



December 30, 2024

PROJECT # 5E33088 BG# 5

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

SUBJECT: Closure Request Report for the RDX Federal 21 #022/ 21-22 Pad, Incident ID #'s nAPP2430235253 and nAPP2430930089, Eddy 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 that describes the corrective actions for a produced water incident related to oil and gas production activities at the RDX Federal 21 #022/21-22 Pad ("RDX"), under two incidents:

- Incident nAPP2430235253, which occurred on October 25, 2024, and
- Incident nAPP2430930089, which occurred on November 3, 2024.

The spill area is located at latitude N 32.030922 and longitude W -103.8901 on Federal Bureau of Land Management (BLM) land.

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 October 25, 2024 and November 4, 2024, for the submission of Notice of Release (NOR), followed by the submission of the Form C-141, Release Notification on November 4, 2024 for both incident ID's. Immediate notice was provided for both incidents through an email from Devon to notify of a major release. This letter provides a description of the spill assessment and includes a request for spill closure.

Table 1: Release Information and Closure Criteria			
Name	RDX Federal 21 #022	Company	Devon Energy Production Company, LP
API Number	30-015-40561	Location	F-21-26S-30E/32.030922, -103.8901
Incident Numbers	nAPP2430235253 and nAPP2430930089	Land Status	Federal
Date of Releases	October 25, 2024, and November 3, 2024	Lease Number	NMNM102917
Source of Releases	Tank overflow and equipment failure		
Released Volume	330 bbls / 66 bbls	Recovered Volume	330 bbls / 66 bbls
NMOCD Closure Criteria	Depth to groundwater <50 feet bgs (below ground surface) – Within 300 feet of Wetlands feature		

2.0 Background

On October 25, 2024, an issue with the water transfer pump caused the production tank to overflow. The total volume of released fluids was 330 barrels (bbls) of produced water. Approximately 330 bbls of produced water were recovered using a vacuum truck.

On November 3, 2024, a second incident occurred when the water transfer pump malfunctioned causing the production tank to overflow. The total volume of released fluids was 66 bbls of produced water. Approximately 66 bbls of produced water were recovered using a vacuum truck.

Both releases occurred within the secondary lined containment at RDX. Initial response activities were conducted by the operator, including source elimination, photographs of standing fluids, and recovery of the produced water for both incidents. Verification that the affected area was properly exposed and cleaned for visual observation was done and a liner inspection was scheduled. 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 shows the surface geology at the incident location area is comprised of primarily Qoa–Older alluvial deposits of upland plains and piedmont areas with calcic silts and eolian cover sediments of High Plains region. Soil texture is classified as Gypsum land-Reeves complex. Ecological settings include vegetation of mixed grasses, dominated by grasses with shrubs and half-shrubs sparse and evenly distributed. Black grama, blue grama, and tobosa are the dominant grass species. A variety of perennial forbs, such as globemallow, verbena, groundsels, croton, and filaree. Fourwing saltbrush and winterfat are two of the more palatable shrubs for animals present within the area.

The surrounding geography and terrain are associated with plains, terraces, and fan piedmonts with landforms consisting of sand dunes, ridges, and hills at elevations between 2,842 and 5,000 feet above mean sea level (amsl). The annual average rainfall and precipitation ranges between 8 to 14 inches. The soil in the release location area consists of sandy loam, clay loam, and gravelly loam material that tends to be well drained, with high run off, and low available water supply. The moderately deep soils have a petrocalcic, petrogypsic, or gypsum horizon.

4.0 Site Information and Closure Criteria

The RDX is located approximately 9.88 miles northeast of Angeles, Texas, on Federal (BLM) land at an elevation of approximately 3,018 feet amsl. SMA completed site assessment and 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 but does fall within the parameters of 300 feet to a wetland feature, a riverine that runs north and south on the east side of the pad. This wetland, riverine, is 186 feet from the secondary containment which as outlined in Paragraph (4) of Subsection C of 19.15.29.11 NMAC. RDX is subject to be treated as if it occurred in less than 50 feet to groundwater as stated in Table 1 of 19.15.29.12 NMAC. The nearest significant watercourse, as defined in 19.15.17.7.P NMAC, is the Pecos River, located approximately 4.19 miles east of the site (U.S. Fish and Wildlife Service, National Wetlands Inventory, 2024). There are no continuous flowing watercourses or significant watercourses, lakebeds, sinkholes, playa lakes.

Depth to ground water was determined using a New Mexico Office of the State Engineers (NMOSE) online GIS POD locations for registered water wells. No wells were located within a 0.5-mile search radius. The nearest POD, C-04629-POD1, is located 0.69 miles from RDX, and is a temporary borehole previously drilled by Devon, to a total depth of 55 feet bgs. The temporary borehole was completed on May 20, 2022 and concluded depth to groundwater is greater than 55 feet bgs. Documentation in reference to site characterization and depth to groundwater is included in Attachment 2.

Based on data included in the closure criteria determination worksheet, the incident at RDX is not subject to the requirements of Paragraph (4) of Subsection C 19.15.29.12 NMAC and due to no groundwater data within ½ mile of the site, it is determined that the closure criteria for the site are the constituent concentration limits associated with less than 50 feet depth to groundwater as stated in Table 1 of 19.15.29.12 NMAC.

5.0 Remediation Activities

Notification of the liner inspection, scheduled for November 22, 2024, was provided to Devon through email by SMA personnel on November 19, 2024. Devon provided notification to OCD and the BLM through the ENMRD Electronic Permitting and Payment Portal for Operators on November 19, 2024. Notification documentation is included in Attachment 3.

On November 22, 2024, SMA personnel performed a 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 was completed on all sidewalls and 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. Rainwater from a storm event recently did leave rain puddles within the containment. Observations concluded no signs of any cuts, rips, tears, or weathering of the liner condition needs repairs or replacement, and liner integrity was confirmed. Photo documentation of the liner inspection is in the Site Assessment Report (Attachment 1).

6.0 Conclusions and Recommendations

Based on the liner inspection and assessment, SMA concludes the liner integrity is adequate to contain the spill related to incidents nAPP2430235253 and nAPP2430930089, and there is no evidence of release to the environment. Based on the professional activities and site assessment, Devon Energy Production Company respectfully requests closure on the incidents that occurred at RDX 21 Federal #022/21-22 Pad.

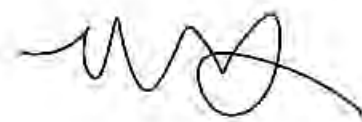
7.0 Scope and Limitations

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 releases in the Permian Basin in New Mexico.

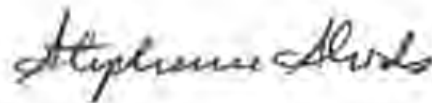
If there are any questions regarding this report, please contact Stephanie Hinds at (505) 302-1127 or Monica Peppin at (575) 909-3418.

Submitted by:
SOUDER, MILLER & ASSOCIATES

Reviewed by:



Monica Peppin
Project Manager



Stephanie Hinds, P.E.
Senior Engineer

REFERENCES:

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

Http://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 Field Report and Photolog

Attachment 2: Closure Criteria Determination Research

Attachment 3: Correspondence

ATTACHMENT 1: SITE ASSESSMENT FIELD REPORT AND PHOTOLOG

Site Inspection Report

Client: Devon Energy Corporation

Site Name: RDX Federal 21 #022

API: 30-015-40561

Lease #: NMNM102917

Incident ID: nAPP2430235253 and
nAPP2430930089

Project Manager: Monica Peppin

Project Owner: Jim Raley



Stronger Communities by Design

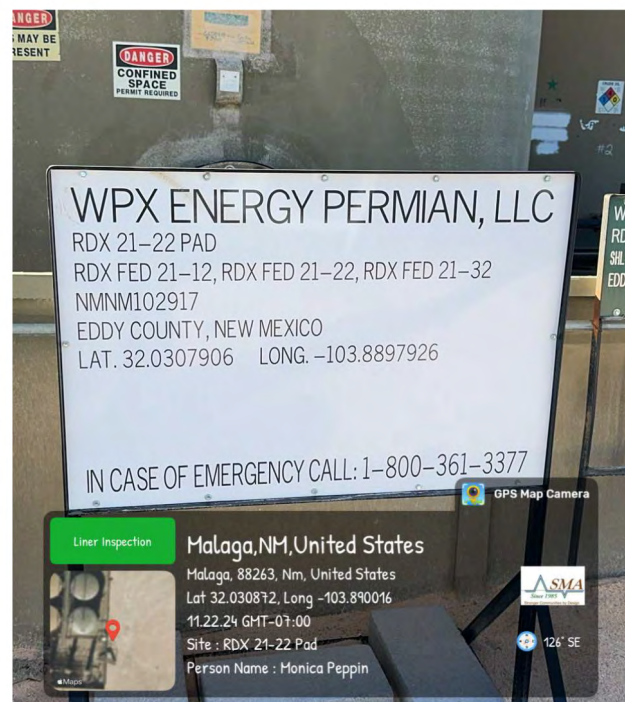
Field Notes

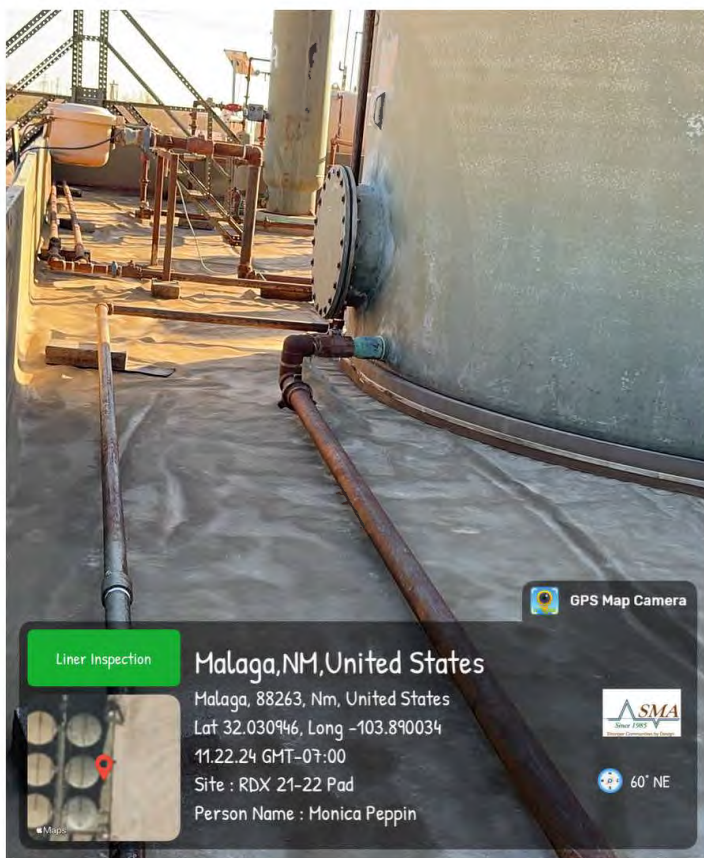
Nov 22, 2024, at 11:01AM

- Arrive on site at 11:00 AM. Complete safety paperwork, begin visual inspection of secondary containment, and collect photos of liner in a 360-degree view for proof of liner integrity. Inspected for any visible perforations, cuts, rips, tears, or substantial weathering that could lead to the potential breach through the liner.
- The liner inspection activity 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.
- Two incidents occurred on separate occasions and this inspection is to verify that both incidents did not have any breach past the liner within the containment. Liner integrity has been confirmed and photo documentation is provided here and will be included with a final report.

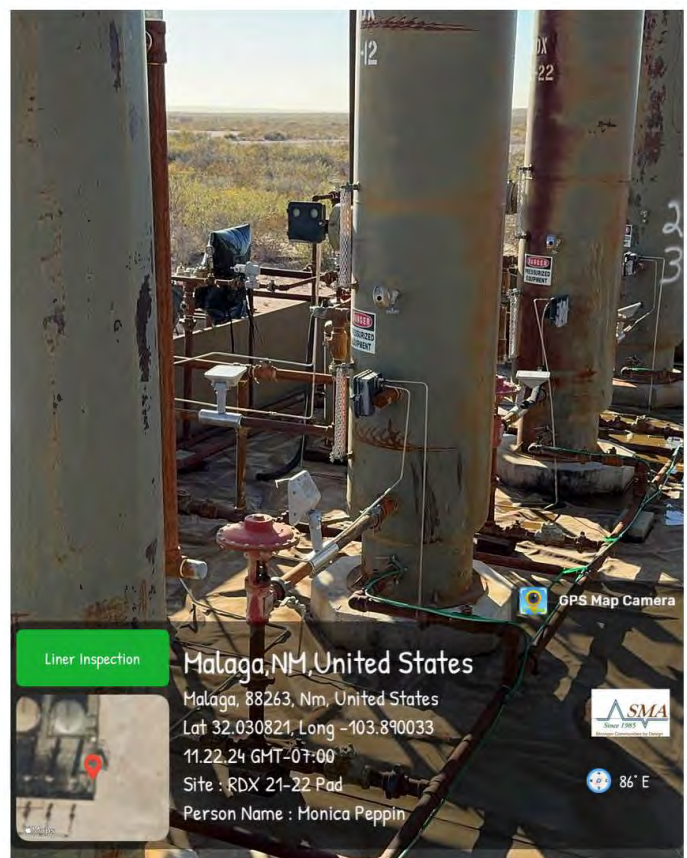
Visual documentation

**Photograph #1: Lease sign for
proof of being at correct site**

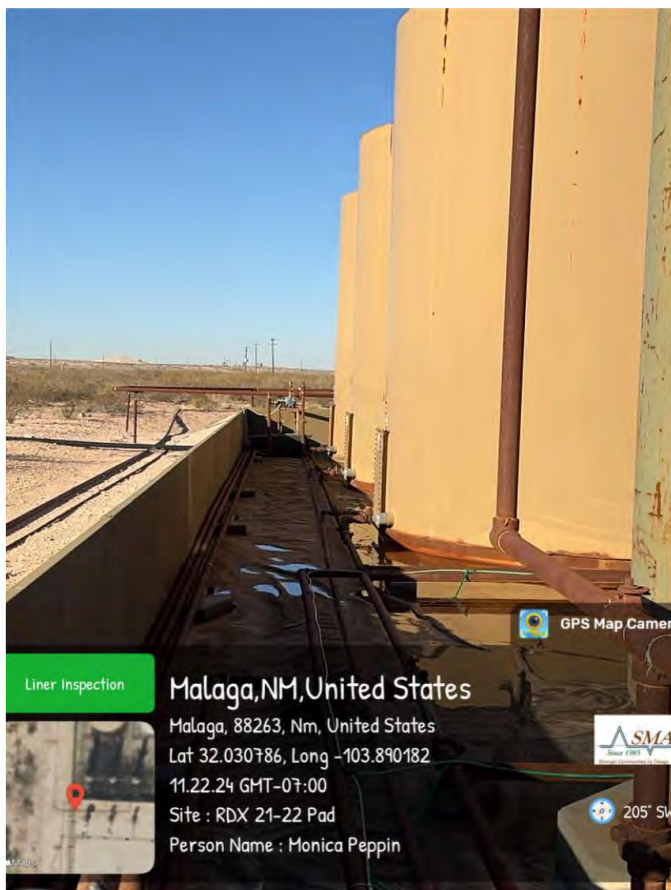




Photograph #3: East side showing east to south area



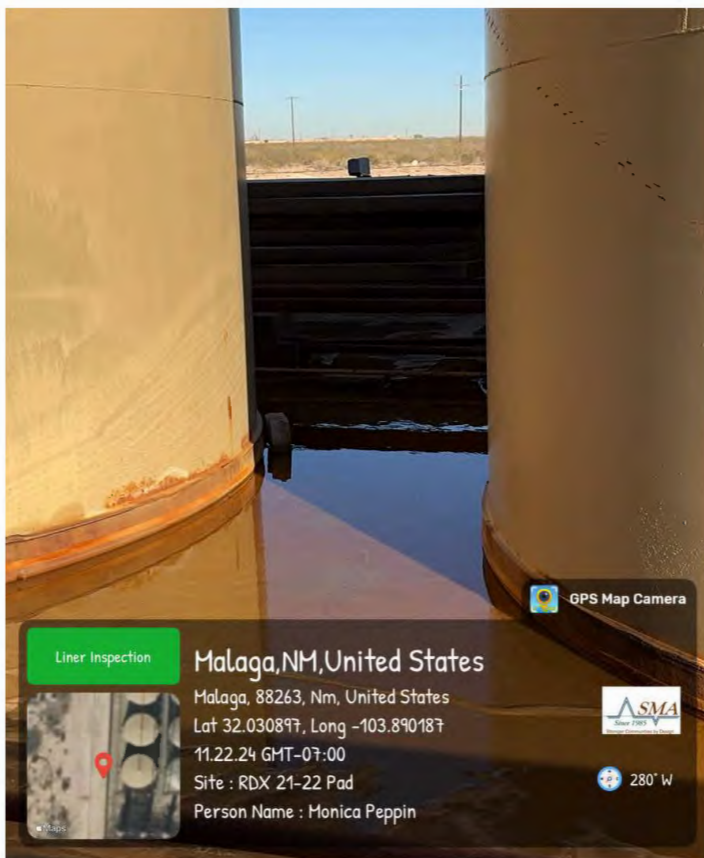
Photograph #4: east side looking west showing south end of liner



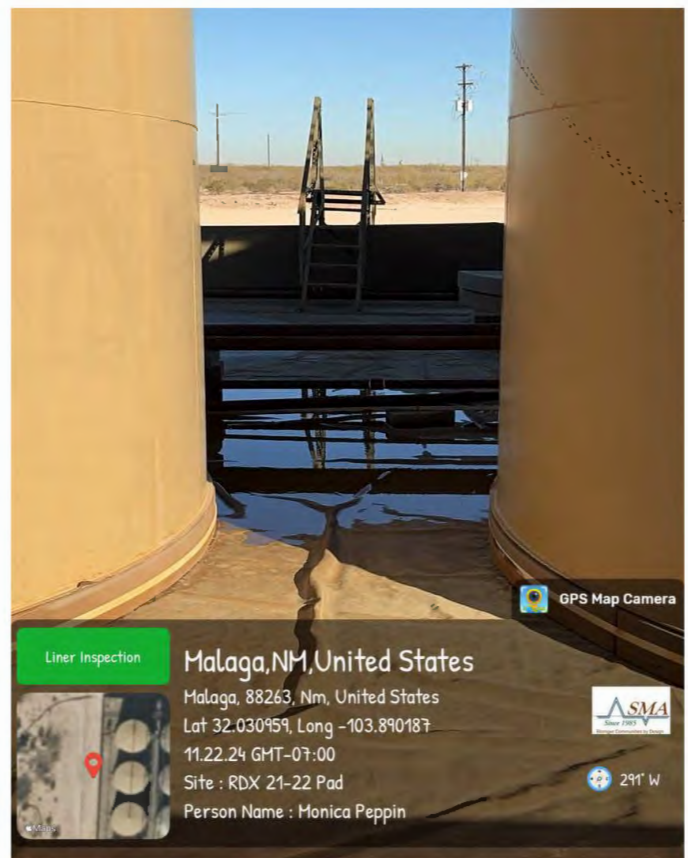
Photograph #5: Facing north from southwest corner showing west side of containment



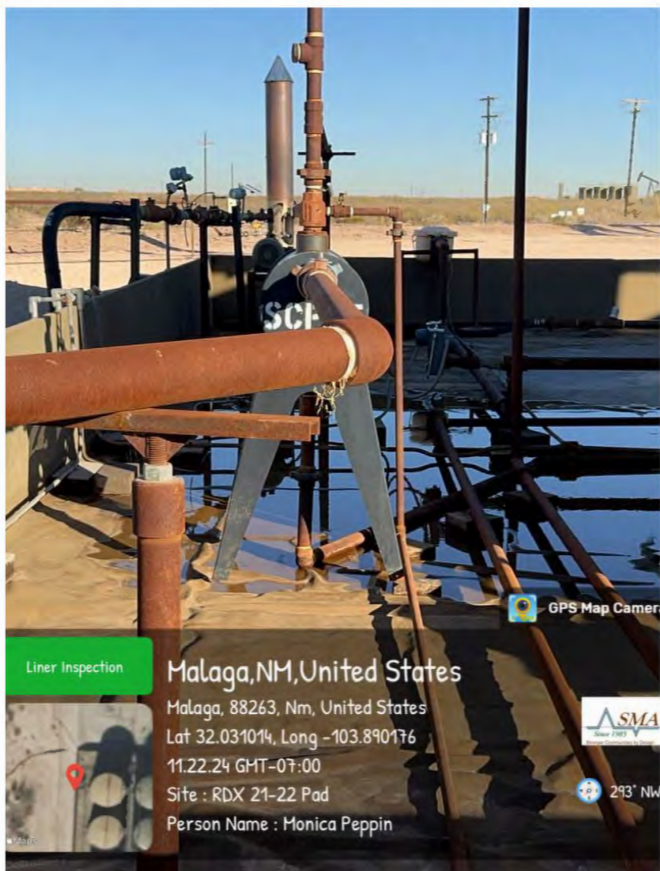
Photograph #6: Facing southeast to show south end from southwest corner



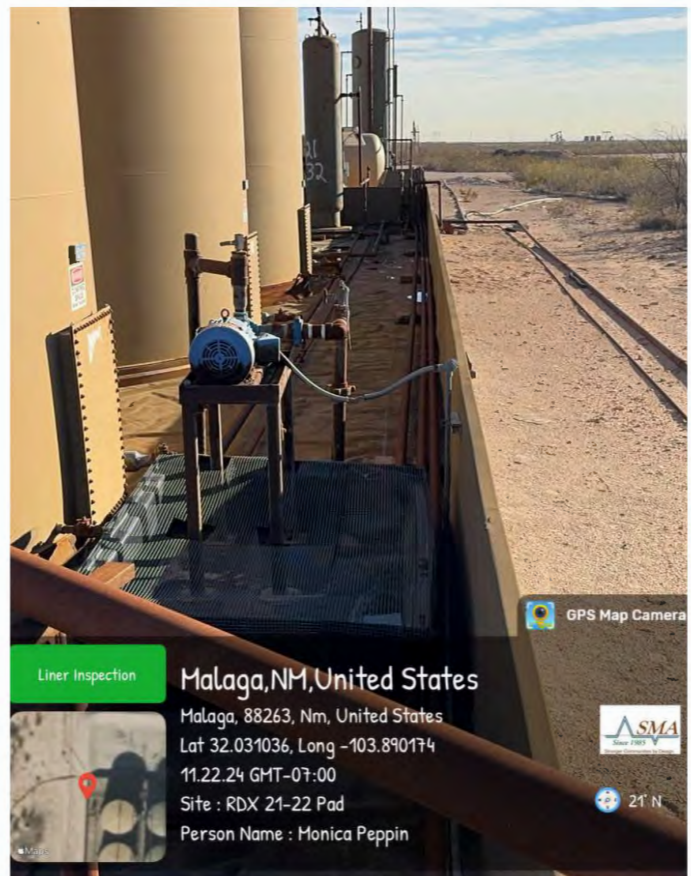
Photograph #7: Facing west showing middle area between tanks



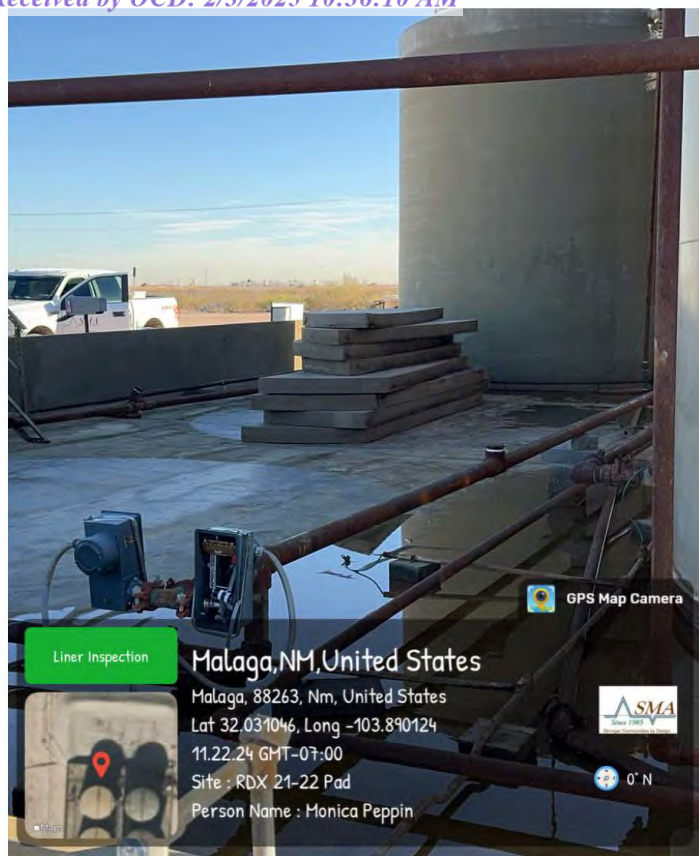
Photograph #8: Facing east from west middle area of containment



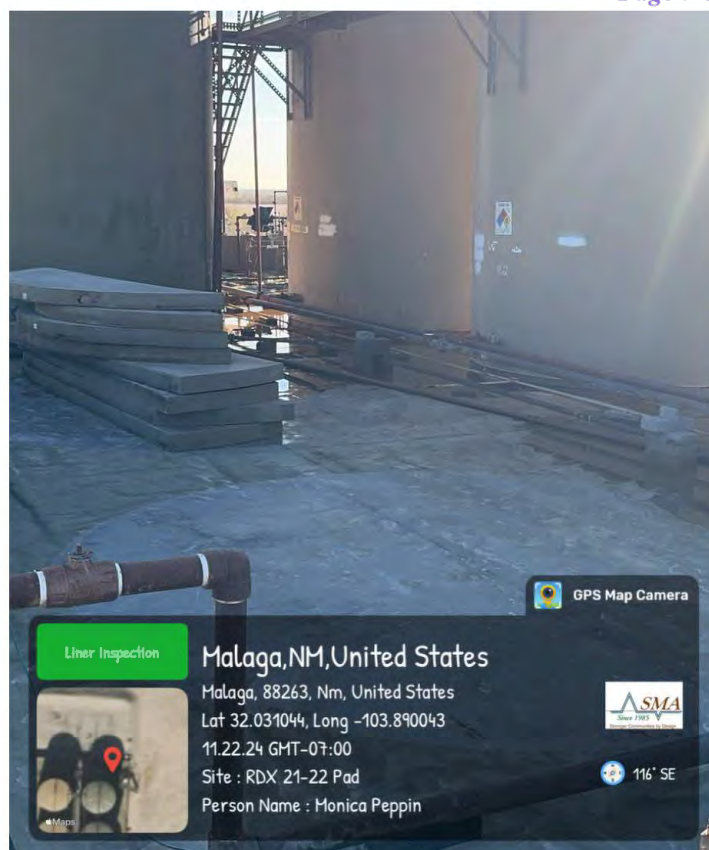
Photograph #9: Facing east from west/northwest side



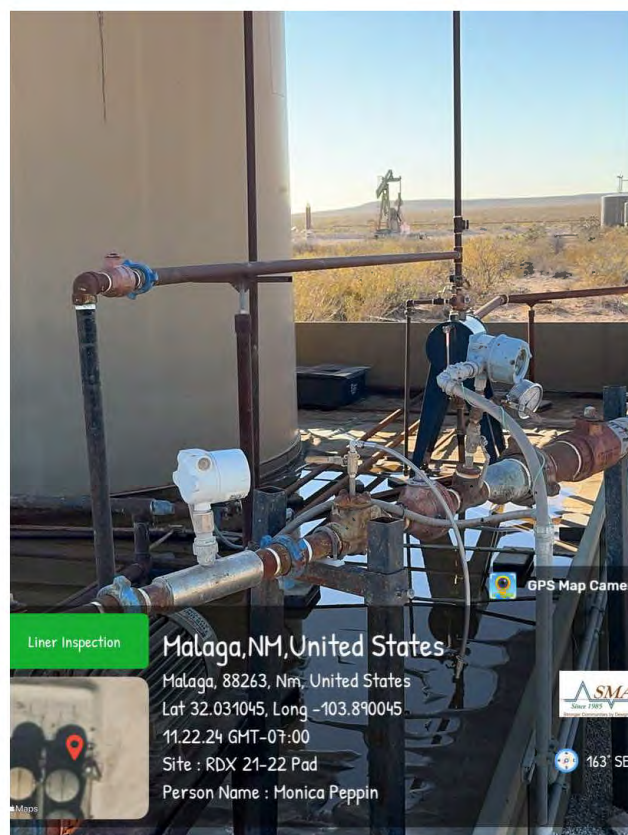
Photograph #10: Facing south from north west corner



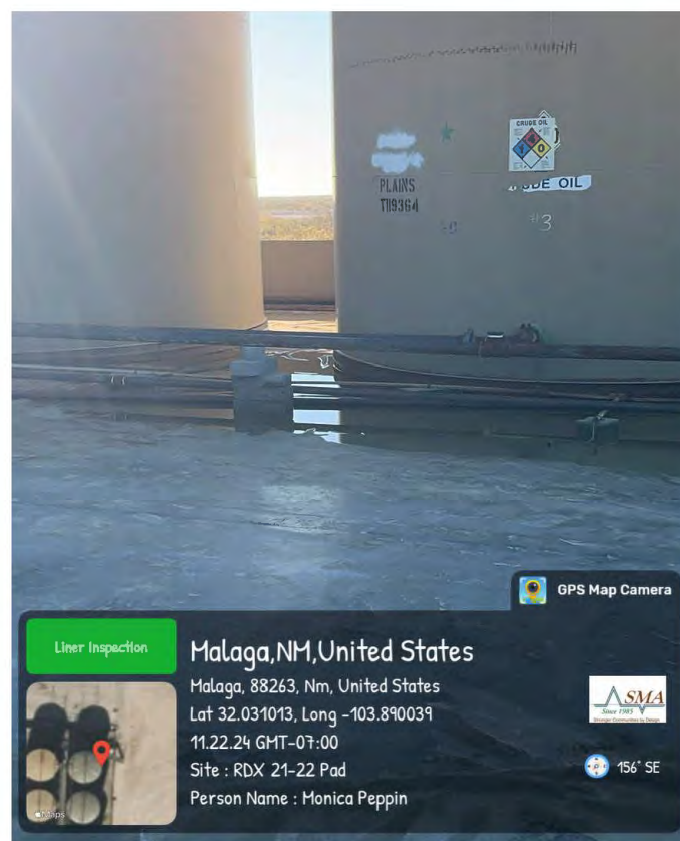
Photograph #11: Facing south from northwest corner



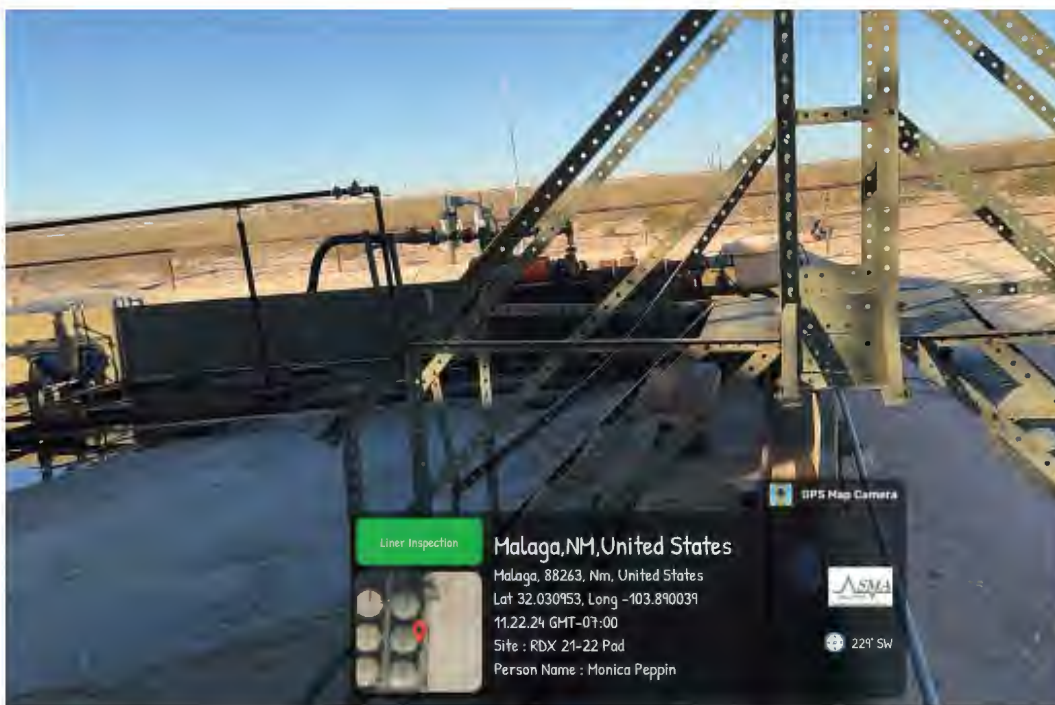
Photograph #12: Facing south from northeast side of containment



Photograph #13: north end of containment facing west



Photograph #14: Facing west/southwest from mid area on east side



Photograph #15: Facing north to show northeast corner of containment near steps

Technician: Monica Peppin

Date: 11/22/2024

Signature:



A handwritten signature in black ink, appearing to be 'Monica Peppin', written over a solid black horizontal line.

ATTACHMENT 2: CLOSURE CRITERIA DETERMINATION RESEARCH

RDX 21-22 Pad

Approximate Area of Containment: 4,801 Square Feet
POR Coordinates: 32.030922, -103.8901

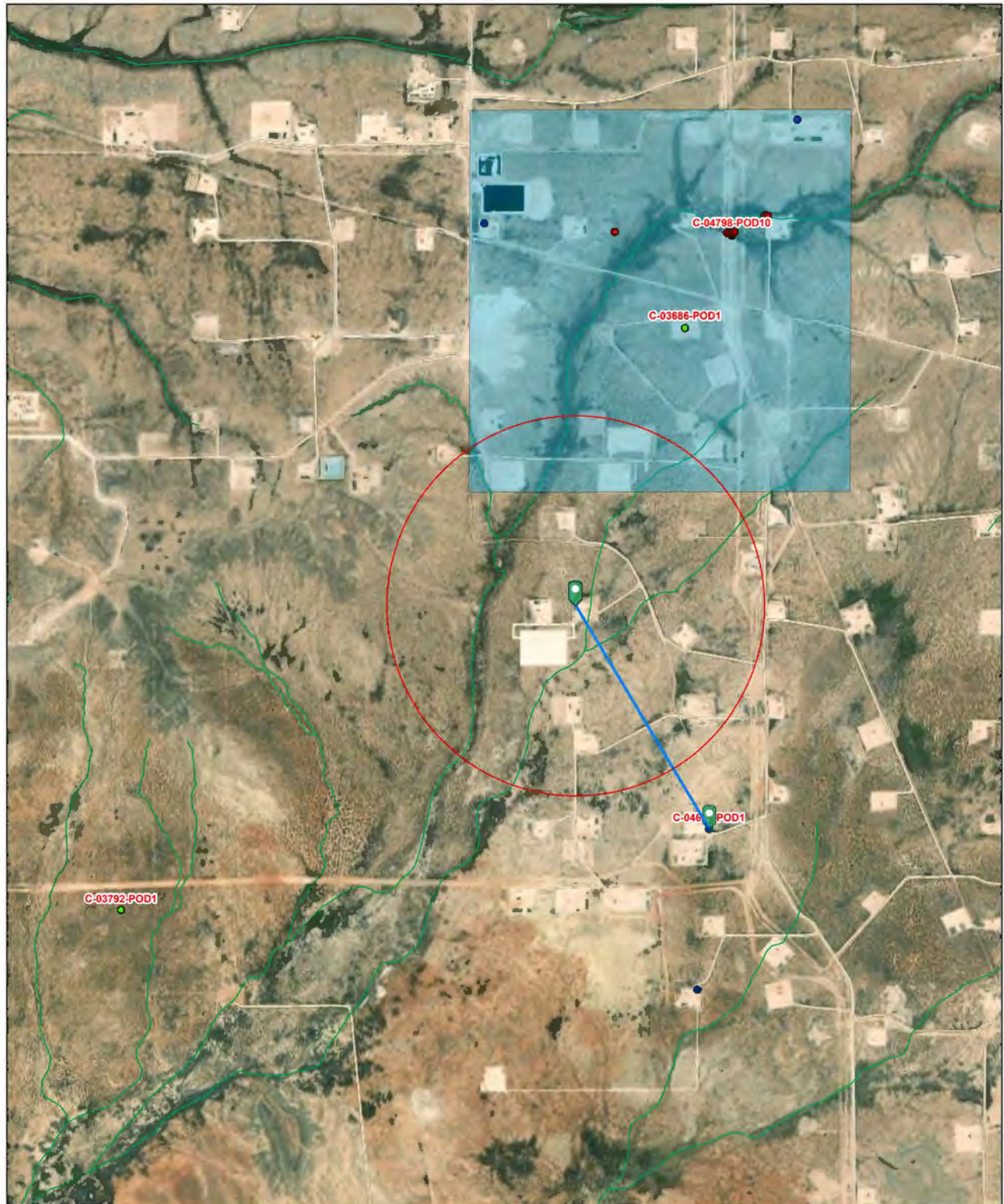
Legend

-  Polygon Measure
-  RDX 21-22 Pad



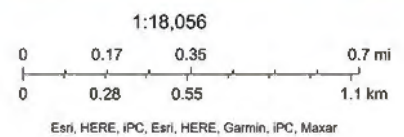
Nearest OSE Pod for DTGW Determination

RDX 21-22 Pad



12/4/2024, 9:38:17 AM

- | | | |
|-----------------|------------------------------|-------------------|
| — Override 1 | ● Plugged | NHD Flowlines |
| GIS WATERS PODs | ● | — Artificial Path |
| ● Active | — OSE District Boundary | — Stream River |
| ● Pending | New Mexico State Trust Lands | |
| | Both Estates | |





Online web user
This is an unofficial map from the OSE's online application.

RDX 21-22 Pad

Nearest Watercourse/Lakebed: 4.19 miles (22,103 feet)

Legend

 Feature 1

 RDX 21-22 Pad

4.19 mi

NEW MEXICO




2 mi

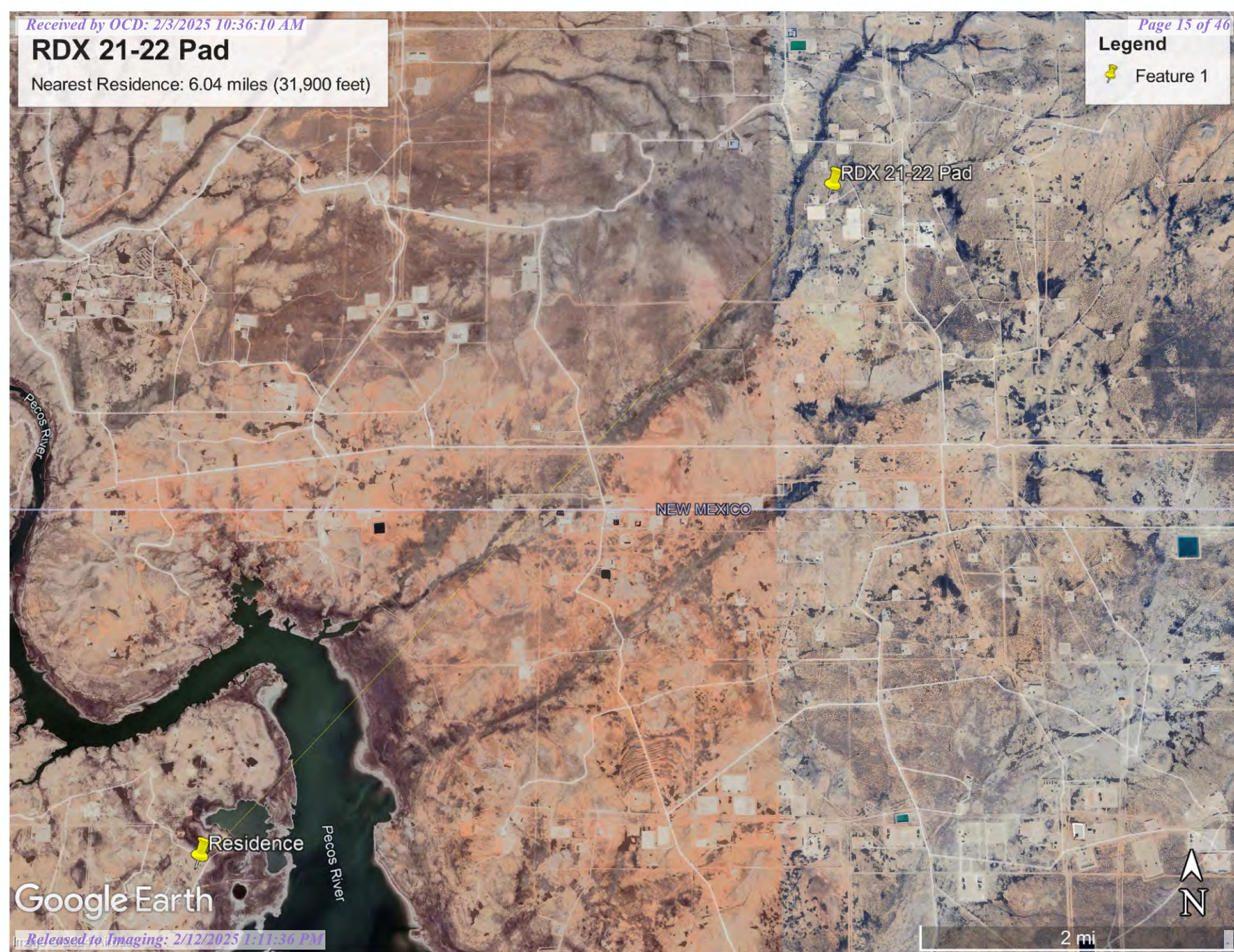
Google Earth

RDX 21-22 Pad

Nearest Residence: 6.04 miles (31,900 feet)

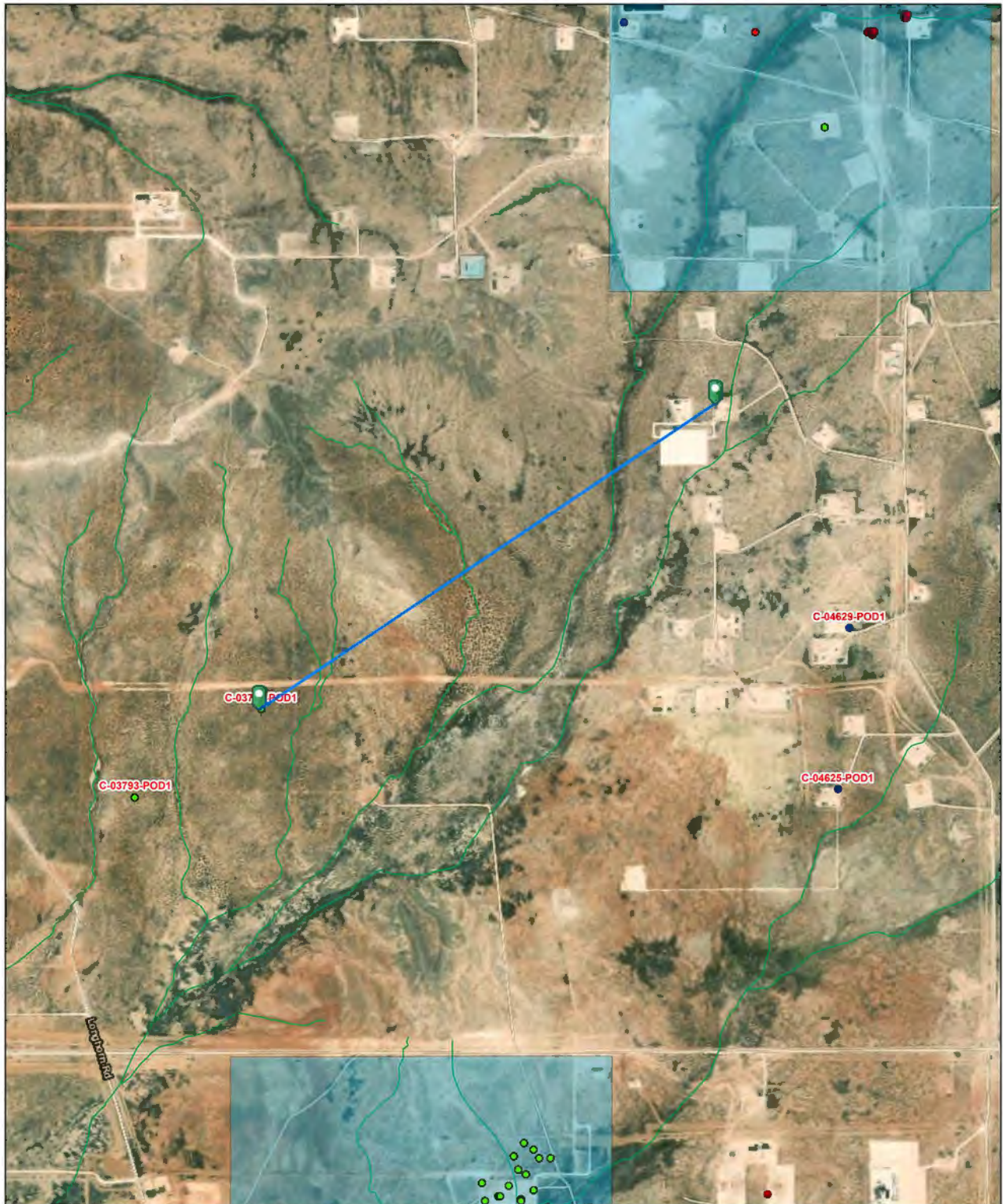
Legend

 Feature 1



Google Earth

RDX 21-22 Pad



12/4/2024, 9:17:33 AM

- Override 1
- GIS WATERS PODs
 - Active
 - Pending
 - Plugged
- New Mexico State Trust Lands
- Both Estates
- NHD Flowlines
 - Artificial Path
 - Stream River

1:18,056

0 0.17 0.35 0.7 mi

0 0.28 0.55 1.1 km



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

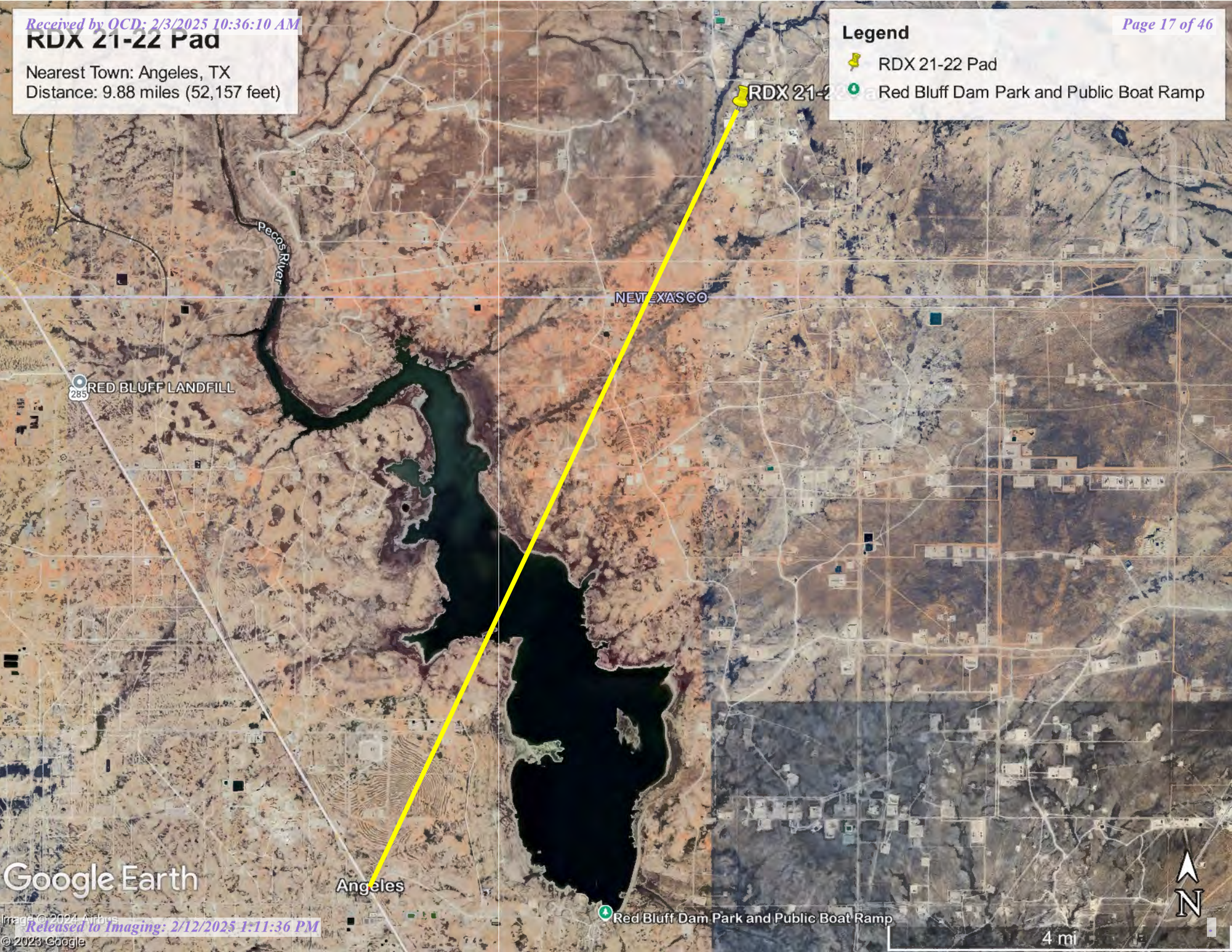
Online web user
This is an unofficial map from the OSE's online application.

RDX 21-22 Pad

Nearest Town: Angeles, TX
Distance: 9.88 miles (52,157 feet)

Legend

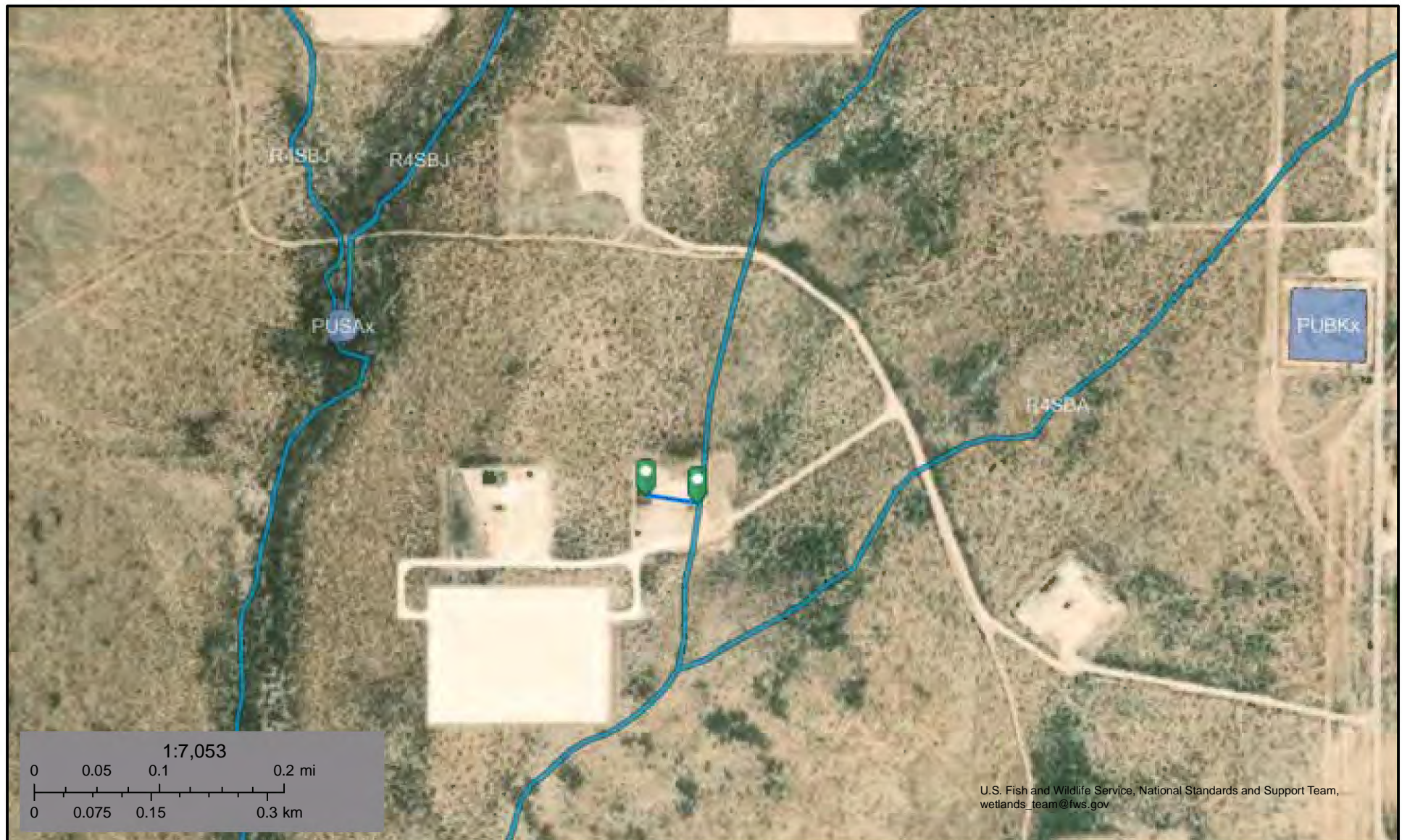
-  RDX 21-22 Pad
-  Red Bluff Dam Park and Public Boat Ramp



Google Earth



RDX 21-22 Pad Nearest Wetlands: Riverine
Distance: 186 feet (0.04 miles)



November 19, 2024

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

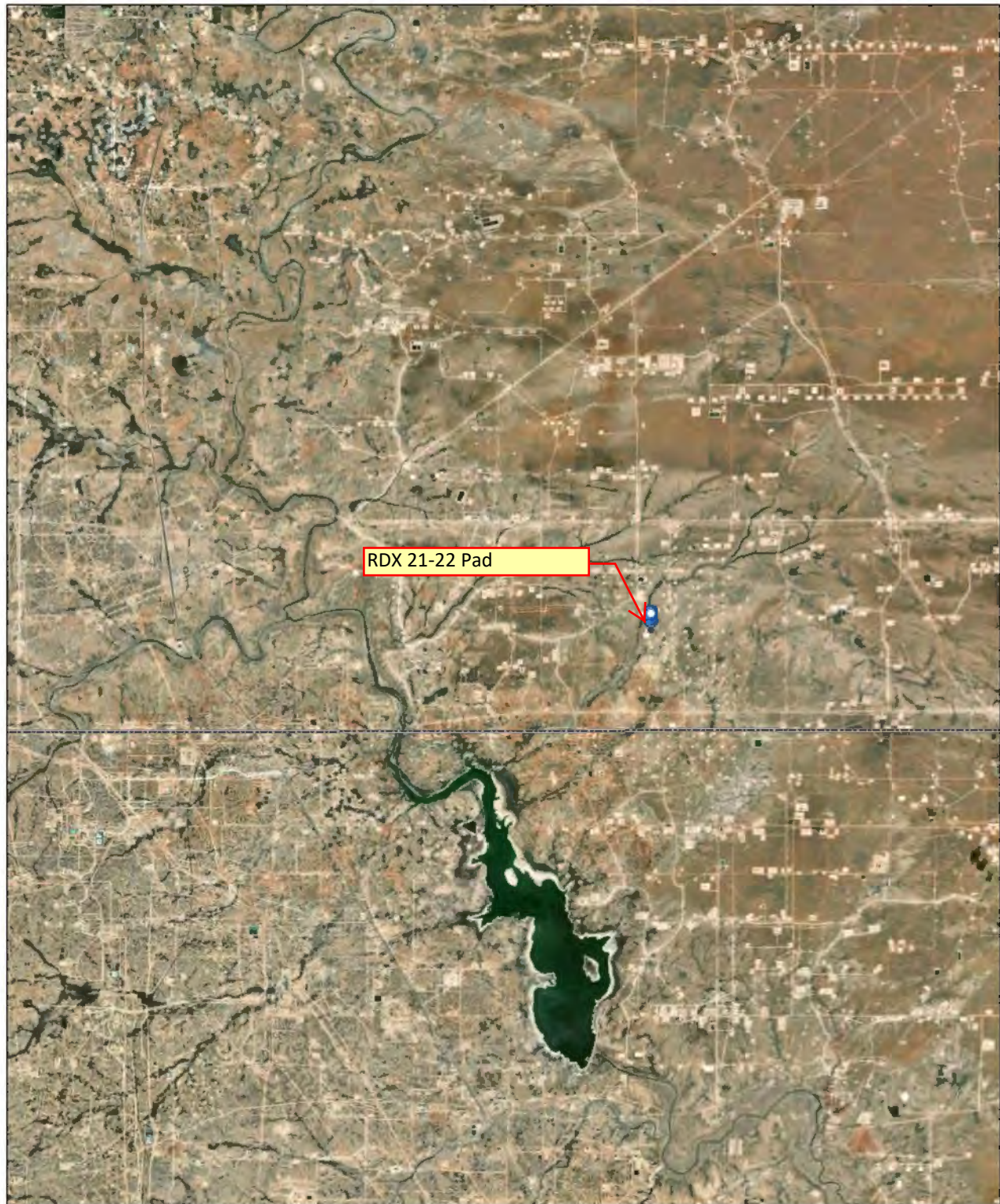
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

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

Subsurface Mines Distance > 5 miles

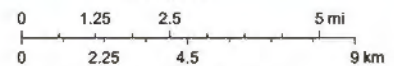
RDX 21-22 Pad



11/29/2024, 1:09:24 AM

- Mining_Ghost_Towns
- Counties
- REE_Districts
 - Fe skarn, carbonate-hosted Pb-Zn
 - REE-Th-U veins, fluorite veins
 - Vein and replacement deposits in Proterozoic rocks, tin veins, volcanic-epithermal vein
 - carbonatite
 - beach-placer sandstone

1:144,448



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

RDX 21-22 Pad

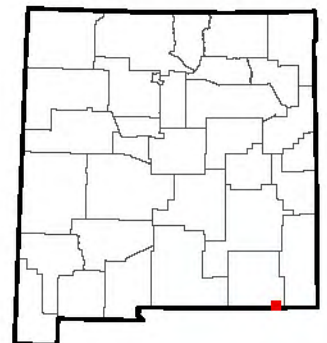
RDX 21-22 Pad0 0.05 0.1 0.2
mi**New Mexico State Land Office**

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: 2/12/2025 1:11:36 PM
Map Created: 11/19/2024

- RDX 21-22 Pad
- Karst_Potential_NM
Potential
 - High
 - Medium
 - Low
- Critical_Karst_Zone_NM



National Flood Hazard Layer FIRMette



103°53'43"W 32°2'7"N



0 250 500 1,000 1,500 2,000 Feet 1:6,000

Released to Imaging: 2/12/2025 4:11:36 PM

Basemap Imagery Source: USGS National Map 2023

Legend

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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) 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 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
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 **11/19/2024 at 2:49 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.

Soil Map—Eddy Area, New Mexico



Soil Map may not be valid at this scale.

Map Scale: 1:982 if printed on A landscape (11" x 8.5") sheet.

0 10 20 40 60 Meters

0 45 90 180 270 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84



Natural Resources
Conservation Service


Web Soil Survey
National Cooperative Soil Survey

11/19/2024
Page 1 of 3

Soil Map—Eddy Area, 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: Eddy Area, New Mexico

Survey Area Data: Version 20, 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.

Soil Map—Eddy Area, New Mexico

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
GR	Gypsum land-Reeves complex, 0 to 3 percent slopes, eroded	3.3	100.0%
Totals for Area of Interest		3.3	100.0%

Map Unit Description: Gypsum land-Reeves complex, 0 to 3 percent slopes, eroded---Eddy Area, New Mexico

Eddy Area, New Mexico

GR—Gypsum land-Reeves complex, 0 to 3 percent slopes, eroded

Map Unit Setting

National map unit symbol: 1w4h

Elevation: 3,000 to 5,000 feet

Mean annual precipitation: 10 to 14 inches

Mean annual air temperature: 60 to 64 degrees F

Frost-free period: 190 to 220 days

Farmland classification: Not prime farmland

Map Unit Composition

Gypsum land: 55 percent

Reeves and similar soils: 35 percent

Minor components: 10 percent

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

Description of Gypsum Land

Setting

Landform: Ridges, plains, hills

Landform position (two-dimensional): Shoulder, backslope, footslope, toeslope

Landform position (three-dimensional): Side slope, head slope, nose slope, crest

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Residuum weathered from gypsum

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Hydric soil rating: No

Description of Reeves

Setting

Landform: Ridges, plains, hills

Landform position (two-dimensional): Shoulder, backslope, footslope, toeslope

Landform position (three-dimensional): Side slope, head slope, nose slope, crest

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Residuum weathered from gypsum

Typical profile

H1 - 0 to 8 inches: sandy loam

H2 - 8 to 32 inches: clay loam

Map Unit Description: Gypsum land-Reeves complex, 0 to 3 percent slopes, eroded---Eddy Area, New Mexico

H3 - 32 to 60 inches: gypsiferous material

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Gypsum, maximum content: 80 percent

Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum: 4.0

Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): 3s

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: B

Ecological site: R070BC007NM - Loamy

Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 10 percent

Hydric soil rating: No

Data Source Information

Soil Survey Area: Eddy Area, New Mexico

Survey Area Data: Version 20, Sep 3, 2024



Ecological site R070BC007NM

Loamy

Accessed: 11/19/2024

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.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on uplands landforms, mainly on hill slopes, ridges, plains, terraces and some fan remnants. Slopes range from 1 to 5 percent and average about 3 percent. Average annual precipitation is about 8 to 14 inches. Elevations range from 2,842 to 5,000 feet.

Table 2. Representative physiographic features

Landforms	(1) Plain (2) Terrace (3) Fan piedmont
Flooding frequency	None
Ponding frequency	None
Elevation	2,842–5,000 ft
Slope	0–5%
Aspect	E, S, W

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 is in late March or early April, and the first killing frost is in late 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 in January through June rapidly drying out the soil during a critical time 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 by wetland or streams.

Soil features

The soils of this site are deep to moderately deep. The moderately deep soils have either a petrocalcic, petrogypsic or gypsum horizon between 30 and 40 inches.

Surface textures are loam, silt loam, very fine sandy loam, or clay loam. Substratum textures are loam, silty clay loam, clay loam, or silt loams. Subsoil textures are silt loam, clay loam, silty clay loam, gravelly loam, gravelly clay loam or very gravelly loam. Permeability is moderate to slow and the available water holding capacity is high to moderate. The Atoka, Reeves, Russler, Milner soils may have high amounts of CaCO₃, ranging as high as 40 percent in the subsoil. Rock fragments range from 5 to 50 percent in the subsoil. Reeves, Russler, Milner, Holloman soils will have 40 to 80 percent gypsum in the underlying material.

Maximum and minimum values listed below represent the characteristic soils for this site.

Characteristic Soils:

Atoka (petrocalcic)
 Bigetty
 Reagan
 Reakor
 Reeves (gypsum)
 Russler (gypsum)
 Largo
 Russler (gypsum)
 Largo
 Berino
 Tinney
 Midessa
 Ratliff
 Holloman (gypsum)
 Milner (gypsum)

Table 4. Representative soil features

Surface texture	(1) Loam (2) Very fine sandy loam (3) Silt loam
Family particle size	(1) Loamy
Drainage class	Well drained to somewhat excessively drained
Permeability class	Moderate to slow
Soil depth	30–72 in

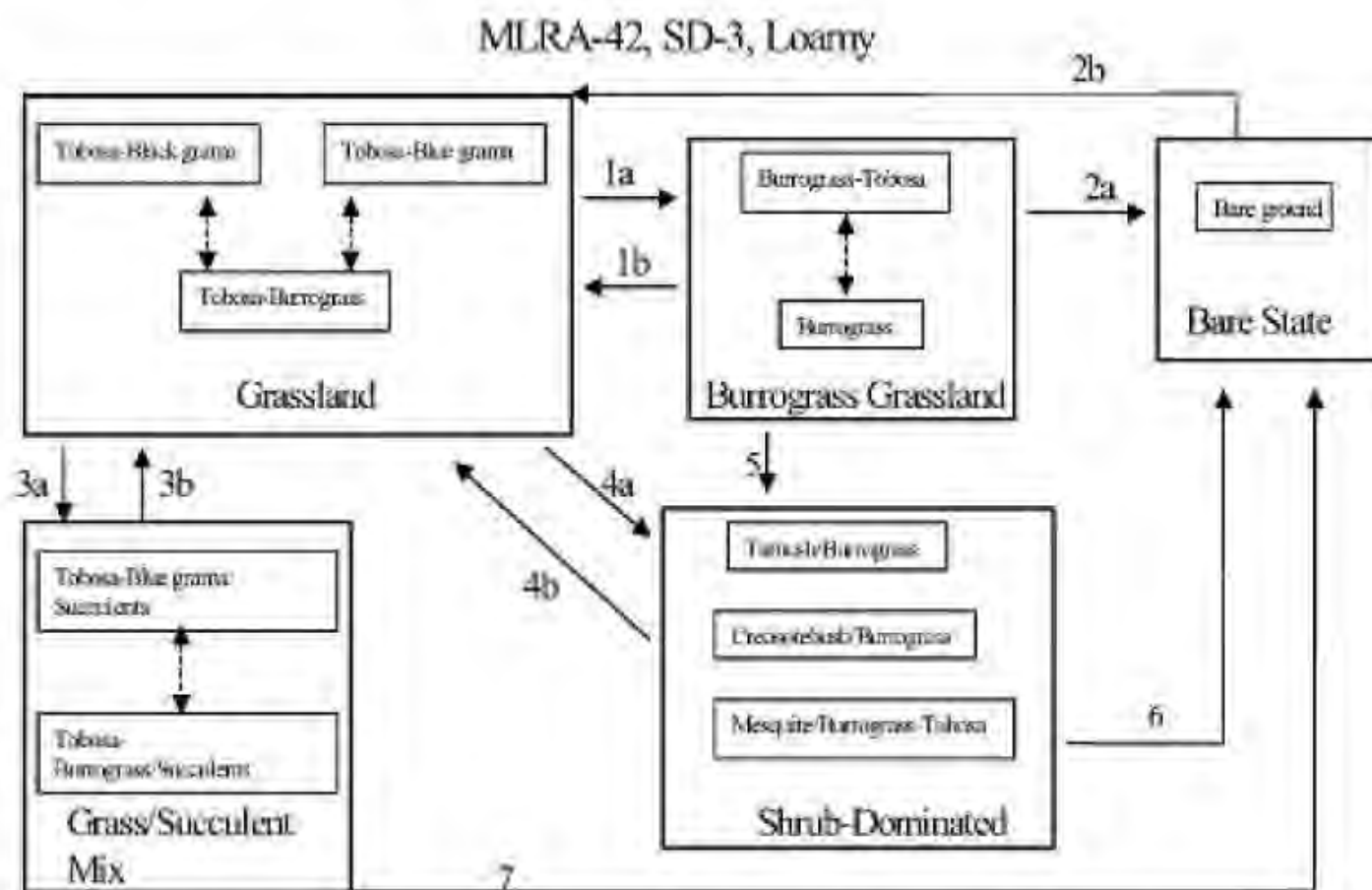
Surface fragment cover <=3"	0–5%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	5–12 in
Calcium carbonate equivalent (0-40in)	0–10%
Electrical conductivity (0-40in)	0–8 mmhos/cm
Sodium adsorption ratio (0-40in)	0–6
Soil reaction (1:1 water) (0-40in)	6.6–8.4
Subsurface fragment volume <=3" (Depth not specified)	0–5%
Subsurface fragment volume >3" (Depth not specified)	0%

Ecological dynamics

Overview: The Loamy site is associated with the Gyp Upland ecological site with which it intergrades. There is a pronounced increase in alkali sacaton along this interface. The loamy site is also associated with the Gravelly and Shallow ecological sites from which it receives run-on water. The Draw site often dissects Loamy sites and is distinguished from the Loamy site by increased production or greater densities of woody species. The historic plant community has a grassland aspect, dominated by grasses with shrubs and half-shrubs sparse and evenly distributed. Tobosa, black grama and blue grama are the dominant species. Retrogression within this state is characterized by a decrease in black and blue grama and an increase in burrograss. Continuous overgrazing and drought can initiate a transition to a Burrograss- Grassland state. Continued reduction in grass cover and resulting infiltration problems may eventually effect a change to a Bare State, with very little or no remaining grass cover. Alternatively, creosotebush, tarbush or mesquite may expand or invade. Transitions back to a Grassland State from a Bare or Shrub-Dominated state are costly and may not be economically feasible. Decreased fire frequency may play a part in the transition to the Grass/Succulent Mix state with increased amounts of cholla and prickly pear.

State and transition model

Plant Communities and Transitional Pathways (diagram)



1a. Soil drying, overgrazing, drought, soil surface sealing; 1b. Restore natural overland flow, increase infiltration, prescribed grazing.

2a. Severe reduction in cover, soil surface sealing, decreased infiltration, erosion; 2b. Restore hydrology, break up physical crust, range seeding, prescribed grazing.

3a. Lack of fire, overgrazing, hail storms or other physical disturbance, drought; 3b. Prescribed fire, brush control, prescribed grazing.

4a. Seed dispersal of shrubs, persistent loss of grass cover, competition by shrubs, lack of fire; 4b. Brush control, range seeding - dependent on amount of grass (seed bank) remaining.

5. Loss of grass cover, seed dispersal of shrubs, competition by shrubs.

6 & 7. Brush control with continued loss of grass cover, soil sealing, erosion.

State 1 Historic Climax Plant Community

Community 1.1 Historic Climax Plant Community

State Containing Historic Climax Plant Community Grassland: The historic plant community has a grassland aspect, dominated by grasses with shrubs and half-shrubs sparse and evenly distributed. Black grama, blue grama, and tobosa are the dominant grass species. There are a variety of perennial forbs and their production varies widely by season and year. Globemallow, verbena, groundsels, croton and filaree are forbs commonly found on this site. Fourwing saltbush and winterfat are two of the more palatable shrubs. The Loamy ecological site encompasses a

wide variety of soils, with surface textures ranging from sandy loams to clay loams. Soil depths range from shallow to very deep and can include sub surface features such as calcic, petrocalcic, and gypsic horizons. These variations cause differences in plant community composition and dynamics. Black grama is found at highest densities on coarser textured sandy loams, with blue grama preferring finer textured loam and silt loam, and tobosa favoring lower landscape positions and loam to clay loam surface textures. Burrograss may often be the dominant grass species on silty soils, perhaps in part due to the seedlings ability to auger into and establish on physically crusted soils. Gypsum influenced soils typically have greater amounts of tobosa, burrograss, and ephedra. There is greater representation of sideoats and vine mesquite within the tobosa-blue grama community. Retrogression under continuous heavy grazing results in a decrease of black grama, blue grama, sideoats grama, plains bristlegrass, bush muhly, cane bluestem, vine mesquite, winterfat, and fourwing saltbush. Species such as burrograss, threeawns, sand dropseed, sand muhly, and broom snakeweed increase under continuous heavy grazing or prolonged periods of drought. Under continued retrogression burrograss can completely dominate the site. Creosotebush, tarbush, and mesquite, can also dominate. Cholla and prickly pear can increase on areas that are disturbed or overgrazed. Diagnosis: Tobosa, black grama, and blue grama are the dominant species. Grass cover is uniformly distributed with few large bare areas. Shrubs are sparse and evenly distributed. Slopes range from level to gently sloping and usually display limited evidence of active rills and gully formation if plant cover remains intact. Litter movement associated with overland flow is limited to smaller size class litter and short distances. Other shrubs include: yucca, mesquite, tarbush, cholla and creosote bush. Other forbs include: desert holly, scorpionweed, bladderpod, flax, nama, fleabane, Indianwheat, Indian blanket flower, groundcherry, deerstongue, and rayless goldenrod.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	585	833	1080
Forb	39	55	72
Shrub/Vine	26	37	48
Total	650	925	1200

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	15-30%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	25-30%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	40-50%

Figure 5. Plant community growth curve (percent production by month).
 NM2807, R042XC007NM Loamy HCPC. R042XC007NM Loamy HCPC Warm
 Season Plant Community..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	5	10	10	25	30	15	5	0	0

State 2

Burrograss-Grassland

Community 2.1

Burrograss-Grassland

Burrograss-Grassland: Changes in hydrology resulting in decreased available soil moisture, reduces grass cover and increases bare ground. Burrograss is the dominant grass. Tobosa cover is variable and can range from sizeable areas to small patches occupying only depressions or the lowest and wettest positions within the site. Threeawns, ear muhly, sand muhly, and fluffgrass occur at increased densities compared to the grassland state. Shrub densities may increase especially mesquite, creosotebush or tarbush. Retrogression within this state is characterized by a further decrease in grass cover and increased bare ground. Further deterioration of this site can result in the transition to a bare state or becoming shrub dominated. Diagnosis: Burrograss is the dominant species. Grass cover is no longer uniformly distributed, instead tending to be patchy with large areas of bare ground present. Physical crusts are present in bare areas reducing infiltration and suppressing seedling establishment by any grass species other than burrograss. Transition to Burrograss-Grassland (1a): Transitions from grassland to a burrograss-grassland state may occur due to changes in hydrology. Gullies, roads or obstructions that alter natural water flow patterns may cause this transition. Changes in surface hydrology may also occur due to overgrazing or drought. The reduction in grass cover promotes increased soil physical crusts and reduces infiltration. 5 Key indicators of approach to transition: ? Diversion of overland flow resulting in decreased soil moisture. ? Increase in amount of burrograss cover ? Reduction in grass cover and increase in size and frequency of bare patches. ? Formation of physical crusts—indicating reduced infiltration. ? Evidence of litter movement—indicating loss or redistribution of organic matter. Transition back to Grassland (1b) The natural hydrology of the site must be returned. Culverts, turnouts, or rerouting roads may help re-establish natural overland flow, if roads or trails have altered the hydrology. Erosion control structures or shaping and filling gullies may help regain natural flow patterns and establish vegetation if the flow has been channeled. Breaking up physical crusts by soil disturbance may promote infiltration and seedling emergence. Allow natural revegetation to take place. Prescribed grazing will help ensure proper forage utilization and reduce grass loss due to grazing.

State 3

Bare State

Community 3.1

Bare State

Bare State: Extremely low ground cover, soil degradation and erosion characterize this state. Very little vegetation remains. Burrograss is the dominant grass and cover is extremely patchy. Physical soil crusts are extensive. Erosion and resource depletion increase as site degrades. Diagnosis: Very little cover remains. Erosion is evident by soil sealing, water flow patterns, pedestals or terracettes. Rills and gullies may be present and active. Transition to Bare State (2a): Extended drought, continuous heavy grazing, or other disturbance that severely depletes grass cover can effect this transition. As grass cover decreases, sheet flow and erosion increase, and physical soil crusts form, thereby further reducing infiltration. Key indicators of approach to transition: ? Continued reduction in grass cover. ? Increased soil surface sealing. ? Increased erosion. ? Reduced aggregate stability in bare areas. Transition back to Grassland (2b) Restore the hydrology, see (1a). With the extent of grass loss range seeding may be necessary. Utilizing livestock or mechanical means to break up the physical crusts may increase infiltration and aid seedling establishment. Prescribed grazing will help ensure adequate deferment period following seeding, and proper forage utilization once the grass stand is well established. The degree to which this site is capable of recovery depends on the restoration of hydrology, extent of degradation to soil resources, and adequate rainfall necessary to establish grasses.

State 4

Grass/Succulent Mix

Community 4.1

Grass/Succulent Mix

Grass / Succulent Mix: Increased representations of succulents characterize this site. Increased densities of cholla or pricklypear is recognized as a management concern, but their impact on grass production is unclear. Light to

medium cholla or prickly pear infestation doesn't seem to greatly reduce grass production, however it limits access to palatable grasses and interferes with livestock movement and handling. Tobosa and blue grama are the dominant species on this site. Retrogression within this site is characterized by a decrease in blue grama and an increase in succulents, tobosa and burrograss. Diagnosis: Cholla or prickly pear is found at increased densities. Grass cover is variable ranging from uniformly distributed to patchy with frequent areas of bare ground present. Tobosa or blue grama is the dominant grass species. Transition to Grass/Succulent Mix (3a): If fire was historically a part of desert grassland ecosystem and played a role in suppressing seedlings of shrubs and succulents, then fire suppression may favor the increase of succulents.¹ Heavy grazing by livestock or other physical disturbances may help disseminate seed and increase the establishment of succulents. Areas historically overgrazed by sheep are sometimes associated with higher densities of Succulents. Intense hailstorms can spread pricklypear by breaking off joints causing new plants to take root.³ During severe drought perennial grass cover can decline significantly, leaving resources available for use by more drought tolerant succulents. Cholla and pricklypear are both adapted to and favored by drought due to the ability of their shallow, wide spreading root systems to absorb and store water.⁴ Key indicators of approach to transition: ? Decrease or change in distribution of grass cover. ? Increase in amount of succulent seedlings. ? Increased cover of succulents. Transition back to Grassland (3b) Fire is an effective means of controlling cholla and prickly pear if adequate grass cover remains to carry fire.² Cholla greater than two feet tall or pricklypear with a large amount of pads (>15-20) are harder to kill. Chemical control is effective in controlling prickly pear and cholla; apply when growth starts in May. Hand grubbing is also effective if cholla or pricklypear is severed 2-4 inches below ground and care is taken not to let broken joints or pads take root. Stacking and burning piles and grubbing during winter or drought help keeps broken joints and pads from rooting. Prescribed grazing will help ensure proper forage utilization and sustain grass cover.

State 5 Shrub Dominated

Community 5.1 Shrub Dominated

Shrub Dominated: Increased shrub cover characterizes this state. Mesquite, creosotebush, and/or tarbush are the dominant shrub species. Burrograss or tobosa is the dominant grass species. Grass cover is decreased, typically patchy with large bare areas present; however, sometimes grass cover can remain relatively high for extended periods when associated with light to moderate infestations of mesquite. Variations in soil characteristics play a part in determining which shrub species increase. Mesquite is well adapted to a wide range of soil types, but increases more often on deep soils low in carbonates, that have a sandy surface overlying finer textured soils. Tarbush prefers finer textured, calcareous soils, usually in lower positions that receive some extra water. Creosotebush is less tolerant of fine textured soils, preferring sandy, calcareous soils that have some gravel. Creosotebush also does well on soils that are shallow over caliche. Retrogression within this state is characterized by a decrease in tobosa, and an increase in burrograss. As the site continues to degrade shrub cover continues to increase and grass cover is severely reduced. Diagnosis: Mesquite, Creosotebush, and/or tarbush are the dominant shrubs. Blue grama and black grama cover is low or absent. Burrograss or tobosa are the dominant grasses. Typically grass cover is patchy with large interconnected bare areas present. Physical soil crusts are present, especially on silt loam surface soils. Transition to Shrub Dominated (4a): Wildlife and livestock consume and disperse mesquite seeds. Flood events may wash creosote or tarbush seeds off adjacent gravelly sites onto the loamy site and supply adequate moisture for germination. Persistent loss of grass cover due to overgrazing or drought can cause large bare patches, providing competition free areas for shrub seedling establishment. As shrub cover increases, competition for soil resources, especially water, becomes a major factor in further reducing grass cover. Reduction of fire, due to either fire suppression policy or loss of adequate fine fuels may increase the probability of shrub encroachment. Increased soil surface physical crusts and associated decreased infiltration, may prevent the establishment of grass seedlings. Transition to Shrub Dominated (5): The dispersal of creosotebush, tarbush or mesquite seed, combined with loss of grass cover and resource competition by shrubs may cause this transition. Key indicators of approach to transition: ? Decreased grass and litter cover. ? Increased bare patch size. ? Increased physical soil crusts. ? Increased amount of mesquite, creosotebush, or tarbush seedlings. ? Increased shrub cover. Transition back to Grassland (4b) Brush control will be necessary to remove shrubs and eliminate competition for resources necessary for grass establishment or reproduction. Seeding may be necessary on those sites where desired grass species are absent or very limited. Pitting and seeding may increase the chances of successful grass establishment. Prescribed grazing will help ensure adequate time is elapsed before grazing seeded area is allowed and proper forage utilization following seeding establishment. Transition to Bare State (6): If grass cover on the shrub-dominated state is

severely limited and shrubs are removed a bare state may result. This transition will depend on amount of grasses or seed remaining, whether site is seeded, or if seeding is successful. Transition to Bare State (7): Removal of succulents and continued overgrazing or drought may cause loss of remaining grasses and erosion. Soil surface physical crusting may also be an important factor in inhibiting grass seedling establishment

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			278–324	
	tobosagrass	PLMU3	<i>Pleuraphis mutica</i>	278–324	–
2	Warm Season			9–46	
	burrograss	SCBR2	<i>Scleropogon brevifolius</i>	9–46	–
3	Warm Season			231–278	
	black grama	BOER4	<i>Bouteloua eriopoda</i>	231–278	–
	blue grama	BOGR2	<i>Bouteloua gracilis</i>	231–278	–
4	Warm Season			28–46	
	sideoats grama	BOCU	<i>Bouteloua curtipendula</i>	28–46	–
5	Warm Season			46–93	
	bush muhly	MUPO2	<i>Muhlenbergia porteri</i>	46–93	–
	plains bristlegrass	SEVU2	<i>Setaria vulpiseta</i>	46–93	–
6	Warm Season			9–28	
	Arizona cottontop	DICA8	<i>Digitaria californica</i>	9–28	–
7	Warm Season			46–93	
	threeawn	ARIST	<i>Aristida</i>	46–93	–
	muhly	MUHLE	<i>Muhlenbergia</i>	46–93	–
	sand dropseed	SPCR	<i>Sporobolus cryptandrus</i>	46–93	–
8	Warm Season			28–46	
	Graminoid (grass or grass-like)	2GRAM	<i>Graminoid (grass or grass-like)</i>	28–46	–
Shrub/Vine					
9	Shrub			9–28	
	fourwing saltbush	ATCA2	<i>Atriplex canescens</i>	9–28	–
	jointfir	EPHED	<i>Ephedra</i>	9–28	–
	winterfat	KRLA2	<i>Krascheninnikovia lanata</i>	9–28	–
	cane bluestem	BOBA3	<i>Bothriochloa barbinodis</i>	5–24	–
	Arizona cottontop	DICA8	<i>Digitaria californica</i>	5–24	–
	plains bristlegrass	SEVU2	<i>Setaria vulpiseta</i>	5–24	–
10	Shrub			9–28	
	javelina bush	COER5	<i>Condalia ericoides</i>	9–28	–
	broom snakeweed	GUSA2	<i>Gutierrezia sarothrae</i>	9–28	–
	Grass, annual	2GA	<i>Grass, annual</i>	5–15	–
11	Shrubs			9–28	
	Shrub (>.5m)	2SHRUB	<i>Shrub (>.5m)</i>	9–28	–
Forb					

12	Forb			9–46	
	threadleaf ragwort	SEFLF	<i>Senecio flaccidus</i> var. <i>flaccidus</i>	9–46	–
	globemallow	SPHAE	<i>Sphaeralcea</i>	9–46	–
	verbena	VEPO4	<i>Verbena polystachya</i>	9–46	–
	broom snakeweed	GUSA2	<i>Gutierrezia sarothrae</i>	5–15	–
	pricklypear	OPUNT	<i>Opuntia</i>	5–15	–
13	Forb			9–28	
	croton	CROTO	<i>Croton</i>	9–28	–
	woolly groundsel	PACA15	<i>Packera cana</i>	9–28	–
14	Forb			9–28	
	Goodding's tansyaster	MAPIG2	<i>Machaeranthera pinnatifida</i> ssp. <i>gooddingii</i> var. <i>gooddingii</i>	9–28	–
	woolly paperflower	PSTA	<i>Psilostrophe tagetina</i>	9–28	–
15	Forb			9–28	
	redstem stork's bill	ERCI6	<i>Erodium cicutarium</i>	9–28	–
	Texas stork's bill	ERTE13	<i>Erodium texanum</i>	9–28	–
16	Forb			9–28	
	Forb (herbaceous, not grass nor grass-like)	2FORB	<i>Forb (herbaceous, not grass nor grass-like)</i>	9–28	–

Animal community

This site provides habitats which support a resident animal community that is characterized by pronghorn antelope, black-tailed jackrabbit, black tailed prairie dog, yellow-faced pocket gopher, banner-tailed kangaroo rat, hispid cotton rat, swift fox, burrowing owl, horned lark, mockingbird, meadowlark, mourning dove, scaled quail, Great Plains toad, plains spadefoot toad, prairie rattlesnake and western coachwhip snake.

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
 Atoka C
 Bigetty B
 Ratliff B
 Reyab B
 Holloman B
 Largo B
 Holloman B
 Bigetty B
 Berino B
 Reagan B
 Reakor B
 Reeves B
 Russler C

Recreational uses

This site offers limited potential for hiking, horseback riding, nature observation and photography. Game bird, antelope and predator hunting are also limited.

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, during all seasons of the year. Under retrogression, such plants as black grama, blue grama, sideoats grama, bush muhly, plains bristlegrass, Arizona cottontop, fourwing saltbush and winterfat decrease and there is an increase in burrograss, threeawns, sand dropseed, muhlys, broom snakeweed and javilinabush. Under continued retrogression, burrograss can completely dominate the site. Creosotebush, mesquite, and tarbush can also dominate. Grazing management alone will not improve the site in the above situation. This site is well suited 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 3.0 – 4.2

75 – 51 4.1 – 5.5

50 – 26 5.3 – 7.0

25 – 0 7.1 +

Inventory data references

Other 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 Chavez County.

Other references

Literature References:

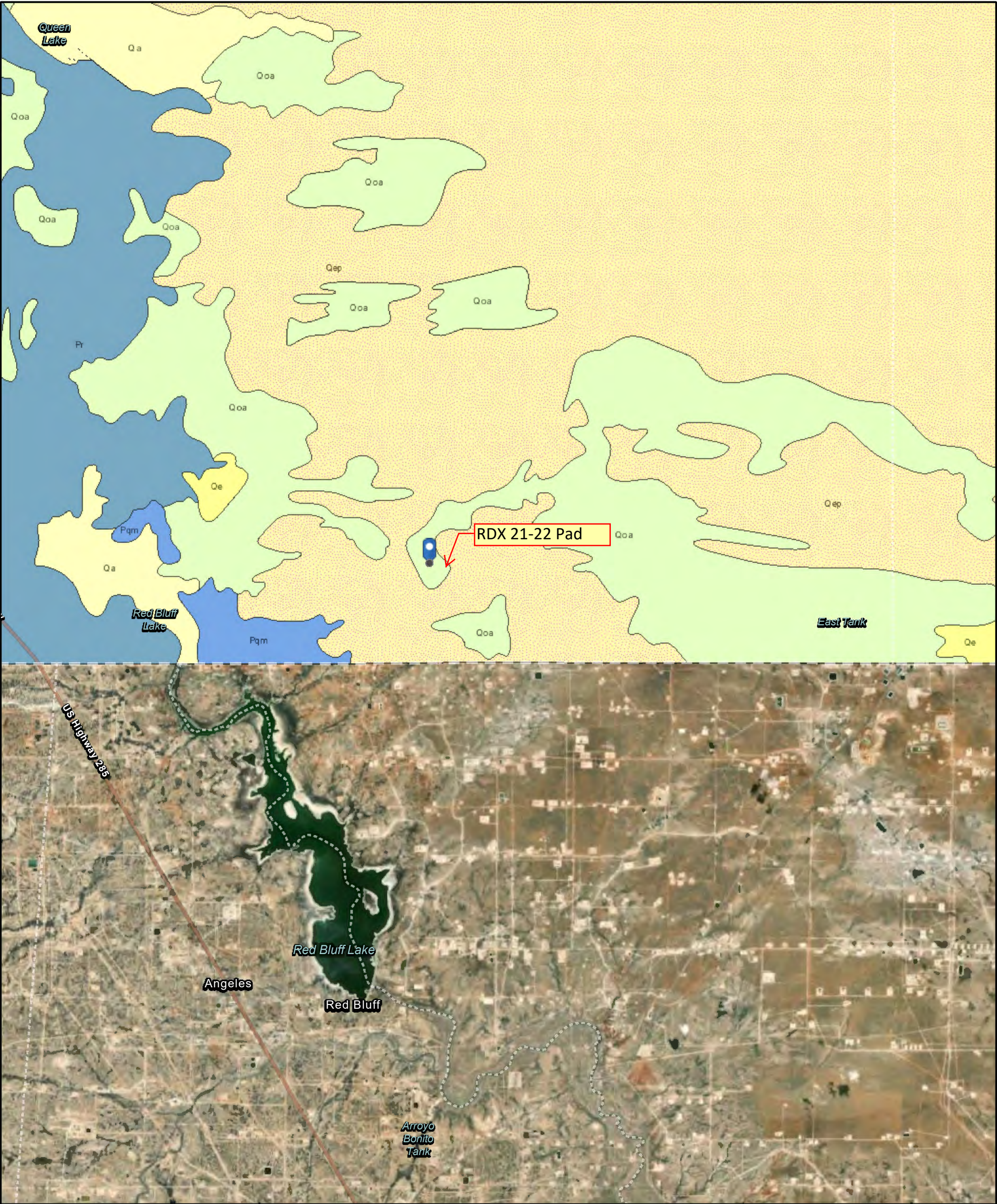
1. Brooks, M.L., AND D.A. Pyke. 2001. Invasive plants and fire in the deserts of North America. Pages 1–14 in K.E.M. Galley and T.P. Wilson (eds.). Proceedings of the Invasive Species Workshop: the Role of Fire in the Control and Spread of Invasive Species.
2. Bunting, S.C., H.A. Wright, and L.F. Neuenschwander. 1980. Long-term effects of fire on cactus in the Southern Mixed Prairie of Texas. J. Range. Manage. 33: 85-88.
3. Laycock, W.A. 1982. Hail as an ecological factor in the increase of prickly pear cactus. p. 359-361. In: J.A. Smith and V.W. Hays (eds.) Proc. XIV Int. Grassland Congr. Westview Press, Boulder, Colo.
4. Vallentine, J.F. 1989. Range Developments and Improvements. 3rd Edition. Academic Press. San Diego, California.
5. U.S. Department of Agriculture, Natural Resources Conservation Service. 2001. Soil Quality Information Sheet. Rangeland Soil Quality—Physical and Biological Soil Crusts. Rangeland Sheet 6, [Online]. Available: <http://www.statlab.iastate.edu/survey/SQL/range.html>

Contributors

David Trujillo

Don Sylvester

Geological Map - RDX 21-22 Pad

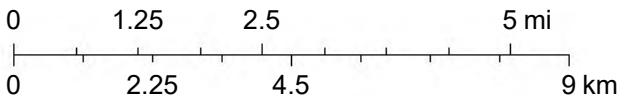


11/19/2024, 7:53:15 AM

Lithologic Units

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

1:144,448



Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS, Earthstar Geographics, NMBGMR

ATTACHMENT 3: CORRESPONDENCE



RE: [EXTERNAL] nAPP2430235253 and nAPP2430930089 RDX 21-22 Pad Liner Inspection Notification

From: Raley, Jim <Jim.Raley@dvn.com>
 Date: Tue, 11/19/2024 6:54 AM
 To: Monica Peppin <Monica.Peppin@soudermiller.com>
 Cc: Stephanie Hinds <stephanie.hinds@soudermiller.com>

Monica,
 Submitted for both incidents 11/19/2024

Jim Raley | Environmental Professional - Permian Basin
 5315 Buena Vista Dr., Carlsbad, NM 88220
 C: (575)689-7597 | jim.ralej@dvn.com



From: Monica Peppin <Monica.Peppin@soudermiller.com>
 Sent: Tuesday, November 19, 2024 6:36 AM
 To: Raley, Jim <Jim.Raley@dvn.com>
 Cc: BLM Spill Email <blm_nm_clo_spill@blm.gov>; ocd.enviro@emnrd.nm.gov; Stephanie Hinds <stephanie.hinds@soudermiller.com>
 Subject: [EXTERNAL] nAPP2430235253 and nAPP2430930089 RDX 21-22 Pad Liner Inspection Notification

All:

SMA anticipates conducting soil sampling activities at the following site on Friday, November 22, 2024:
 Proposed Date: 11.22.24
 Proposed Time Frame: 11:30 AM
 Site Name: RDX 21-22 Pad
 Incident Number: nAPP2430235253 and nAPP2430930089
 API: 30-016-40561

Site Name and Incident ID:	RDX 21-22 Pad nAPP2430235253 nAPP2430930089
Containment surface area:	4,801 square feet
Have all impacted materials been removed from the liner:	Yes
Liner Inspection date pursuant to Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC	Friday, November 22, 2024
Time liner inspection will commence:	11:30 AM
Contact Information:	Monica Peppin 575.909.3418

Navigation to site:

From Intersection 285 and Whitehorn/Longhorn Rd, travel east 2.5 miles, slight left onto Longhorn northeast 1.9 miles, left/East onto Pipeline RD for 6.81 miles, right/south for 0.89 miles, right/west for 0.71 miles, left/south for 0.96 miles, slight left/east for 0.76 miles, right/south for 0.55 miles, right/west for 0.27 miles, slight right going north/northwest 0.16 miles, left going west/southwest 0.19 miles and location on the right hand side/North 32.030922, -103.8901

Thank you,
Monica



Stronger Communities by Design

Monica
Peppin, A.S.

Project
Manager

Direct/Mobile:
575.909.3418

Office:
575.689.7040

201 S
Halagueno St.

Carlsbad, NM
88220



www.soudermiller.com

Corporate Registrations: AZ Engineering/Geology/Surveying Firm (14070), FL Engineering Firm (34203), ID Engineering/Surveying Firm (C-3564), ND Engineering Firm (28545PE), OK Engineering Firm (8498), SD Surveying Firm (C-7436), TX Engineering Firm (8877), TX Geology Firm (50254), TX Surveying Firm (10162200), WY Engineering/Surveying Firm (S-1704)

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

QUESTIONS

Action 427458

QUESTIONS

Operator: WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID: 246289
	Action Number: 427458
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2430930089
Incident Name	NAPP2430930089 RDX FEDERAL 21 #022 @ 30-015-40561
Incident Type	Produced Water Release
Incident Status	Remediation Closure Report Received
Incident Well	[30-015-40561] RDX FEDERAL 21 #022

Location of Release Source	
<i>Please answer all the questions in this group.</i>	
Site Name	RDX FEDERAL 21 #022
Date Release Discovered	11/03/2024
Surface Owner	Federal

Incident Details	
<i>Please answer all the questions in this group.</i>	
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	
<i>Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.</i>	
Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Cause: Equipment Failure Pump Produced Water Released: 67 BBL Recovered: 67 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)	Not answered.

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QUESTIONS, Page 2

Action 427458

QUESTIONS (continued)

Operator: WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID: 246289
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	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	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: James Raley Title: EHS Professional Email: jim.raley@dvsn.com Date: 02/03/2025
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QUESTIONS, Page 3

Action 427458

QUESTIONS (continued)

Operator: WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID: 246289
	Action Number: 427458
	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)	Less than or equal 25 (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	Greater than 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 100 and 200 (ft.)
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	Medium
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	11/14/2024
On what date will (or did) the final sampling or liner inspection occur	11/22/2024
On what date will (or was) the remediation complete(d)	11/22/2024
What is the estimated surface area (in square feet) that will be remediated	4801
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>	

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QUESTIONS, Page 4

Action 427458

QUESTIONS (continued)

Operator: WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID: 246289
	Action Number: 427458
	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:	
(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	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: 02/03/2025
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

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QUESTIONS, Page 6

Action 427458

QUESTIONS (continued)

Operator: WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID: 246289
	Action Number: 427458
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Liner Inspection Information	
Last liner inspection notification (C-141L) recorded	427535
Liner inspection date pursuant to Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC	11/22/2024
Was all the impacted materials removed from the liner	Yes
What was the liner inspection surface area in square feet	4801

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	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	4801
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

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 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@dmn.com Date: 02/03/2025
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CONDITIONS

Action 427458

CONDITIONS

Operator: WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID: 246289
	Action Number: 427458
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

Created By	Condition	Condition Date
scott.rodgers	App ID 427458 Liner Inspection approved	2/12/2025