Site Assessment Summary, Variance Request & Proposed Remediation Plan

Mewbourne Oil Company
Layla 27 SWD #001
Eddy County, New Mexico
Unit Letter "H", Section 27, Township 23 South, Range 28 East
Latitude 32.27803 North, Longitude 104.06982 West
NMOCD Reference No. nAPP2428849677

Prepared By:

Etech Environmental & Safety Solutions, Inc.
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July 25, 2025

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1.0 PROJECT INFORMATION

Etech Environmental & Safety Solutions, Inc. (Etech), on behalf of Mewbourne Oil Company (Mewbourne), has prepared this *Site Assessment Summary, Variance Request & Proposed Remediation Plan* for the release site known as the Layla 27 SWD #001 (henceforth, "Site"). Details of the release are summarized below:

Location of Release Source

Latitude: 32.27803 Longitude: -104.06982

Provided GPS are in WGS84 format.

Site Name:	Layla 27 SWD #001	Site Type:	Production Tank
Date Release Discovered:	10/5/2024	API # (if applicable):	30-015-33900

Unit Letter	Section	Township	Range	County
"H"	27	23S	28E	Eddy

Surface Owner: [ ] State [ ] Federal [ ] Tribal [X] Private (Name Dorothy W. Queen Revocable Trust)

Nature and Volume of Release

[ ] Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
[X] Produced Water	Volume Released (bbls) 305	Volume Recovered (bbls) 250
	Is the concentration of dissolved chloride in the produced water > 10,000 mg/L?	[X] Yes [ ] No [ ] N/A
[ ] Condensate	Volume Released (bbls)	Volume Recovered (bbls)
[ ] Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
[ ] Other (describe)	Volume/Weight Released	Volume/Weight Recovered

Cause of Release:
Mechanical failure on a threaded flange.

Initial Response

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

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

2.0 SITE CHARACTERIZATION

What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (bgs)?	Between 26 and 50 (ft.)
What method was used to determine the depth to groundwater?	NM OSE iWaters Database Search
Did the release impact groundwater or surface water?	☐ Yes ☒ 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 300 and 500 (ft.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	Between ½ and 1 (mi.)
An occupied permanent residence, school, hospital, institution or church?	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	Between 1,000 (ft.) and ½ (mi.)
Any other fresh water well or spring?	Between 300 and 500 (ft.)
Incorporated municipal boundaries or a defined municipal fresh water well field?	Between 1 and 5 (mi.)
A wetland?	Between 300 and 500 (ft.)
A subsurface mine?	Greater than 5 (mi.)
A (non-karst) unstable area?	Between 500 and 1,000 (ft.)
Categorize the risk of this well/site being in a karst geology.	Low
A 100-year floodplain?	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production or storage site?	☐ Yes ☒ No

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

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

In July 2016, in conjunction with the remediation of NMOCD Incident #nAB1609149408 (2RP-3626), an impermeable, high-density polyethylene (HDPE) liner was installed in the footprint of the entire production pad for the Layla 27 SWD #001 tank battery at depths ranging from approximately one (1) to four (4) feet bgs. The footprint of the pad liner is depicted in Figure 3, "Sample Location Map". Photographs of the 2016 liner installation are provided in Appendix B.

A karst study of the affected area was conducted by a third-party environmental contractor in April 2025. According to the *Environmental Karst Study Report* (Karst Survey) dated May 23, 2025, "The LS271 survey contains no surface karst features within 200 feet (61 meters) of the spill delineation boundary. One recognized surface feature exists within the 200-meter survey boundary. This feature is likely related to soil piping and represents a safety hazard, but not a karst hazard. The LS271 survey contains one high-resistivity anomaly which we interpret as a subsurface void. This feature exists outside of the 200-foot (61-meter) survey boundary. This feature may represent a collapse risk and present a hazard to equipment operators working in that area. A moderately well-layered stratigraphy is interpreted to exist beneath the area where the geophysical survey was conducted, indicating stable ground..." The karst study report is provided as Appendix C.

3.0 CLOSURE CRITERIA FOR SOILS IMPACTED BY A RELEASE

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

Probable Depth to Groundwater	Constituent	Laboratory Analytical Method	Closure Criteria*†	Reclamation Standards*‡
Between 26 and 50 (ft.)	Chloride (Cl-)	EPA** 300.0 or SM4500 Cl B	600	600
	Total Petroleum Hydrocarbons (TPH)	EPA SW-846 Method 8015M Ext	100	100
	Gas Range Organics + Diesel Range Organics (GRO+DRO)	EPA SW-846 Method 8015M	N/A	N/A
	Benzene	EPA SW-846 Methods 8021b or 8260b	10	10
	Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX)	EPA SW-846 Methods 8021b or 8260b	50	50

* Measured in milligrams per kilogram (mg/kg)

** Environmental Protection Agency

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

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

4.0 REGULATORY SUBMITTALS

On December 12, 2024, a *Proposed Remediation Plan* was submitted to the NMOCD outlining remedial activities designed to advance the Site toward NMOCD-approved closure. The NMOCD subsequently denied the remediation plan on the grounds that the extent of the release had not been delineated horizontally or vertically, and the depth to ground water determination was inadequate, as it did not include gauging data from a recently drilled well nearby.

For additional information, please reference the *Proposed Remediation Plan,* which is available in the NMOCD Permitting system.

Copies of all regulatory correspondence are provided in Appendix D.

5.0 SITE ASSESSMENT

On February 14, 2025, Etech conducted a site assessment. During the site assessment, four (4) test trenches (TT-1 through TT-4) were advanced within the margins of the release in an effort to determine the vertical extent of impacted soil. In addition, six (6) hand-augered soil bores (NH, EH 1, EH 2, SH, WH 1, and WH 2) were advanced along the release margins to determine the horizontal extent of impacted soil.

The test trenches were advanced in one-foot increments until the liner underlying the Site was encountered, which ranged from approximately one (1) foot bgs in trench TT-1 to approximately three (3) feet bgs in trenches TT-2, TT-3, and TT-4. Inspections of the exposed portions of the liner were performed to check its integrity and confirm that it remained intact. No holes or breaches were discovered during the inspections.

During the advancement of the test trenches and hand-augered soil bores, soil samples were collected and field-screened for the presence of Volatile Organic Compounds (VOCs) utilizing olfactory/visual senses and/or concentrations of chloride utilizing a Hach Quantab ® chloride test kit. Based on field observations and field test data, a total of 20 delineation soil samples (TT-1 @ Surf , TT-1 @ 1', TT-2 @ Surf through TT-2 @ 3', TT-3 @ Surf through TT-3 @ 3', TT-4 @ Surf through TT-4 @ 3', NH, EH-1, EH-2, SH, WH-1, and WH-2) were submitted to a certified, commercial laboratory (henceforth, "the laboratory") for analysis of BTEX, TPH, and chloride. Based on laboratory analytical results, the horizontal extent of impacted soil was adequately defined in the areas characterized by sample points NH, EH 1, EH 2, SH, WH 1, and WH 2.

Delineation sample points, the extent of the affected area, and the footprint of the pad liner referenced in Section 2.0 above are depicted in Figure 3. Soil chemistry data is summarized in Table 1. Field data is provided in Appendix E. General photographs of the Site are provided in Appendix F. A "Liner Integrity Inspection Report" is provided in Appendix G. Laboratory analytical reports are provided in Appendix H.

6.0 VARIANCE REQUEST

According to historical records available in the NMOCD Permitting system, in July 2016 an impermeable HDPE liner was installed in the footprint of the entire production pad for the Layla 27 SWD #001 tank battery at depths ranging from approximately one (1) to four (4) feet bgs (see Section 2.0, Figure 3, and Appendix B). This engineered control was designed to mitigate potential releases at the Site and prevent the vertical migration of any contamination to groundwater. As shown in Figure 3, the liner extends well beyond the maximum horizontal extent of the affected area. Visual inspections of exposed portions of the liner conducted in February 2025 confirmed that it remains intact (see Section 5.0 and Appendix G).

The drilling log for NMOSE well C-4830 POD 1 (located approximately 400 feet to the east of the release) indicates that the underlying soil stratigraphy at the Site includes interbedded clays and silty clays, which are described in the well log as "very stiff-hard", "consolidated", and of low to medium plasticity (see Appendix A). These characteristics are indicative of low-permeability soils that restrict the vertical movement of moisture.

The Karst Survey indicated that no surface karst features are present within 200 feet of the release area, and that the subsurface is "moderately well-layered", which is indicative of "stable ground." This geologic stability, coupled with the absence of karst features proximate to the affected area, significantly reduces the risk of contaminant migration to groundwater through subsurface conduits.

The affected area has been horizontally delineated to the Table 1 Closure Criteria for a site where the depth to groundwater is ≤50 feet bgs and has been vertically delineated to <10,000 mg/kg chloride and <100 mg/kg TPH.

Based on the information above, Mewbourne respectfully requests a variance from the requirements of Subsections 19.15.29.12.C(3) and 19.15.29.13.D(1) NMAC, as well as from the NMOCD's position that "soil standards below 4 feet must be delineated/remediated to Table 1 Closure Criteria for the approved site-specific depth to groundwater" (see rejection letter dated January 10, 2025, provided in Appendix D). Mewbourne also requests a relaxation of the closure criterion for chloride from 600 mg/kg to 10,000 mg/kg. Mewbourne affirms that attempting to excavate impacted soil to ≤600 mg/kg chloride would require disturbing the underlying HDPE liner, which could unnecessarily compromise its integrity and impermeability. Given the stable site conditions, low permeability of the underlying soil, and absence of potential subsurface contaminant migration pathways, leaving marginally impacted soil in-situ and avoiding damage to the impermeable liner would "...provide an equal or better protection of fresh water, public health and the environment" than excavation to ≤600 mg/kg chloride, pursuant to Subsection 19.15.29.14 A(2) NMAC.

7.0 PROPOSED REMEDIAL ACTIVITIES

Mewbourne proposes the following remedial activities designed to advance the Site toward an NMOCD-approved closure:

- Utilizing mechanical equipment, impacted soil within the release margins will be excavated and stockpiled on-site, pending final disposition.
    - The excavation will be advanced vertically until field tests and field observations suggest that concentrations of benzene, BTEX, TPH, and chloride are below the proposed Closure Criteria of 10 mg/kg; 50 mg/kg; 100 mg/kg; and 10,000 mg/kg, respectively. If excavation to 10,000 mg/kg chloride cannot be achieved without the risk of compromising the HDPE liner, a protective cushion of material at least six (6) inches thick will be left in-situ to prevent damage to the liner during backfilling activities.
    - The sidewalls of the excavated area(s) will be advanced until field tests and field observations suggest that benzene, BTEX, TPH, and chloride concentrations are below 10 mg/kg, 50 mg/kg, 100 mg/kg, and 600 mg/kg, respectively (or to the extent practicable).
    - Should any holes or breaches be discovered (or inadvertently created) in the HDPE liner during the course of excavation activities, the compromised section(s) of the liner will be removed, and any underlying impacted soil will

be excavated until field tests and field observations suggest that benzene, BTEX, TPH, and chloride concentrations are below the applicable Closure Criteria. The liner will be repaired to restore its integrity and impermeability prior to backfilling the excavated area(s).

- Upon completion of excavation activities, representative five-point composite confirmation soil samples will be collected every 200 square feet from the sidewalls and floor(s) of the excavated area(s) to be submitted for laboratory analysis. In addition, discrete grab samples will be collected from wet or visibly stained areas inferred to have been affected by the release, as necessary. The excavation will be advanced as necessary if any exceedances are identified.
- Excavated soil will be transferred to an NMOCD-permitted surface waste facility for disposal.
- Upon receiving laboratory analytical results from confirmation soil samples, the excavated area(s) will be backfilled and restored as described in Section 8.0 below.
- Upon completion of all proposed remedial activities, a *Remediation Summary & Soil Closure Request* will be prepared detailing field activities and laboratory analytical results from confirmation soil samples.

Requesting a remediation plan approval with this submission?	[X] Yes [ ] No
Requesting a deferral of remediation closure due date with the approval of this submission?	[ ] Yes [X] No
Have the lateral and vertical extents of contamination been fully delineated?	[X] Yes [ ] No
Was this release entirely contained within a lined containment area?	[X] Yes [ ] No
On what estimated date will (or did) the remediation commence?	8/25/2025
On what date will (or did) the final sampling or liner inspection occur?	9/15/2025
On what date will (or was) the remediation complete(d)?	9/22/2025
What is the total surface area (sq. ft.) in need of or that will *eventually* be reclaimed?	~15,596
What is the total volume (cy) in need of or that will *eventually* be reclaimed?	~2,934
What was the total surface area (sq. ft.) that has or will be remediated?	~15,596
What was the total volume (cy) that has or will be remediated?	~2,934
This remediation utilized the following processes to remediate/reduce contaminants:	
(Ex Situ) Excavation and off-site disposal (i.e. dig and haul, hydrovac, etc.)	[X] Yes [ ] No
(Ex Situ) Excavation and on-site remediation (i.e. On-Site Land Farms)	[ ] Yes [X] No
(In Situ) Soil Vapor Extraction	[ ] Yes [X] No
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	[ ] Yes [X] No
(In Situ) Biological processing (i.e. Microbes/Fertilizer, etc.)	[ ] Yes [X] No
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	[ ] Yes [X] No
Ground Water Abatement pursuant to 19.15.30 NMAC	[ ] Yes [X] No
Other (Non-listed remedial process)	[ ] Yes [X] No
Which OCD approved facility was or will be used for off-site disposal?	R360 Red Bluff Facility
NMOCD Disposal Facility ID?	Texas
Summarize any additional remediation activities not included by answers above.	N/A

8.0 RESTORATION, RECLAMATION & RE-VEGETATION PLAN

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

The release was limited to the lined production pad of an active tank battery and did not impact the adjacent pasture. Final reclamation and revegetation will be conducted upon decommissioning and abandonment of the location in accordance with Section 19.15.29.13 NMAC. The reclaimed area will be revegetated with an agency and/or landowner-approved seed mix during the first favorable growing season following closure of the facility. The seed mix will be certified as weed-free and installed at the prescribed rate utilizing either a seed drill or a broadcaster and harrow.

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

9.0 LIMITATIONS

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

This report has been prepared for the benefit of Mewbourne Oil Company. Use of the information contained in this report is prohibited without the consent of Etech and/or Mewbourne Oil Company.

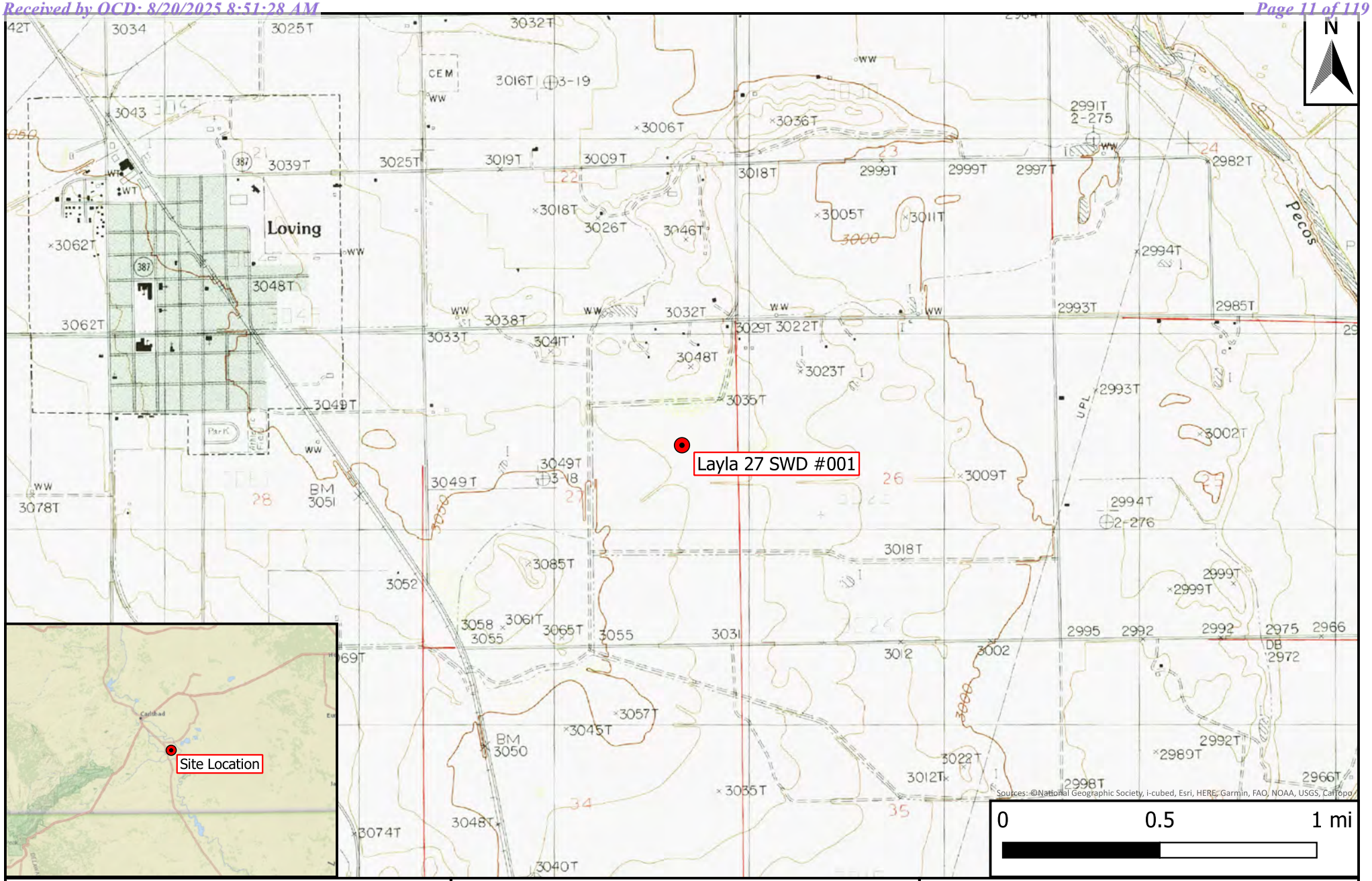
10.0 DISTRIBUTION

Mewbourne Oil Company
4801 Business Park Blvd.
Hobbs, NM 88240

New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division, District 2
811 S. First Street
Artesia, NM 88210

(Electronic Submission)

Figure 1
Site Location Map



Legend

- Site Location

Figure 1
Site Location Map
Mewbourne Oil Company
Layla 27 SWD #001
GPS: 32.27803, -104.06982
Eddy County, New Mexico

eTECH Environmental & Safety Solutions, Inc.

Drafted: bja Checked: rlc Date: 11/18/24

Figure 2A & 2B
Site Characterization Maps

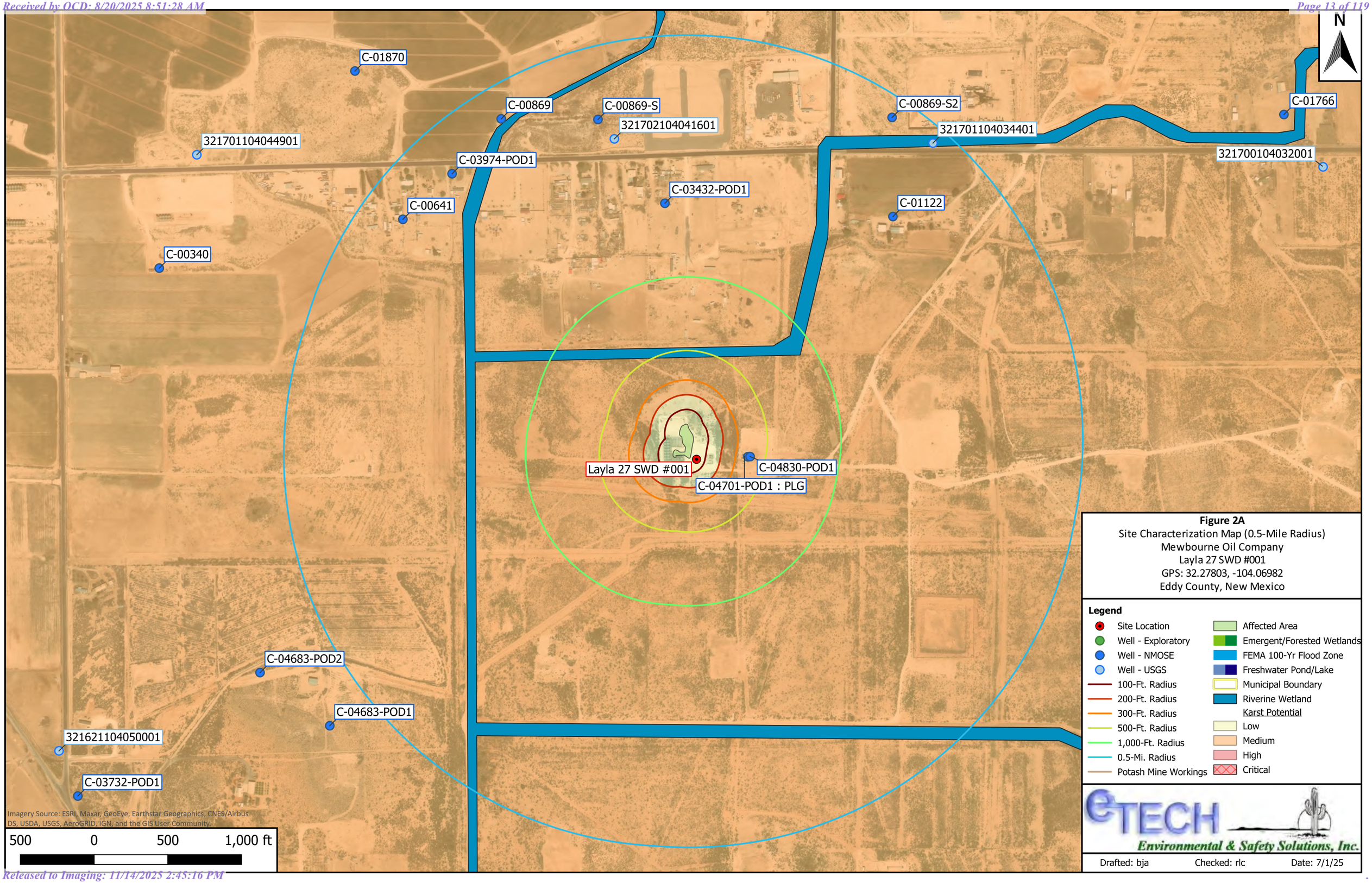


Figure 2A
Site Characterization Map (0.5-Mile Radius)
Mewbourne Oil Company
Layla 27 SWD #001
GPS: 32.27803, -104.06982
Eddy County, New Mexico

Legend

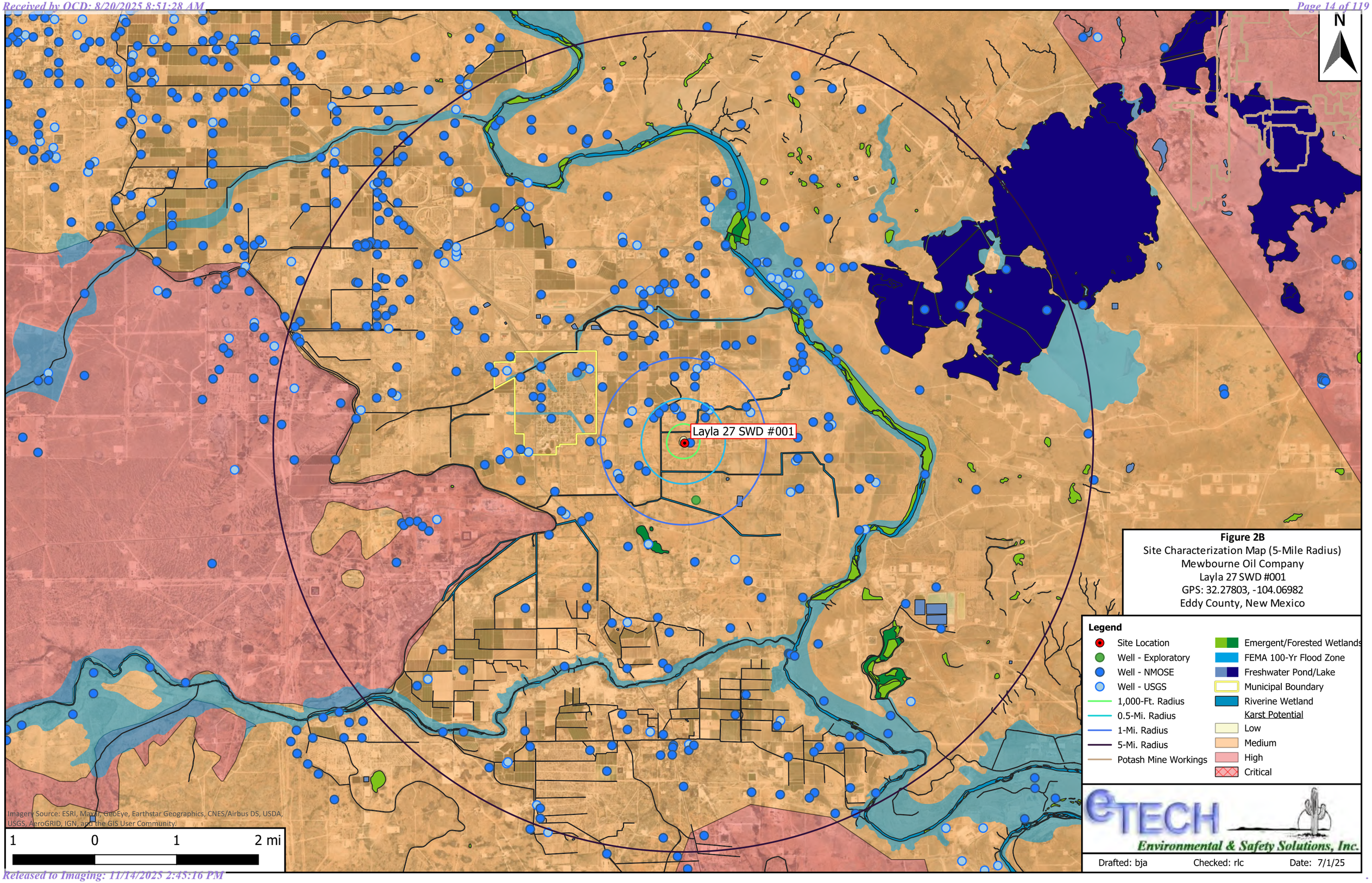
- Site Location
- Well - Exploratory
- Well - NMOSE
- Well - USGS
- 100-Ft. Radius
- 200-Ft. Radius
- 300-Ft. Radius
- 500-Ft. Radius
- 1,000-Ft. Radius
- 0.5-Mi. Radius
- Potash Mine Workings
- Affected Area
- Emergent/Forested Wetlands
- FEMA 100-Yr Flood Zone
- Freshwater Pond/Lake
- Municipal Boundary
- Riverine Wetland

Karst Potential

- Low
- Medium
- High
- Critical

eTECH Environmental & Safety Solutions, Inc.

Drafted: bja Checked: rlc Date: 7/1/25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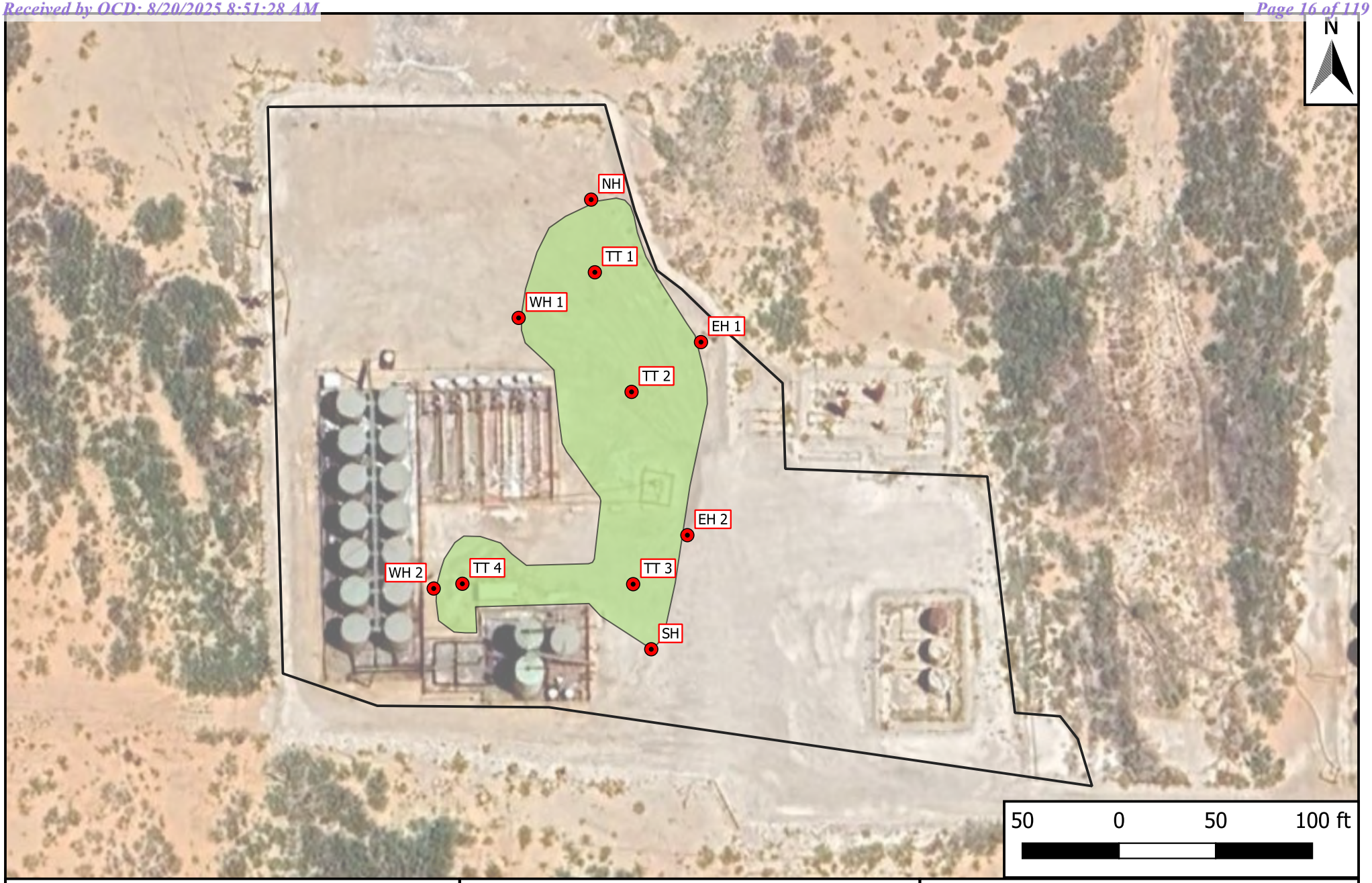
Layla 27 SWD #001
Imagery Source: ESRI, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
1 0 1 2 mi
Figure 2B
Site Characterization Map (5-Mile Radius)
Mewbourne Oil Company
Layla 27 SWD #001
GPS: 32.27803, -104.06982
Eddy County, New Mexico
Legend
Site Location
Well - Exploratory
Well - NMOSE
Well - USGS
1,000-Ft. Radius
0.5-Mi. Radius
1-Mi. Radius
5-Mi. Radius
Potash Mine Workings
Emergent/Forested Wetlands
FEMA 100-Yr Flood Zone
Freshwater Pond/Lake
Municipal Boundary
Riverine Wetland
Karst Potential
Low
Medium
High
Critical
eTECH
Environmental & Safety Solutions, Inc.
Drafted: bja
Checked: rlc
Date: 7/1/25

Figure 3
Sample Location Map



Legend

- Affected Area (≈15,596 ft²)
- Pad Liner Extent
- Delineation Sample Point

Figure 3
Sample Location Map
Mewbourne Oil Company
Layla 27 SWD #001
GPS: 32.27803, -104.06982
Eddy County, New Mexico

eTECH Environmental & Safety Solutions, Inc.

Drafted: bja Checked: rlc Date: 3/26/25

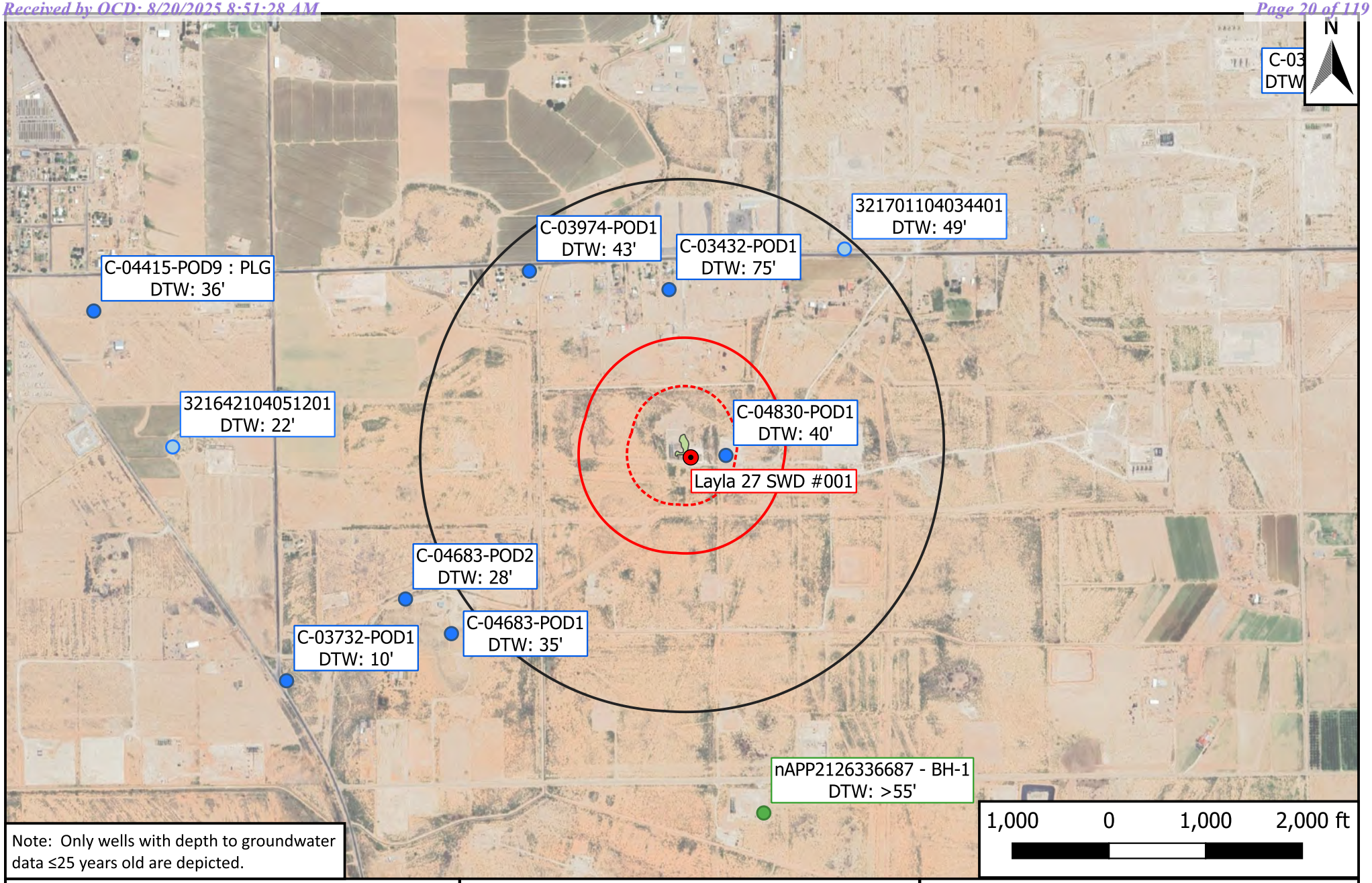
Table 1
Concentrations of BTEX, TPH & Chloride in Soil

Table 1
Concentrations of BTEX, TPH & Chloride in Soil
Mewbourne Oil Company
Layla 27 SWD #001
NMOCD Ref. #: nAPP2428849677

Proposed Closure Criteria				10	50	N/A	N/A	N/A	N/A	100	10,000
				SW 846 8021B		SW 846 8015M Ext.					4500 Cl
Sample ID	Date	Depth (Feet)	Soil Status	Benzene (mg/kg)	BTEX (mg/kg)	GRO C_6-C_{10} (mg/kg)	DRO C_{10}-C_{28} (mg/kg)	GRO + DRO C_6-C_{28} (mg/kg)	ORO C_{28}-C_{36} (mg/kg)	TPH C_6-C_{36} (mg/kg)	Chloride (mg/kg)
TT-1 @ SURF	2/14/2025	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	**36,400**
TT-1 @ 1'	2/14/2025	1	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	8,000
TT-2 @ SURF	2/14/2025	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	**34,400**
TT-2 @ 1'	2/14/2025	1	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	7,000
TT-2 @ 2'	2/14/2025	2	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	3,520
TT-2 @ 3'	2/14/2025	3	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	3,040
TT-3 @ SURF	2/14/2025	0	In-Situ	<0.050	<0.300	<10.0	137	137	53.6	**191**	**21,600**
TT-3 @ 1'	2/14/2025	1	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	4,080
TT-3 @ 2'	2/14/2025	2	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	2,920
TT-3 @ 3'	2/14/2025	3	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	2,680
TT-4 @ SURF	2/14/2025	0	In-Situ	<0.050	<0.300	<10.0	51.0	51.0	11.6	62.6	**60,000**
TT-4 @ 1'	2/14/2025	1	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	4,960
TT-4 @ 2'	2/14/2025	2	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	1,490
TT-4 @ 3'	2/14/2025	3	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	1,250
NH	2/14/2025	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	368
EH-1	2/14/2025	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	528
EH-2	2/14/2025	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	448
SH	2/14/2025	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	416
WH-1	2/14/2025	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	48.0
WH-2	2/14/2025	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0

Dash (-): Sample not analyzed for that constituent.
Bold: NMOCD Closure Criteria exceedance.
Red: NMOCD Reclamation Standard exceedance.
Red Border with Shading: Highest observed concentration.

Appendix A
Depth to Groundwater Information



Note: Only wells with depth to groundwater data ≤25 years old are depicted.

Legend

- Site Location
- Well - Exploratory
- Well - NMOSE
- Well - USGS
- Affected Area
- 500-Ft Radius
- 1,000-Ft Radius
- 0.5-Mi Radius

Figure 4
Inferred Depth to Groundwater Map
Mewbourne Oil Company
Layla 27 SWD #001
GPS: 32.27803, -104.06982
Eddy County, New Mexico

eTECH Environmental & Safety Solutions, Inc.

Drafted: bja Checked: rlc Date: 3/26/25

Point of Diversion Summary

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

NAD83 UTM in meters

Well Tag	POD Nbr	Q64	Q16	Q4	Sec	Tws	Rng	X	Y	Map
NA	C 04830 POD1	NE	SE	NE	27	23S	28E	587706.9	3571639.9	

*** UTM location was derived from PLSS - see Help**

Driller License:	1868	**Driller Company:**	TALON/LPE LTD		
Driller Name:	ROBERT A MEYER				
Drill Start Date:	2024-05-29	**Drill Finish Date:**	2024-05-30	**Plug Date:**	
Log File Date:	2024-08-12	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:		**Depth Well:**	52	**Depth Water:**	40

Water Bearing Stratifications:

Top	Bottom	Description
23	41	Sandstone/Gravel/Conglomerate
41	42	Sandstone/Gravel/Conglomerate

Casing Perforations:

Top	Bottom
21	51

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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OSE DII AUG 12 2024 AM 9:05

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO.	OSE FILE NO(S).
POD-1 (MW-1)		C-4830

WELL OWNER NAME(S)	PHONE (OPTIONAL)
Chevron U.S.A, Inc	

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
6301 Deauville Blvd	Midland	Texas	79706

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	16	41.0916	N
	LONGITUDE	-104	4	7.14	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHJIP, RANGE) WHERE AVAILABLE

Sec 27, T23S, R 28E

2. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1868	Robert A Meyer	Talon/LPE, Ltd

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
05/29/2024	05/30/2024	52	52	40

COMPLETED WELL IS: ☐ ARTESIAN *add Centralizer info below ☐ DRY HOLE ☑ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 27

DATE STATIC MEASURED: 05/31/2024

DRILLING FLUID: ☐ AIR ☐ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ☐ ROTARY ☐ HAMMER ☐ CABLE TOOL ☑ OTHER – SPECIFY: HSA

CHECK HERE IF PITLESS ADAPTER IS INSTALLED ☐

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	21	6.275	Sch 40 PVC	Riser	2	2.25	-
21	51	6.275	Sch 40 PVC	Screen	2	2.25	0.010
51	52	6.275	Sch 40 PVC	Cone Sump	2	2.25	-

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL *(if using Centralizers for Artesian wells- indicate the spacing below)	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0	16	6.275	Portland Cement I/II	3.56	Tremie
16	19	6.275	3/8" Hydrated Bentonite Chips	0.56	Tremie
19	52	6/275	8/16 Silica Sand	6.18	Tremie

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 09/22/2022)

FILE NO. C-4830	POD NO. 1	TRN NO. 759256	
LOCATION 23S. 28E. 27 242		WELL TAG ID NO. NA	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES **(attach supplemental sheets to fully describe all units)**	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	1.5	1.5	SM: Medium brown, poorly-graded, very fine silty sand; loose/unconsolidated; dry.	Y ✓ N	
1.5	9	7.5	CL: Red/brown to pale pink/brown, vf sandy-silty clay; low-mod plast; consolidated, very stiff to hard; dry.	Y ✓ N	
9	9.5	0.5	SM: Medium brownish-grey, poorly-graded, very fine silty sand; dry.	Y ✓ N	
9.5	23	13.5	CL: Red/brown, vf sandy-silty clay; low to moderate plasticity; consolidated, very stiff to hard; dry.	Y ✓ N	
23	41	18	CL-ML: Interbedded clay and silty clay; red/brown to brown/orange; low-mod plast; consolidated, very stiff-hard; dry.	✓ Y N	
41	41.5	0.5	CL: Locally grades to very fine sandy clay; with up to 30% sand.	✓ Y N	
41.5	52	10.5	CL-ML: Interbedded clay and silty clay; red/brown to brown/orange; low-mod plast; consolidated, very stiff-hard; dry	✓ Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm):

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

OSE DII AUG 12 2024 AM 9:05

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:

Robert A Meyer — Digitally signed by Robert A Meyer DN: cn=Robert A Meyer, o=Talon/LPE, Ltd., ou=VP of Drilling, email=rmeyer@talonlpe.com, c=US Date: 2024.08.08 16:24:11 -05'00'

Robert A Meyer — 08/08/2024

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 09/22/2022)

FILE NO. C-4830	POD NO. 1	TRN NO. 759256	
LOCATION 23S.28E.27.242		WELL TAG ID NO. NA	PAGE 2 OF 2

Point of Diversion Summary

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

NAD83 UTM in meters

Well Tag	POD Nbr	Q64	Q16	Q4	Sec	Tws	Rng	X	Y	Map
	C 03432 POD1	NW	NE	NE	27	23S	28E	587527.4	3572162.5	

*** UTM location was derived from PLSS - see Help**

Driller License:	1400	**Driller Company:**	SOUTHEAST DRILLING COMPANY		
Driller Name:	MARK HAMMOND				
Drill Start Date:	2009-10-17	**Drill Finish Date:**	2009-10-25	**Plug Date:**	
Log File Date:	2009-10-26	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	45
Casing Size:	6.25	**Depth Well:**	115	**Depth Water:**	75

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2009 OCT 26 P 2:07

1. GENERAL AND WELL LOCATION

POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
C-03432-POD1	C- 03432
WELL OWNER NAME(S)	PHONE (OPTIONAL)
Ramond Lunsford	
WELL OWNER MAILING ADDRESS	CITY / STATE / ZIP
R. 170 Ash Road	Loving NM 88256

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	16	58.46	N
LONGITUDE	104	04	14.60	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS: R. 170 Ash Road 2 miles East Loving NM

2. OPTIONAL

(2.5 ACRE)	(10 ACRE)	(40 ACRE)	(160 ACRE)	SECTION	TOWNSHIP	RANGE
NW ¼	NW ¼	NE ¼	NE ¼	27	23 ☐ NORTH ☒ SOUTH	28 ☒ EAST ☐ WEST

SUBDIVISION NAME	LOT NUMBER	BLOCK NUMBER	UNIT/TRACT

HYDROGRAPHIC SURVEY	MAP NUMBER	TRACT NUMBER

3. DRILLING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1400	Mark Hammond	South East

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
10-17-09	10-20-09	115	115	75

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☒ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 65

DRILLING FLUID: ☐ AIR ☐ MUD ☐ ADDITIVES – SPECIFY:

DRILLING METHOD: ☐ ROTARY ☐ HAMMER ☒ CABLE TOOL ☐ OTHER – SPECIFY:

DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	CASING MATERIAL	CONNECTION TYPE (CASING)	INSIDE DIA. CASING (IN)	CASING WALL THICKNESS (IN)	SLOT SIZE (IN)
+18"	70	11"	6 5/8 Steel	welded	6 1/4	1.88	-0
90	115	11	6 5/8 Steel	welded	6 1/4	1.88	1/8 Tx

4. WATER BEARING STRATA

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	FORMATION DESCRIPTION OF PRINCIPAL WATER-BEARING STRATA (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	YIELD (GPM)
75	92	17	Conglomerated Sandstone	25
92	110	18	Red Sand	20

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: Bailer

TOTAL ESTIMATED WELL YIELD (GPM): 45

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	C-3432	POD NUMBER	C-03432-POD1	TRN NUMBER	439577
LOCATION	23.26.27.2211 3141			PAGE 1 OF 2	

DOMESTIC 460884

5. SEAL AND PUMP

TYPE OF PUMP: ☐ SUBMERSIBLE ☐ JET ☒ NO PUMP – WELL NOT EQUIPPED ☐ TURBINE ☐ CYLINDER ☐ OTHER – SPECIFY:

ANNULAR SEAL AND GRAVEL PACK	DEPTH (FT) FROM	DEPTH (FT) TO	BORE HOLE DIA. (IN)	MATERIAL TYPE AND SIZE	AMOUNT (CUBIC FT)	METHOD OF PLACEMENT
	20	115	11	3/4 gravel	3 1/2 sacks	HAND
	0	20	11	Remix cement	—	HAND

6. GEOLOGIC LOG OF WELL

DEPTH (FT) FROM	DEPTH (FT) TO	THICKNESS (FT)	COLOR AND TYPE OF MATERIAL ENCOUNTERED (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	WATER BEARING?
0	3	3	soil	☐ YES ☐ NO
3	75	72	conglomerated Rock	☐ YES ☒ NO
75	92	17	conglomerated sandstone	☒ YES ☐ NO
92	110	18	Red SAND	☒ YES ☐ NO
110	115	5	gyp.	☐ YES ☒ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO
				☐ YES ☐ NO

ATTACH ADDITIONAL PAGES AS NEEDED TO FULLY DESCRIBE THE GEOLOGIC LOG OF THE WELL

7. TEST & ADDITIONAL INFO

WELL TEST — METHOD: ☐ BAILER ☐ PUMP ☐ AIR LIFT ☐ OTHER – SPECIFY:

TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

ADDITIONAL STATEMENTS OR EXPLANATIONS:

STATE ENGINEER OFFICE ROSWELL, NEW MEXICO 2009 OCT 26 P 1:23

8. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

Nick Hammond — SIGNATURE OF DRILLER

10-22-09 — DATE

FOR OSE INTERNAL USE — WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER	C-3432	POD NUMBER	POD1	TRN NUMBER	~~129774~~
LOCATION	23.28.27.221 3141			PAGE 2 OF 2	

DOMESTIC

505 623 8559 Office of State Engineer 03-23-2009 01:55:15 p.m. 3/3

Point of Diversion Summary

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

NAD83 UTM in meters

Well Tag	POD Nbr	Q64	Q16	Q4	Sec	Tws	Rng	X	Y	Map
	C 03974 POD1	NE	NE	NW	27	23S	28E	587087.1	3572220.9	

*** UTM location was derived from PLSS - see Help**

Driller License:	1348	**Driller Company:**	TAYLOR WATER WELL SERVICE		
Driller Name:	CLINTON E TAYLOR				
Drill Start Date:	2016-08-15	**Drill Finish Date:**	2016-08-16	**Plug Date:**	
Log File Date:	2016-10-03	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	100
Casing Size:	5.00	**Depth Well:**	75	**Depth Water:**	43

Water Bearing Stratifications:

Top	Bottom	Description
44	72	Sandstone/Gravel/Conglomerate

Casing Perforations:

Top	Bottom
55	75

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
C-3974	
WELL OWNER NAME(S)	**PHONE (OPTIONAL)**
Javier Sierra	
WELL OWNER MAILING ADDRESS	**CITY / STATE / ZIP**
R 155 Ash Rd.	Loving / NM / 88256

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	17	0.12	N
	LONGITUDE	104	4	30.61	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND

* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

Well is near the paved road at the entrance to the property.

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1348	Clinton E Taylor	Taylor Water Well Service

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
8/15/2016	8/16/2016	75	80	54

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☑ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 42.5

DRILLING FLUID: ☑ AIR ☐ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ☑ ROTARY ☐ HAMMER ☐ CABLE TOOL ☐ OTHER – SPECIFY:

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
+1.5	55	8 3/4	PVC	Spline	5	SDR 17	
55	75	8 3/4	PVC	Spline	5	SDR 17	.032

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0	20	8 3/4	20% Bentonite Grout+Chips	5 Sacks Total	Tremie+Dump

2016 OCT -3 PM 2:18

STATE ENGINEER OFFICE ROSWELL, NEW MEXICO

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 10/29/15)

FILE NUMBER C-3974 POD NUMBER TRN NUMBER 591515

LOCATION 23S.22E.27.1.2.2 Domestic PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	6	6	Soil	Y ✔ N	
6	10	4	Caliche	Y ✔ N	
10	44	34	Clay:rd,smth-slty,sme fn gravel	Y ✔ N	
44	72	28	Conglomerate:yel brn,brn,gry,mott,lmy,sme stringers of sand,water at 54'	✔ Y N	100.00
72	80	8	Clay:srnth,stky	Y ✔ N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☑ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 100.00

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION: Yield is limited to 100 GPM by casing size. Water is about 6000 PPM TDS. Poor quality.

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

CE Taylor — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

10/1/2016 — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 10/29/2015)

FILE NUMBER	C-3974	POD NUMBER	1	TRN NUMBER	591515
LOCATION	23S.28E.27.1.2.2			Domestic	PAGE 2 OF 2

Click forNews Bulletins

Groundwater levels for the Nation

Important: Next Generation Monitoring Location Page

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 321701104034401

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

USGS 321701104034401 23S.28E.23.33344 57

Eddy County, New Mexico
Latitude 32°17'02.1", Longitude 104°03'52.6" NAD83
Land-surface elevation 3,023 feet above NAVD88
The depth of the well is 150 feet below land surface.
This well is completed in the Other aquifers (N9999OTHER) national aquifer.
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period

Date	Time	? Water-level date-time accuracy	? Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Status	? Method of measurement	? Measuring agency	? Source of measurement	? Water-level approval status
>=1999			7								
2003-01-28		D	72019	48.22			1	S	USGS	S	A
2013-01-11	19:00 UTC	m	72019	56.17			1	S	USGS	S	A
2018-02-13	17:40 UTC	m	72019	42.85			1	S	USGS	S	A
2021-02-24	17:43 UTC	m	72019	47.99			1	S	USGS	S	A
2022-01-13	20:03 UTC	m	72019	48.74			1	S	USGS	S	A
2024-03-08	17:15 UTC	m	72019	47.11			1	S	USGS	S	A

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level date-time accuracy	m	Date is accurate to the Minute
Parameter code	62610	Groundwater level above NGVD 1929, feet
Parameter code	62611	Groundwater level above NAVD 1988, feet
Parameter code	72019	Depth to water level, feet below land surface
Referenced vertical datum	NAVD88	North American Vertical Datum of 1988
Referenced vertical datum	NGVD29	National Geodetic Vertical Datum of 1929
Status	1	Static
Method of measurement	S	Steel-tape measurement.
Method of measurement	Z	Other.
Measuring agency		Not determined
Measuring agency	USGS	U.S. Geological Survey
Source of measurement		Not determined
Source of measurement	S	Measured by personnel of reporting agency.
Water-level approval status	A	Approved for publication -- Processing and review completed.

Questions or Comments
Help
Data Tips
Explanation of terms
Subscribe for system changes

Accessibility FOIA Privacy Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey
Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2024-11-21 16:51:13 EST
0.38 0.24 nadww01

National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater | Geographic Area: United States | GO

Click forNews Bulletins

Groundwater levels for the Nation

Important: Next Generation Monitoring Location Page

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 321642104051201

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

USGS 321642104051201 23S.28E.28.232341

Eddy County, New Mexico
Latitude 32°16'42", Longitude 104°05'12" NAD27
Land-surface elevation 3,051 feet above NAVD88
The depth of the well is 162 feet below land surface.
This well is completed in the Other aquifers (N9999OTHER) national aquifer.
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period

Date	Time	? Water-level date-time accuracy	? Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Status	? Method of measurement	? Measuring agency	? Source of measurement	? Water-level approval status
>=1999			7								
2003-01-28		D	72019	21.82			1	S	USGS	S	A

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Parameter code	62610	Groundwater level above NGVD 1929, feet
Parameter code	62611	Groundwater level above NAVD 1988, feet
Parameter code	72019	Depth to water level, feet below land surface
Referenced vertical datum	NAVD88	North American Vertical Datum of 1988
Referenced vertical datum	NGVD29	National Geodetic Vertical Datum of 1929
Status	1	Static
Method of measurement	S	Steel-tape measurement.
Method of measurement	Z	Other.
Measuring agency		Not determined
Measuring agency	USGS	U.S. Geological Survey
Source of measurement		Not determined
Source of measurement	S	Measured by personnel of reporting agency.
Water-level approval status	A	Approved for publication -- Processing and review completed.

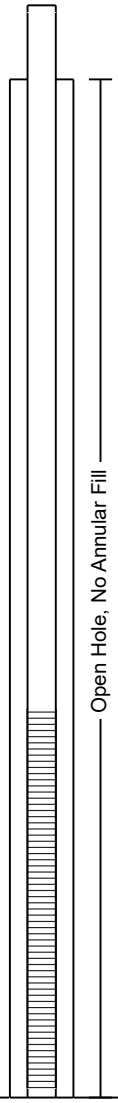
Environmental & Safety Solutions, Inc.

Soil Boring/Temporary Monitor Well BH-1

Company: Mewbourne Oil Company	**Well/Borehole ID:** BH-1	**Drilling Company:** H&R Enterprises, LLC
Site: Speedwagon 27 W0PA Fee #2H	**Coordinates (NAD 83):** 32.267902,-104.067480	**Driller:** Jim Hawley
NMOCD Reference #: nAPP2126336687	**Drilling Date:** 6/4/2024	**Drilling Method:** Air Rotary
Location: Eddy Co., NM	**Depth of Boring (ft):** 55	**Logged By:** Jim Hawley
PLSS: U/L "A", Sec. 34, T23S, R28E	**Depth to Groundwater (ft):** >55	**Drafted By:** Ben J. Arguijo
	Plugging Date: 6/7/2024	**Draft Date:** 8/15/2024
Completion: N/A	**Casing:** 2" PVC	**Screen:** 0.020" Slotted

Comments: N/A

Depth (ft)	Groundwater	Lithology	Material Description	Petroleum Odor	Petroleum Stain	PID Reading
0			Caliche - 100%	N	N	-
5			Topsoil 60% - Red Clay 40%	N	N	-
10			Soapstone 70% - Gypsum 30%	N	N	-
15			Fine Sand 15% - Clay 85%	N	N	-
20			Red Clay 100%	N	N	-
25			Grey Clay 100%	N	N	-
30				N	N	-
35				N	N	-
40				N	N	-
45				N	N	-
50				N	N	-
55				N	N	-
60			Notes: • Lines between material types represent approximate boundaries. Actual transitions may be gradual. • The exploratory soil boring was left open for over 72 hours. No indications of inflow and/or accumulation of water were noted during the advancement of the soil boring or prior to plugging and abandonment.			

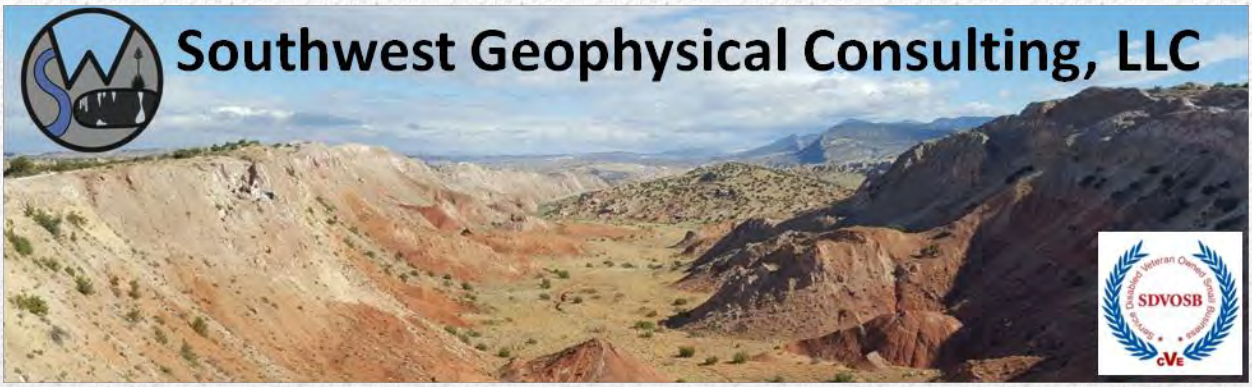


Disclaimer This bore log is intended for environmental not geotechnical purposes.

Appendix B
Pad Liner Installation (2016)

Map extracted from the *Corrective Action Plan* for NMOCD Incident ID #nAB1609149408 (2RP-3626), dated May 8, 2016.
https://ocdimage.emnrd.nm.gov/Imaging/FileStore/artesia/ao/20160519/pab1609148979_05_19_2016_12_25_54.pdf

Appendix C
Environmental Karst Study Report



Environmental Karst Study Report
Mewbourne Layla SWD 27 No. 1
Eddy County, New Mexico

Prepared For:

eTech Environmental & Safety Solutions, Inc.
6309 Indiana Avenue, Suite D
Lubbock, TX 79413

☐ Positive within 200 feet of spill delineation boundary

☑ Negative within 200 feet of spill delineation boundary

☐ Stable ☑ Unstable Ground

☐ Karst Monitor Recommended

May 23, 2025

ETEC-014-20250403

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MMXXV

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1.0 INTRODUCTION

This report was commissioned by eTech Environmental & Safety Solutions, Inc. (hereinafter referred to as "the client"), on April 3, 2025, for the purpose of conducting an environmental karst study within an area encompassing the Mewbourne Layla SWD 27 No. 1 release site (hereinafter termed “LS271”) centered at N 32.278365° W 104.069891°.

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 delineation boundary of the Mewbourne Layla SWD 27 No. 1 release site as provided by the client via e-mail (**Layla SWD 27 001.kmz**) on April 8, 2025, using electrical resistivity imaging[3].

1.2 Summary of Findings

- **No surface karst features exist within the 200-foot (61-meter) perimeter of the spill delineation boundary.**
- One recognized surface feature lies within the 200-*meter* survey boundary. This feature is likely related to soil piping rather than dissolution of bedrock.
- **One anomaly consistent with a subsurface air-filled void is located within the LS271 resistivity survey area, indicating a surface collapse risk exists. This anomaly is outside of the 200-foot survey boundary.**
- **Moderately well-layered stratigraphy is interpreted to exist beneath the area where the geophysical survey was conducted; however, due to the possible subsurface void a finding of stable ground is not warranted until the anomaly is field checked.**

1.3 Affected Environment

The LS271 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 **MEDIUM** karst occurrence zone (MKOZ)[5] (**Figure 1**).

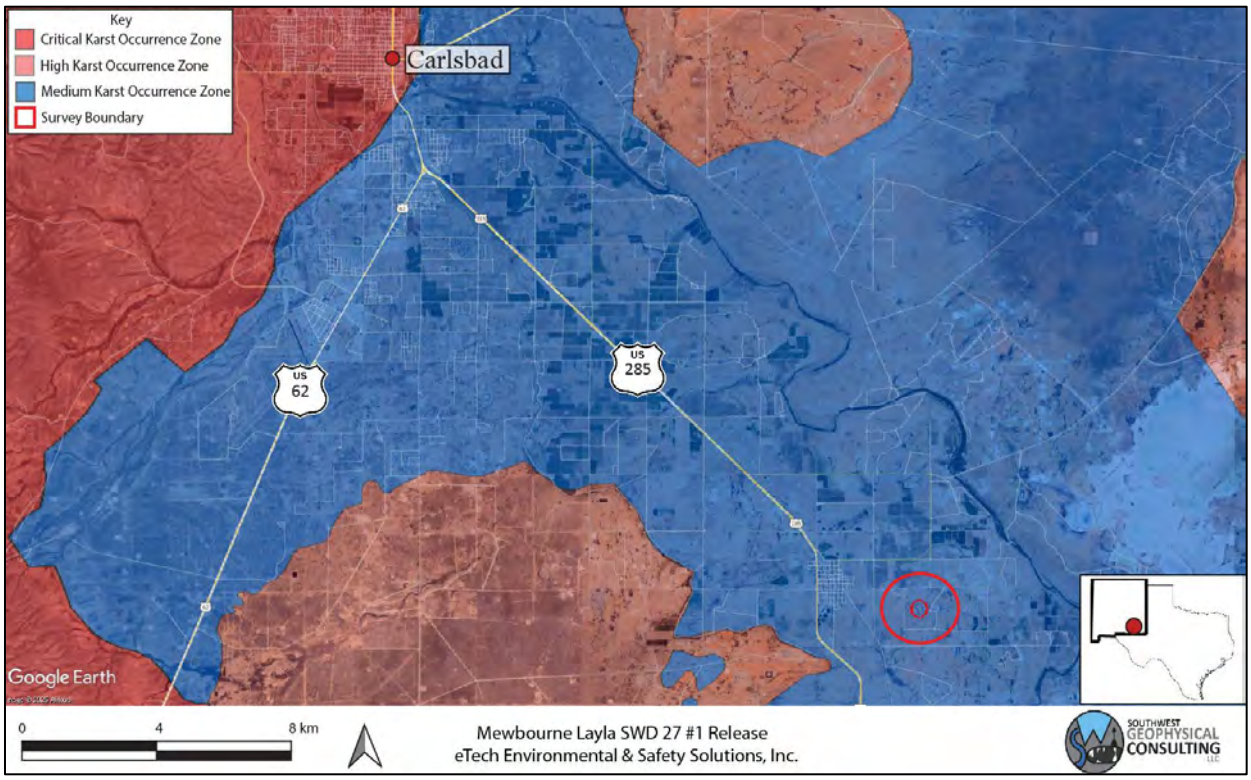

Figure 1: Karst occurrence zone overview. Background image credit: Google Earth. Image date: August 21, 2024. Image datum: WGS-84.

A medium karst occurrence zone is defined as an area in known soluble rock types that may have a shallow insoluble overburden. These areas may contain isolated karst features such as caves and sinkholes. Groundwater recharge may not be wholly dependent on karst features, but the karst features still provide the most rapid aquifer recharge in response to surface runoff [4].

Due to the rapidity with which evaporite karst develops, locations within BLM-CFO designated karst occurrence zones 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 eTech Environmental & Safety Solutions, 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 in the field should be conducted 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 date 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 21.4 kilometers (13.3 miles) southeast of Carlsbad, New Mexico, southeast of the junction of U.S. Highway 285 and West Ash Road. The release site is located within the NE ¼ section of section 27, NM T23S R28E[6] (**Figure 1** and **Figure 2**). The region has flat-lying 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 MKOZ[5] (**Figure 1**) and within privately managed land[10] (**Figure 2**).

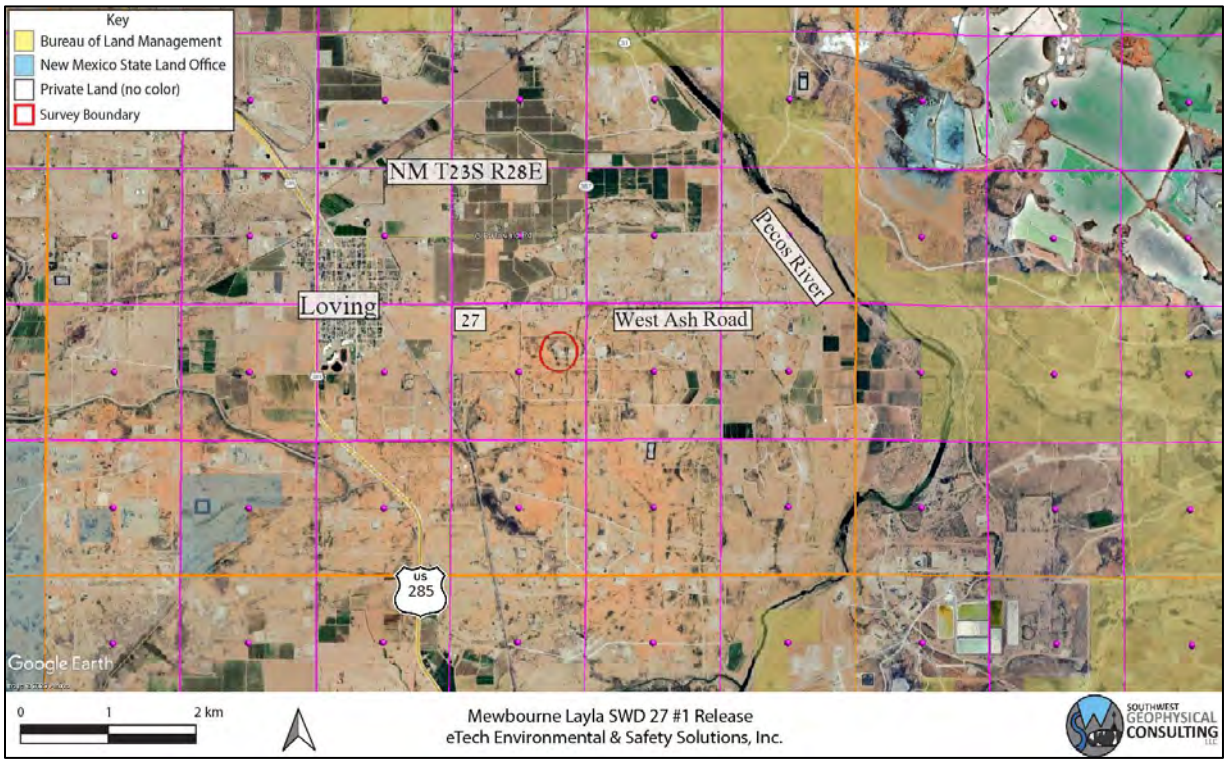

Figure 2: Land ownership and PLSS overview. Background image credit: Google Earth. Image date: July 13, 2024. Image datum: WGS-84.

2.2 Local Geology Summary

The site for the LS271 survey is located at an elevation of 926 meters (3,038 feet), ± 3 meters (9.8 feet), and is located within a region underlain by the Permian Rustler Formation (Pru). The area is mantled by thin gypsiferous soils (gypsite), Quaternary alluvium (Qal), and piedmont gravels (Qp)[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].

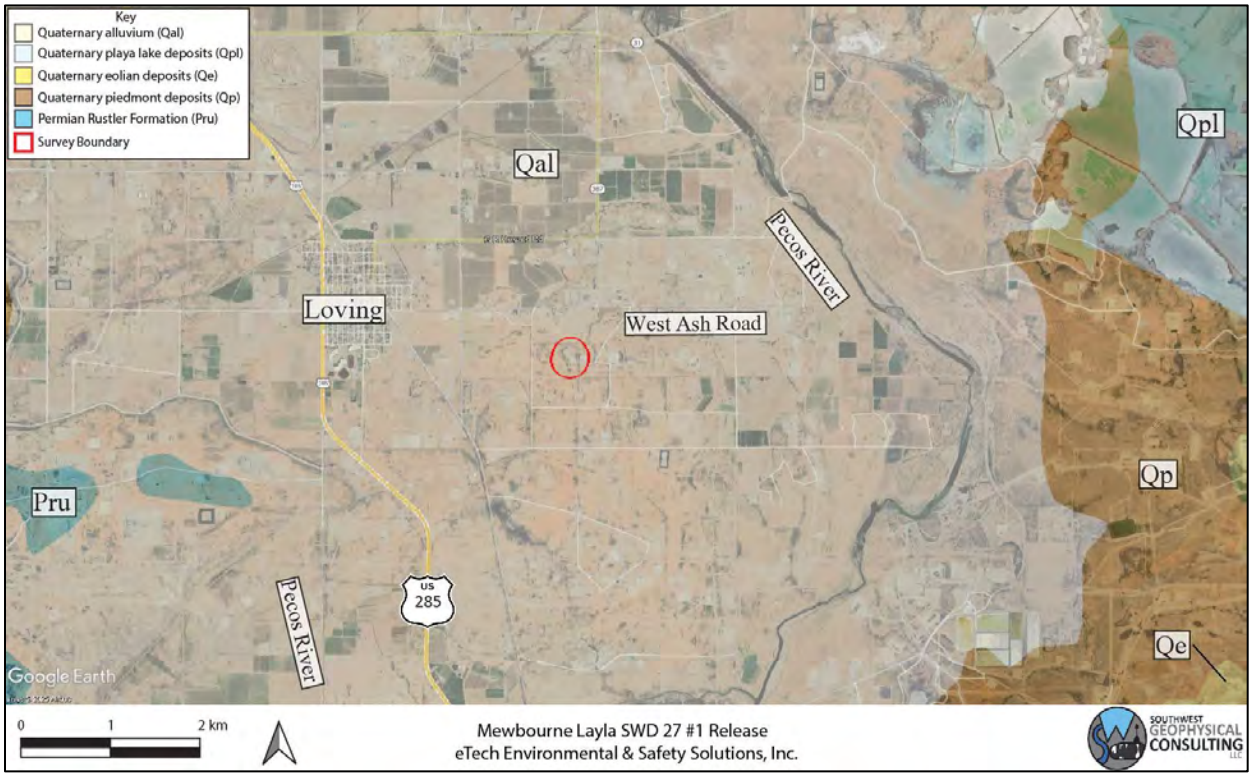

Figure 3: Geology overview. Geology map credit: The Digital Geologic Map of New Mexico in ARC/INFO Format. Background image credit: Google Earth. Image date: July 13, 2024. Image datum: WGS-84.

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 14, 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 April 25, 2025[15]; the Loving, 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 results within the survey boundary.

Surface karst surveys are conducted by sUAS at low elevation within 200 meters of the spill delineation boundary[3] (**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].

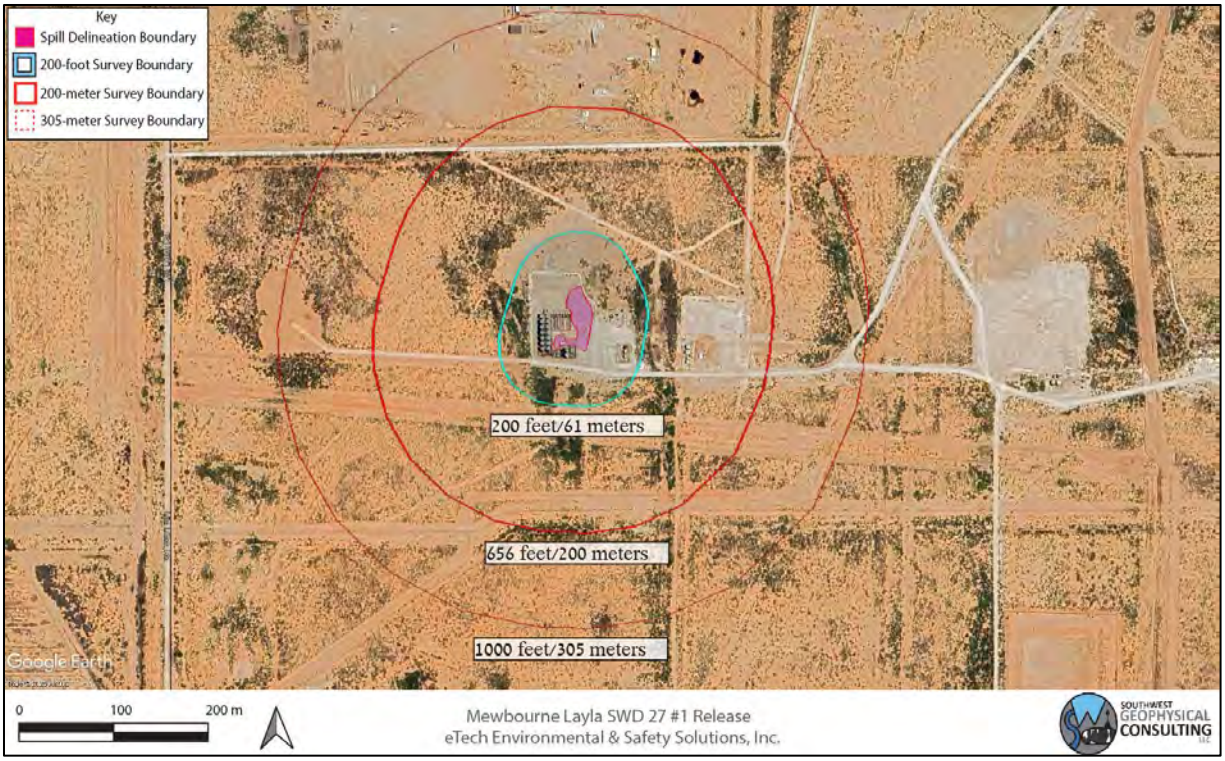

Figure 4: Surface survey overview. Background image credit: Google Earth. Image date: July 13, 2024. Datum: WGS-84.

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 an aerial survey 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 April 11, 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 May 6, 2025.

2.3.2 Geophysical Survey

For this survey, an Advanced Geosciences Inc. (AGI) SuperSting™ Wifi R8 with a multi-electrode switchbox, a 42-electrode array of 40-centimeter-long electrodes, and a tablet controller were used to image the subsurface. This survey consisted of three resistivity lines in a dipole-dipole configuration: line LS27101 was laid out south to north, while lines LS27102 and LS27103 were laid out west to east. LS27101 consisted of 42 electrodes, while LS27102 and LS27103 consisted of 28 electrodes, all at 5-meter spacing, resulting in 205-meter-long and 135-meter-long arrays, respectively (**Figure 5**, **Table 1**). Two preconfigured command files were used to run the data collection (DiDi42 and DDSG28). The 42-electrode configuration provided a depth of investigation of 41 meters (135 feet) while the 28-electrode configurations provided a depth of investigation of 27 meters (89 feet), all with 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.

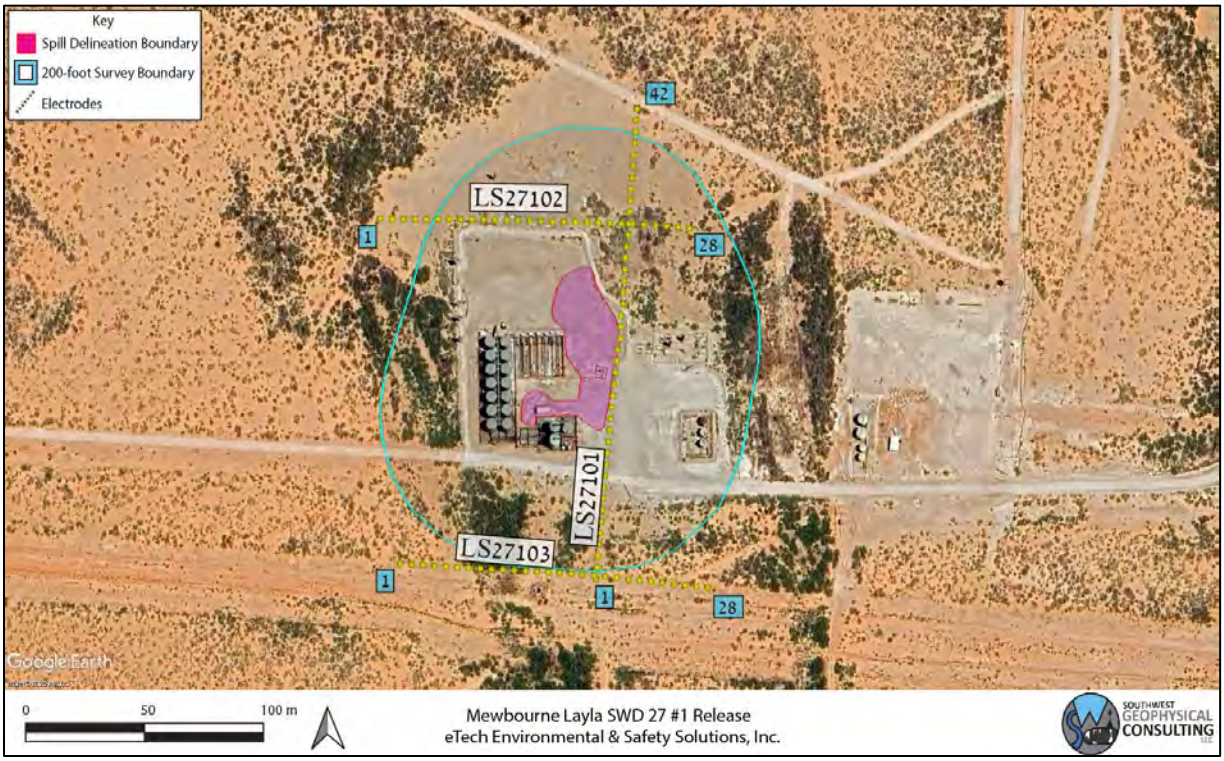

Figure 5: Geophysical survey overview. LS27101 was conducted with 42 electrodes, while LS27102 and LS27103 were conducted with 28 electrodes each; all at 5-meter spacing (yellow dots denoted with blue numbers). Background image credit: Google Earth. Image date: July 13, 2024. Image datum: WGS-84.

Table 1 provides basic line data. Detailed information for each line 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 LS271_ERI_Points.kmz file contains all the points for the survey line listed in the file name. These data are available in the accompanying file ETEC-014-20250403_LS271_Data_Files.kmz.

File Name:	Completed By:	Date:
LS27101.kmz	Garrett Jorgensen Olague – Senior Field Geologist Britt Bommer – Field Geologist Steven Kesler – Field Geologist	4/29/2025
LS27102.kmz		
LS27103.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 Steven Kesler on April 29, 2025.

3.0 RESULTS

3.1 Surface Karst Survey

The desk study and surface karst survey located no surface karst features within the 200-foot (61-meter)[1] survey boundary.

One recognized surface karst feature is located within the 200-*meter* survey boundary but outside of the 200-*foot* (61-meter) survey boundary (**Figure 6**, **Table 3**). Recognized surface karst features are features that are positively identified in either satellite or aerial imagery as karst features and the features have been visited by a qualified karst professional in the field and fully identified. This feature is a suffosion sinkhole along a pipeline. During the field visit it was determined that too much soil was missing for this to be related to soil compaction along the pipeline and instead is more likely associated with either a void that was intersected during trenching and subsequently buried, or soil piping associated with the arroyo 20 meters south. Based on the geology of this area, it is more likely associated with soil piping and this is pseudokarst rather than karst. Images for the feature are available on request.

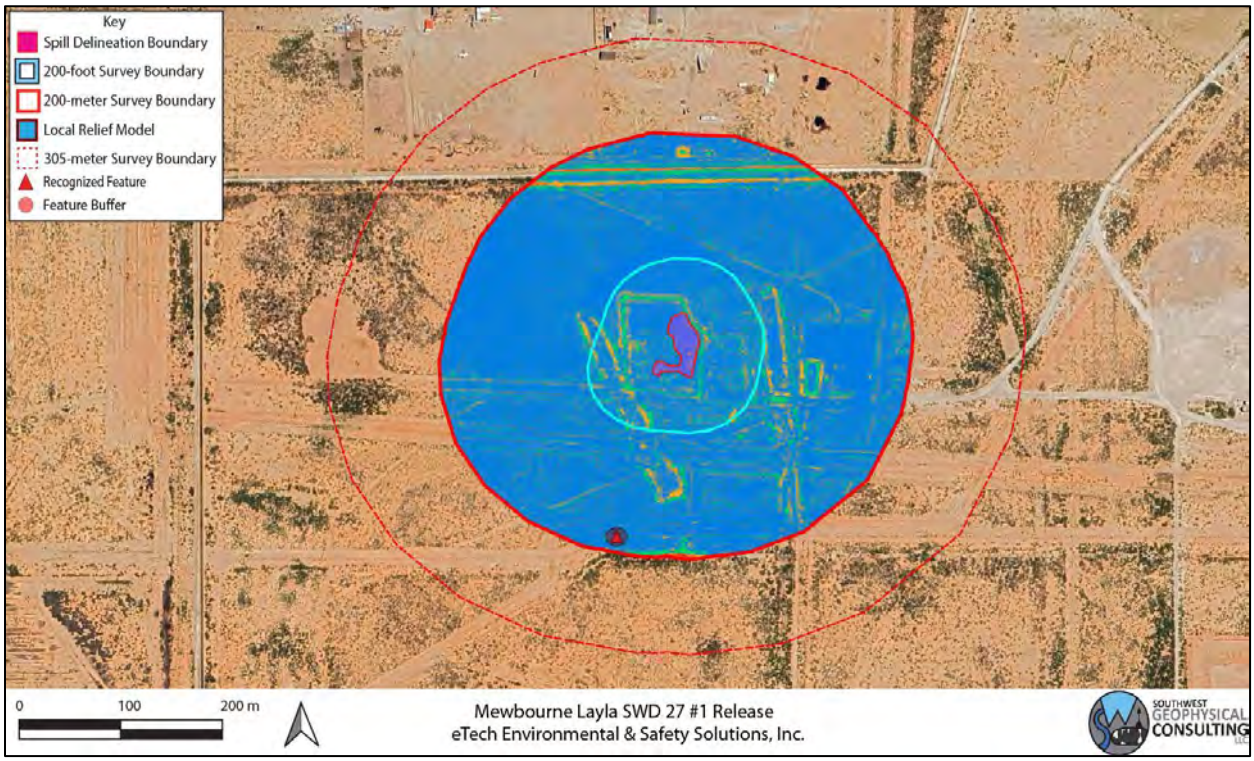

Figure 6: Surface karst survey results. Background image credit: Google Earth. Image date: July 14, 2024. Image datum: WGS-84.

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

Caution should be exercised while operating in or around all karst-related features due to the possibility of near-surface voids. Employing a BLM-CFO approved karst monitor on site during these activities should be considered.

Table 3 contains a list of features identified during the surface karst survey and subsequent imagery analysis. Each feature is identified with a feature identification number (Feature ID), the type of feature, estimated size (in meters), recommended buffer (in meters), the likelihood of this feature being a surface karst feature (modifiers H/M for high or medium likelihood, V for field verified), and its location in WGS-84/UTM-13 (EPSG: 32613).

Table 3: Surface Karst Feature Data Table

KF Status	Feature ID	Type	Size (m)	Buffer (m)	Mod	Easting	Northing
RKF	250424-D01	Suffosion sinkhole	1.1	10	V	587514.259	3571459.978

NOTE: Location data provided in WGS-84/UTM 13N. RKF – recognized karst feature.

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 moderately well-layered geologic system with resistivities between 1.0 and 924 Ohm-m with occasional values to 2,100 Ohm-m (**Figure 7**). Line LS27103 contains one anomaly (A1, 27,000 Ohm-m) near the surface at the western end of the line (**Figure 7**, **Table 4**). 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.

Table 4 contains a list of subsurface anomalies identified during the geophysical survey and subsequent data analysis. Each anomaly is identified with an identification number (Feature ID), the type of feature, estimated size (in meters), estimated depth (in meters), recommended buffer (in meters), a category modifier for our database (R for resistivity anomaly, V for field verified), and the best location to drill for geotechnical verification in WGS-84/UTM-13 (EPSG: 32613).

Table 4: High-Resistivity Anomaly Data Table

KF Status	Feature ID	Type	Size (m)	Depth (m)	Buffer (m)	Mod	Easting	Northing
PKF	250429-A01	ERI anomaly	<5	10	10	R	587539.671	3571574.905

NOTE: Location data provided in WGS-84/UTM 13N. PKF – Possible karst feature.

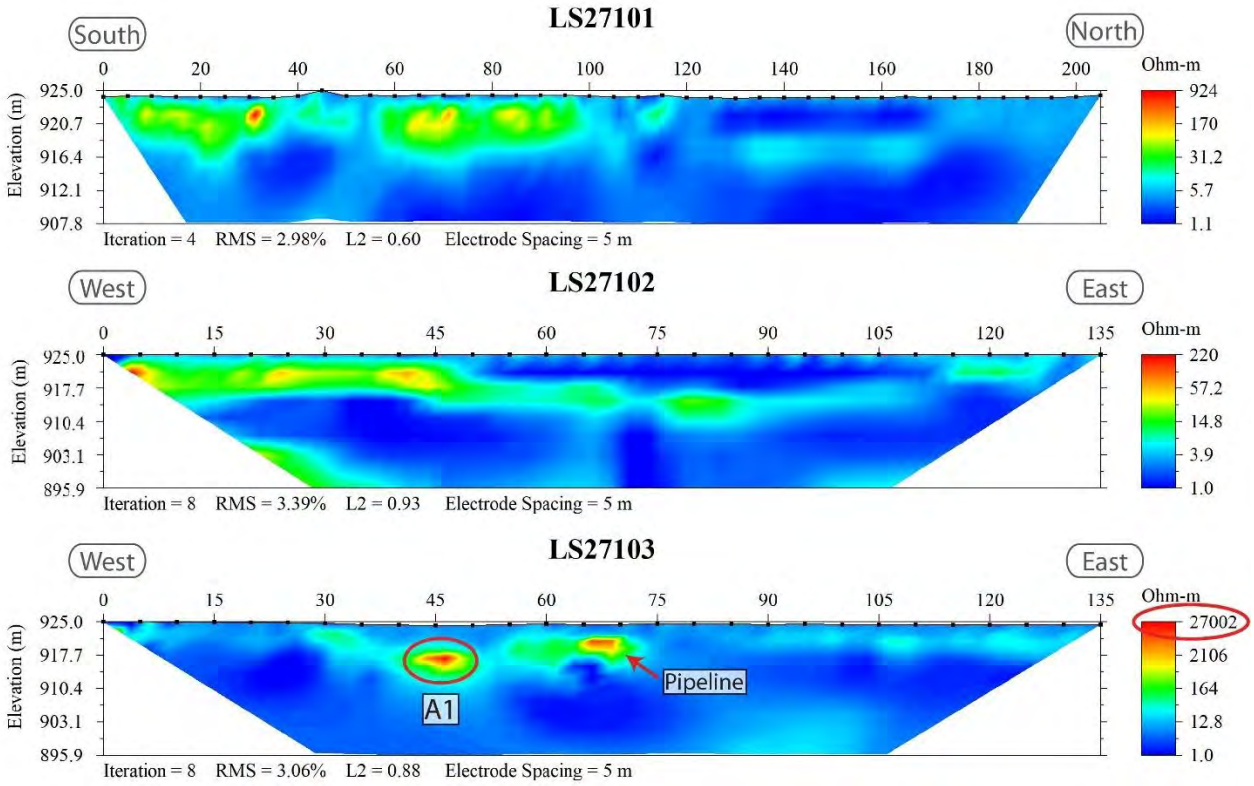

Figure 7: 2D inverted resistivity sections. Red ellipse highlights high-resistivity anomaly. Reds and oranges indicate higher resistivity values. Yellows and greens are medium-resistivity values. Blues are low-resistivity values. Please note that the color scale is relative.

4.0 DISCUSSION

One surface karst feature outside of the 61-meter (200-foot) survey boundary but within the 200-meter (656-foot) survey boundary exists at the project site. This feature could be associated with either a solutional void beneath the pipeline or with soil piping associated with the arroyo to the south. Based on the geology at this location, the latter interpretation is the most likely.

One high-resistivity anomaly (A1) consistent with an air-filled subsurface void is located just outside of the 61-meter (200-foot) survey boundary. This anomaly could also represent a sandstone or dolomite lens, or a gravel layer. The anomaly may represent a small (less than 5-meter diameter) to medium (less than 10-meter) isolated air-filled void in caliche or near-surface solution-enlarged fracture within gypsite or an evaporite layer in the Rustler Formation. Such a feature could be associated with groundwater recharge and may also represent a collapse hazard.

An additional high-resistivity anomaly is seen within line LS27103 to the east of A1. However, it aligns with an existing buried pipeline and is interpreted to be noise associated with this infrastructure.

No other anomalies interpreted as large near-surface voids are located within the study area. However, due to the resolution limit of the survey, other small voids at or near the resolution limit (2.5 – 3.0 meters) cannot be ruled out and are quite common in this area. Higher-than-average resistivity areas located 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 for remediation activities. Areas of moderate resistivity (yellows and greens) near the surface are interpreted as dry caliche soils and gypsum or dolomite bedrock of the Rustler Formation (**Figure 7** and **Figure 8**).

Resistivity of the survey area drops below 5 Ω-m at approximately 8 meters (26 feet) depth the survey area, indicating a change to clay-rich soils or possibly moist to saturated caliche/gypsite soils or gypsum/dolomite bedrock of the Rustler Formation.

Please remember that these are interpretations made from knowledge of the local subsurface materials and experience. **They remain interpretations until verified by geotechnical methods. We recommend drilling anomaly A1 to verify our interpretation, and if confirmed, resolve the type of cavity that exists before using this information for remediation planning purposes.**

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 may exist; these may be encountered during excavation and if so, should be evaluated by a karst specialist prior to continuation of the excavation. Employing a BLM-CFO approved karst monitor on site during excavation in this area 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.

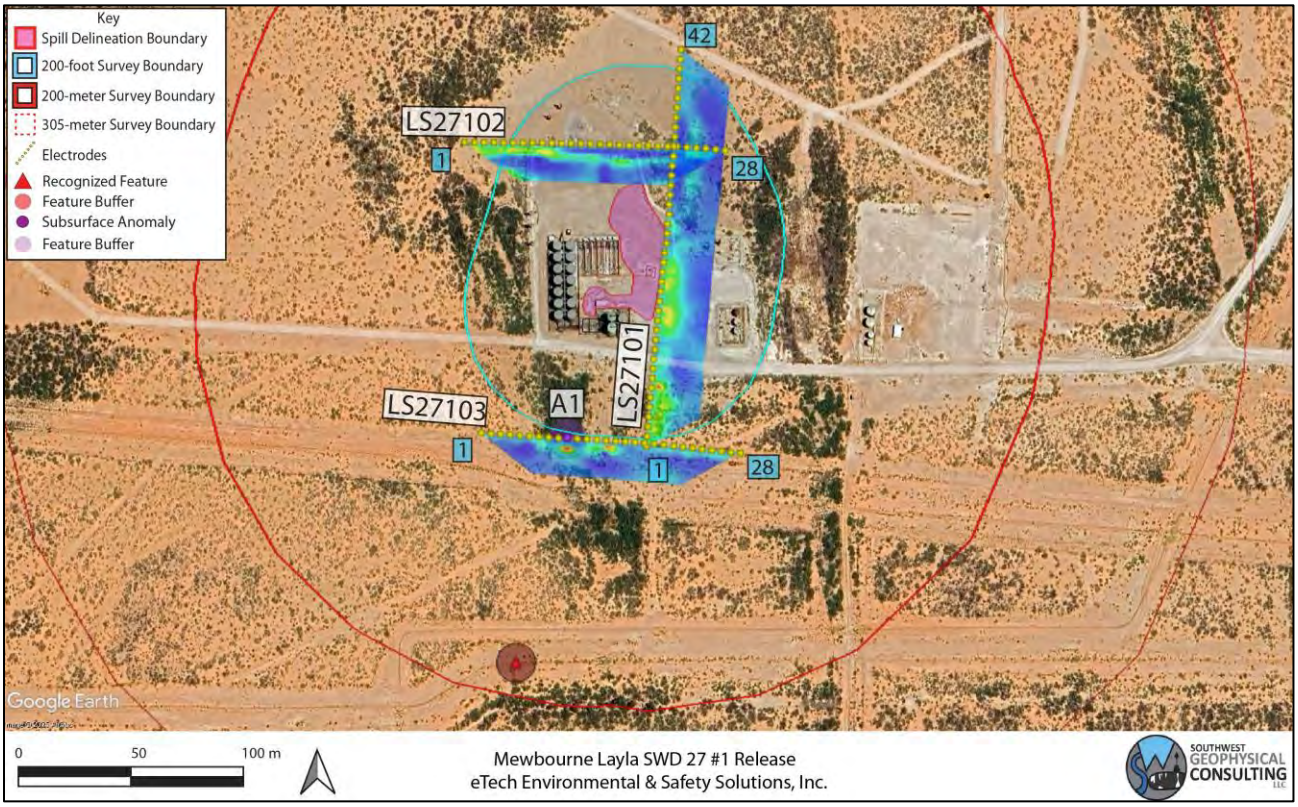

Figure 8: Data overlay. Colored trapezoids are 2D inverted resistivity lines. Background image credit: Google Earth. Image date: July 14, 2024.

5.0 SUMMARY

- **The LS271 survey contains no surface karst features within 200 feet (61 meters) of the spill delineation boundary.**
- One recognized surface feature exists within the 200-meter survey boundary. This feature is likely related to soil piping and represents a safety hazard, but not a karst hazard.
- **The LS271 survey contains one high-resistivity anomaly which we interpret as a subsurface void. This feature exists outside of the 200-foot (61-meter) survey boundary. This feature may represent a collapse risk and present a hazard to equipment operators working in that area.**
- **A moderately well-layered stratigraphy is interpreted to exist beneath the area where the geophysical survey was conducted, indicating stable ground.**
- **Geophysical interpretations should be field verified by geotechnical methods prior to using this information for remediation planning.**
- Employing a BLM-CFO approved karst monitor during excavation at this 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 (along with the associated data files) commissioned at the request of the land manager should be submitted to BLM-CFO at blm_nm_karst@blm.gov.

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

Environmental karst reports should be submitted to the appropriate project manager at the New Mexico Oil Conservation Division.

7.0 REFERENCES

1 Division, O. C. *Title 19, Chapter 15, Part 29* (Oil Conservation Division, 2018).

2 NMSLO.(ed Oil Conservation Division) (New Mexico State Land Office, Santa Fe, NM, 2018).

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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 ETEC-014-20250403 entitled, “Environmental Karst Study Report, Mewbourne Layla SWD 27 No. 1, 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, June 4, 2025.

David D. Decker
PhD, CPG-12123

Appendix D
Regulatory Correspondence

From:OCDOnline@state.nm.us <OCDOnline@state.nm.us>
Sent: Friday, January 10, 2025 1:43:54 PM
To: Connor Walker <cwalker@mewbourne.com>
Subject: [EXT] The Oil Conservation Division (OCD) has rejected the application, Application ID: 411424

To whom it may concern (c/o Connor Walker for MEWBOURNE OIL CO),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2428849677,
for the following reasons:

- **The Remediation Plan is denied. The site assessment has not been delineated horizontally or vertically. Horizontal delineation must meet the requirements of the reclamation standards 19.15.29.13 NMAC (600 mg/kg Cl, 100 mg/kg TPH, 50 mg/kg BTEX, 10 mg/kg benzene) or OCD approved "background" values for the upper 4 feet of the impacted area. Soil standards below 4 feet must be delineated/remediated to Table I Closure Criteria for the approved site-specific depth to groundwater. A surface visual footprint alone is not sufficient when assessing the horizontal extent of the release. Laboratory data must be provided as evidence of delineation efforts. Depth to ground water is inadequate per 19.15.29.11A (2). Please included POD1 04830 in the dtgw determination.**

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 411424.
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,
Scott Rodgers
Environmental Specialist - A
505-469-1830
scott.rodgers@emnrd.nm.gov

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

Appendix E
Field Data

eTECH Environmental & Safety Solutions, Inc.

Sample Log

Date: _____

Project: Layla SWD 27 #001

Project Number: 21279 Latitude: 32.278289 Longitude: -104.070126

Sample ID	PID/Odor	Chloride Conc.	GPS
TT-1 @ Surface		26416	
TT-1 @ 1'		3952	
TT-2 @ Surface		26416	
TT-2 @ 1'		5024	
TT-2 @ 2'		2564	
TT-2 @ 3'		1640	
TT-3 @ Surface		26416	
TT-3 @ 1'		2836	
TT-3 @ 2'		2044	
TT-3 @ 3'		1896	
TT-4 @ Surface		26416	
TT-4 @ 1'		2480	
TT-4 @ 2'		1640	
TT-4 @ 3'		1224	
NH			
EH			
SH			
WH			

Sample Point = SP #1 @ ## etc

Floor = FL #1 etc

Sidewall = SW #1 etc

Test Trench = TT #1 @ ##

Refusal = SP #1 @ 4'-R

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

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

Stockpile = Stockpile #1

GPS Sample Points, Center of Comp Areas

Appendix F
Photographic Log

Photographic Log

Photo Number: 1 **Photo Direction:** Southeast **Photo Description:** View of the affected area.	

Photo Number: 2 **Photo Direction:** South-Southeast **Photo Description:** View of the affected area.	

Photographic Log

Photo Number: 3 **Photo Direction:** Southeast **Photo Description:** View of the affected area.	

Photo Number: 4 **Photo Direction:** Southeast **Photo Description:** View of the affected area.	

Photographic Log

Photo Number: 5 **Photo Direction:** East-Northeast **Photo Description:** View of the affected area.	

Photo Number: 6 **Photo Direction:** Northeast **Photo Description:** View of the affected area.	

Photographic Log

Photo Number: 7 **Photo Direction:** East **Photo Description:** View of test trench TT 1 and liner.	

Photo Number: 8 **Photo Direction:** Southeast **Photo Description:** View of test trench TT 2 and liner.	

Photographic Log

Photo Number: 9 **Photo Direction:** South **Photo Description:** View of test trench TT 3 and liner.	

Photo Number: 10 **Photo Direction:** South-Southeast **Photo Description:** View of test trench TT 4 and liner.	

Appendix G
Liner Integrity Inspection Report

Liner Integrity Inspection Report

Company: Mewbourne Oil Company Site Name: Layla SWD #001

Project #: 21279 Inspection Tech: David Robinson Date: 2/14/2025

Visual Inspection

Type of Secondary Containment				Containment Status			
Earthen	☒	Cement	☐	Free Fluid	☐	Traces of Leak Inside	☐
Lined	☒	Coated Fabrics/Laminates	☐	Intermittent Pooling	☐	Traces of Leak Outside	☐
Steel	☐	Other_____	☐	Intact	☒	Dry	☒

Observations

Environmental Damage

Damage from animals or vegetation compromising liner integrity	☐
Discoloration, erosion, or chemical degradation of the liner	☐
Degradation from the storm water flow or erosion of containment	☐

Comments

N/A

Physical Damage

Cracks, holes, bulges, stains, chips, or seepages in the liner system	☐
Improper or deferred maintenance of the liner system	☐
Dike wall, foundation, or embankment movement, settlement, or deterioration compromising liner integrity	☐
Degradation of the liner system at penetrations (piping, supports, wells, foundations, pads, etc.)	☐
Damage to the liner system from equipment, vehicles, foot traffic, etc.	☐
Evidence of foundation movement, settlement, or deterioration	☐

Comments *Please take pictures of any type of damage (holes, etc.)

N/A

Appendix H
Laboratory Analytical Reports

CARDINAL Laboratories

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

February 21, 2025

LANCE CRENSHAW

Etech Environmental & Safety Solutions

2617 W MARLAND

HOBBS, NM 88240

RE: LAYLA SWD 27 #001

Enclosed are the results of analyses for samples received by the laboratory on 02/17/25 13:09.

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 accreditated 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,

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Etech Environmental & Safety Solutions
LANCE CRENSHAW
2617 W MARLAND
HOBBS NM, 88240
Fax To:

Received:	02/17/2025	Sampling Date:	02/14/2025
Reported:	02/21/2025	Sampling Type:	Soil
Project Name:	LAYLA SWD 27 #001	Sampling Condition:	Cool & Intact
Project Number:	21279	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE 32.278289-104.070126		

Sample ID: TT - 1 @ SURF (H250938-01)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/18/2025	ND	1.85	92.5	2.00	2.64	
Toluene*	<0.050	0.050	02/18/2025	ND	2.06	103	2.00	1.17	
Ethylbenzene*	<0.050	0.050	02/18/2025	ND	2.21	111	2.00	2.29	
Total Xylenes*	<0.150	0.150	02/18/2025	ND	6.76	113	6.00	1.46	
Total BTEX	<0.300	0.300	02/18/2025	ND					

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

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**36400**	16.0	02/18/2025	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/18/2025	ND	198	99.1	200	1.71	
DRO >C10-C28*	<10.0	10.0	02/18/2025	ND	186	93.2	200	4.44	
EXT DRO >C28-C36	<10.0	10.0	02/18/2025	ND					

Surrogate: 1-Chlorooctane *127 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *131 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Etech Environmental & Safety Solutions
LANCE CRENSHAW
2617 W MARLAND
HOBBS NM, 88240
Fax To:

Received:	02/17/2025	Sampling Date:	02/14/2025
Reported:	02/21/2025	Sampling Type:	Soil
Project Name:	LAYLA SWD 27 #001	Sampling Condition:	Cool & Intact
Project Number:	21279	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE 32.278289-104.070126		

Sample ID: TT - 1 @ 1' (H250938-02)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/18/2025	ND	1.86	92.9	2.00	0.201	
Toluene*	<0.050	0.050	02/18/2025	ND	2.11	106	2.00	2.81	
Ethylbenzene*	<0.050	0.050	02/18/2025	ND	2.34	117	2.00	2.92	QR-03
Total Xylenes*	<0.150	0.150	02/18/2025	ND	7.12	119	6.00	3.29	QR-03
Total BTEX	<0.300	0.300	02/18/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *117 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**8000**	16.0	02/18/2025	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/18/2025	ND	198	99.1	200	1.71	
DRO >C10-C28*	<10.0	10.0	02/18/2025	ND	186	93.2	200	4.44	
EXT DRO >C28-C36	<10.0	10.0	02/18/2025	ND					

Surrogate: 1-Chlorooctane *130 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *132 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Etech Environmental & Safety Solutions
LANCE CRENSHAW
2617 W MARLAND
HOBBS NM, 88240
Fax To:

Received:	02/17/2025	Sampling Date:	02/14/2025
Reported:	02/21/2025	Sampling Type:	Soil
Project Name:	LAYLA SWD 27 #001	Sampling Condition:	Cool & Intact
Project Number:	21279	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE 32.278289-104.070126		

Sample ID: TT - 2 @ SURF (H250938-03)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/18/2025	ND	1.86	92.9	2.00	0.201	
Toluene*	<0.050	0.050	02/18/2025	ND	2.11	106	2.00	2.81	
Ethylbenzene*	<0.050	0.050	02/18/2025	ND	2.34	117	2.00	2.92	
Total Xylenes*	<0.150	0.150	02/18/2025	ND	7.12	119	6.00	3.29	
Total BTEX	<0.300	0.300	02/18/2025	ND					

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

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**34400**	16.0	02/18/2025	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/18/2025	ND	198	99.1	200	1.71	
DRO >C10-C28*	**66.7**	10.0	02/18/2025	ND	186	93.2	200	4.44	
EXT DRO >C28-C36	**17.0**	10.0	02/18/2025	ND					

Surrogate: 1-Chlorooctane *123 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *129 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Etech Environmental & Safety Solutions
LANCE CRENSHAW
2617 W MARLAND
HOBBS NM, 88240
Fax To:

Received:	02/17/2025	Sampling Date:	02/14/2025
Reported:	02/21/2025	Sampling Type:	Soil
Project Name:	LAYLA SWD 27 #001	Sampling Condition:	Cool & Intact
Project Number:	21279	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE 32.278289-104.070126		

Sample ID: TT - 2 @ 1' (H250938-04)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/18/2025	ND	1.86	92.9	2.00	0.201	
Toluene*	<0.050	0.050	02/18/2025	ND	2.11	106	2.00	2.81	
Ethylbenzene*	<0.050	0.050	02/18/2025	ND	2.34	117	2.00	2.92	
Total Xylenes*	<0.150	0.150	02/18/2025	ND	7.12	119	6.00	3.29	
Total BTEX	<0.300	0.300	02/18/2025	ND					

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

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**7000**	16.0	02/18/2025	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/18/2025	ND	198	99.1	200	1.71	
DRO >C10-C28*	<10.0	10.0	02/18/2025	ND	186	93.2	200	4.44	
EXT DRO >C28-C36	<10.0	10.0	02/18/2025	ND					

Surrogate: 1-Chlorooctane *129 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *133 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

Etech Environmental & Safety Solutions
LANCE CRENSHAW
2617 W MARLAND
HOBBS NM, 88240
Fax To:

Received:	02/17/2025	Sampling Date:	02/14/2025
Reported:	02/21/2025	Sampling Type:	Soil
Project Name:	LAYLA SWD 27 #001	Sampling Condition:	Cool & Intact
Project Number:	21279	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE 32.278289-104.070126		

Sample ID: TT - 2 @ 2' (H250938-05)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/18/2025	ND	1.86	92.9	2.00	0.201	
Toluene*	<0.050	0.050	02/18/2025	ND	2.11	106	2.00	2.81	
Ethylbenzene*	<0.050	0.050	02/18/2025	ND	2.34	117	2.00	2.92	
Total Xylenes*	<0.150	0.150	02/18/2025	ND	7.12	119	6.00	3.29	
Total BTEX	<0.300	0.300	02/18/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3520**	16.0	02/18/2025	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/18/2025	ND	198	99.1	200	1.71	
DRO >C10-C28*	<10.0	10.0	02/18/2025	ND	186	93.2	200	4.44	
EXT DRO >C28-C36	<10.0	10.0	02/18/2025	ND					

Surrogate: 1-Chlorooctane *135 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *139 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

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Analytical Results For:

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LANCE CRENSHAW
2617 W MARLAND
HOBBS NM, 88240
Fax To:

Received:	02/17/2025	Sampling Date:	02/14/2025
Reported:	02/21/2025	Sampling Type:	Soil
Project Name:	LAYLA SWD 27 #001	Sampling Condition:	Cool & Intact
Project Number:	21279	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE 32.278289-104.070126		

Sample ID: TT - 2 @ 3' (H250938-06)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/18/2025	ND	1.86	92.9	2.00	0.201	
Toluene*	<0.050	0.050	02/18/2025	ND	2.11	106	2.00	2.81	
Ethylbenzene*	<0.050	0.050	02/18/2025	ND	2.34	117	2.00	2.92	
Total Xylenes*	<0.150	0.150	02/18/2025	ND	7.12	119	6.00	3.29	
Total BTEX	<0.300	0.300	02/18/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *119 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3040**	16.0	02/18/2025	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/18/2025	ND	198	99.1	200	1.71	
DRO >C10-C28*	<10.0	10.0	02/18/2025	ND	186	93.2	200	4.44	
EXT DRO >C28-C36	<10.0	10.0	02/18/2025	ND					

Surrogate: 1-Chlorooctane *110 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *115 %* *49.1-148*

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Analytical Results For:

Etech Environmental & Safety Solutions
LANCE CRENSHAW
2617 W MARLAND
HOBBS NM, 88240
Fax To:

Received:	02/17/2025	Sampling Date:	02/14/2025
Reported:	02/21/2025	Sampling Type:	Soil
Project Name:	LAYLA SWD 27 #001	Sampling Condition:	Cool & Intact
Project Number:	21279	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE 32.278289-104.070126		

Sample ID: TT - 3 @ SURF (H250938-07)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/18/2025	ND	1.86	92.9	2.00	0.201	
Toluene*	<0.050	0.050	02/18/2025	ND	2.11	106	2.00	2.81	
Ethylbenzene*	<0.050	0.050	02/18/2025	ND	2.34	117	2.00	2.92	
Total Xylenes*	<0.150	0.150	02/18/2025	ND	7.12	119	6.00	3.29	
Total BTEX	<0.300	0.300	02/18/2025	ND					

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

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**21600**	16.0	02/18/2025	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/18/2025	ND	198	99.1	200	1.71	
DRO >C10-C28*	**137**	10.0	02/18/2025	ND	186	93.2	200	4.44	
EXT DRO >C28-C36	**53.6**	10.0	02/18/2025	ND					

Surrogate: 1-Chlorooctane *97.2 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *102 %* *49.1-148*

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Analytical Results For:

Etech Environmental & Safety Solutions
LANCE CRENSHAW
2617 W MARLAND
HOBBS NM, 88240
Fax To:

Received:	02/17/2025	Sampling Date:	02/14/2025
Reported:	02/21/2025	Sampling Type:	Soil
Project Name:	LAYLA SWD 27 #001	Sampling Condition:	Cool & Intact
Project Number:	21279	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE 32.278289-104.070126		

Sample ID: TT - 3 @ 1' (H250938-08)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/18/2025	ND	1.86	92.9	2.00	0.201	
Toluene*	<0.050	0.050	02/18/2025	ND	2.11	106	2.00	2.81	
Ethylbenzene*	<0.050	0.050	02/18/2025	ND	2.34	117	2.00	2.92	
Total Xylenes*	<0.150	0.150	02/18/2025	ND	7.12	119	6.00	3.29	
Total BTEX	<0.300	0.300	02/18/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *113 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**4080**	16.0	02/18/2025	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/18/2025	ND	198	99.1	200	1.71	
DRO >C10-C28*	<10.0	10.0	02/18/2025	ND	186	93.2	200	4.44	
EXT DRO >C28-C36	<10.0	10.0	02/18/2025	ND					

Surrogate: 1-Chlorooctane *102 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *104 %* *49.1-148*

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CARDINAL Laboratories

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Analytical Results For:

Etech Environmental & Safety Solutions
LANCE CRENSHAW
2617 W MARLAND
HOBBS NM, 88240
Fax To:

Received:	02/17/2025	Sampling Date:	02/14/2025
Reported:	02/21/2025	Sampling Type:	Soil
Project Name:	LAYLA SWD 27 #001	Sampling Condition:	Cool & Intact
Project Number:	21279	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE 32.278289-104.070126		

Sample ID: TT - 3 @ 2' (H250938-09)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/18/2025	ND	1.86	92.9	2.00	0.201	
Toluene*	<0.050	0.050	02/18/2025	ND	2.11	106	2.00	2.81	
Ethylbenzene*	<0.050	0.050	02/18/2025	ND	2.34	117	2.00	2.92	
Total Xylenes*	<0.150	0.150	02/18/2025	ND	7.12	119	6.00	3.29	
Total BTEX	<0.300	0.300	02/18/2025	ND					

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

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**2920**	16.0	02/18/2025	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/18/2025	ND	198	99.1	200	1.71	
DRO >C10-C28*	<10.0	10.0	02/18/2025	ND	186	93.2	200	4.44	
EXT DRO >C28-C36	<10.0	10.0	02/18/2025	ND					

Surrogate: 1-Chlorooctane *119 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *123 %* *49.1-148*

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CARDINAL Laboratories

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Analytical Results For:

Etech Environmental & Safety Solutions
LANCE CRENSHAW
2617 W MARLAND
HOBBS NM, 88240
Fax To:

Received:	02/17/2025	Sampling Date:	02/14/2025
Reported:	02/21/2025	Sampling Type:	Soil
Project Name:	LAYLA SWD 27 #001	Sampling Condition:	Cool & Intact
Project Number:	21279	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE 32.278289-104.070126		

Sample ID: TT - 3 @ 3' (H250938-10)

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	02/18/2025	ND	1.86	92.9	2.00	0.201	
Toluene*	<0.050	0.050	02/18/2025	ND	2.11	106	2.00	2.81	
Ethylbenzene*	<0.050	0.050	02/18/2025	ND	2.34	117	2.00	2.92	
Total Xylenes*	<0.150	0.150	02/18/2025	ND	7.12	119	6.00	3.29	
Total BTEX	<0.300	0.300	02/18/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**2680**	16.0	02/18/2025	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/18/2025	ND	198	99.1	200	1.71	
DRO >C10-C28*	<10.0	10.0	02/18/2025	ND	186	93.2	200	4.44	
EXT DRO >C28-C36	<10.0	10.0	02/18/2025	ND					

Surrogate: 1-Chlorooctane *109 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *110 %* *49.1-148*

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Analytical Results For:

Etech Environmental & Safety Solutions
LANCE CRENSHAW
2617 W MARLAND
HOBBS NM, 88240
Fax To:

Received:	02/17/2025	Sampling Date:	02/14/2025
Reported:	02/21/2025	Sampling Type:	Soil
Project Name:	LAYLA SWD 27 #001	Sampling Condition:	Cool & Intact
Project Number:	21279	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE 32.278289-104.070126		

Sample ID: TT - 4 @ SURF (H250938-11)

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	02/18/2025	ND	1.86	92.9	2.00	0.201	
Toluene*	<0.050	0.050	02/18/2025	ND	2.11	106	2.00	2.81	
Ethylbenzene*	<0.050	0.050	02/18/2025	ND	2.34	117	2.00	2.92	
Total Xylenes*	<0.150	0.150	02/18/2025	ND	7.12	119	6.00	3.29	
Total BTEX	<0.300	0.300	02/18/2025	ND					

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

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**60000**	16.0	02/18/2025	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/18/2025	ND	198	99.1	200	1.71	
DRO >C10-C28*	**51.0**	10.0	02/18/2025	ND	186	93.2	200	4.44	
EXT DRO >C28-C36	**11.6**	10.0	02/18/2025	ND					

Surrogate: 1-Chlorooctane *110 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *113 %* *49.1-148*

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CARDINAL Laboratories

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Analytical Results For:

Etech Environmental & Safety Solutions
LANCE CRENSHAW
2617 W MARLAND
HOBBS NM, 88240
Fax To:

Received:	02/17/2025	Sampling Date:	02/14/2025
Reported:	02/21/2025	Sampling Type:	Soil
Project Name:	LAYLA SWD 27 #001	Sampling Condition:	Cool & Intact
Project Number:	21279	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE 32.278289-104.070126		

Sample ID: TT - 4 @ 1' (H250938-12)

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	02/18/2025	ND	1.86	92.9	2.00	0.201	
Toluene*	<0.050	0.050	02/18/2025	ND	2.11	106	2.00	2.81	
Ethylbenzene*	<0.050	0.050	02/18/2025	ND	2.34	117	2.00	2.92	
Total Xylenes*	<0.150	0.150	02/18/2025	ND	7.12	119	6.00	3.29	
Total BTEX	<0.300	0.300	02/18/2025	ND					

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

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**4960**	16.0	02/18/2025	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/18/2025	ND	198	99.1	200	1.71	
DRO >C10-C28*	<10.0	10.0	02/18/2025	ND	186	93.2	200	4.44	
EXT DRO >C28-C36	<10.0	10.0	02/18/2025	ND					

Surrogate: 1-Chlorooctane *119 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *123 %* *49.1-148*

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Analytical Results For:

Etech Environmental & Safety Solutions
LANCE CRENSHAW
2617 W MARLAND
HOBBS NM, 88240
Fax To:

Received:	02/17/2025	Sampling Date:	02/14/2025
Reported:	02/21/2025	Sampling Type:	Soil
Project Name:	LAYLA SWD 27 #001	Sampling Condition:	Cool & Intact
Project Number:	21279	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE 32.278289-104.070126		

Sample ID: TT - 4 @ 2' (H250938-13)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/18/2025	ND	1.86	92.9	2.00	0.201	
Toluene*	<0.050	0.050	02/18/2025	ND	2.11	106	2.00	2.81	
Ethylbenzene*	<0.050	0.050	02/18/2025	ND	2.34	117	2.00	2.92	
Total Xylenes*	<0.150	0.150	02/18/2025	ND	7.12	119	6.00	3.29	
Total BTEX	<0.300	0.300	02/18/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *113 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1490**	16.0	02/18/2025	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/18/2025	ND	198	99.1	200	1.71	
DRO >C10-C28*	<10.0	10.0	02/18/2025	ND	186	93.2	200	4.44	
EXT DRO >C28-C36	<10.0	10.0	02/18/2025	ND					

Surrogate: 1-Chlorooctane *127 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *132 %* *49.1-148*

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

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Analytical Results For:

Etech Environmental & Safety Solutions
LANCE CRENSHAW
2617 W MARLAND
HOBBS NM, 88240
Fax To:

Received:	02/17/2025	Sampling Date:	02/14/2025
Reported:	02/21/2025	Sampling Type:	Soil
Project Name:	LAYLA SWD 27 #001	Sampling Condition:	Cool & Intact
Project Number:	21279	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE 32.278289-104.070126		

Sample ID: TT - 4 @ 3' (H250938-14)

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	02/18/2025	ND	1.86	92.9	2.00	0.201	
Toluene*	<0.050	0.050	02/18/2025	ND	2.11	106	2.00	2.81	
Ethylbenzene*	<0.050	0.050	02/18/2025	ND	2.34	117	2.00	2.92	
Total Xylenes*	<0.150	0.150	02/18/2025	ND	7.12	119	6.00	3.29	
Total BTEX	<0.300	0.300	02/18/2025	ND					

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

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1250**	16.0	02/18/2025	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/18/2025	ND	198	99.1	200	1.71	
DRO >C10-C28*	<10.0	10.0	02/18/2025	ND	186	93.2	200	4.44	
EXT DRO >C28-C36	<10.0	10.0	02/18/2025	ND					

Surrogate: 1-Chlorooctane *122 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *126 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Etech Environmental & Safety Solutions
LANCE CRENSHAW
2617 W MARLAND
HOBBS NM, 88240
Fax To:

Received:	02/17/2025	Sampling Date:	02/14/2025
Reported:	02/21/2025	Sampling Type:	Soil
Project Name:	LAYLA SWD 27 #001	Sampling Condition:	Cool & Intact
Project Number:	21279	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE 32.278289-104.070126		

Sample ID: EH - 1 (H250938-15)

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	02/18/2025	ND	1.86	92.9	2.00	0.201	
Toluene*	<0.050	0.050	02/18/2025	ND	2.11	106	2.00	2.81	
Ethylbenzene*	<0.050	0.050	02/18/2025	ND	2.34	117	2.00	2.92	
Total Xylenes*	<0.150	0.150	02/18/2025	ND	7.12	119	6.00	3.29	
Total BTEX	<0.300	0.300	02/18/2025	ND					

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

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**528**	16.0	02/18/2025	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/18/2025	ND	198	99.1	200	1.71	
DRO >C10-C28*	<10.0	10.0	02/18/2025	ND	186	93.2	200	4.44	
EXT DRO >C28-C36	<10.0	10.0	02/18/2025	ND					

Surrogate: 1-Chlorooctane *114 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *117 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Etech Environmental & Safety Solutions
LANCE CRENSHAW
2617 W MARLAND
HOBBS NM, 88240
Fax To:

Received:	02/17/2025	Sampling Date:	02/14/2025
Reported:	02/21/2025	Sampling Type:	Soil
Project Name:	LAYLA SWD 27 #001	Sampling Condition:	Cool & Intact
Project Number:	21279	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE 32.278289-104.070126		

Sample ID: EH - 2 (H250938-16)

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	02/18/2025	ND	1.86	92.9	2.00	0.201	
Toluene*	<0.050	0.050	02/18/2025	ND	2.11	106	2.00	2.81	
Ethylbenzene*	<0.050	0.050	02/18/2025	ND	2.34	117	2.00	2.92	
Total Xylenes*	<0.150	0.150	02/18/2025	ND	7.12	119	6.00	3.29	
Total BTEX	<0.300	0.300	02/18/2025	ND					

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

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**448**	16.0	02/18/2025	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/18/2025	ND	198	99.1	200	1.71	
DRO >C10-C28*	<10.0	10.0	02/18/2025	ND	186	93.2	200	4.44	
EXT DRO >C28-C36	<10.0	10.0	02/18/2025	ND					

Surrogate: 1-Chlorooctane *102 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *105 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Etech Environmental & Safety Solutions
LANCE CRENSHAW
2617 W MARLAND
HOBBS NM, 88240
Fax To:

Received:	02/17/2025	Sampling Date:	02/14/2025
Reported:	02/21/2025	Sampling Type:	Soil
Project Name:	LAYLA SWD 27 #001	Sampling Condition:	Cool & Intact
Project Number:	21279	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE 32.278289-104.070126		

Sample ID: WH - 1 (H250938-17)

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	02/18/2025	ND	1.86	92.9	2.00	0.201	
Toluene*	<0.050	0.050	02/18/2025	ND	2.11	106	2.00	2.81	
Ethylbenzene*	<0.050	0.050	02/18/2025	ND	2.34	117	2.00	2.92	
Total Xylenes*	<0.150	0.150	02/18/2025	ND	7.12	119	6.00	3.29	
Total BTEX	<0.300	0.300	02/18/2025	ND					

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

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	02/18/2025	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/18/2025	ND	198	99.1	200	1.71	
DRO >C10-C28*	<10.0	10.0	02/18/2025	ND	186	93.2	200	4.44	
EXT DRO >C28-C36	<10.0	10.0	02/18/2025	ND					

Surrogate: 1-Chlorooctane *111 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *114 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Etech Environmental & Safety Solutions
LANCE CRENSHAW
2617 W MARLAND
HOBBS NM, 88240
Fax To:

Received:	02/17/2025	Sampling Date:	02/14/2025
Reported:	02/21/2025	Sampling Type:	Soil
Project Name:	LAYLA SWD 27 #001	Sampling Condition:	Cool & Intact
Project Number:	21279	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE 32.278289-104.070126		

Sample ID: WH - 2 (H250938-18)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/18/2025	ND	1.86	92.9	2.00	0.201	
Toluene*	<0.050	0.050	02/18/2025	ND	2.11	106	2.00	2.81	
Ethylbenzene*	<0.050	0.050	02/18/2025	ND	2.34	117	2.00	2.92	
Total Xylenes*	<0.150	0.150	02/18/2025	ND	7.12	119	6.00	3.29	
Total BTEX	<0.300	0.300	02/18/2025	ND					

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

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	02/18/2025	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/18/2025	ND	198	99.1	200	1.71	
DRO >C10-C28*	<10.0	10.0	02/18/2025	ND	186	93.2	200	4.44	
EXT DRO >C28-C36	<10.0	10.0	02/18/2025	ND					

Surrogate: 1-Chlorooctane *104 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *107 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Etech Environmental & Safety Solutions
LANCE CRENSHAW
2617 W MARLAND
HOBBS NM, 88240
Fax To:

Received:	02/17/2025	Sampling Date:	02/14/2025
Reported:	02/21/2025	Sampling Type:	Soil
Project Name:	LAYLA SWD 27 #001	Sampling Condition:	Cool & Intact
Project Number:	21279	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE 32.278289-104.070126		

Sample ID: NH (H250938-19)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/18/2025	ND	1.86	92.9	2.00	0.201	
Toluene*	<0.050	0.050	02/18/2025	ND	2.11	106	2.00	2.81	
Ethylbenzene*	<0.050	0.050	02/18/2025	ND	2.34	117	2.00	2.92	
Total Xylenes*	<0.150	0.150	02/18/2025	ND	7.12	119	6.00	3.29	
Total BTEX	<0.300	0.300	02/18/2025	ND					

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

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**368**	16.0	02/18/2025	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/18/2025	ND	198	99.1	200	1.71	
DRO >C10-C28*	<10.0	10.0	02/18/2025	ND	186	93.2	200	4.44	
EXT DRO >C28-C36	<10.0	10.0	02/18/2025	ND					

Surrogate: 1-Chlorooctane *108 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *113 %* *49.1-148*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Etech Environmental & Safety Solutions
LANCE CRENSHAW
2617 W MARLAND
HOBBS NM, 88240
Fax To:

Received:	02/17/2025	Sampling Date:	02/14/2025
Reported:	02/21/2025	Sampling Type:	Soil
Project Name:	LAYLA SWD 27 #001	Sampling Condition:	Cool & Intact
Project Number:	21279	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE 32.278289-104.070126		

Sample ID: SH (H250938-20)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/18/2025	ND	1.86	92.9	2.00	0.201	
Toluene*	<0.050	0.050	02/18/2025	ND	2.11	106	2.00	2.81	
Ethylbenzene*	<0.050	0.050	02/18/2025	ND	2.34	117	2.00	2.92	
Total Xylenes*	<0.150	0.150	02/18/2025	ND	7.12	119	6.00	3.29	
Total BTEX	<0.300	0.300	02/18/2025	ND					

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

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**416**	16.0	02/18/2025	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/18/2025	ND	198	99.1	200	1.71	
DRO >C10-C28*	<10.0	10.0	02/18/2025	ND	186	93.2	200	4.44	
EXT DRO >C28-C36	<10.0	10.0	02/18/2025	ND					

Surrogate: 1-Chlorooctane *118 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *119 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

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

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name:	Etech Environmental	**BILL TO**	
Project Manager:	Lance Crenshaw	**P.O. #:**	
Address:	2617 W Marland Blvd	**Company:**	Mewbourne
City:	Hobbs **State:** NM **Zip:** 88240	**Attn:**	
Phone #:	(575) 264-9884 **Fax #:**	**Address:**	
Project #:	21279 **Project Owner:** Mewbourne Oil Company	**City:**	
Project Name:	Layla SWD 27 #001	**State:** **Zip:**	
Project Location:	GPS:(32.278289, -104.070126)	**Phone #:**	
Sampler Name:	Aaron Rios	**Fax #:**	

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	ANALYSIS REQUEST: Chloride	TPH	BTEX 8021
H250938																	
1	TT - 1 @ SURF	G	1			x					x		2/14/25		x	x	x
2	TT - 1 @ 1'	G	1			x					x		2/14/25		x	x	x
3	TT - 2 @ SURF	G	1			x					x		2/14/25		x	x	x
4	TT - 2 @ 1'	G	1			x					x		2/14/25		x	x	x
5	TT - 2 @ 2'	G	1			x					x		2/14/25		x	x	x
6	TT - 2 @ 3'	G	1			x					x		2/14/25		x	x	x
7	TT - 3 @ SURF	G	1			x					x		2/14/25		x	x	x
8	TT - 3 @ 1'	G	1			x					x		2/14/25		x	x	x
9	TT - 3 @ 2'	G	1			x					x		2/14/25		x	x	x
10	TT - 3 @ 3'	G	1			x					x		2/14/25		x	x	x

Relinquished By: Tamarah Kendrick	**Date:** 2/17/2025 **Time:** 1309	**Received By:**	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	**Date:** **Time:**	**Received By:**	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	**Sample Condition** Cool: ☐ Yes ☐ No Intact: ☐ Yes ☐ No	**CHECKED BY:** (Initials)	**REMARKS:** Email copy of COC and results to: PM@etechenv.com

-8.5:)C+0.3: -8.2: #140

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

FORM-006 R 2.0

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name:	Etech Environmental	**BILL TO**	
Project Manager:	Lance Crenshaw	**P.O. #:**	
Address:	2617 W Marland Blvd	**Company:**	Mewbourne
City:	Hobbs **State:** NM **Zip:** 88240	**Attn:**	
Phone #:	(575) 264-9884 **Fax #:**	**Address:**	
Project #:	21279 **Project Owner:** Mewbourne Oil Company	**City:**	
Project Name:	Layla SWD 27 #001	**State:** **Zip:**	
Project Location:	GPS:(32.278289, -104.070126)	**Phone #:**	
Sampler Name:	Aaron Rios	**Fax #:**	

FOR LAB USE ONLY				MATRIX							PRESERV.			SAMPLING		ANALYSIS REQUEST										
Lab I.D.	**Sample I.D.**	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Chloride	TPH	BTEX 8021										
H250938																										
11	TT - 4 @ SURF	G	1			x					x		2/14/25		x	x	x									
12	TT - 4 @ 1'	G	1			x					x		2/14/25		x	x	x									
13	TT - 4 @ 2'	G	1			x					x		2/14/25		x	x	x									
14	TT - 4 @ 3'	G	1			x					x		2/14/25		x	x	x									
15	EH - 1	G	1			x					x		2/14/25		x	x	x									
16	EH - 2	G	1			x					x		2/14/25		x	x	x									
17	WH - 1	G	1			x					x		2/14/25		x	x	x									
18	WH - 2	G	1			x					x		2/14/25		x	x	x									
19	NH	G	1			x					x		2/14/25		x	x	x									
20	SH	G	1			x					x		2/14/25		x	x	x									

Relinquished By: Tamarah Kendrick	**Date:** 2/17/2025 **Time:** 1309	**Received By:** SRodriguez	
Relinquished By:	**Date:** **Time:**	**Received By:**	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	-8.5:)C+0.3: -8.2: #140	**Sample Condition** Cool: ☑ Yes ☐ No Intact: ☐ Yes ☐ No	**CHECKED BY: (Initials)** SR

Phone Result: ☐ Yes ☐ No **Add'l Phone #:**
Fax Result: ☐ Yes ☐ No **Add'l Fax #:**

REMARKS: Email copy of COC and results to: PM@etechenv.com

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

FORM-006 R 2.0

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

Operator: MEWBOURNE OIL CO P.O. Box 5270 Hobbs, NM 88241	OGRID: 14744
	Action Number: 488012
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAPP2428849677**
Incident Name	**NAPP2428849677 LAYLA 27 SWD #1 @ 30-015-22638**
Incident Type	**Produced Water Release**
Incident Status	**Remediation Plan Received**
Incident Well	**[30-015-22638] LAYLA 27 SWD #001**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	Layla 27 SWD #1
Date Release Discovered	10/05/2024
Surface Owner	Private

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

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	*Not answered.*
Produced Water Released (bbls) Details	Cause: Equipment Failure | Flow Line - Injection | Produced Water | Released: 305 BBL | Recovered: 250 BBL | Lost: 55 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	*Not answered.*
Natural Gas Vented (Mcf) Details	*Not answered.*
Natural Gas Flared (Mcf) Details	*Not answered.*
Other Released Details	*Not answered.*
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	*Not answered.*

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 (continued)

Operator: MEWBOURNE OIL CO P.O. Box 5270 Hobbs, NM 88241	OGRID: 14744
	Action Number: 488012
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

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	*Not answered.*

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

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

I hereby agree and sign off to the above statement	Name: Connor Walker Title: Senior Engineer Email: cwalker@mewbourne.com Date: 10/14/2024

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 (continued)

Operator: MEWBOURNE OIL CO P.O. Box 5270 Hobbs, NM 88241	OGRID: 14744
	Action Number: 488012
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

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 300 and 500 (ft.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between ½ and 1 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1000 (ft.) and ½ (mi.)
Any other fresh water well or spring	Between 300 and 500 (ft.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Between 1 and 5 (mi.)
A wetland	Between 300 and 500 (ft.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Between 500 and 1000 (ft.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Between 1 and 5 (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
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.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	Yes
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	08/25/2025
On what date will (or did) the final sampling or liner inspection occur	09/15/2025
On what date will (or was) the remediation complete(d)	09/22/2025
What is the estimated surface area (in square feet) that will be remediated	15596
What is the estimated volume (in cubic yards) that will be remediated	2934
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 (continued)

Operator: MEWBOURNE OIL CO P.O. Box 5270 Hobbs, NM 88241	OGRID: 14744
	Action Number: 488012
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

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.)	
Is (or was) there affected material present needing to be removed	Yes
Is (or was) there a power wash of the lined containment area (to be) performed	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: Connor Walker Title: Senior Engineer Email: cwalker@mewbourne.com Date: 08/20/2025
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 (continued)

Operator:	OGRID:
MEWBOURNE OIL CO P.O. Box 5270 Hobbs, NM 88241	14744
	Action Number: 488012
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Liner Inspection Information	
Last liner inspection notification (C-141L) recorded	***{Unavailable.}***
Was all the impacted materials removed from the liner	*Unavailable.*

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

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CONDITIONS

Operator: MEWBOURNE OIL CO P.O. Box 5270 Hobbs, NM 88241	OGRID: 14744
	Action Number: 488012
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

CONDITIONS

Created By	Condition	Condition Date
scott.rodgers	The Remediation Plan is conditionally approved. The variance request to go to 10,000 mg/kg for chlorides is denied. OCD requests material impacted above the 600 mg/kg level as required under part 29 must be excavated to the maximum extent practicable to protect the existing liner, minimally 3' bgs. Be advised at site closure a ground water investigation will be required due to being unable to inspect the existing liner.	11/14/2025