



February 21, 2025

5E33088 BG# 24

EMNRD – Oil Conservation Division
506 W. Texas Ave
Artesia, NM 88210

SUBJECT: Closure Request Report for the Jayhawk 6 CTB 2, Incident ID # nAPP2504226053, Facility ID fAPP2130256531, Lea County, New Mexico

1.0 Introduction

On behalf of Devon Energy Production Company, LP (Devon), Souder, Miller & Associates (SMA) has prepared this Closure Request Report. This report describes the corrective actions for a produced water incident related to oil and gas production activities at the Jayhawk 6 CTB 2 (Jayhawk), Incident ID nAPP2504226053, that occurred on December 21, 2024. The spill area is located at latitude N 32.076295 and longitude W -103.511916.

Devon completed a release notification to the New Mexico Energy, Minerals, and Natural Resources Department – Oil Conservation Division (OCD) via Operators Electronic Permitting and Payment Portal on November 3, 2024, for the submission of Notice of Release (NOR), followed by the submission of the Form C-141, Release Notification on November 4, 2024. This letter provides a description of the spill assessment and includes a request for spill closure.

Table 1: Release Information and Closure Criteria			
Name	Jayhawk 6 CTB 2	Company	Devon Energy Production Company, LP
Facility ID	fAPP2130256531	Location	F-06-26S-34E N 32.076295, W -103.511916 Lea County
Incident Number	nAPP2504226053	Land Status	Federal
Date of Release	December 21, 2024	Lease Number	NMNM114991
Source of Release	Water transfer pump failure		
Released Volume	20 bbls	Recovered Volume	20 bbls
NMOCD Closure Criteria	Depth to groundwater >100 feet below ground surface (bgs)		

2.0 Background

On December 21, 2024, a water transfer pump failed resulting in a fluid release. The total volume of released fluids was 20 barrels (bbls) of produced water. The release occurred within the secondary lined containment at Jayhawk. Initial response activities were conducted by the operator, including source elimination, photographs of standing fluids, recovery of approximately 20 bbls of produced water, and

verification that the affected area was properly exposed and cleaned for visual observation. Documentation of the liner inspection, including photographs, is provided in the Site Assessment Report in Attachment 1.

3.0 Site Geology and Vegetation

The Geologic Map of New Mexico by New Mexico Bureau of Geology and Mineral Resources indicates the surface geology at the incident location area is comprised of primarily Qep – Eolian and piedmont deposits (Holocene to middle Pleistocene), interlayed eolian sands and piedmont-slope deposits.

The surrounding geography and terrain are associated with plains, fan piedmonts, dunes, and inter dunal areas at elevations between 2,800 and 5,000 feet above mean sea level (amsl). The annual average rainfall and precipitation ranges between 8 to 13 inches, tends to be well drained with negligible runoff, and low available water supply.

The soil texture is characterized as Pyote and Maljamar fine sands and tends to be moderately deep to very deep. Surface textures are loamy fine sand, fine sandy loam, loamy very fine sand, or gravelly sandy loam.

Subsurface is loamy fine sand, coarse sandy loam, fine sandy loam, or loam that averages less than 18 percent clay and less than 15 percent carbonates. Substratum is a fine sandy loam or gravelly fine sandy loam with less than 15 percent gravel and with less than 40 percent calcium carbonate. Some layers high in lime or with caliche fragments may occur at depth of 20 to 30 inches.

The ecological setting is vegetation of a grassland aspect dominated by black grama, dropseeds, and bluestems with scattered shinnery oak and sand sage. Sand sage and shinnery oak tend to be evenly dispersed due to the coarse soil surface. Perennial and annual forbs are reflective of rainfall. The grass/shrub state is comprised of grasses/honey mesquite, grasses/broom snakeweed, or grasses/sand sage.

4.0 Site Information and Closure Criteria

The Jayhawk is located approximately 18.23 miles southwest of Jal, New Mexico, on BLM land at an elevation of approximately 3,324 feet amsl. SMA completed site assessment/characterization pursuant to 19.5.29.11-12 NMAC to determine potential environmental impacts and closure criteria. Site assessment and characterization results are included in Attachments 1 and 2.

There is no surface water located on site or 300 feet of the site. The nearest significant watercourse, as defined in 19.15.17.7.P NMAC, is a riverine located approximately 12.96 miles southeast, a playa lake 4.63 miles north, and a freshwater emergent wetland 0.53 miles southwest of Jayhawk (U.S. Fish and Wildlife Service, National Wetlands Inventory, 2024). There are no continuous flowing watercourses or significant watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features within the defined distance, as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

Depth to ground water was determined using New Mexico Office of the State Engineer (NMOSE) Water Rights Pod Location: ArcGIS Interactive Online Map. The nearest pod is C-02291, an inactive well, is located 0.29 miles northeast of Jayhawk and has a recorded depth to groundwater of 160 feet bgs. The nearest active pod is C-03441-POD1, located 0.35 miles northeast from Jayhawk, is used for stock watering purposes and has a recorded depth to groundwater of 140 feet bgs.

Karst potential for the area that Jayhawk is low and is 0.26 miles east of a medium karst feature, based on the New Mexico State Land Office Land Status Interactive Map (NMSLO).

According to FEMA's National Flood Hazard Layer, the Dalmatian is located in Zone D, an area of undetermined flood hazard. The nearest 100-year floodplain (Zone A) is located more 12.4 miles west of the site.

Based on site review, closure criteria for the site are the constituent concentration limits associated with greater than 100 feet depth to groundwater (DTGW), as stated in Table I of 19.15.29.12 NMAC.

Documentation of site characterization, including surface water features, depth to groundwater, nearest residence, unstable areas, and flood zone, is included in Attachment 2.

5.0 Remediation Activities

Notification of the liner inspection, scheduled for February 14, 2025, was provided to Devon through email by SMA personnel on February 10, 2025. Devon provided notification to NMOCD through the ENMRD Electronic Permitting and Payment Portal for Operators on February 11, 2025, and Bureau of Land Management (BLM) via email. Notification documentation is included in Attachment 3.

On February 14, 2025, SMA personnel performed an on-site visual inspection of the secondary containment to verify liner integrity as outlined in Paragraph (5)(a) of Subsection A of 19.15.29.11 NMAC.

Visual observation of the liner included a complete inspection of all sidewalls and the base of the containment, around equipment, and all seams of the liner. The inspection included looking for any potential perforations in the liner that could lead to a breach of the secondary containment. Observations concluded no signs of any cuts, rips, tears, or weathering of the liner condition which need repairs or replacement. Liner integrity was confirmed. Photo documentation of the liner inspection is in the Site Assessment Photolog (Attachment 1).

6.0 Conclusions and Recommendations

Based on the liner inspection and assessment, SMA concludes the liner integrity is adequate to contain the release related to incident nAPP2504226053. There is no evidence of a release to the environment. Based on the professional activities and site assessment, Devon Energy Production Company respectfully requests closure of the incident that occurred at Jayhawk 6 CTB 2.

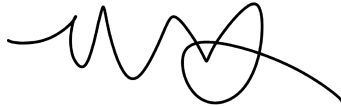
7.0 Scope and Limitations

The scope of our services included: visual inspection for liner integrity; regulatory liaison; and preparing this report. All work has been performed in accordance with accepted professional environmental consulting practices for oil and gas incidents in the Permian Basin in New Mexico.

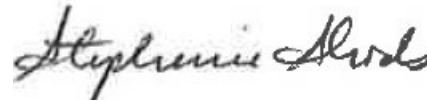
If there are any questions regarding this report, please contact Stephanie Hinds at (505) 302-1127 or Monica Peppin at (575) 909-3418.

Submitted by:
SOUDER, MILLER & ASSOCIATES

Reviewed by:



Monica Peppin, A.S.
Project Manager



Stephanie Hinds, P.E.
Senior Engineer

REFERENCES:

New Mexico Office of the State Engineer (NMOSE) online water well database

https://gis.ose.state.nm.us/gisapps/ose_pod_locations/

USGS National Water Information System: Web interface online water well database

https://nwis.waterdata.usgs.gov/nwis/gwlevels?site_no=321205103544701&agency_cd=USGS&format=html

U.S. Fish and Wildlife Service: National Wetlands Inventory

[Wetlands Mapper | U.S. Fish & Wildlife Service](#)

New Mexico State Land Office: Land Status

[NMSLO Land Status](#)

United States Department of Agriculture: Natural Resources Conservation Service: Web Soil Survey

<https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

USDA, USGS The National Map: Orthoimagry: FEMA's National Flood Hazard Layer (NFHL) Viewer

<https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd>

ATTACHMENTS:

Attachment 1: Site Assessment Photolog

Attachment 2: Closure Criteria Determination Research

Attachment 3: Correspondence

ATTACHMENT 1: SITE ASSESSMENT REPORT

Site Assessment Photolog



Client: Devon Energy Corporation

Incident ID: nAPP2504226053

Facility ID: fAPP2130256531

Project Manager: Monica Peppin

Lease ID: NMNM114991

Project Owner: Jim Raley

Site: Jayhawk 6 CTB 2

Field Notes

February 14, 2025

- Arrive on site.
- Fill out safety paperwork/JHA.
- Start visual inspection of secondary containment.
- Begin taking pictures from different positions around the containment and between tanks.
- Pictures taken in each cardinal direction to ensure due diligence for regulatory agency.
- Inspected for any visible perforations, cuts, rips, tears, or substantial weathering that could lead to the potential breach through the liner.
- Inspection concluded that there are no signs of permeation through the liner and the barrier between the secondary containment and ground surface is isolated to withhold fluids.

Photographs



Photograph #1: Lease sign with site information and geographic data.



Photograph #2: South wall facing east from middle point.



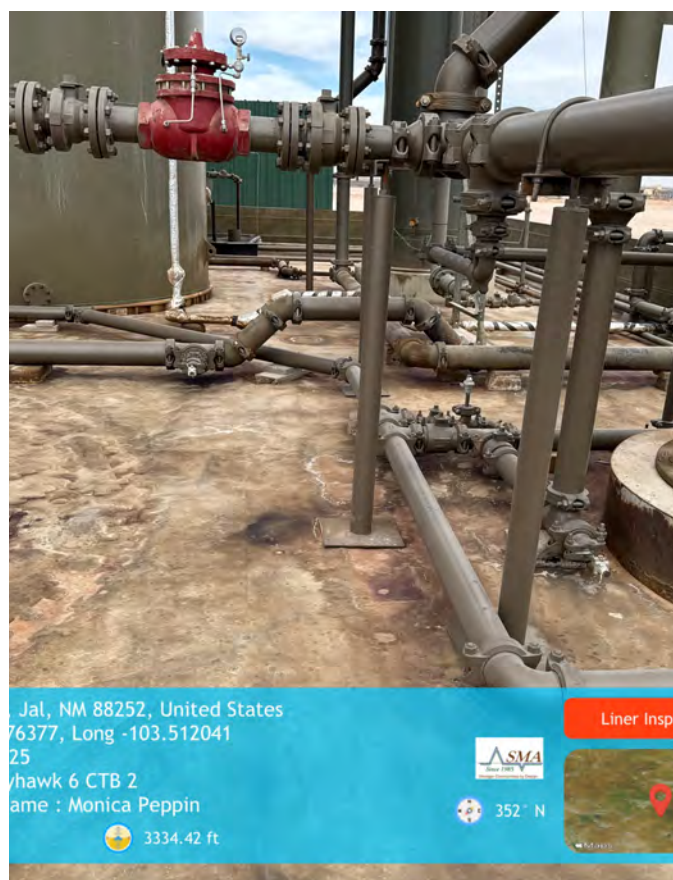
Photograph #3: South wall area facing west from middle point.



Photograph #4: Liner between tanks furthest west.



Photograph #5: Liner between middle tanks facing north.



Photograph #6: Looking north viewing east side of containment.



Photograph #7: Facing west from northeast corner.



Photograph #8: Facing west viewing south wall of containment.



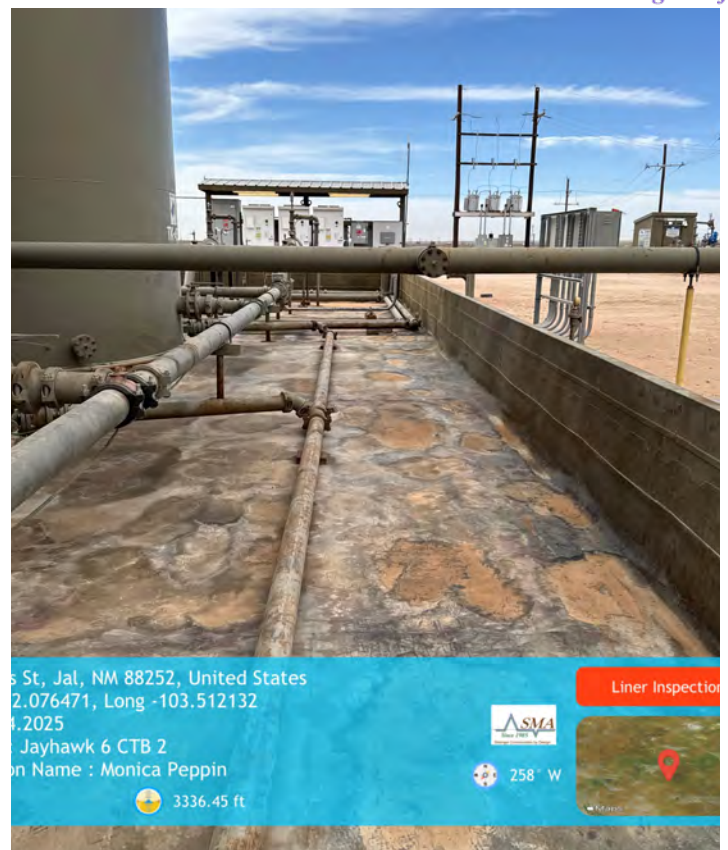
Photograph #9: Southeast corner view from east end standing near tanks.



Photograph #10: Facing west viewing between tanks from east end.



Photograph #11: Northeast corner standing near tanks on north wall.



Photograph #12: Viewing north wall from east end facing west.



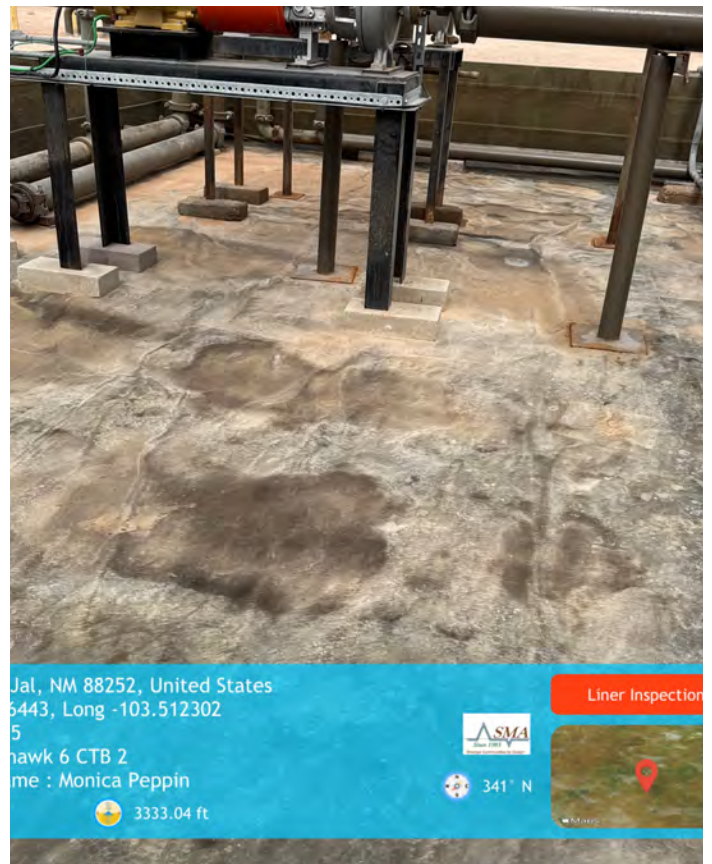
Photograph #13: Liner between tanks facing south from north side.



Photograph #14: View of north end of containment from west wall.



Photograph #15: Looking south viewing east end of containment under equipment.



Photograph #16: Facing north viewing west side of containment under equipment.



Photograph #17: Liner between tanks from west side looking east.



Photograph #18: Liner between east wall and transfer pumps.



Photograph #19: West side of containment looking north.



Photograph #20: Liner on north side of tanks

Technician: Monica Peppin

Date: 2/14/2025



Signature: 

ATTACHMENT 2: CLOSURE CRITERIA DETERMINATION RESEARCH

Jayhawk 6 CTB 2

Containment Coordinates: 32.076295, -103.511916
Approximate Containment Area: 6,610 square feet

Legend

-  Containment Area
-  Jayhawk 6 CTB 2



OSE POD Location Map



2/21/2025, 12:55:25 PM

GIS WATERS PODs

Active

Inactive

OSE District Boundary

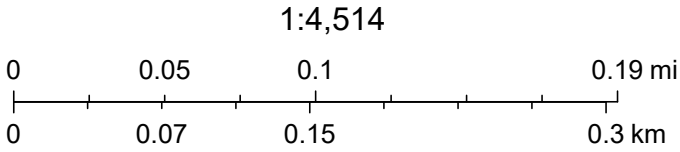
Water Right Regulations

Closure Area

New Mexico State Trust Lands

Both Estates

C-02291(inactive): depth to groundwater 160 feet bgs
C-03441-Pod1 (active): depth to groundwater 140 feet bgs



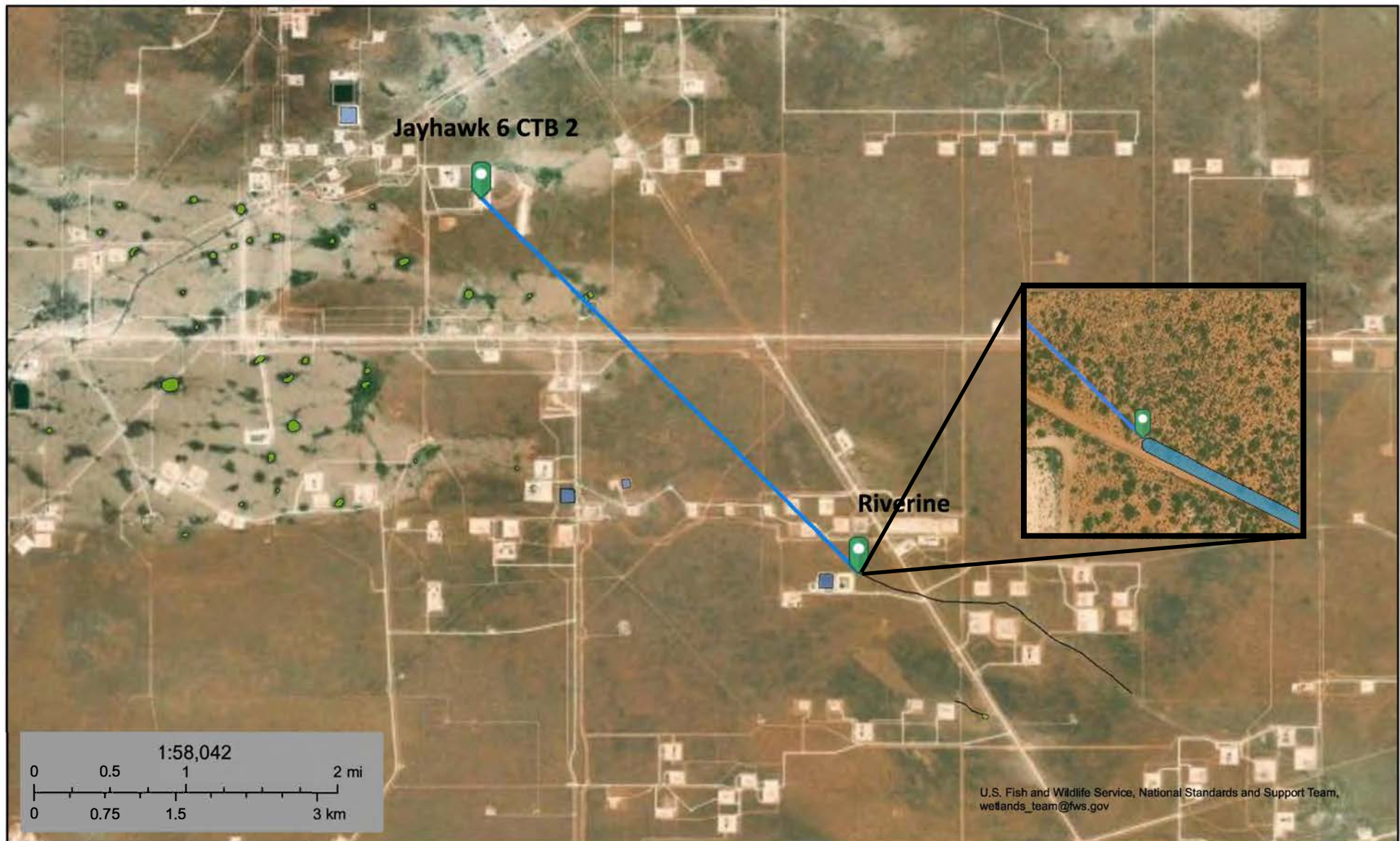
Esri, HERE, iPC, Esri, HERE, Garmin, iPC, Maxar



Jayhawk 6 CTB 2

Nearest Significant Watercourse: Riverine

Distance: 2.96 miles/15,620 feet



February 20, 2025

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

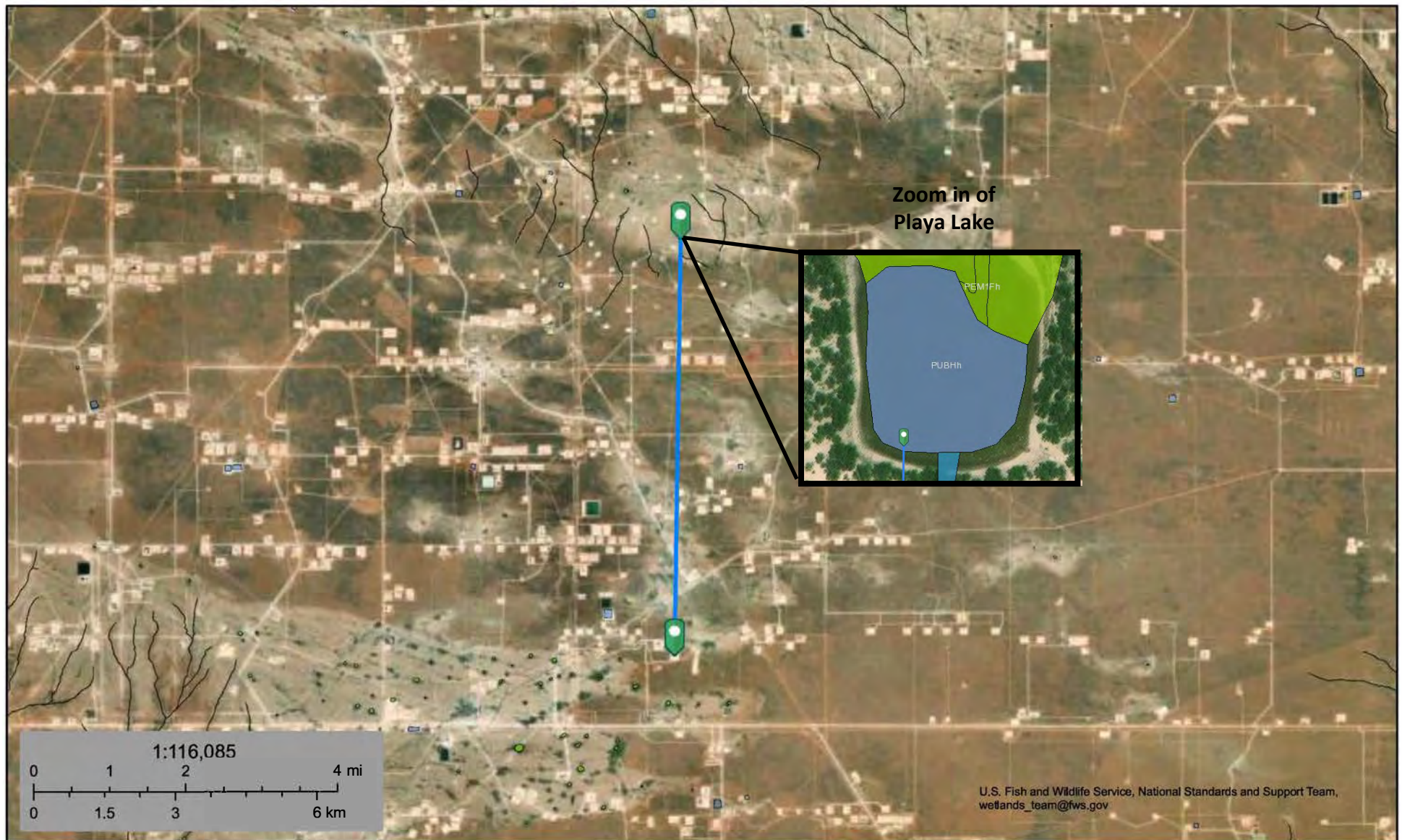
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

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



Nearest Playa Lake Distance 4.63 miles/24,468 feet



February 20, 2025

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond





- Lake
- Other
- Riverine

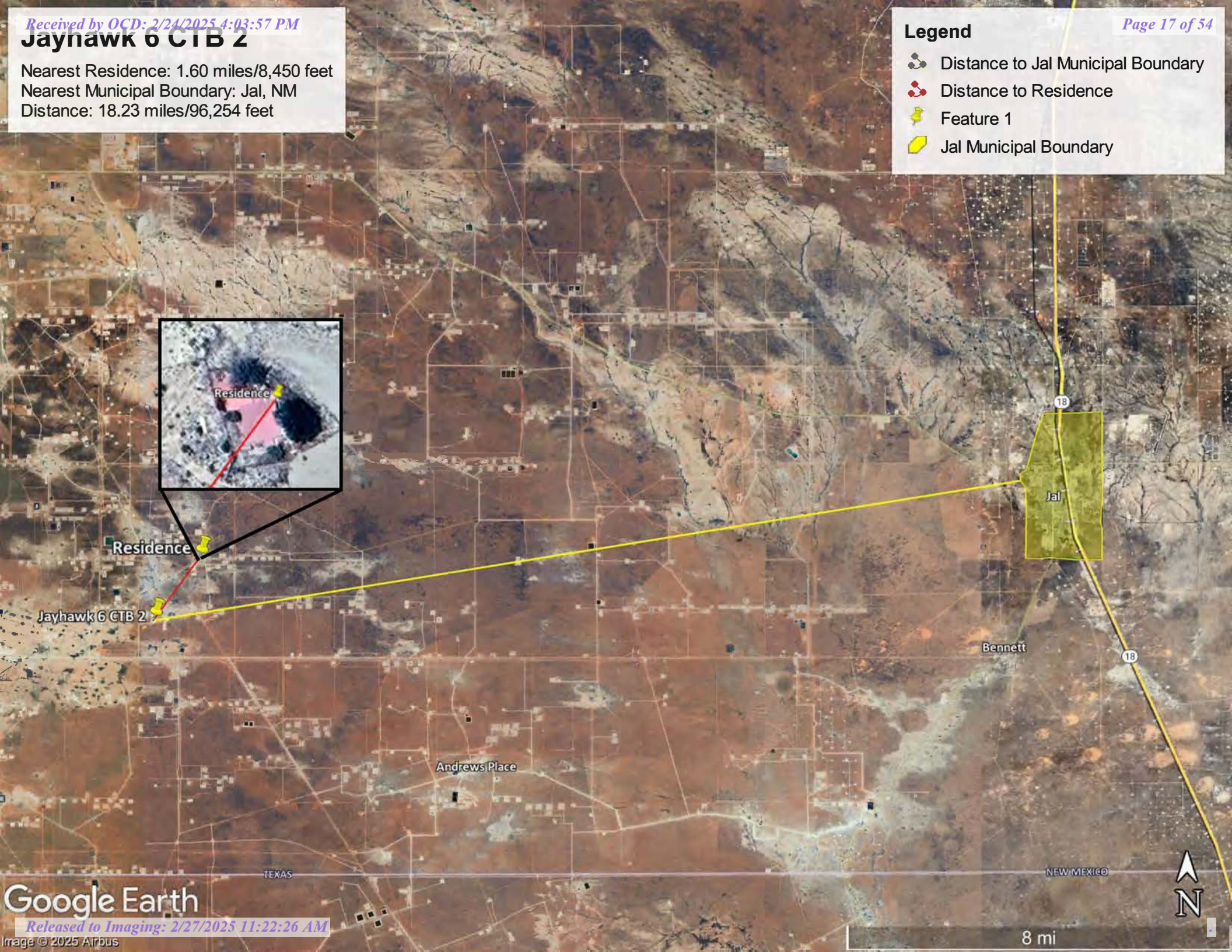
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Jayhawk 6 CTB 2

Nearest Residence: 1.60 miles/8,450 feet
Nearest Municipal Boundary: Jal, NM
Distance: 18.23 miles/96,254 feet

Legend

-  Distance to Jal Municipal Boundary
-  Distance to Residence
-  Feature 1
-  Jal Municipal Boundary



**Jayhawk 6 CTB 2****Nearest Wetland:** Freshwater Emergent Wetland**Distance:** 0.53 miles/2,777 feet

February 20, 2025

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

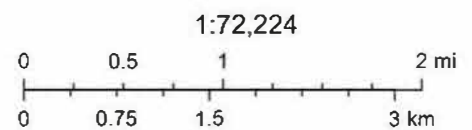
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Jayhawk 6 CTB 2 Subsurface Mines Map

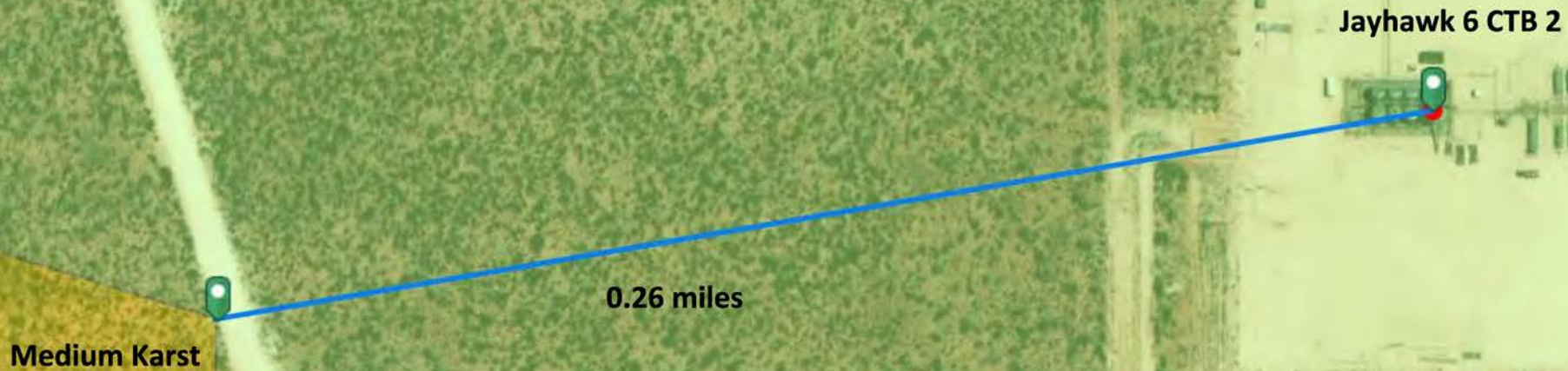


2/20/2025, 4:51:29 PM

- Mining_Ghost_Towns
- Counties
- REE_Districts
 - Fe skarn, carbonate-hosted Pb-Zn
 - REE-Th-U veins, fluorite veins



New Mexico Bureau of Geology and Mineral Resources, New Mexico Bureau of Geology & Mineral Resources, Earthstar Geographics, NMBGMR



Jayhawk 6 CTB 2 Low Karst Potential & Distance to Medium Karst - 0.26 miles

0 0.01 0.03 0.06
mi



New Mexico State Land Office

Disclaimer:
The New Mexico State Land Office assumes no responsibility or liability for, or in connection with the accuracy, reliability or use of the information provided herein with respect to State Land Office data or data from other sources.

Data pertaining to New Mexico State Trust Lands are provisional and subject to revision, and do not constitute an official record of title. Official records may be reviewed at the New Mexico State Land Office in Santa Fe, New Mexico.

Released to Imaging: 2/27/2025 11:22:26 AM
Map Created: 2/10/2025

● User drawn points

Oil and Gas Leasing Restrictions

Energy Leases

Agricultural Leases

Oil and Gas Leases

Minerals Leases

Commercial Leases

New Mexico State Trust Lands

Subsurface Estate

Surface Estate

Both Estates

Karst_Potential_NM

Potential

High

Medium

Low

Critical_Karst_Zone_NM



National Flood Hazard Layer FIRMette



103°31'2"W 32°4'50"N



Legend

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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/20/2025 at 11:07 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

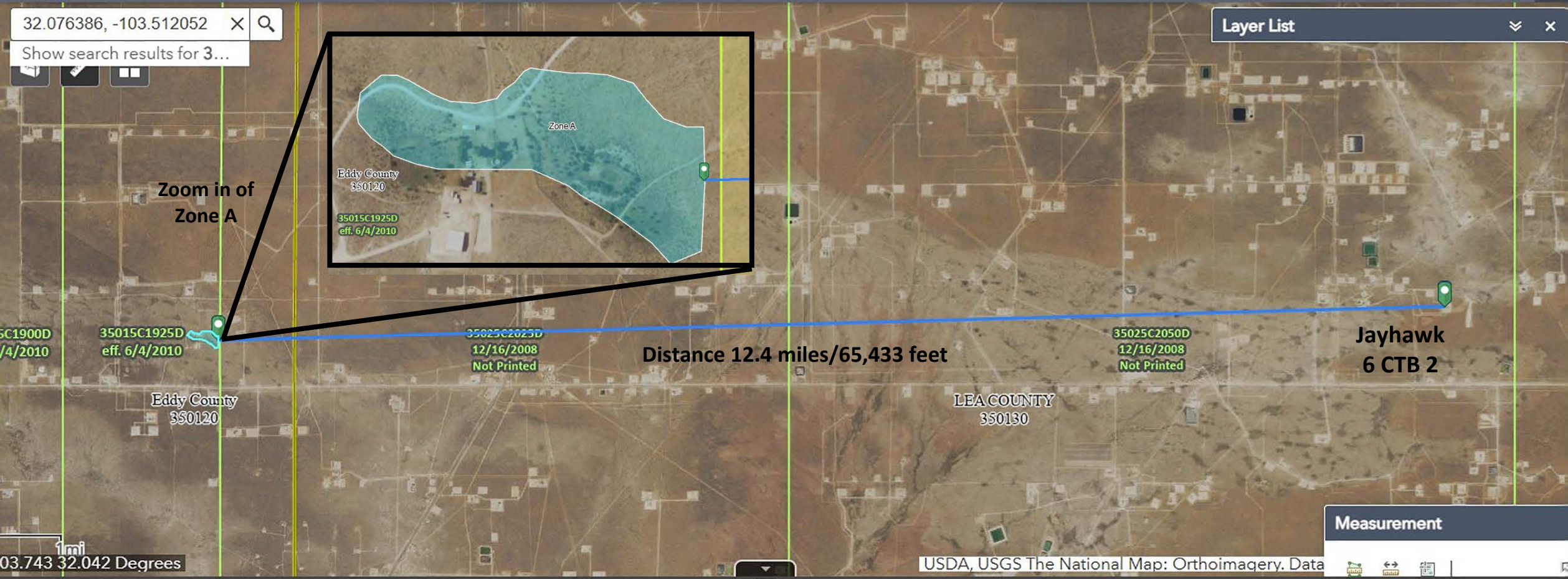
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory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

Released to Imaging: 2/27/2025 10:22:26 AM 1,500 2,000 Feet

1:6,000

103°30'25"W 32°4'20"N

Basemap Imagery Source: USGS National Map 2023



Transects

Transect Baselines

General Structures

River Mile Markers

Limit of Moderate Wave Action

Flood Hazard Boundaries

Flood Hazard Zones

Primary Frontal Dunes

CBRS Prohibitions

options ▾

Filter by map extent

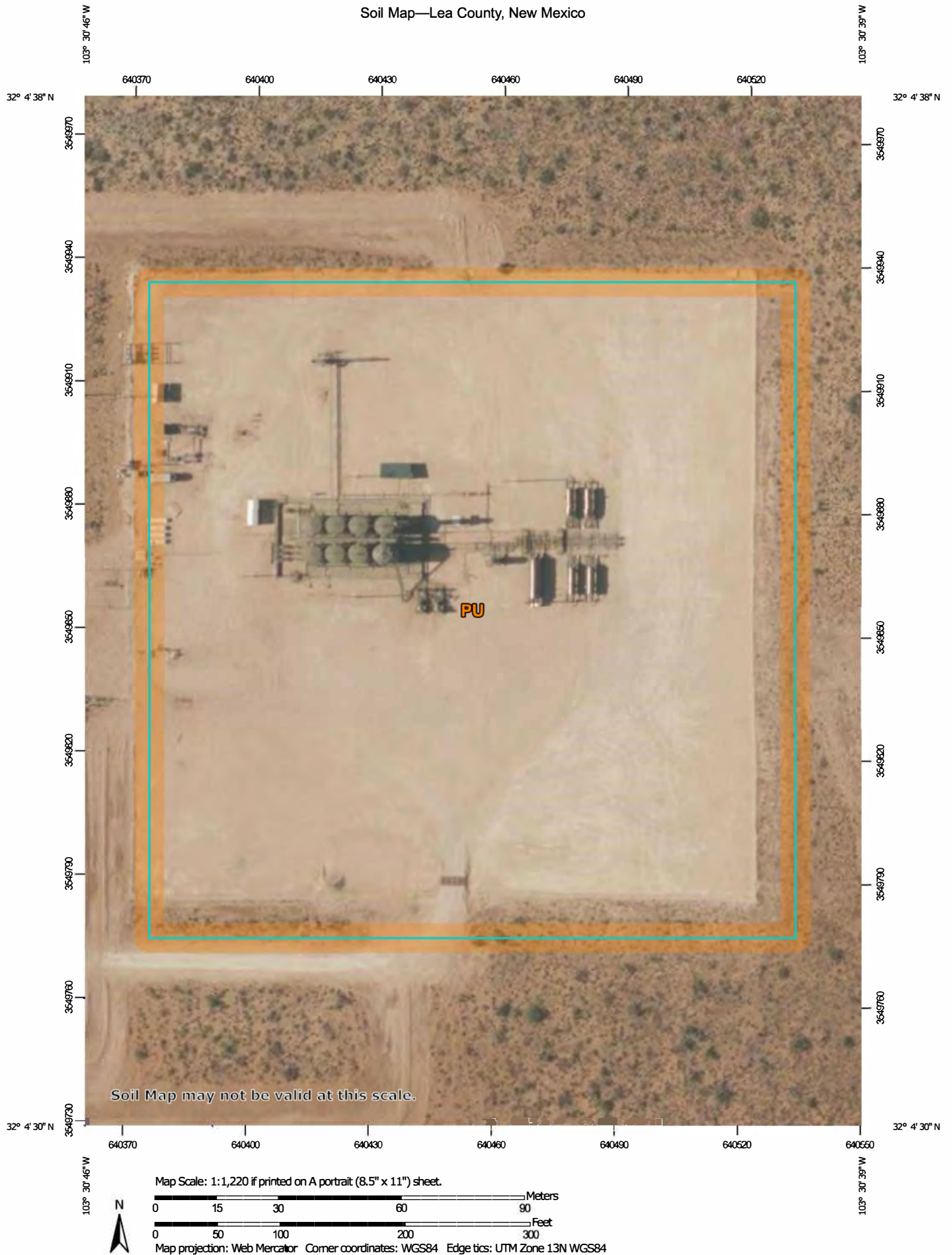
Zoom to

Clear selection

Refresh

DFIRM_ID	FLD_AR_ID	FLD_ZONE	DEPTH	VELOCITY	SOURCE_CIT	GlobalID
35015C	35015C_1512	A	-9,999.00	-9,999.00	35015C_STUDY1	{4ADA40C3-E4BE-4B0A-8A59-DAE3CB315B64}
35015C	35015C_1516	A	-9,999.00	-9,999.00	35015C_STUDY1	{3D423437-A6C7-44C0-BD66-75E061D60B5B}
35015C	35015C_1517	A	-9,999.00	-9,999.00	35015C_STUDY1	{A473FD39-D71B-4649-

Soil Map—Lea County, New Mexico



Natural Resources
Conservation Service


Web Soil Survey
National Cooperative Soil Survey

2/20/2025
Page 1 of 3

Soil Map—Lea County, New Mexico

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

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

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

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

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Lea County, New Mexico

Survey Area Data: Version 21, Sep 3, 2024

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

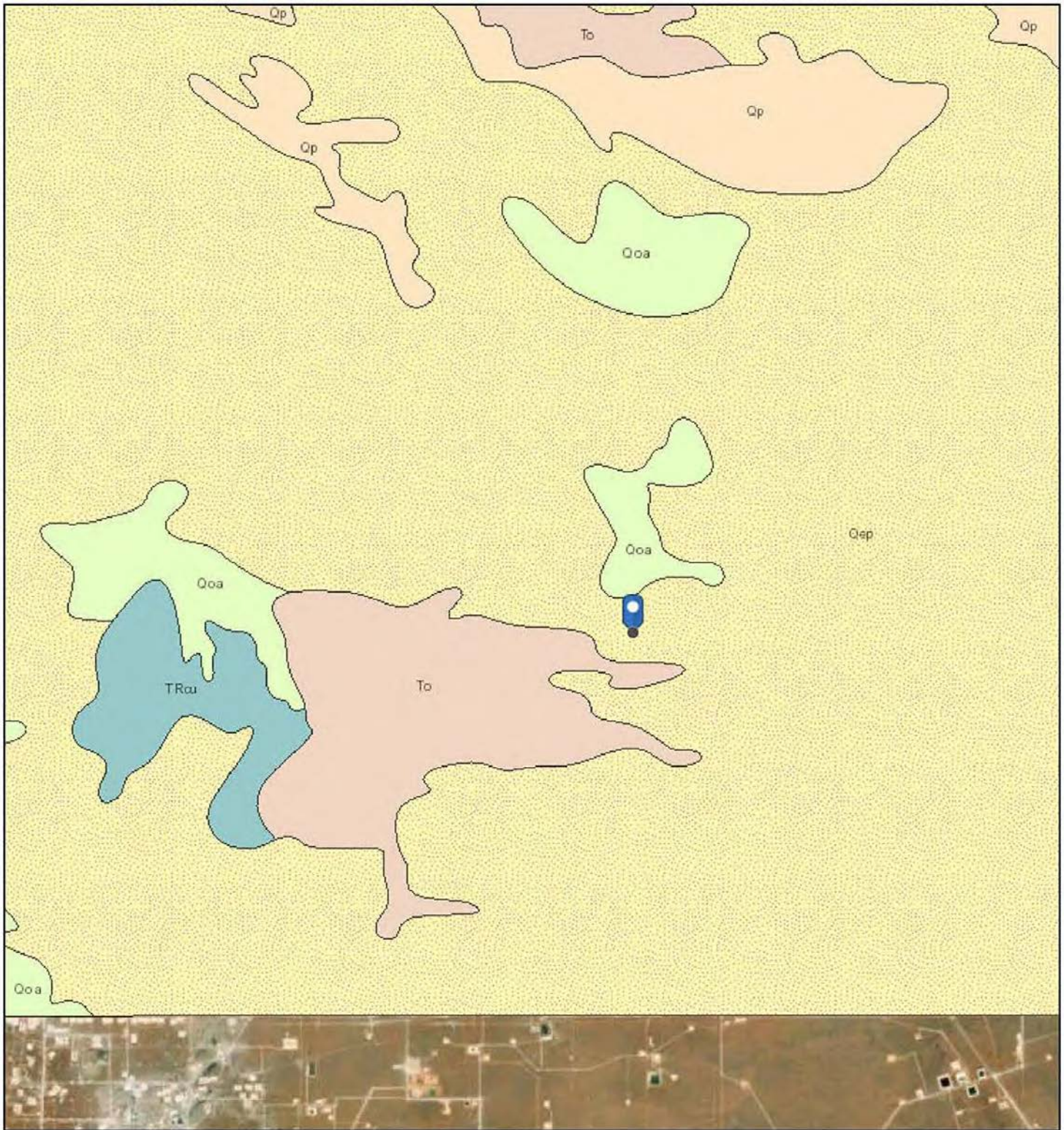
Date(s) aerial images were photographed: Feb 7, 2020—May 12, 2020

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PU	Pyote and Maljamar fine sands	6.2	100.0%
Totals for Area of Interest		6.2	100.0%

Jayhawk 6 CTB 2 Geological Map

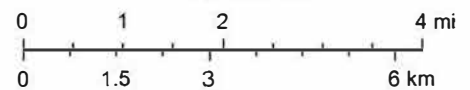


2/20/2025, 4:42:05 PM

1:144,448

Lithologic Units

- Playa—Alluvium and evaporite deposits (Holocene)
- Water—Perennial standing water
- Qa—Alluvium (Holocene to upper Pleistocene)



Earthstar Geographics, NMBGMR

Map Unit Description: Pyote and Maljamar fine sands—Lea County, New Mexico

Lea County, New Mexico

PU—Pyote and Maljamar fine sands

Map Unit Setting

National map unit symbol: dmqq

Elevation: 3,000 to 3,900 feet

Mean annual precipitation: 10 to 12 inches

Mean annual air temperature: 60 to 62 degrees F

Frost-free period: 190 to 205 days

Farmland classification: Not prime farmland

Map Unit Composition

Pyote and similar soils: 46 percent

Maljamar and similar soils: 44 percent

Minor components: 10 percent

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

Description of Pyote

Setting

Landform: Plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Sandy eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 30 inches: fine sand

Bt - 30 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High
(2.00 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Gypsum, maximum content: 1 percent

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

Sodium adsorption ratio, maximum: 2.0

Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): 6e

Map Unit Description: Pyote and Maljamar fine sands—Lea County, New Mexico

Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Description of Maljamar

Setting

Landform: Plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 24 inches: fine sand
Bt - 24 to 50 inches: sandy clay loam
Bkm - 50 to 60 inches: cemented material

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 40 to 60 inches to petrocalcic
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Minor Components

Kermit

Percent of map unit: 10 percent
Ecological site: R070BC022NM - Sandhills

Map Unit Description: Pyote and Maljamar fine sands---Lea County, New Mexico

Hydric soil rating: No

Data Source Information

Soil Survey Area: Lea County, New Mexico
Survey Area Data: Version 21, Sep 3, 2024



Ecological site R070BD003NM Loamy Sand

Accessed: 11/14/2024

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

Associated sites

R070BD004NM	Sandy Sandy
R070BD005NM	Deep Sand Deep Sand

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site is on uplands, plains, dunes, fan piedmonts and in inter dunal areas. The parent material consists of mixed alluvium and or eolian sands derived from sedimentary rock. Slope range on this site range from 0 to 9 percent with the average of 5 percent.

Low stabilized dunes may occur occasionally on this site. Elevations range from 2,800 to 5,000 feet.

Table 2. Representative physiographic features

Landforms	(1) Fan piedmont (2) Alluvial fan (3) Dune
Elevation	2,800–5,000 ft
Slope	0–9%
Aspect	Aspect is not a significant factor

Climatic features

The average annual precipitation ranges from 8 to 13 inches. Variations of 5 inches, more or less, are common. Over 80 percent of the precipitation falls from April through October. Most of the summer precipitation comes in the form of high intensity-short duration thunderstorms.

Temperatures are characterized by distinct seasonal changes and large annual and diurnal temperature changes.

The average annual temperature is 61 degrees with extremes of 25 degrees below zero in the winter to 112 degrees in the summer.

The average frost-free season is 207 to 220 days. The last killing frost being late March or early April and the first killing frost being in later October or early November.

Temperature and rainfall both favor warm season perennial plant growth. In years of abundant spring moisture, annual forbs and cool season grasses can make up an important component of this site. Strong winds blow from the southwest from January through June, which accelerates soil drying during a critical period for cool season plant growth.

Climate data was obtained from <http://www.wrcc.sage.dri.edu/summary/climsmnm.html> web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

Table 3. Representative climatic features

Frost-free period (average)	221 days
Freeze-free period (average)	240 days
Precipitation total (average)	13 in

Influencing water features

This site is not influenced from water from wetlands or streams.

Soil features

Soils are moderately deep or very deep. Surface textures are loamy fine sand, fine sandy loam, loamy very fine sand or gravelly sandy loam.

Subsurface is a loamy fine sand, coarse sandy loam, fine sandy loam or loam that averages less than 18 percent clay and less than 15 percent carbonates.

Substratum is a fine sandy loam or gravelly fine sandy loam with less than 15 percent gravel and with less than 40 percent calcium carbonate. Some layers high in lime or with caliche fragments may occur at depths of 20 to 30 inches.

These soils, if unprotected by plant cover and organic residue, become wind blown and low hummocks are formed.

Minimum and maximum values listed below represent the characteristic soils for this site.

Characteristic soils are:

Maljamar

Berino

Parjarito

Palomas

Wink

Pyote

Table 4. Representative soil features

Surface texture	(1) Fine sand (2) Fine sandy loam (3) Loamy fine sand
Family particle size	(1) Sandy
Drainage class	Well drained to somewhat excessively drained
Permeability class	Moderate to moderately rapid

Soil depth	40–72 in
Surface fragment cover ≤3"	0–10%
Surface fragment cover >3"	0%
Available water capacity (0–40in)	5–7 in
Calcium carbonate equivalent (0–40in)	3–40%
Electrical conductivity (0–40in)	2–4 mmhos/cm
Sodium adsorption ratio (0–40in)	0–2
Soil reaction (1:1 water) (0–40in)	6.6–8.4
Subsurface fragment volume ≤3" (Depth not specified)	4–12%
Subsurface fragment volume >3" (Depth not specified)	0%

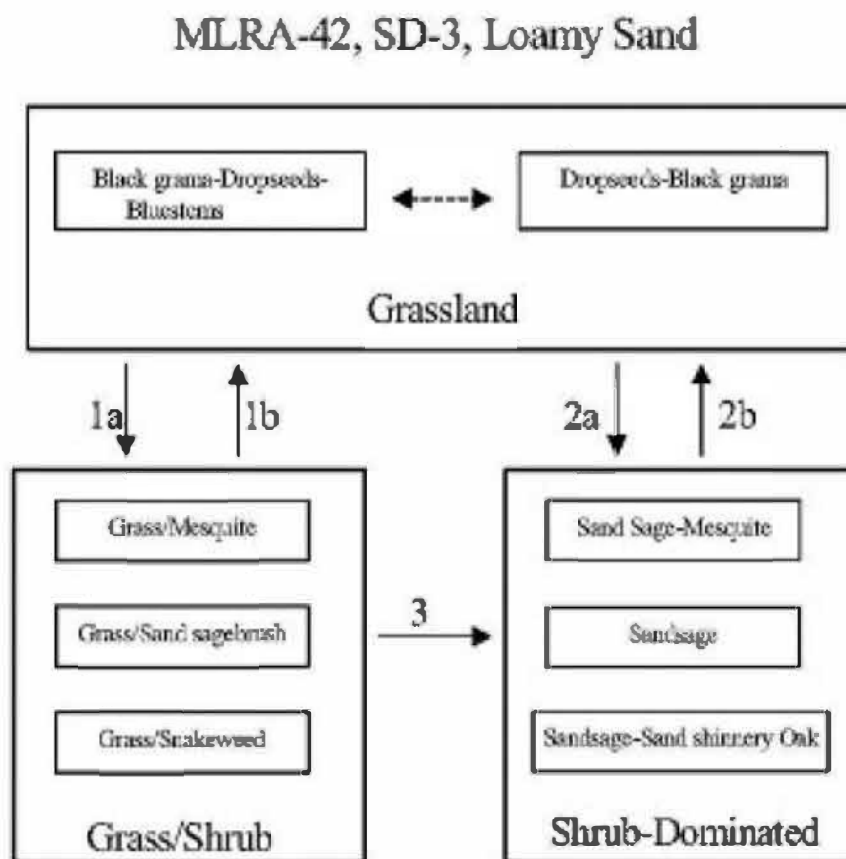
Ecological dynamics

Overview

The Loamy Sand site intergrades with the Deep Sand and Sandy sites (SD-3). These sites can be differentiated by surface soil texture and depth to a textural change. Loamy Sand and Deep Sand sites have coarse textured (sands and loamy sand) surface soils while Sandy sites have moderately coarse textured (sandy loam and fine sandy loam) surfaces. Although Loamy Sand and Deep Sand sites have similar surface textures, the depth to a textural change is different—Loamy Sand sub-surface textures typically increase in clay at approximately 20 to 30 inches, and Deep Sand sites not until around 40 inches.

The historic plant community of Loamy Sand sites is dominated by black grama (*Bouteloua eriopoda*), dropseeds (*Sporobolus flexuosus*, *S. contractus*, *S. cryptandrus*), and bluestems (*Schizachyrium scoparium* and *Andropogon hallii*), with scattered shinnery oak (*Quercus havardii*) and sand sage (*Artemisia filifolia*). Perennial and annual forb abundance and distribution are dependent on precipitation. Litter and to a lesser extent, bare ground, are a significant proportion of ground cover while grasses compose the remainder. Decreases in black grama indicate a transition to either a grass/shrub or shrub-dominated state. The grass/shrub state is composed of grasses/honey mesquite (*Prosopis glandulosa*), grasses/broom snakeweed (*Gutierrezia sarothrae*), or grasses/sand sage. The shrub-dominated state occurs after a severe loss of grass cover and a prevalence of sand sage with secondary shinnery oak and mesquite. Heavy grazing intensity and/or drought are influential drivers in decreasing black grama and bluestems and subsequently increasing shrub cover, erosion, and bare patches. Historical fire suppression also encourages shrub pervasiveness and a competitive advantage over grass species (McPherson 1995). Brush and grazing management, however, may reverse grass/shrub and shrub-dominated states toward the grassland-dominated historic plant community.

State and transition model

Plant Communities and Transitional Pathways (diagram):

1a. Drought, over grazing, fire suppression.

1b. Brush control, prescribed grazing

2.a Severe loss of grass cover, fire suppression, erosion.

2b. Brush control, seeding, prescribed grazing.

3. Continued loss of grass cover, erosion.

State 1**Historic Climax Plant Community****Community 1.1****Historic Climax Plant Community**

Grassland: The historic plant community is a uniformly distributed grassland dominated by black grama, dropseeds, and bluestems. Sand sage and shinnery oak are evenly dispersed throughout the grassland due to the coarse soil

surface texture. Perennial and annual forbs are common but their abundance and distribution are reflective of precipitation. Bluestems initially, followed by black grama, decrease with drought and heavy grazing intensity. Historical fire frequency is unknown but likely occurred enough to remove small shrubs to the competitive advantage of grass species. Fire suppression, drought conditions, and excessive grazing drive most grass species out of competition with shrub species. Diagnosis: Grassland dominated by black grama, dropseeds, and bluestems. Shrubs, such as sand sage, shinnery oak, and mesquite are dispersed throughout the grassland. Forbs are present and populations fluctuate with precipitation variability.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	442	833	1224
Forb	110	208	306
Shrub/Vine	98	184	270
Total	650	1225	1800

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	28%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	50%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	22%

Figure 5. Plant community growth curve (percent production by month). NM2803, R042XC003NM-Loamy Sand-HCPC. SD-3 Loamy Sand - Warm season plant community .

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	3	5	10	10	25	30	12	5	0	0

State 2
Grass/Shrub

Community 2.1
Grass/Shrub



Grass/Shrub State: The grass/shrub state is dominated by communities of grasses/mesquite, grasses/snakeweed, or grasses/sand sage. Decreases in black grama and bluestem species lead to an increase in bare patches and mesquite which further competes with grass species. An increase of dropseeds and threeawns occurs. Grass distribution becomes more patchy with an absence or severe decrease in black grama and bluestems. Mesquite provides nitrogen and soil organic matter to co-dominant grasses (Ansley and Jacoby 1998, Ansley et al. 1998). Mesquite mortality when exposed to fire is low due to aggressive resprouting abilities. Herbicide application combined with subsequent prescribed fire may be more effective in mesquite reduction (Britton and Wright 1971). **Diagnosis:** This state is dominated by an increased abundance of communities including grass/mesquite, grass/snakeweed, or grass/sand sage. Dropseeds and threeawns have a patchy distribution. **Transition to Grass/Shrub State (1a):** The historic plant community begins to shift toward the grass/shrub state as drivers such as drought, fire suppression, interspecific competition, and excessive grazing contribute to alterations in soil properties and herbaceous cover. Cover loss and surface soil erosion are initial indicators of transition followed by a decrease in black grama with a subsequent increase of dropseeds, threeawns, mesquite, and snakeweed. Snakeweed has been documented to outcompete black grama especially under conditions of fire suppression and drought (McDaniel et al. 1984). **Key indicators of approach to transition:** • Loss of black grama cover • Surface soil erosion • Bare patch expansion • Increased dropseed/threeawn and mesquite, snakeweed, or sand sage abundances **Transition to Historic Plant Community (1b):** Brush and grazing management may restore the grassland component and reverse shrub or grass/shrub dominated states back toward the historic plant community.

State 3 Shrub Dominated

Community 3.1 Shrub Dominated

Shrub-Dominated State: The shrub-dominated state results from a severe loss of grass cover. This state's primary species is sand sage. Shinnery oak and mesquite also occur; however, grass cover is limited to intershrub distribution. Sand sage stabilizes light sandy soils from wind erosion, which enhances protected grass/forb cover (Davis and Bonham 1979). However, shinnery oak also responds to the sandy soils with dense stands due to an

aggressive rhizome system. Shinnery oak's extensive root system promotes competitive exclusion of grasses and forbs. Sand sage, shinnery oak, and mesquite can be controlled with herbicide (Herbel et al. 1979, Pettit 1986). Transition to Shrub-Dominated (2a): Severe loss of grass species with increased erosion and fire suppression will result in a transition to a shrub-dominated state with sand sage, Shin oak, and honey mesquite directly from the grassland-dominated state. Key indicators of approach to transition: • Severe loss of grass species cover • Surface soil erosion • Bare patch expansion • Increased sand sage, shinnery oak, and mesquite abundance Transition to Historic Plant Community (2b): Brush and grazing management may restore the grassland component and reverse shrub or grass/shrub dominated states back toward the historic plant community. In addition, seeding with native grass species will augment the transition to a grassland-dominated state. Transition to Shrub-Dominated (3): If the grass/shrub site continues to lose grass cover with soil erosion, the site will transition to a shrub-dominated state with sand sage, shinnery oak, and honey mesquite. Key indicators of approach to transition: • Continual loss of dropseeds/threawns cover • Surface soil erosion • Bare patch expansion • Increased sand sage, shinnery oak, and mesquite/dropseed/threawn and mesquite/snakeweed abundance

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	Warm Season			61–123	
	little bluestem	SCSC	<i>Schizachyrium scoparium</i>	61–123	–
2	Warm Season			37–61	
	sand bluestem	ANHA	<i>Andropogon hallii</i>	37–61	–
3	Warm Season			37–61	
	cane bluestem	BOBA3	<i>Bothriochloa barbinodis</i>	37–61	–
	silver bluestem	BOSA	<i>Bothriochloa saccharoides</i>	37–61	–
4	Warm Season			123–184	
	black grama	BOER4	<i>Bouteloua eriopoda</i>	123–184	–
	bush muhly	MUPO2	<i>Muhlenbergia porteri</i>	123–184	–
5	Warm Season			123–184	
	thin paspalum	PASE5	<i>Paspalum setaceum</i>	123–184	–
	plains bristlegrass	SEVU2	<i>Setaria vulpiseta</i>	123–184	–
	fringed signalgrass	URCI	<i>Urochloa ciliatissima</i>	123–184	–
6	Warm Season			123–184	
	spike dropseed	SPCO4	<i>Sporobolus contractus</i>	123–184	–
	sand dropseed	SPCR	<i>Sporobolus cryptandrus</i>	123–184	–
	mesa dropseed	SPFL2	<i>Sporobolus flexuosus</i>	123–184	–
7	Warm Season			61–123	
	hooded windmill grass	CHCU2	<i>Chloris cucullata</i>	61–123	–
	Arizona cottontop	DICA8	<i>Digitaria californica</i>	61–123	–
9	Other Perennial Grasses			37–61	
	Grass, perennial	2GP	<i>Grass, perennial</i>	37–61	–
Shrub/Vine					
8	Warm Season			37–61	
	New Mexico feathergrass	HENE5	<i>Hesperostipa neomexicana</i>	37–61	–
	giant dropseed	SPGI	<i>Sporobolus giganteus</i>	37–61	–
10	Shrub			61–123	

	sand sagebrush	ARFI2	<i>Artemisia filifolia</i>	61–123	–
	Havard oak	QUHA3	<i>Quercus havardii</i>	61–123	–
11	Shrub			34–61	
	fourwing saltbush	ATCA2	<i>Atriplex canescens</i>	37–61	–
	featherplume	DAFO	<i>Dalea formosa</i>	37–61	–
12	Shrub			37–61	
	jointfir	EPHED	<i>Ephedra</i>	37–61	–
	littleleaf ratany	KRER	<i>Krameria erecta</i>	37–61	–
13	Other Shrubs			37–61	
	Shrub (>.5m)	2SHRUB	<i>Shrub (>.5m)</i>	37–61	–
Forb					
14	Forb			61–123	
	leatherweed	CRPOP	<i>Croton pottsii</i> var. <i>pottsii</i>	61–123	–
	Indian blanket	GAPU	<i>Gaillardia pulchella</i>	61–123	–
	globemallow	SPHAE	<i>Sphaeralcea</i>	61–123	–
15	Forb			12–37	
	woolly groundsel	PACA15	<i>Packera cana</i>	12–37	–
16	Forb			61–123	
	touristplant	DIWI2	<i>Dimorphocarpa wislizeni</i>	61–123	–
	woolly plantain	PLPA2	<i>Plantago patagonica</i>	61–123	–
17	Other Forbs			37–61	
	Forb (herbaceous, not grass nor grass-like)	2FORB	<i>Forb (herbaceous, not grass nor grass-like)</i>	37–61	–

Animal community

This Ecological Site provides habitat which supports a resident animal community that is characterized by pronghorn antelope, desert cottontail, spotted ground squirrel, black-tailed prairie dog, yellow faced pocket gopher, Ord's kangaroo rat, northern grasshopper mouse, southern plains woodrat, badger, roadrunner, meadowlark, burrowing owl, white necked raven, lesser prairie chicken, morning dove, scaled quail, Harris hawk, side blotched lizard, marbled whiptail, Texas horned lizard, western diamondback rattlesnake, dusty hognose snake and ornate box turtle.

Where mesquite has invaded, most resident birds and scissor-tailed flycatcher, morning dove and Swainson's hawk, nest. Vesper and grasshopper sparrows utilize the site during migration.

Hydrological functions

The runoff curve numbers are determined by field investigations using hydraulic cover conditions and hydrologic soil groups.

Hydrologic Interpretations

Soil Series Hydrologic Group

Berino B

Kinco A

Maljamar B

Pajarito B

Palomas B

Wink B

Pyote A

Recreational uses

This site offers recreation potential for hiking, horseback riding, nature observation, photography and hunting. During years of abundant spring moisture, this site displays a colorful array of wildflowers during May and June.

Wood products

This site has no potential for wood products.

Other products

This site is suitable for grazing by all kinds and classes of livestock at any time of year. In cases where this site has been invaded by brush species it is especially suited for goats. Mismanagement of this site will cause a decrease in species such as the bluestems, black grama, bush muhly, plains bristlegrass, New Mexico feathergrass, Arizona cottontop and fourwing saltbush. A corresponding increase in the dropseeds, windmill grass, fall witchgrass, silver bluestem, sand sagebrush, shiner oak and ephedra will occur. This will also cause an increase in bare ground which will increase soil erodibility. This site will respond well to a system of management that rotates the season of use.

Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index Ac/AUM

100 - 76 2.3 – 3.5

75 – 51 3.0 – 4.5

50 – 26 4.6 – 9.0

25 – 0 9.1 +

Inventory data references

Data collection for this site was done in conjunction with the progressive soil surveys within the Southern Desertic Basins, Plains and Mountains, Major Land Resource Areas of New Mexico. This site has been mapped and correlated with soils in the following soil surveys. Eddy County, Lea County, and Chaves County.

Other references

Literature Cited:

Ansley, R. J.; Jacoby, P. W. 1998. Manipulation of fire intensity to achieve mesquite management goals in north Texas. In: Pruden, Teresa L.; Brennan, Leonard A., eds. Fire in ecosystem management: shifting the paradigm from suppression to prescription: Proceedings, Tall Timbers fire ecology conference; 1996 May 7-10; Boise, ID. No. 20. Tallahassee, FL: Tall Timbers Research Station: 195-204.

Ansley, R. J.; Jones, D. L.; Tunnell, T. R.; [and others]. 1998. Honey mesquite canopy responses to single winter fires: relation to herbaceous fuel, weather and fire temperature. International Journal of Wildland Fire 8(4):241-252.

Britton, Carlton M.; Wright, Henry A. 1971. Correlation of weather and fuel variables to mesquite damage by fire. Journal of Range Management 24:136-141.

Davis, Joseph H., III and Bonham, Charles D. 1979. Interference of sand sagebrush canopy with needleandthread. Journal of Range Management 32(5):384-386.

Herbel, C. H, Steger, R, Gould, W. L. 1974. Managing semidesert ranges of the Southwest Circular 456. Las Cruces, NM: New Mexico State University, Cooperative Extension Service. 48 p.

McDaniel, Kirk C.; Pieper, Rex D.; Loomis, Lyn E.; Osman, Abdelgader A. 1984. Taxonomy and ecology of perennial snakeweeds in New Mexico. Bulletin 711. Las Cruces, NM: New Mexico State University, Agricultural Experiment Station. 34 p.

McPherson, Guy R. 1995. The role of fire in the desert grasslands. In: McClaran, Mitchel P.; Van Devender, Thomas R., eds. The desert grassland. Tucson, AZ: The University of Arizona Press: 130-151.

Pettit, Russell D. 1986. Sand shinnery oak: control and management. Management Note 8. Lubbock, TX: Texas Tech University, College of Agricultural Sciences, Department of Range and Wildlife Management. 5 p.

Contributors

Don Sylvester
Quinn Hodgson

Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. Number and extent of rills:

2. Presence of water flow patterns:

3. Number and height of erosional pedestals or terracettes:

4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):

5. Number of gullies and erosion associated with gullies:

6. Extent of wind scoured, blowouts and/or depositional areas:


7. **Amount of litter movement (describe size and distance expected to travel):**
-
8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**
-
9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**
-
10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**
-
11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**
-
12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**
- Dominant:
- Sub-dominant:
- Other:
- Additional:
-
13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**
-
14. **Average percent litter cover (%) and depth (in):**
-
15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**
-
16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:**
-

17. Perennial plant reproductive capability:

Point of Diversion Summary

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

NAD83 UTM in meters

Well Tag	POD Nbr	Q64	Q16	Q4	Sec	Tw	Rng	X	Y	Map
	C 02291	NW	NW	NE	06	26S	34E	640825.0	3550140.0 *	

* UTM location was derived from PLSS - see [Help](#)

Driller License:		Driller Company:			
Driller Name:					
Drill Start Date:		Drill Finish Date:		1949-12-31	Plug Date:
Log File Date:		PCW Rcv Date:			Source:
Pump Type:		Pipe Discharge Size:			Estimated Yield: 15
Casing Size: 6.00		Depth Well: 220		Depth Water: 160	

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

Water Right Summary



[get image](#)
[list](#)

WR File Number:		C 03441	Subbasin:		C	Cross Reference:	
Primary Purpose:		STK 72-12-1 LIVESTOCK WATERING					
Primary Status:		PMT Permit					
Total Acres:			Subfile:		Header:		
Total Diversion:		3.000	Cause/Case:				
Owner:		INTREPID POTASH NEW MEXICO LLC	Owner Class:		Owner		
Contact:		KATIE KELLER					

Documents on File

Transaction Images	Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/To	Acres
get images 652958		COWNF	2019-06-11	CHG	PRC	C 03441	T	
get images 643301		COWNF	2019-03-20	CHG	PRC	C 03441	T	
get images 470014		72121	2010-04-08	PMT	LOG	C 03441	T	

Current Points of Diversion

POD Number	Well Tag	Source	Q64	Q16	Q4	Sec	Tws	Rng	X	Y	Map	Other Location
C 03441 POD1		Shallow	SE	NW	NE	06	26S	34E	640970.7	3550039.6		

* UTM location was derived from PLSS - see Help

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



WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

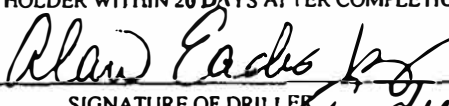
www.ose.state.nm.us

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2000 MAY 17 4 11:12

1. GENERAL AND WELL LOCATION	POD NUMBER (WELL NUMBER) C-3441-POD1				OSE FILE NUMBER(S) C 03441			
	WELL OWNER NAME(S) Dinwiddie Cattle Company				PHONE (OPTIONAL)			
	WELL OWNER MAILING ADDRESS PO Box 963				CITY Capitan		STATE NM	
					ZIP 88316			
2. OPTIONAL	WELL LOCATION (FROM GPS)		DEGREES N32	MINUTES 04	SECONDS 44.0 N	40.224 * ACCURACY REQUIRED: ONE TENTH OF A SECOND		
			LONGITUDE W103	30	00.9 W	* DATUM REQUIRED: WGS 84 (OSE GPS)		
	DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS 22.867							
3. DRILLING INFORMATION	(2.5 ACRE) NW 1/4	(10 ACRE) SE 1/4	(40 ACRE) NW 1/4	(160 ACRE) NE 1/4	SECTION 6	TOWNSHIP 26	<input type="checkbox"/> NORTH <input checked="" type="checkbox"/> SOUTH	RANGE 34 <input checked="" type="checkbox"/> EAST <input type="checkbox"/> WEST
	SUBDIVISION NAME				LOT NUMBER	BLOCK NUMBER	UNIT/TRACT	
	HYDROGRAPHIC SURVEY				MAP NUMBER		TRACT NUMBER	
3. DRILLING INFORMATION	LICENSE NUMBER WD1044		NAME OF LICENSED DRILLER Alan Eades			NAME OF WELL DRILLING COMPANY Eades Drilling & Pump Service		
	DRILLING STARTED 05-03-10		DRILLING ENDED 05-03-10		DEPTH OF COMPLETED WELL (FT) 250	BORE HOLE DEPTH (FT) 250	DEPTH WATER FIRST ENCOUNTERED (FT)	
	COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input type="checkbox"/> DRY HOLE <input checked="" type="checkbox"/> SHALLOW (UNCONFINED)							STATIC WATER LEVEL IN COMPLETED WELL (FT)
	DRILLING FLUID: <input type="checkbox"/> AIR <input checked="" type="checkbox"/> MUD <input type="checkbox"/> ADDITIVES - SPECIFY:							
	DRILLING METHOD: <input checked="" type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input type="checkbox"/> OTHER - SPECIFY:							
	DEPTH (FT)		BORE HOLE DIA. (IN)	CASING MATERIAL	CONNECTION TYPE (CASING)	INSIDE DIA. CASING (IN)	CASING WALL THICKNESS (IN)	SLOT SIZE (IN)
	FROM	TO						
	0	20	11	PVC	slip joint	6.166	.255	
	20	190	9.75	PVC	slip joint	6.166	.255	
	190	250	9.75	PVC - screen	slip joint	6.166	.255	.035
4. WATER BEARING STRATA	DEPTH (FT)		THICKNESS (FT)	FORMATION DESCRIPTION OF PRINCIPAL WATER-BEARING STRATA (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)				YIELD (GPM)
	FROM	TO						
	128	189	61	sandy red clay				
METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA							TOTAL ESTIMATED WELL YIELD (GPM)	

FOR OSE INTERNAL USE

FILE NUMBER C-3441	POD NUMBER POD1	WELL RECORD & LOG (Version 6/9/08)
LOCATION 26.34.6.2141.22	TRN NUMBER	PAGE 1 OF 2

5. SEAL AND PUMP	TYPE OF PUMP: <input checked="" type="checkbox"/> SUBMERSIBLE <input type="checkbox"/> JET <input type="checkbox"/> NO PUMP - WELL NOT EQUIPPED <input type="checkbox"/> TURBINE <input type="checkbox"/> CYLINDER <input type="checkbox"/> OTHER - SPECIFY:						
	ANNULAR SEAL AND GRAVEL PACK	DEPTH (FT)		BORE HOLE DIA. (IN)	MATERIAL TYPE AND SIZE	AMOUNT (CUBIC FT)	METHOD OF PLACEMENT
		FROM	TO				
		0	20				
	20	250	9.75	gravel	84	gravity fed	
6. GEOLOGIC LOG OF WELL	DEPTH (FT)		THICKNESS (FT)	COLOR AND TYPE OF MATERIAL ENCOUNTERED (INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES)	WATER BEARING?		
	FROM	TO					
	0	1	1	top soil	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
	1	25	24	sandy clay	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
	25	37	12	caliche & sand	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
	37	85	48	sand & sandstone stringers	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
	85	108	23	red sandstone with red clay streaks	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
	108	128	20	sandstone with yellow clay streaks	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
	128	189	61	sandy red clay	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
	189	249	60	white sandstone with red clay streaks	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
	249	250	1	red clay	<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
					<input type="checkbox"/> YES	<input type="checkbox"/> NO	
	ATTACH ADDITIONAL PAGES AS NEEDED TO FULLY DESCRIBE THE GEOLOGIC LOG OF THE WELL						
	7. TEST & ADDITIONAL INFO	METHOD: <input type="checkbox"/> BAILER <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> OTHER - SPECIFY:					
		WELL TEST 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:							
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:						
	<div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="text-align: center;">  SIGNATURE OF DRILLER </div> <div style="text-align: center;"> May 14, 2010 DATE </div> </div>						

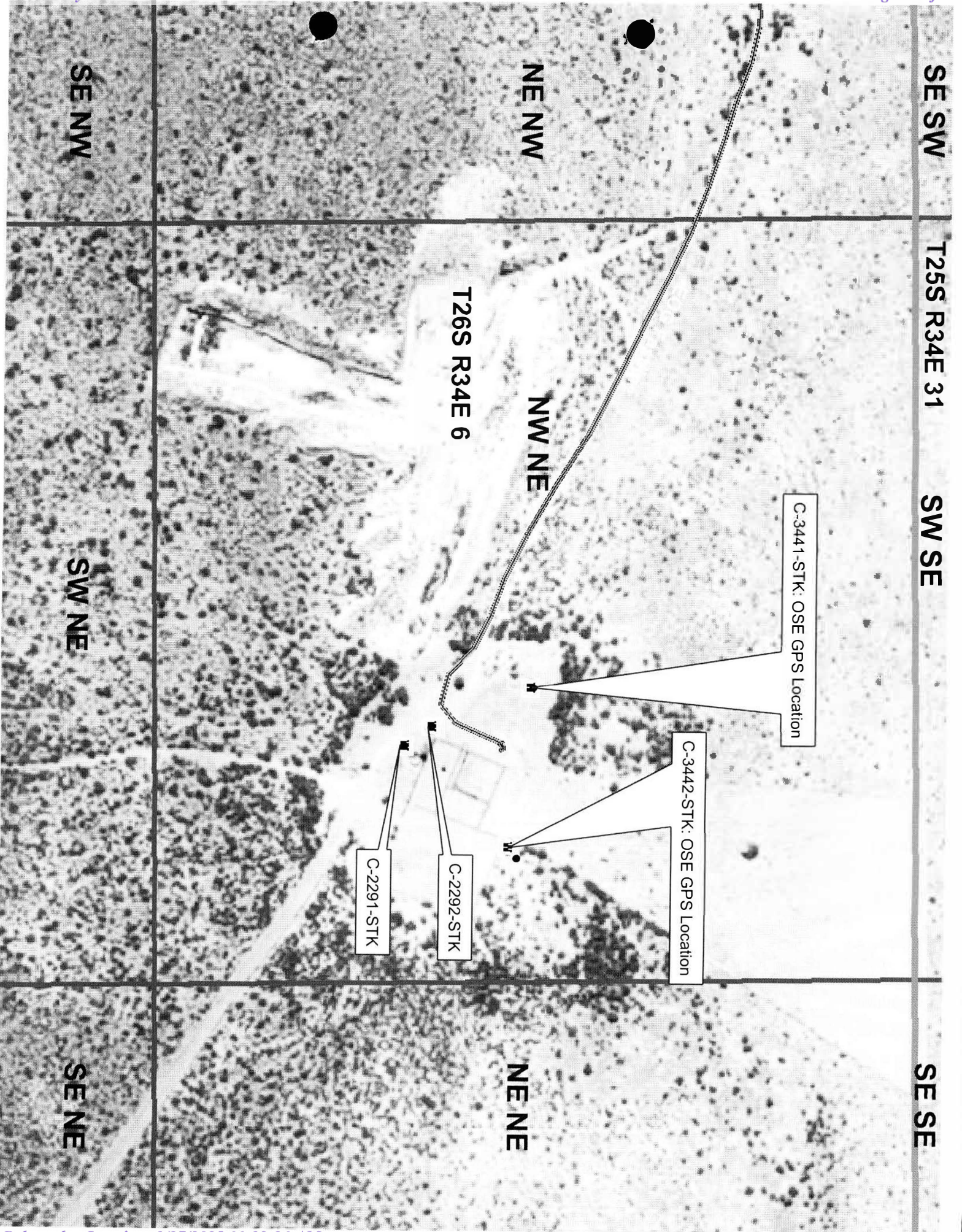
 STATE ENGINEER OF
 NEW MEXICO
 2010 MAY 17 A 11:11 AM

FOR USE INTERNAL USE

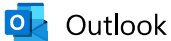
WELL RECORD & LOG (Version 6/9/08)

FILE NUMBER 2-3441	POD NUMBER POD1	TRN NUMBER
LOCATION 26.34.6. 24.382	PAGE 2 OF 2	

2141122



ATTACHMENT 3: CORRESPONDENCE



Outlook

[Draft] Jayhawk 6 CTB 2 Liner Notification nAPP2435652226**From** Monica.Peppin@soudermiller.com

Draft saved Mon 2/17/2025 10:29 AM

Liner inspection submitted.
Incident number will change to nAPP2504226053

Jim Raley | Environmental Professional - Permian Basin

5315 Buena Vista Dr., Carlsbad, NM 88220

C: (575)689-7597 | jim.raley@dmv.com**From:** Monica Peppin <Monica.Peppin@soudermiller.com>**Sent:** Monday, February 10, 2025 6:23 PM**To:** Raley, Jim <Jim.Raley@dmv.com>**Cc:** Stephanie Hinds <stephanie.hinds@soudermiller.com>**Subject:** [EXTERNAL] Jayhawk 6 CTB 2 Liner Notification nAPP2435652226

SMA anticipates conducting liner inspection activities at the following site on Friday, February 14, 2025 at approximately 10:30 AM - 11:30 AM. Details Below:

Proposed Date: Friday, February 14, 2025**Time Frame:** 10:30 AM - 11:30 AM**Site Name:** Jayhawk 6 CTB 2**Incident ID:** nAPP2435652226**API/Facility ID:** fAPP2130256650

Liner Inspection Notification	
Incident ID and Site Name:	nAPP2435652226/Jayhawk 6 CTB 2
API # and Corresponding Agency:	FAPP2130256650 NMOCD NMNM114990 BLM
Question	Answer (Fill In)
What is the liner inspection surface area in square feet (secondary containmet):	Approx. 6,610 sq ft
Have all the impacted materials been removed from the liner and cleaned?	1.7.25
Liner inspection date pursuant to Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC: 48 HOURS PRIOR TO INSPECTION	2.14.25
Time liner inspection will commence:	11:00 AM
Please provide any information necessary for observers to contact inspector: (Name and Number)	Monica Peppin 575.909.3418
Please provide any information necessary for navigation to liner inspection site and coordinates (Lat/Long)	Intersection of 128/Battle Axe Rd travel south on Battle Axe 11.6 miles, turn left onto lease road travel east 0.14 miles, turn right travel south 0.08 miles, turn left travel east 0.23 miles, turn right travel south on lease rd 0.55 miles ending on location 32.076386, -103.512052

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

General Information
Phone: (505) 629-6116

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

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

QUESTIONS

Action 434840

QUESTIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 434840
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2504226053
Incident Name	NAPP2504226053 JAYHAWK 6 CTB 2 @ 0
Incident Type	Produced Water Release
Incident Status	Remediation Closure Report Received
Incident Facility	[fAPP2130256531] JAYHAWK 6 CTB 2

Location of Release Source	
Please answer all the questions in this group.	
Site Name	JAYHAWK 6 CTB 2
Date Release Discovered	12/21/2024
Surface Owner	Federal

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 Pump Produced Water Released: 20 BBL Recovered: 20 BBL Lost: 0 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)	Seal on water transfer pump failed. Releasing 20 bbls to lined secondary containment. Fluids fully recovered.

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

General Information
Phone: (505) 629-6116

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

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

QUESTIONS, Page 2

Action 434840

QUESTIONS (continued)

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 434840
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	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	No
Reasons why this would be considered a submission for a notification of a major release	Unavailable.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial Response

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

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

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

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

I hereby agree and sign off to the above statement	Name: James Raley Title: EHS Professional Email: jim.raley@dvsn.com Date: 02/24/2025
--	---

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

General Information
Phone: (505) 629-6116

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

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

QUESTIONS, Page 3

Action 434840

QUESTIONS (continued)

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 434840
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Site Characterization	
<i>Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 1 and 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1 and 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 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 1000 (ft.) and ½ (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between ½ and 1 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Greater than 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
Requesting a remediation plan approval with this submission	Yes
<i>Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.</i>	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	Yes
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
On what estimated date will the remediation commence	01/07/2025
On what date will (or did) the final sampling or liner inspection occur	02/14/2025
On what date will (or was) the remediation complete(d)	02/14/2025
What is the estimated surface area (in square feet) that will be remediated	6610
What is the estimated volume (in cubic yards) that will be remediated	0
<i>These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.</i>	
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

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

General Information
Phone: (505) 629-6116

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

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

QUESTIONS, Page 4

Action 434840

QUESTIONS (continued)

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 434840
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Remediation Plan (continued)	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
<i>(Select all answers below that apply.)</i>	
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	Yes
OTHER (Non-listed remedial process)	Not answered.
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
I hereby agree and sign off to the above statement	Name: James Raley Title: EHS Professional Email: jim.raley@dvni.com Date: 02/24/2025
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

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

General Information
Phone: (505) 629-6116

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

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

QUESTIONS, Page 6

Action 434840

QUESTIONS (continued)

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 434840
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Liner Inspection Information	
Last liner inspection notification (C-141L) recorded	430412
Liner inspection date pursuant to Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC	02/14/2025
Was all the impacted materials removed from the liner	Yes
What was the liner inspection surface area in square feet	6610

Remediation Closure Request	
<i>Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.</i>	
Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	Yes
What was the total surface area (in square feet) remediated	6610
What was the total volume (cubic yards) remediated	0
Summarize any additional remediation activities not included by answers (above)	Secondary Containment inspection completed. No breach through liner
<i>The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (in .pdf format) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.</i>	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.	
I hereby agree and sign off to the above statement	Name: James Raley Title: EHS Professional Email: jim.raley@dmv.com Date: 02/24/2025

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

General Information
Phone: (505) 629-6116

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

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

CONDITIONS

Action 434840

CONDITIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 434840
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

Created By	Condition	Condition Date
scott.rodgers	App ID 434840 Liner Inspection approved	2/27/2025