager
NM 23576



2/11/2026





Boring Location Map







Logs and Summaries





BORING NO.: BH - 1

CLIENT: Tetra Tech
PROJECT NAME: Willow A State 001 Tank Battery
PROJECT NO.: 2025.1300
DATE DRILLED: 1/8/2026

COORDINATES: Lat. 32.157413°
 Long. -104.074718°
SURFACE ELEVATION: 2,995.0'
BOREHOLE DEPTH: 16'6"
DEPTH TO WATER:

DEPTH (FT)	LITHOLOGIC SYMBOL	SAMPLE RECOVERED	BLOWS PER FOOT	DESCRIPTION	SOIL CLASSIFICATION	LABORATORY TEST DATA										BEARING CAPACITY (psf)	qu (psf)	SHEAR STRENGTH (tsf)
						% MOISTURE	% PASSING 3/4"	% PASSING #4	% PASSING #10	% PASSING #40	% PASSING #200	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)	PLASTICITY INDEX (PI)				

0				Tan Silty Gravel With Sand		2.7	92	54	40	27	19.7							
20				Brown Sandy Lean Clay	CL	12.7											3,620	
52					CL	7.8	96	94	92	84	55.4	34	17	17			>8,000	
5				Brownish Tan Lean Clay with Sand		11.2											>8,000	
41						9.7											>8,000	
10					CL	11.7	100	98	94	82	72.3	44	26	18			>8,000	
61																		
15						13.2											7,760	
30																		

SPLIT SPOON SAMPLE
 EXCAVATION
 WATER
 SHELBY SAMPLE

100 E. Navajo Drive Suite 100 Hobbs NM 88240 T 575 393 9827 F 575 393 1543 <http://www.Pettigrew.us>



BORING NO.: BH - 2

CLIENT: Tetra Tech
PROJECT NAME: Willow A State 001 Tank Battery
PROJECT NO.: 2025.1300
DATE DRILLED: 1/8/2026

COORDINATES: Lat. 32.157417° Long. -104.07446°
SURFACE ELEVATION: 2,996.0'
BOREHOLE DEPTH: 16'6"
DEPTH TO WATER:

DEPTH (FT)	LITHOLOGIC SYMBOL	SAMPLE RECOVERED	BLOWS PER FOOT	DESCRIPTION	SOIL CLASSIFICATION	LABORATORY TEST DATA								BEARING CAPACITY (psf)	qu (psf)	SHEAR STRENGTH (tsf)
						% MOISTURE	% PASSING 3/4"	% PASSING #4	% PASSING #10	% PASSING #40	% PASSING #200	LIQUID LIMIT (LL)	PLASTIC LIMIT (PL)			

0				Tan Silty Gravel With Sand	-	1.7	92	54	40	27	19.7	-	-	-			
11				Brown Sandy Lean Clay	CL	12.1									1,630		
14					CL	10.2	96	94	92	84	55.4	34	17	17	3,060		
27				Brownish Tan Lean Clay with Sand		8.1									6,880		
43						10.9									>8,000		
69						10.8									>8,000		
10					CL	10.9	100	98	94	82	72.3	44	26	18			
51						8.1									>8,000		
15						19.0											
25															6,290		

SPLIT SPOON SAMPLE
 EXCAVATION
 WATER
 SHELBY SAMPLE

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BORING NO.: BH - 3

CLIENT: Tetra Tech
PROJECT NAME: Willow A State 001 Tank Battery
PROJECT NO.: 2025.1300
DATE DRILLED: 1/8/2026

COORDINATES: Lat. 32.157269°
 Long. -104.074474°
SURFACE ELEVATION: 2,996.0'
BOREHOLE DEPTH: 16'6"
DEPTH TO WATER:

DEPTH (FT)	LITHOLOGIC SYMBOL	SAMPLE RECOVERED	BLOWS PER FOOT	DESCRIPTION	SOIL CLASSIFICATION	LABORATORY TEST DATA							BEARING CAPACITY (psf)	qu (psf)	SHEAR STRENGTH (tsf)
						% MOISTURE	% PASSING 3/4"	% PASSING #4	% PASSING #10	% PASSING #40	% PASSING #200	LIQUID LIMIT (LL)			

0				Tan Silty Gravel With Sand		1.9	92	54	40	27	19.7						
14				Brown Sandy Lean Clay	CL	13.7										3,060	
51					CL	13.1	96	94	92	84	55.4	34	17	17		>8,000	
5				Limestone Rock Fragment													
29				Brownish Tan Lean Clay with Sand												7,470	
34						12.4										>8,000	
43						11.3										>8,000	
10					CL	10.3	100	98	94	82	72.3	44	26	18		>8,000	
55																	
15						12.4										>8,000	
35																	

SPLIT SPOON SAMPLE
 EXCAVATION
 WATER
 SHELBY SAMPLE

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LABORATORY TEST REPORT



To: Tetra Tech
 8911 N. Capital of Texas Hwy.
 Bldg. 2, Suite 2310
 Austin, TX 78759

Type of Test:
 Standard Test Method for the Use of the Dynamic Cone
 Penetrometer in Shallow Pavement Applications ASTM: D
 6951

Project: Willow A State 001 Tank Battery
 2025.1300

Date of Test: December 30, 2025

**Test
 No**

- 1 **Location:** Willow Tank Pad West Side
Blows: 8 to reach 6"
PSF: 2650
- 2 **Location:** Willow Tank Pad Center
Blows: 9 to reach 6"
PSF: 2890
- 3 **Location:** Willow Tank Pad East Side
Blows: 12 to reach 6"
PSF: 3580



Employee ID: #N/A

Comments:

PETTIGREW & ASSOCIATES, P.A.

Copies To: Samantha Abbott

BY: _____ **P.E.**
 NM PE No. 29041



LABORATORY TEST REPORT



To: Tetra Tech
661 Andersen Drive, Suite 500
Pittsburgh, PA 15220

Project: Willow A State 001 Tank Battery
Project Number: 2025.1300

Date of Test: January 09, 2026

Sample Date: January 8, 2026

Location: On Site Stock Pile

Field Description: Brown Silty Sand w/ Caliche w/ -3" AGG #26-3

Sieve Analysis Test:

ASTM C 117 Materials Finer Than 75-µm (No.200) Sieve in Mineral Aggregates by Washing

ASTM C 136 Sieve Analysis of Fine and Coarse Aggregates

Sieve Size	% Passing	Required Limits
100 mm	4"	100
75 mm	3"	96
50 mm	2"	96
25 mm	1"	88
19.0 mm	3/4"	85
12.5 mm	1/2"	80
9.5 mm	3/8"	76
4.75 mm	#4	64
2.36 mm	#8	59
2.0 mm	#10	59
425 µm	#40	53
180 µm	#80	49
150 µm	#100	48
75 µm	#200	41.8

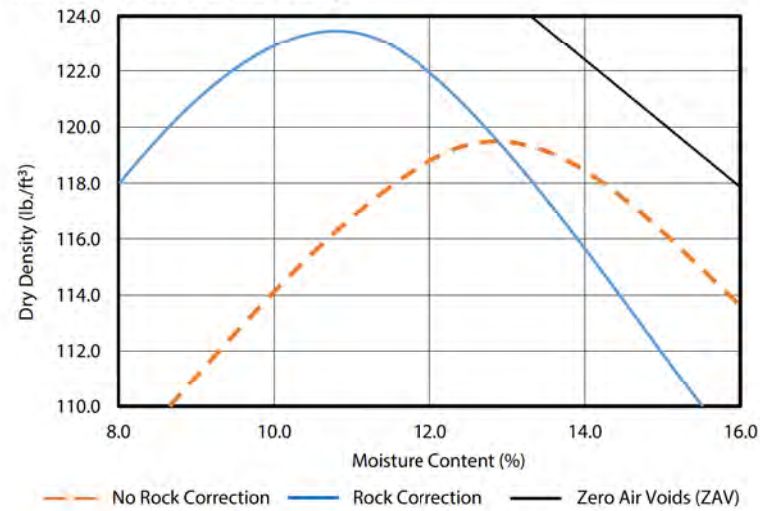
Proctor Compaction Test: Standard

ASTM D 698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12 400 ft-lbf/ft³ (600 kN-m/m³))

Test Type & Method: ASTM D 698 Method C

Preparation Method:	Dry	Drop Height (in):	12
Rammer Type:	Manual	Mold Diameter (in):	6
Rammer Face:	Circular	No. of Layers:	3
Rammer Weight (lb.):	5.5 lb	Blows per Layer:	56

Moisture-Density Relationship:



Liquid Limit, Plastic Limit and Plasticity Index Test:

ASTM D 4318 Liquid Limit, Plastic Limit and Plasticity Index of Soils

LL Method:	A - Multipoint	Liquid Limit (LL):	32
Preparation Method:	Dry	Plastic Limit (PL):	17
PI Method:	Oven Dried	Plasticity Index (PI):	15

Rock Correction: Yes

ASTM D 4718 Standard Practice for Correction of Unit Weight and Water Content for Soils Containing Oversize Particles

Optimum Moisture Content (%):	12.9	Rock Corrected:	12.9
Maximum Dry Density (lb./ft ³):	119.5	Rock Corrected:	123.4
Specific Gravity (Assumed):	2.710		
Coarse Specific Gravity:	2.548		

PETTIGREW & ASSOCIATES, P.A.

Copies To: Christian Lull
Samantha Abbott

BY: _____ P.E.
NM PE No. 29041

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS

Action 556086

QUESTIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 556086
	Action Type: [C-141] Deferral Request C-141 (C-141-v-Deferral)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2221332553
Incident Name	NAPP2221332553 WILLOW A STATE 001 @ FAPP2203532080
Incident Type	Oil Release
Incident Status	Deferral Request Received
Incident Facility	[fAPP2203532080] WILLOW A STATE #1 BATTERY

Location of Release Source	
<i>Please answer all the questions in this group.</i>	
Site Name	WILLOW A STATE 001
Date Release Discovered	07/17/2022
Surface Owner	State

Incident Details	
<i>Please answer all the questions in this group.</i>	
Incident Type	Oil 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	
<i>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.</i>	
Crude Oil Released (bbls) Details	Cause: Equipment Failure Valve Crude Oil Released: 195 BBL Recovered: 100 BBL Lost: 95 BBL.
Produced Water Released (bbls) Details	Not answered.
Is the concentration of chloride in the produced water >10,000 mg/l	No
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 556086

QUESTIONS (continued)

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 556086
	Action Type: [C-141] Deferral Request C-141 (C-141-v-Deferral)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	Yes
Reasons why this would be considered a submission for a notification of a major release	From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.

With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.

Initial Response

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

The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	<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: Lisbeth Chavira Title: Project Manager Email: Lisbeth.chavira@tetrattech.com Date: 02/19/2026
--	--

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Phone: (505) 476-3441

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QUESTIONS, Page 3

Action 556086

QUESTIONS (continued)

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 556086
	Action Type: [C-141] Deferral Request C-141 (C-141-v-Deferral)

QUESTIONS

Site Characterization
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.

What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 26 and 50 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
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 1/2 and 1 (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	Greater than 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Greater than 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Between 1 and 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Between 1 and 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	High
A 100-year floodplain	Between 1/2 and 1 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan
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.

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

Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)

Chloride (EPA 300.0 or SM4500 Cl B)	20900
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	45700
GRO+DRO (EPA SW-846 Method 8015M)	39092
BTEX (EPA SW-846 Method 8021B or 8260B)	389
Benzene (EPA SW-846 Method 8021B or 8260B)	17

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.

On what estimated date will the remediation commence	01/06/2025
On what date will (or did) the final sampling or liner inspection occur	01/08/2025
On what date will (or was) the remediation complete(d)	01/15/2025
What is the estimated surface area (in square feet) that will be reclaimed	1370
What is the estimated volume (in cubic yards) that will be reclaimed	215
What is the estimated surface area (in square feet) that will be remediated	1370
What is the estimated volume (in cubic yards) that will be remediated	215

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. 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.

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QUESTIONS, Page 4

Action 556086

QUESTIONS (continued)

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 556086
	Action Type: [C-141] Deferral Request C-141 (C-141-v-Deferral)

QUESTIONS

Remediation Plan (continued)

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.

This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:

(Select all answers below that apply.)

(Ex Situ) Excavation and off-site disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for off-site disposal	fEEM0112334510 HALFWAY DISPOSAL AND LANDFILL
OR which OCD approved well (API) will be used for off-site disposal	Not answered.
OR is the off-site disposal site, to be used, out-of-state	No
OR is the off-site disposal site, to be used, an NMED facility	No
(Ex Situ) Excavation and on-site 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

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 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: Lisbeth Chavira Title: Project Manager Email: Lisbeth.chavira@tetrattech.com Date: 02/19/2026
--	--

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.

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QUESTIONS, Page 5

Action 556086

QUESTIONS (continued)

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 556086
	Action Type: [C-141] Deferral Request C-141 (C-141-v-Deferral)

QUESTIONS

Deferral Requests Only	
<i>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.</i>	
Requesting a deferral of the remediation closure due date with the approval of this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Is the remaining contamination in areas immediately under or around production equipment where remediation could cause a major facility deconstruction	Yes
Please list or describe the production equipment and how (re)moving the equipment would cause major facility deconstruction	Remaining contamination is located in soils that were left in place to support the production infrastructure, including the vertical separator, transfer pump and associated electrical conduit, tanks, and surface steel lines.
What is the remaining surface area (in square feet) that will still need to be remediated if a deferral is granted	620
What is the remaining volume (in cubic yards) that will still need to be remediated if a deferral is granted	50
<i>Per Paragraph (2) of Subsection C of 19.15.29.12 NMAC if contamination is located in areas immediately under or around production equipment such as production tanks, wellheads and pipelines where remediation could cause a major facility deconstruction, the remediation, restoration and reclamation may be deferred with division written approval until the equipment is removed during other operations, or when the well or facility is plugged or abandoned, whichever comes first.</i>	
Enter the facility ID (f#) on which this deferral should be granted	Not answered.
Enter the well API (30-) on which this deferral should be granted	30-015-33012 WILLOW A STATE #001
Contamination does not cause an imminent risk to human health, the environment, or groundwater	True
<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: Lisbeth Chavira Title: Project Manager Email: Lisbeth.chavira@tetrattech.com Date: 02/19/2026

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS, Page 6

Action 556086

QUESTIONS (continued)

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 556086
	Action Type: [C-141] Deferral Request C-141 (C-141-v-Deferral)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	413591
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	12/16/2024
What was the (estimated) number of samples that were to be gathered	2
What was the sampling surface area in square feet	1370

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

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CONDITIONS

Action 556086

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 556086
	Action Type: [C-141] Deferral Request C-141 (C-141-v-Deferral)

CONDITIONS

Created By	Condition	Condition Date
scwells	Deferral approved. Deferral of FS-7, ESW-1, ISW-5, NSW-2, SSW-1, SSW-2, and WSW-1 is approved until plugging and abandonment or a major facility deconstruction, whichever comes first. A complete and accurate remediation report and/or reclamation report will need to be submitted at that time.	3/13/2026