
May 19, 2025

EMNRD – Oil Conservation Division
506 W. Texas
Artesia, New Mexico 88210

SUBJECT: Liner Inspection and Closure Report for Aleutian 10 CTB 2 – April 23, 2025 Site Visit

Incident ID: nAPP2509923225
Facility ID (Name): fAPP2300331384 (ALEUTIAN 10 CTB 2)
Facility Location: Unit J, 10, T23S, R31E,
Facility GPS Coordinates: 32.315443, -103.762228
Eddy County, New Mexico

Introduction

KLJ Engineering (KLJ) has prepared this report on behalf of Devon Energy Production Company, LP (Devon) to detail the recent liner inspection conducted at the Aleutian 10 CTB 2 well pad (Site) on April 23, 2025, following the release of produced water that occurred on April 7, 2025.

Site Information and Background

The Site is located approximately 19.1 miles east of Loving, New Mexico, on Federal Bureau of Land Management (BLM) property. The Site lies within Section 10, Township 23 South, Range 31 East, in Eddy County. KLJ Engineering conducted a liner inspection and associated site characterization in accordance with 19.15.29.11 and 19.15.29.12 of the New Mexico Administrative Code (NMAC) to assess the integrity of the containment system and evaluate any potential environmental impacts resulting from a release.

Release Description and Immediate Response

On April 7, 2025, a Devon lease operator discovered a pinhole leak in the water transfer pump suction line that resulted in the release of approximately 5 barrels (bbls) of produced water. Initial response actions were conducted by the operator and included source elimination, photographic documentation of the affected area, volume estimation, and an attempt to recover released fluids. Photographic documentation of the facility secondary containment, liner, tanks, and equipment, where the release occurred, are shown in the Liner Inspection Field Notes and Photolog Report (**Appendix A**).

Devon submitted the initial Notice of Release (NOR) to the New Mexico Energy, Minerals, and Natural Resources Department – Oil Conservation Division (NMOCD) on April 9, 2025, through the Operator's Electronic Permitting and Payment Portal. The initial Form C-141 was subsequently submitted on April 15, 2025.

Site Characterization Summary

The Site lies within Qep – Eolian and piedmont deposits (Holocene to Middle Pleistocene), featuring interlayered sands and slope materials (New Mexico Bureau of Geology and Mineral Resources). Terrain for the Site and immediate surrounding area includes uplands, plains, dunes, and piedmonts at elevations of 2,800 – 5,000 feet. Parent material consists of mixed alluvium and/or eolian sands, with 8–13 inches of

average annual precipitation. Soil within the Site tends to be well-drained, with low runoff potential and moderate water-holding capacity.

The USDA – Web Soil Survey (WSS) identifies the predominant soil type at the Site as Kermit-Berino fine sands that are moderately deep or very deep, with surface textures ranging from loamy fine sand, fine sandy loam, loamy very fine sand, to gravelly sandy loam. Subsurface layers include loamy fine sand, course sandy loam, fine sandy loam, or loam that averages <18% clay and <15% carbonates. Substratum includes a fine sandy loam, or gravelly fine sandy loam with <15% gravel and with <40% calcium carbonate while some layers high in lime or caliche fragments may occur at depths of 20–30 inches. The soils are prone to wind erosion if left bare.

Vegetation reflects a grassland community dominated by black grama, dropseeds, and bluestems, with scattered shinnery oak and sand sage. Transitions to shrub-dominated states (e.g., mesquite or snakeweed) may occur with decreased grass cover and include grasses/honey mesquite, grasses/broom snakeweed, or grasses/sand sage. Heavy grazing and/or drought are influential drivers in decreasing grassland-dominated plant communities within proximity of the Site.

No surface water features were identified within 300 feet of the Site. The nearest significant watercourse is 0.85 miles north; the closest playa lake is 1.29 miles northwest, and the nearest wetland is 3.13 miles southwest (USFWS NWI, 2025). These distances comply with the requirements of 19.15.29.12(C)(4) NMAC.

Per the New Mexico Office of the State Engineer (NMOSE) Points of Diversion (POD) Map, the nearest POD is C-03749-POD1, located 0.38 miles southeast, with a recorded groundwater depth of 639 feet below ground surface (bgs). The nearest freshwater well used for stock water, POD C-033551-POD1-2, is located 3.38 miles southwest of the Site.

Karst potential for the Site is identified as low, with the nearest area of medium karst potential located 2.82 miles to the northeast. The Site is in a FEMA flood hazard area identified as FEMA Zone X (undetermined hazard); the nearest identified FEMA flood hazard area, classified as Zone D, is 19.13 miles to the east.

Additional information detailing the results of the site characterization findings can be found in **Appendix B**.

Closure Criteria

The closure criteria for liner failures or releases from containment structures are summarized in **Table 1**, in accordance with 19.15.29.12 NMAC. This regulation outlines incident closure standards for facilities with estimated groundwater depths of 51–100 feet bgs, including contamination thresholds, required sampling depths, and applicable concentration limits.

Table 1: Release Information and Closure Criteria Limits			
Depth to Ground Water Determination: 51-100 feet bgs			
Site Name	Aleutian 10 CTB 2	Company	Devon Energy Production Company, LP
Facility ID/API Number	fAPP2300331384	PLSS/GPS	J-10-23S-31E/32.315443, -103.762228
Lease ID	NMNM077045/NMNM0405444	Land Status	Bureau of Land Management
Incident ID	nAPP2509923225	Date Of Release	4/7/2025
Source of Release	Corrosion on flowline	Volume Released/Recovered	5 bbls/5 bbls pw
Specific Features	Low Karst Potential, DTGW pod within 0.5-mile radius, no surface water within proximity, and FEMA Zone X		

Liner Inspection Activities

KLJ Environmental Specialists conducted a site visit on April 23, 2025, to perform a liner inspection. Notification was submitted to Devon via email on April 15, 2025, and official notification was submitted via the through the Operator's Electronic Permitting and Payment Portal on April 21, 2025, in accordance with Subsection D of 19.15.29.12 NMAC prior to the inspection. A copy of the notification is provided in **Appendix C**. KLJ personnel conducted a visual inspection of the secondary containment to verify liner integrity and confirmed that it was intact with no observed integrity issues. The visual inspection included observations for any perforations in the liner that could lead to a breach of the secondary containment. The inspection concluded with no signs of rips, cuts, tears, or weathering in any condition that showed signs of the liner needing repairs or replacements. Photographic documentation of the liner inspection is included in the Liner Inspection and Photolog Report (**Appendix A**).

Conclusion

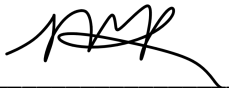
Based on the findings of the liner inspection, KLJ concludes that liner integrity is adequate to contain fluids and there are no further actions required in relation to incident nAPP2509923225.


Based on the site assessment and activities conducted, Devon respectfully requests closure of incident nAPP2509923225 with a No Further Action (NFA) determination.

Submitted and prepared by:
KLJ Engineering

Written By
Name: Monica Peppin
Title: Environmental Specialist II

Reviewed By
Name: Will Harmon, P.G.
Title: Environmental Project Manager

Signature: 

Signature: 

Included Appendices

Appendix A – SITE ASSESSMENT FIELD REPORT AND PHOTOLOG

Appendix B – CLOSURE CRITERIA RESEARCH

Appendix C – CORRESPONDENCE


APPENDIX A

LINER INSPECTION FIELD REPORT AND PHOTOLOG

Environmental Liner Inspection Field Notes & Photolog Report



Site & Incident Information

Client:	Devon Energy	Date:	4.23.2025
Site Name:	Aleutian 10 CTB 2	Arrival Time:	11:30 AM
Incident ID:	nAPP2509923225	 <p>Photo of Lease Sign</p>	
Client Contact:			
Land Status:	BLM		
County:	Eddy		
Lease ID:	NMNM077045, NMNM0405444		
Facility ID/API #:	fAPP2300331384		

Observations and Field Notes

11:30 AM - Arrive on site. Complete JHA and check surroundings for hazards.

11:38 AM - Begin liner inspection by walking around containment area and checking for any perforations, rips, tears, punctures, or degradation of liner.

11:45 AM - Liner inspected around all equipment, tanks, walls, and outside area of containment.

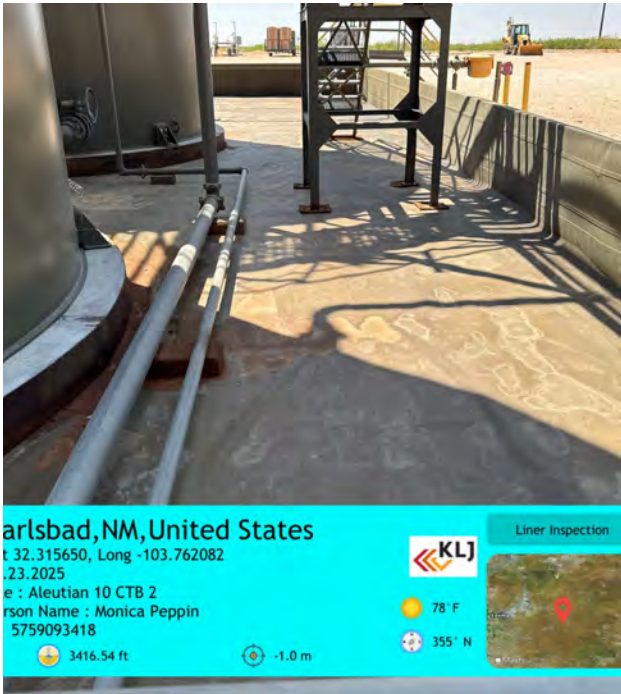
12:00 PM - Complete walk around and begin taking photos of containment area. Photos taken at all different angles and positions around the containment to verify liner integrity.

12:06 PM - Liner was cleaned prior to inspection and liner is able to withhold fluids as expected.

12:10 PM - Complete field notes and upload photos to report. Email copy of field report to upload to file.



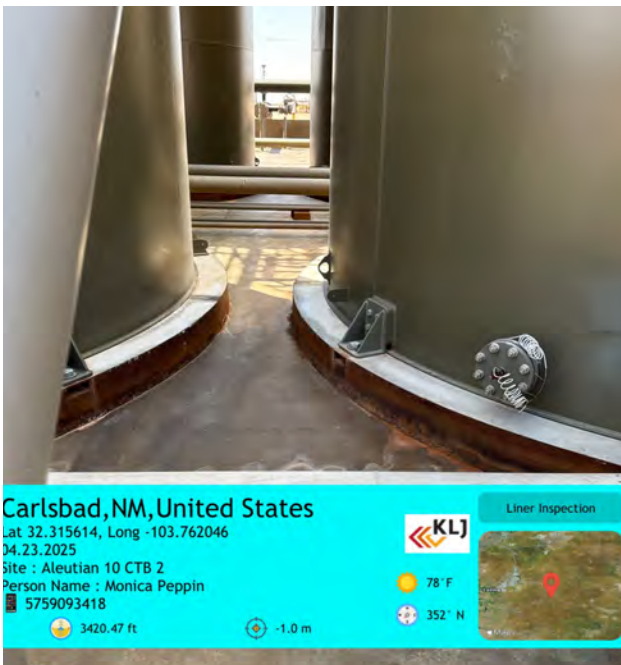
Photolog



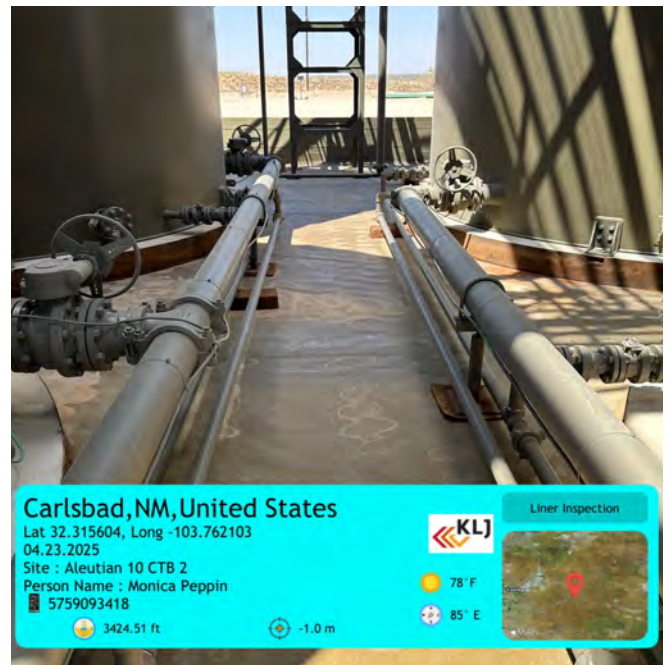
North end of containment facing west from east wall.



East side of containment from north wall looking south.



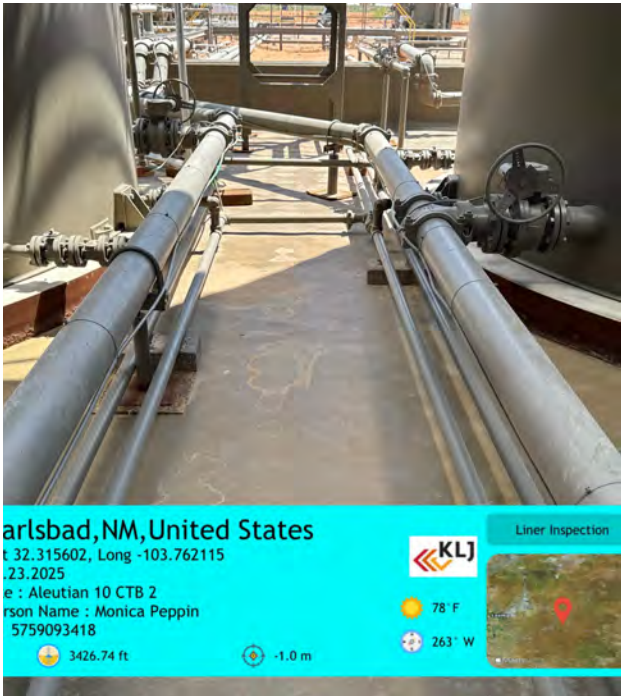
View of liner between tanks from east side on northern end of containment.



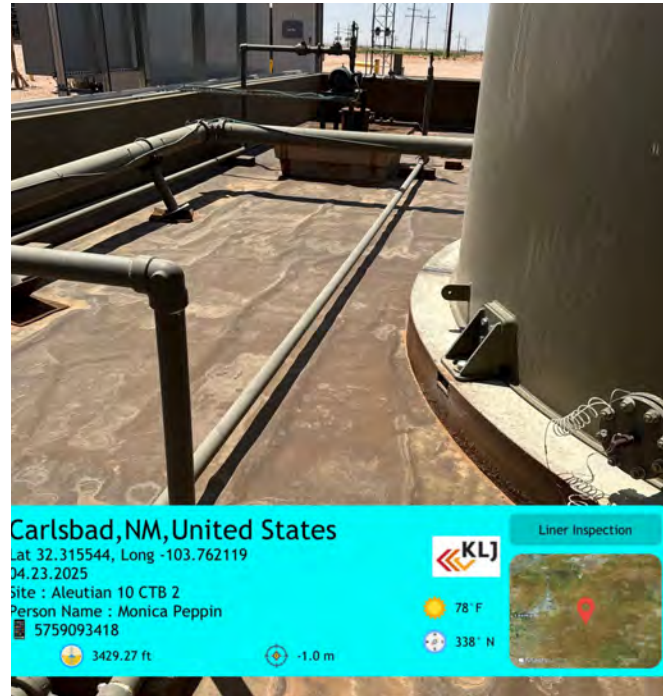
Facing north viewing liner between tanks from mid-area of containment.



Photolog



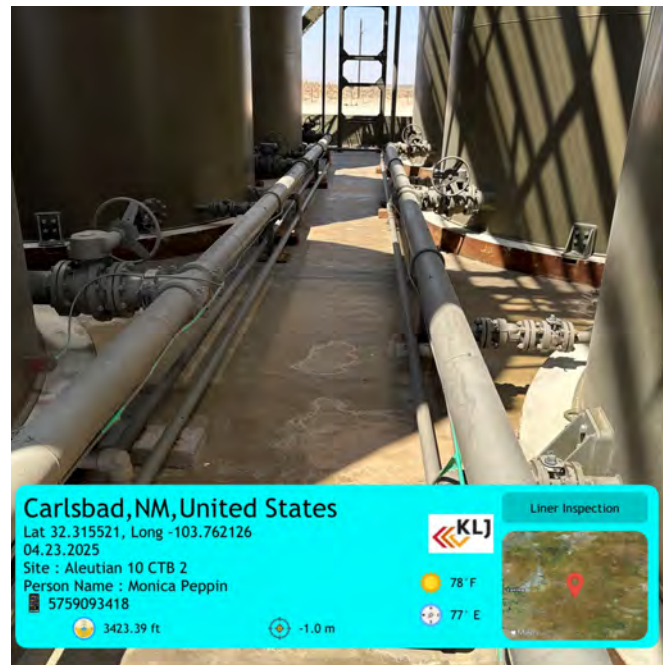
Liner between tanks from mid-area of containment facing south.



Liner area in northeast corner taken from mid-area by tanks.



Liner on south end of containment looking southeast.



Looking north from south end of containment between tanks.



Photolog



Liner in southwest corner of containment from near tanks.



Liner on north end of containment looking east near piping and equipment.



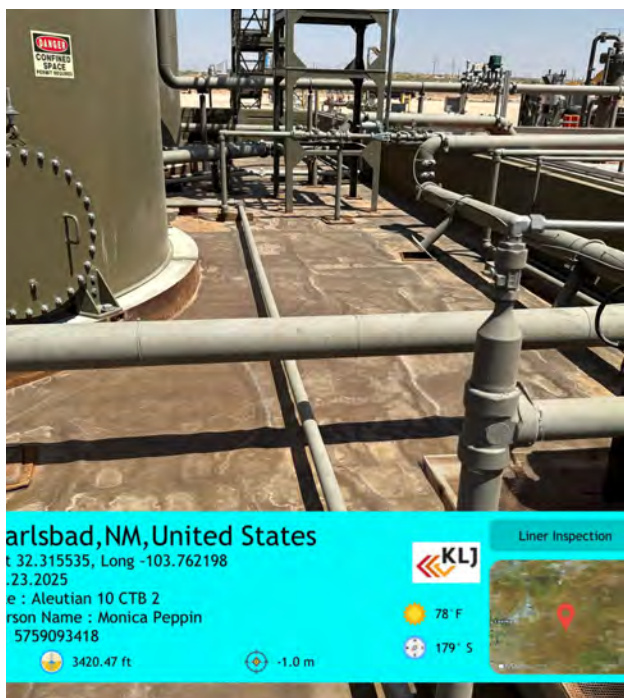
East wall of containment from south corner facing north.



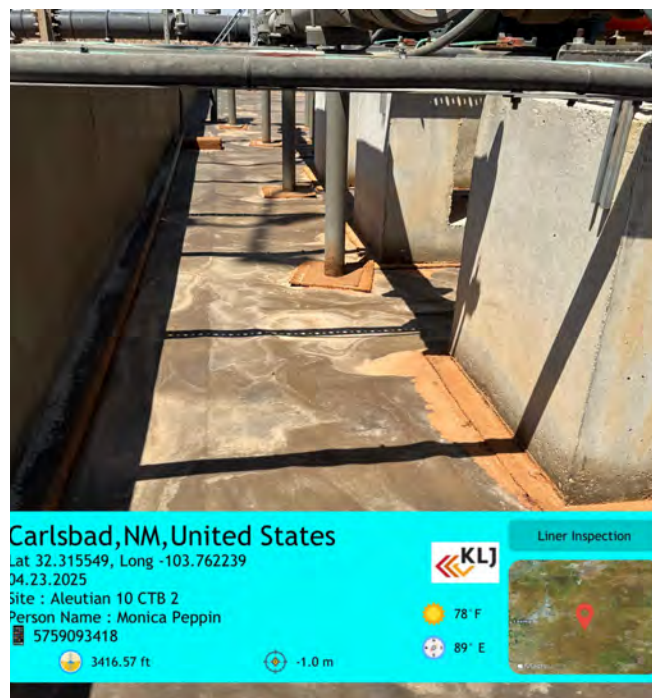
Liner area in southwest corner of containment view taken near tank.



Photolog



View of liner on south end from west wall facing east.



View of liner near pumps and west wall facing north.



View of liner under piping and near equipment facing north.



West side of containment viewing northwest corner of liner.



Photolog



North wall area from west side
facing east.



West wall area from north end
facing south.



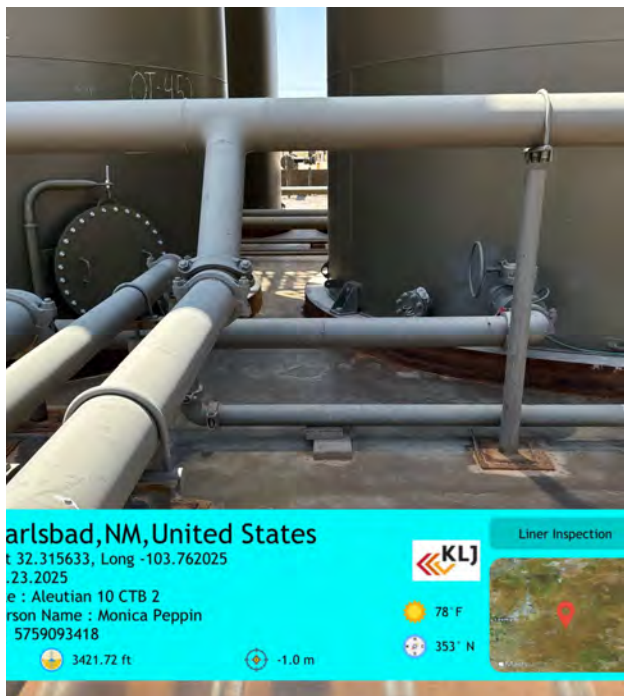
View of south end of containment
from east wall facing west.



View of east area of containment
from northern side facing south
southwest.



Photolog



View of liner between tanks from west side facing east.



View of liner near equipment of north end facing west.



View of liner near tanks on north end facing west from east side.



View of liner from southeast corner facing north northwest.

Additional Notes & Recommendations

- Upload documents to folder
- Compile data and start drafting closure report
- Submit report for approval
- Liner integrity is confirmed. No signs of degrading or wear and tear of liner.
- Liner is capable of containing fluids from going onto the ground.

Acknowledgement & Signature

Technician: Monica Peppin

Date: April 8, 2025

Signature: 

Departure
Time: 12:30 PM



APPENDIX B

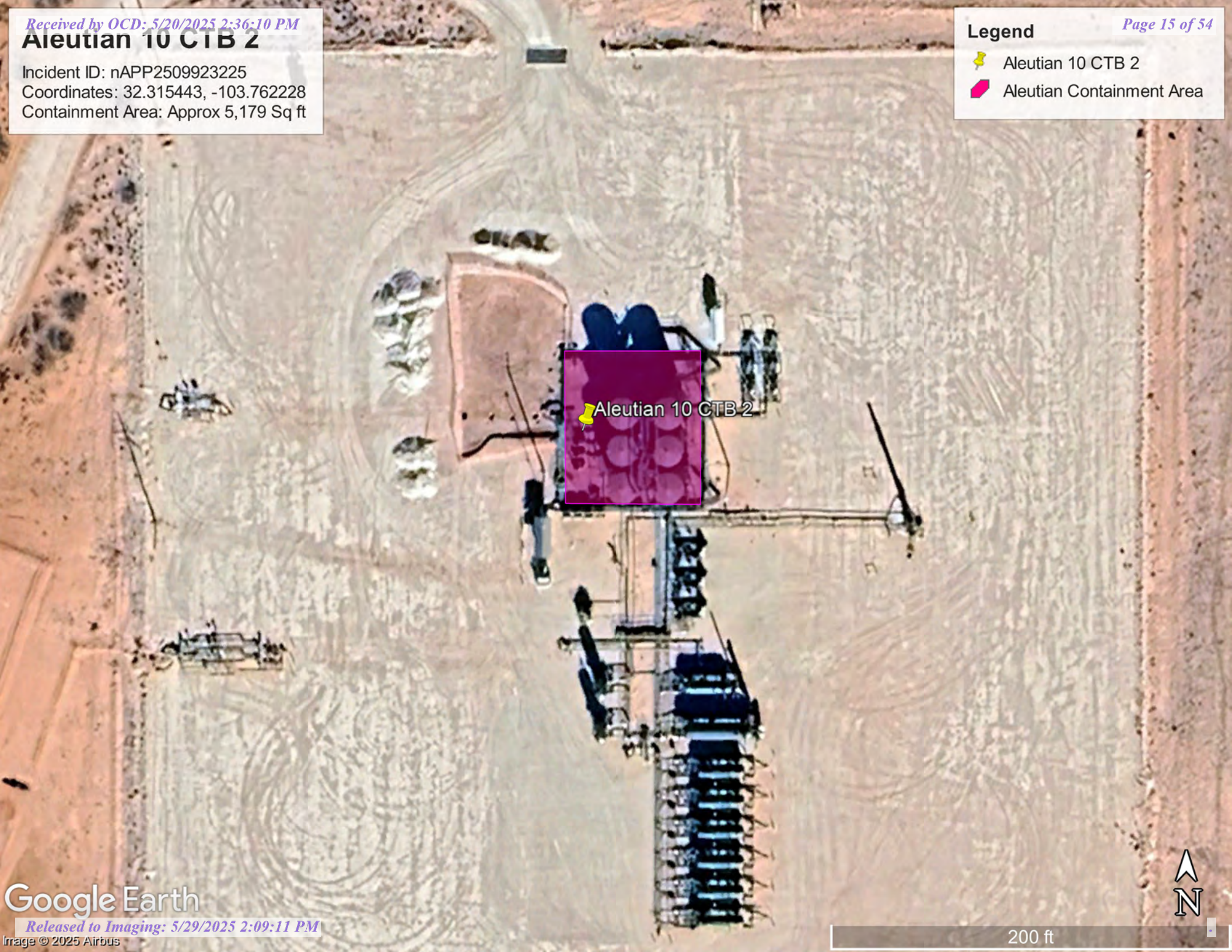
CLOSURE CRITERIA RESEARCH

Aleutian 10 CTB 2

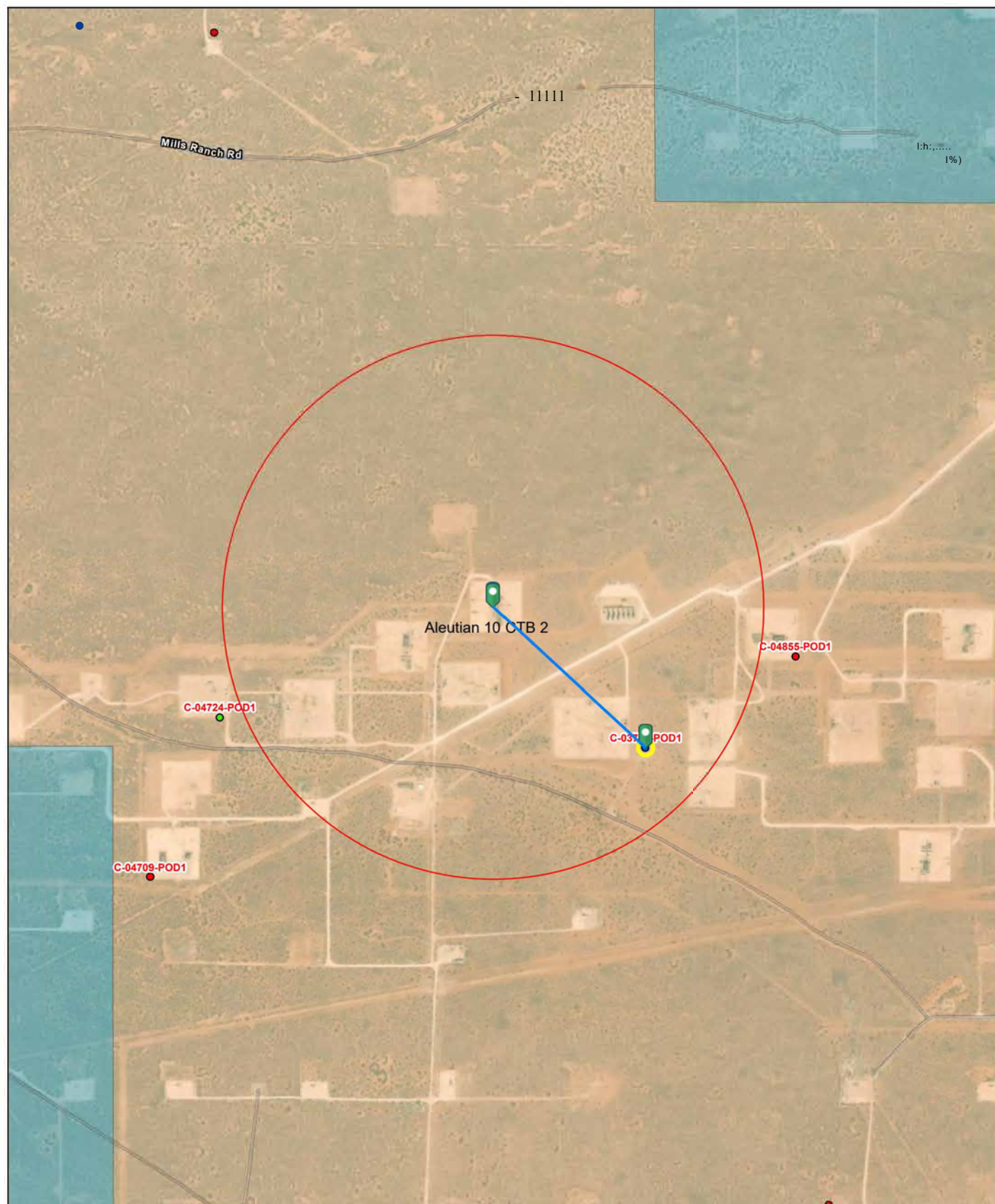
Incident ID: nAPP2509923225
Coordinates: 32.315443, -103.762228
Containment Area: Approx 5,179 Sq ft

Legend

-  Aleutian 10 CTB 2
-  Aleutian Containment Area



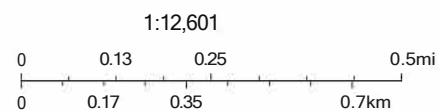
Aleutian 10 CTB 2 Depth to Groundwater - 0.5-Mile Radius Pod Search Map



4/18/2025, 6:52:54 PM

- Override 1
- GIS WATERS PODs
 - Active
 - Pending
 - Plugged
- OSE District Boundary
- New Mexico State Trust Lands
- Both Estates
- NM Simplified Geology
- C Basin Fill

Nearest Pod
C-03749-Pod1
Distance
0.38 miles/2,018 feet
DTGW
639 feet
Well Type
Monitor



Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community, Source: Esri, Maxar, Earthstar Geographies, and the GIS User Community



WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

OSE POD NUMBER (WELL NUMBER) C-3749POD 1 {H12R}						OSE HLE NUMBER(S) C-3749 POD 1							
WELL OWNER NAME(S) US Dept of Energy						PHONE (OmONAL) 575-234-7488							
WEU, O WEL R MAILING ADDRESS POB3090						CITY Carlsbad				STATE NM		ZIP 88221-3090	
WELL LOCATION (FROM OPS)		DEGREES MINUTES SECONDS LATITUDE 32 18 42.0588 N LONGITUDE -103 45 26.7078 W		• ACCURACY REQUIRED: ONE TENTH OF A SECOND • DATUM REQUIRED: WGS 84									
OBSERVATION DATA WELL LOCATION TO NEAREST CORNER OR COMMON LANDMARKS - (SECTION, TOWNSHIP, RANGE) (AVAILABILITY)													
From Jal Hwy take Redd Rd 3 miles north, head west 1 mile on dirt road to HI 2 Well site													
LICENSE NUMBER NM331				NAME OF LICENSED DRILLER Randy Stewart				NAME OF WELL DRILLING COMPANY Stewart Brothers					
DRILLING STARTED 7/10/14		DRILLING ENDED 8/6/14		DEPTH OF COMPLETED WELL (FI) 865		BORE HOLE DEPTH (FI) 865		DEPTH WATER FIRST ENCOUNTERED (FI)					
CDMPLET6□ WELL IS: C ARTESIAN () DRYHOLE SHALLOW (UNCONFINED)								STATIC WATER LEVEL IN COMPLETED WELL FT 639					
DRILLING FLUID: C AIR O MOD ADDITIVES - SPECIFY:													
DRILLING METHOD: (R) ROTARY C HAMMER O CABLE TOOL C OTHER-SPECIFY:													
DEPTH (feet bgl)		BOREHOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)						
FROM	TO												
0	40	17 1/2	133/8	Weld	12 1/4	.375							
40	820	12 1/4	5" Fiberglass Blank	Threaded	4.5								
820	846	12 1/4	5" Fiberglass Slotted	Threaded	4.5		.070						
846	858	12 1/4	5" Fiberqlass Blank	Threaded	4.5								
DEPTH (feet bgl)		BOREHOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT								
FROM	TO												
0-7	co.	12 1/4	8/12 sand	L	Tremie								
851	857	12 1/4	Elaelcryl Supertlex Seal	1	Tremie								
816	851	12 1/4	8/16 Sand Pack	6	Tremie								
811	816	12 1/4	Fine Sand	1	Tremie								
806	811	12 1/4	Gelaclryl Super Flex	1	Tremie								

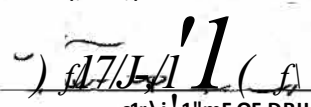
FOR OSE INTERNAL USE

WR-20 WELL RF.CORD & LOO (Version 06/08/2012)

FILE NUMBER	C-3749	POD NUMBER	1	TRNNUMBER	548076
LOCATION	4-4-3	235.32E.07			PAGE 1 OF 2

DEPT (feet bgl)	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES/NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES(gpm)	
					FROM
1	12	11	Dune sand and pad material	CY ® N	
12	16	4	Mescalero Caliche	OY < N	
16	20	4	Gatuna (Sandstone)	CY @, N	
20	70	50	Santa Rosa (Sandstone)	CY (!, N	
70	620	550	Dewy Lake Sandstone	OY (!, N	
620	648	28	Anhydrite	CY (i, N	
648	663	15	Mudstone	QY) N	
663	678	15	Anhydrite	()Y (i, N	
678	702	4	Magenta Dolomite	c v C N	
702	756	54	Anhydrite	O y O N	
756	772	16	Halite	o v O N	
772	820	48	Anhydrite	(! y C N	
820	846	26	Culebra Dolomite	@ y O N	
846	856	10	Mudstone	CY & N	
856	865	9	Anhydrite	Cy (! N	
				C v O N	
				O y O N	
				c v C N	
				C v O N	
				OV C N	
				c v C N	
METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: C PUMP			TOTAL ESTIMATED WELL YIELD (gpm): 5		
@ AIRLIFT C BAILER C OTHER- SPECIFY:					

5. TEST;	WELL TEST (TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.
	MISCELLANEOUS INFORMATION;
	Monitor Well
	PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSED
	Don Ward

6. SIG	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 MAINTAIN IT WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:
	<div style="display: flex; justify-content: space-between;"> <div>  SIGNATURE OF DRILLER / PRINT SIGNEE NAME </div> <div> awe-6- fie DATE </div> </div>

FOR USE INTERNAL USE

FILE NUMBER

C: qj

POD NUMBER

61E.D1

WR-20 WELL RECORD & LOG (Version 06/08/2012)

IBN NUMBER

6Yr014

LOCATION

44

cf235.

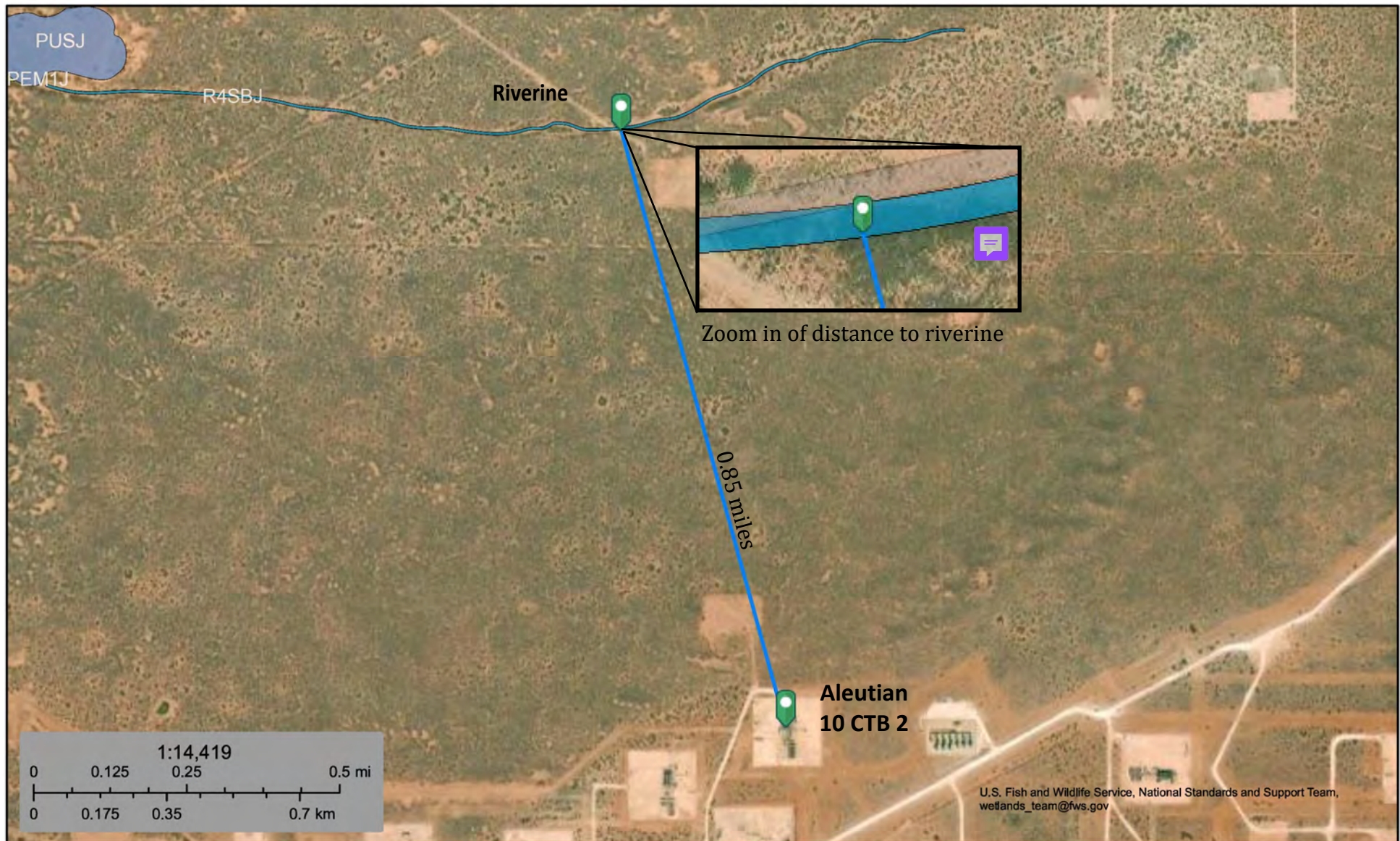
PAGE 20F2



Aleutian 10 CTB 2

Nearest Significant Watercourse: Riverine

Distance: 0.85 miles/2,018 feet



April 23, 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.



Aleutian 10 CTB 2

Nearest Topographic Depression: Playa Lake
Distance: 1.29 miles/6,816 feet



April 23, 2025

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

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



- Lake
- Other
- Riverine

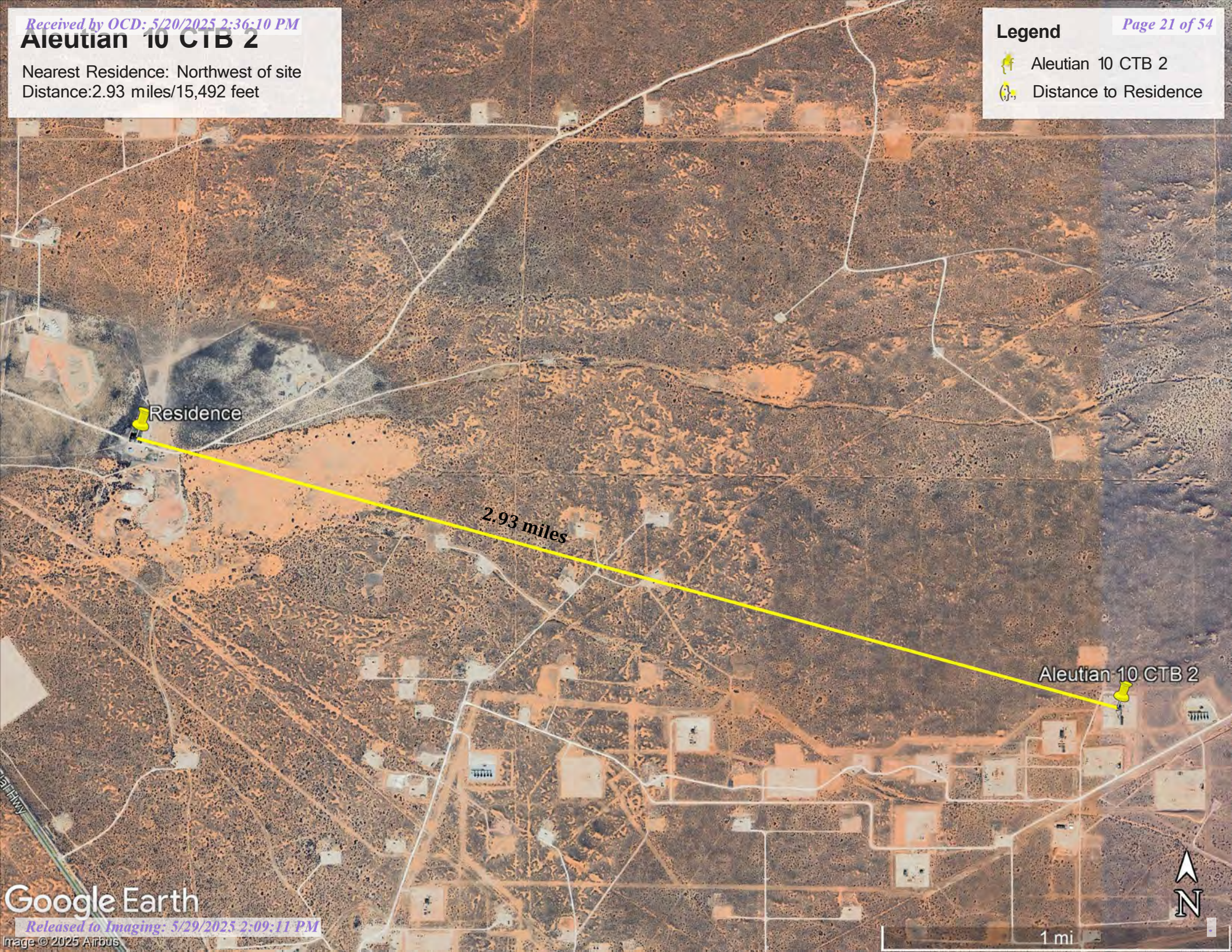
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Aleutian 10 CTB 2

Nearest Residence: Northwest of site
Distance: 2.93 miles/15,492 feet

Legend

-  Aleutian 10 CTB 2
-  Distance to Residence



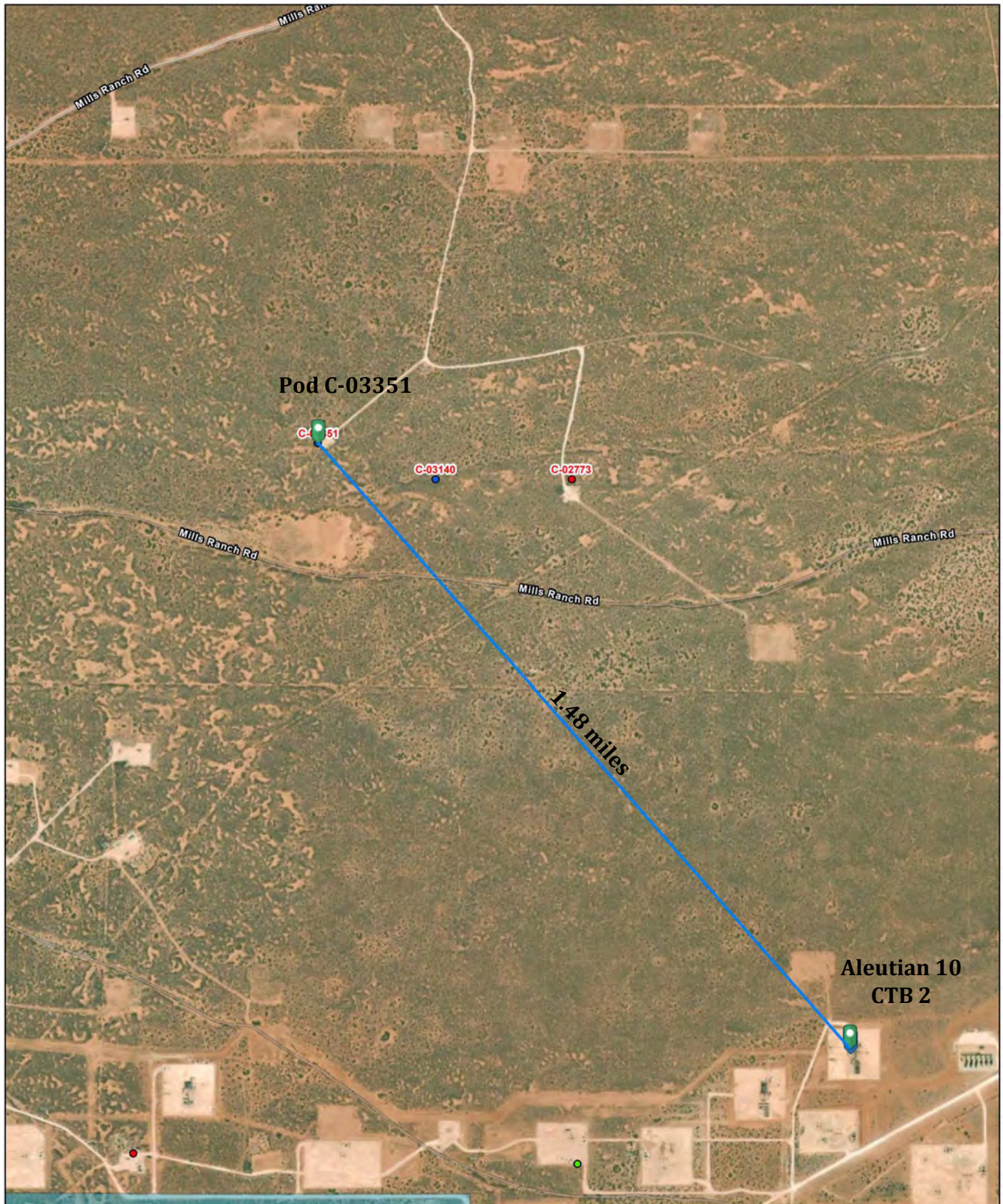
Residence

2.93 miles

Aleutian 10 CTB 2



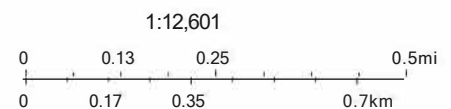
Aleutian 10 CTB 2 - Nearest Domestic Water Well



4/19/2025, 9:53:44 AM

- Override 1
- GIS WATERS PODs
 - Active
 - Pending
 - Plugged
- OSE District Boundary
- New Mexico State Trust Lands
- Both Estates

Nearest Domestic Well
OSE Pod C-03351
Distance
1.48 miles
Well Type
Stock Waterer



Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community, Source: Esri, Maxar, Earthstar Geographies, and the GIS User Community

Revised June 1972

STATE ENGINEER OFFICE
WELL RECORD

469289

Section I. GENERAL INFORMATION

(A) Owner of well BLM- s TACY MILLS Owner's Well No. C-3351
 Street or Post Office Address P.O. BOX 1358
 City and State LOVING, N. W. MEXICO 88256

Well was drilled under Penni! No. C-3351 and is located in the:

a. G $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 4 Township 23-S Range 31-E N.M.P.M.
 b. Tract No. _____ of Map No. _____ of the _____
 c. Lot No. _____ of Block No. _____ of the _____
 Subdivision, recorded in _____ County.
 d. X=614968.79 feet, Y=3577879.68 feet, N.M. Coordinate System _____ Zone in
 the _____ Grant.

(B) Drilling Contractor W. E. S. W. S. L. S. E. S. V. I. C. E. I. N. C. License No. W-411
 Address P.O. BOX 692 ATUM, NEW MEXICO 88267

Drilling Began 11/20/07 Completed 11/20/07 Typetools ROTARY Size of hole 7 7/8 in.

Elevation of land surface or _____ al well is _____ ft. Total depth of well 1132.0 ft.

Completed well is ☒ shallow ☐ O artesian. Depth to water upon completion of well 168 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			
240	265	25	SAND ROCK	25

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To
8 5/8	.188	PE	1	20	20	NONE	Cemented	
6 5/8	.188	PE	1	304	304	NONE	152	304

Section 4. RECORD OF MUDDING AND CEMENTING

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

Section 5. PLUGGING RECORD

Plugging Contractor _____
 Address _____
 Plugging Method _____
 Date Well Plugged _____
 Plugging approved by: _____

State Engineer Representative

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

FOR USE OF STATE ENGINEER ONLY

Date Received /./ **101**

Quad _____ FWL _____ FSL _____

Section 7. REMARKS AND ADDITIONAL INFORMATION




Corky J. Perry
Driller

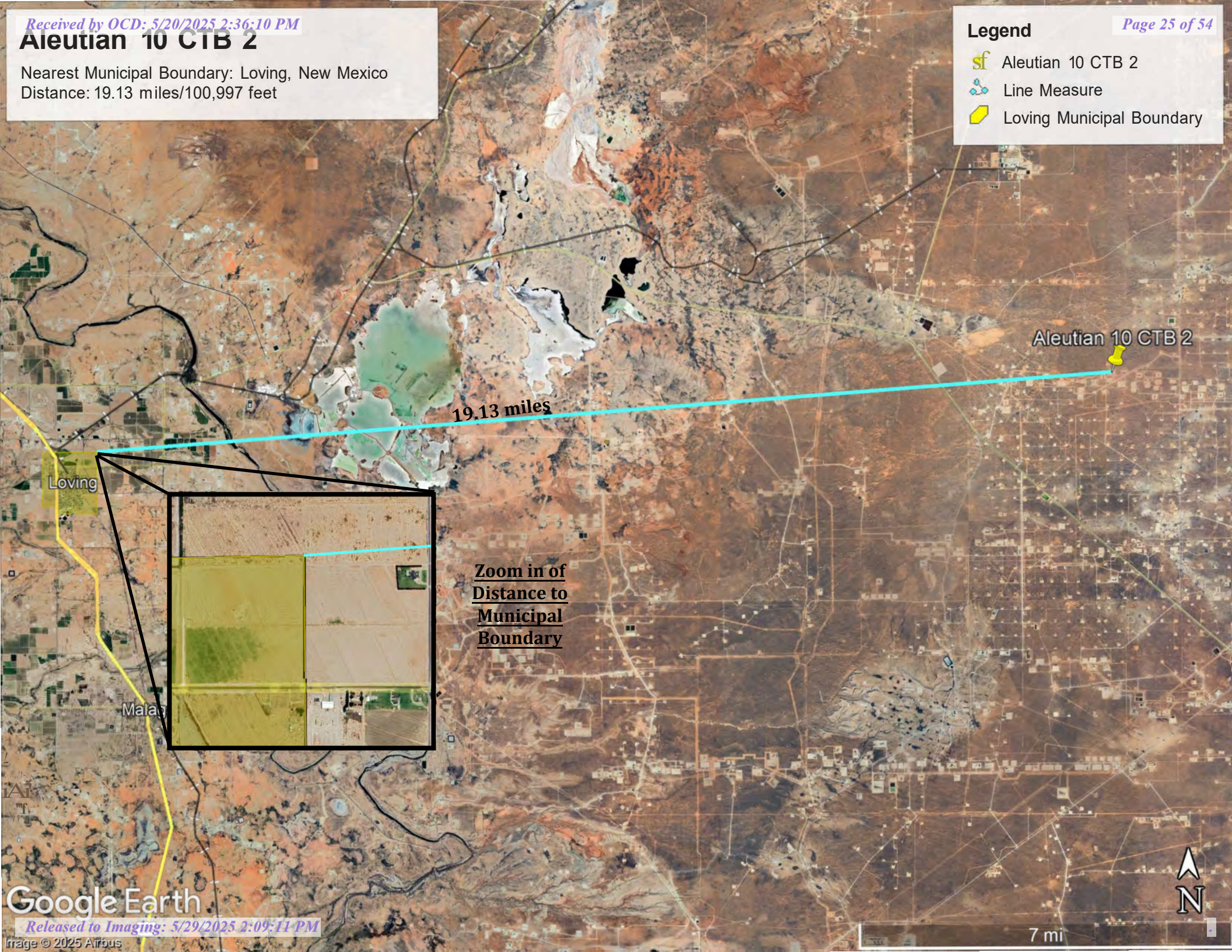
Released to Imaging: 5/29/2025 2:09:11 PM

Aleutian 10 CTB 2

Nearest Municipal Boundary: Loving, New Mexico
Distance: 19.13 miles/100,997 feet

Legend

-  Aleutian 10 CTB 2
-  Line Measure
-  Loving Municipal Boundary



19.13 miles

Aleutian 10 CTB 2

Loving

Zoom in of
Distance to
Municipal
Boundary

Malaga





4/19/2025, 11:09:39 AM

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

disseminated Y-Zr deposits in alkaline rocks, REE-Th-U veins

episyenites (metasomatites)

granite, syenite

pegmatite

REE_Mine Events

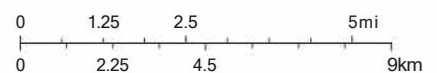
beach-placer sandstone

carbonatite

episyenites (metasomatites)

placer REE

1:144,448



New Mexico Bureau of Geology and Mineral Resources, Earthstar Geographies

Medium Karst Zone

2.82 miles

Aleutian 10 CTB 2

Aleutian 10 CTB 2 Karst Potential

0 0.15 0.3 0.6
mi**New Mexico State Land Office****Disclaimer:**

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Released to Imaging: 5/29/2025 2:09:11 PM

Map Created: 4/19/2025

● User drawn points
Karst_Potential_NM
Potential
Critical

High
Medium

Karst Potential
Low
Distance to Medium
Karst Zone

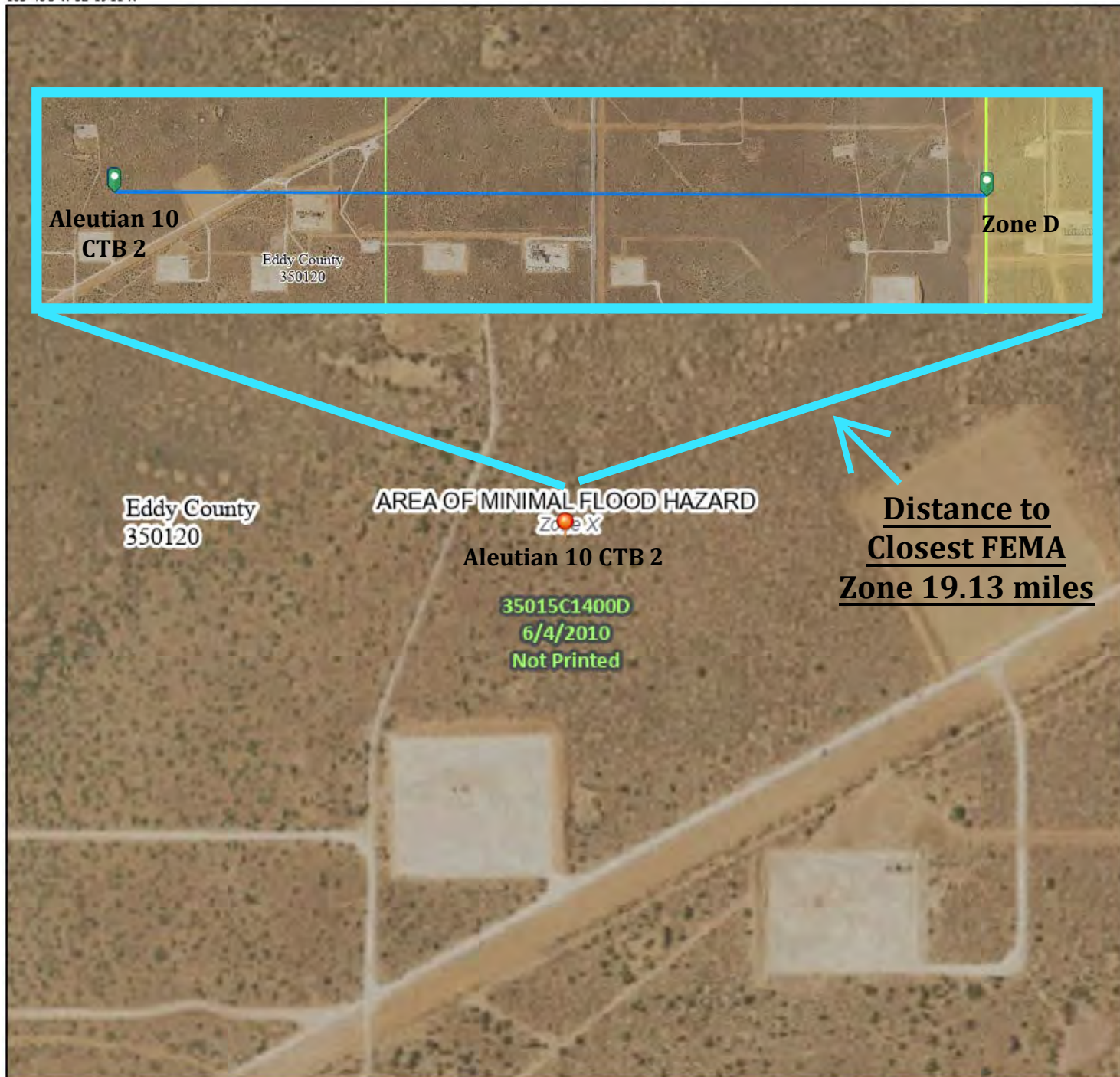
2.82 miles/14,898 feet



National Flood Hazard Layer FIRMette



103°46'3"W 32°19'11"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 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 4/19/2025 at 4:17 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.

Map Unit Description: Kermit-Berino fine sands, 0 to 3 percent slopes--Eddy Area, New Mexico

Eddy Area, New Mexico

KM-Kermit-Berino fine sands, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1w4q

Elevation: 3,100 to 4,200 feet

Mean annual precipitation: 10 to 14 inches

Mean annual air temperature: 60 to 64 degrees F

Frost-free period: 190 to 230 days

Farmland classification: Not prime farmland

Map Unit Composition

Kermit and similar soils: 50 percent

Berino and similar soils: 35 percent

Minor components: 15 percent

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

Description of Kermit

Setting

Landform: Plains, alluvial fans

Landform position (three-dimensional): Talf, rise

Down-slope shape: Convex, linear

Across-slope shape: Linear

Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 7 inches: fine sand

H2 - 7 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Very high (20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)

Sodium adsorption ratio, maximum: 1.0

Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Ecological site: R0708D005NM - Deep Sand

Hydric soil rating: No

Map Unit Description: Kermit-Berino fine sands, 0 to 3 percent slopes--Eddy Area, New Mexico

Description of Berino

Setting

Landform: Plains, fan piedmonts
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 17 inches: fine sand
H2 - 17 to 50 inches: fine sandy loam
H3 - 50 to 58 inches: loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Minor Components

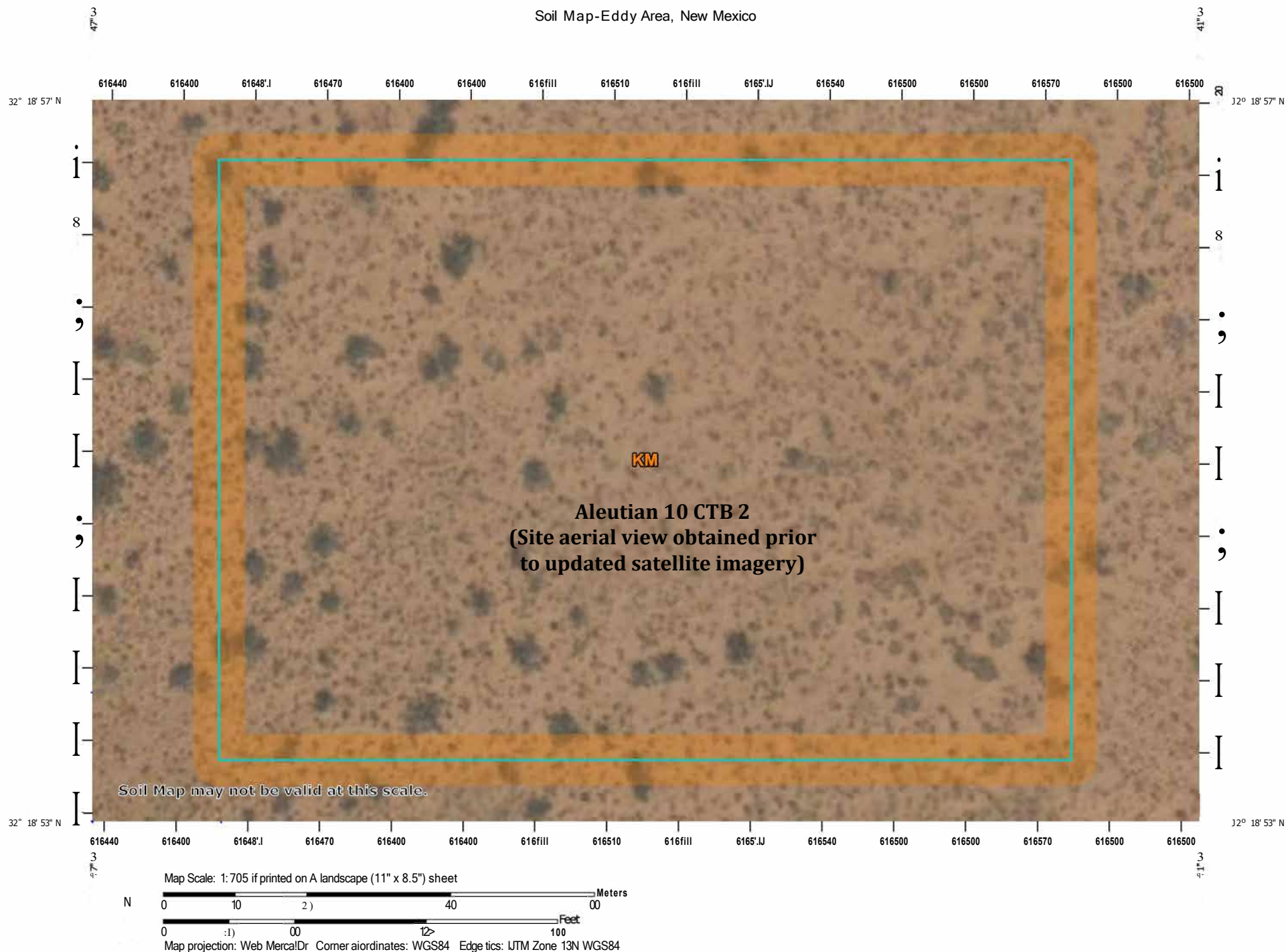
Active dune land

Percent of map unit: 15 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 20, Sep 3, 2024

Soil Map-Eddy Area, New Mexico



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

4/19/2025
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



SodicSpot



Spoil Area



Stony Spot



Very Stony Spot



WetSpot



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
KM	Kermit-Berino fine sands, 0 to 3 percent slopes	2.4	100.0%
Totals for Area of Interest		2.4	100.0%

Ecological site R070BD003NM Loamy Sand

Accessed: 04/19/2025

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

Serino

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	40-72in
Surface fragment cover $\leq 3"$	0-10%
Surface fragment cover $> 3"$	0%
Available water capacity (0-40in)	5-7in
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 $\leq 3"$ (Depth not specified)	4-12%
Subsurface fragment volume $> 3"$ (Depth not specified)	0%

Ecological dynamics

Overview

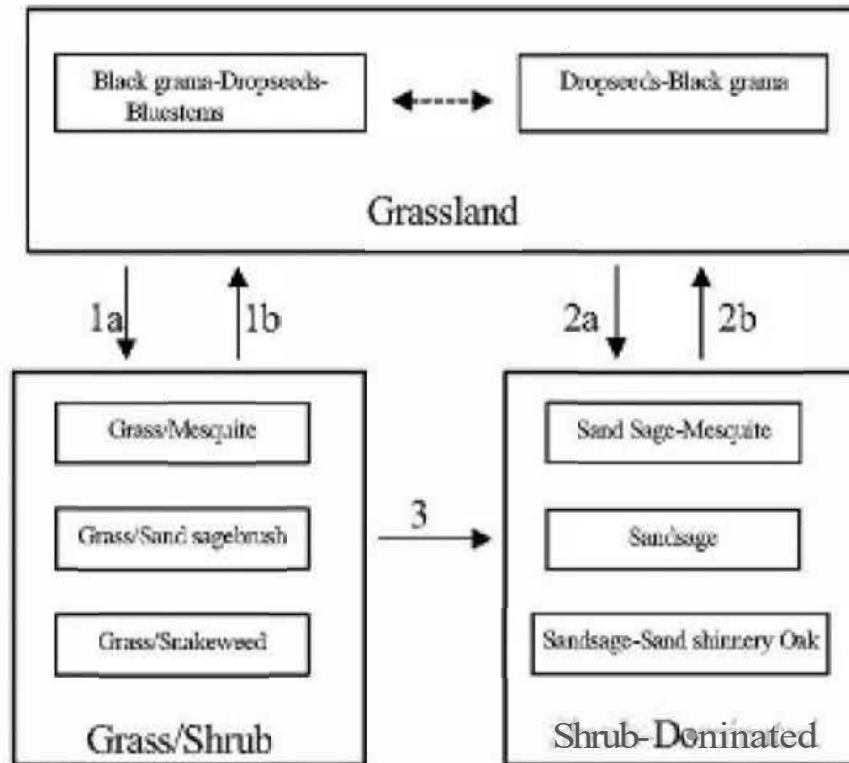
The Loamy Sand site intergrades with the Deep Sand and Sandy sites (SD-3). These sites can be differentiated by surface soil texture and depth to a textural change. Loamy Sand and Deep Sand sites have coarse textured (sands and loamy sand) surface soils while Sandy sites have moderately coarse textured (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 ha/fit*), with scattered shinnery oak (*Quercus havardit*) 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

Platt County Title and Trusts Siloos Pathway (tliag.nut1):

MLRA-42, SD-3, Loatny Sand



1a. Drought, over grazing, fire suppression.

1b. Brush control, prescribed grazing.

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

2b. Brush control, seeding, prescribed management.

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
ShrubNine	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 (1 a): 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	-
ShrubNine					
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 pu/chella</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

Serino B

KincoA

Maljamar B

Pajarito B

Palomas B

WinkB

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

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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:

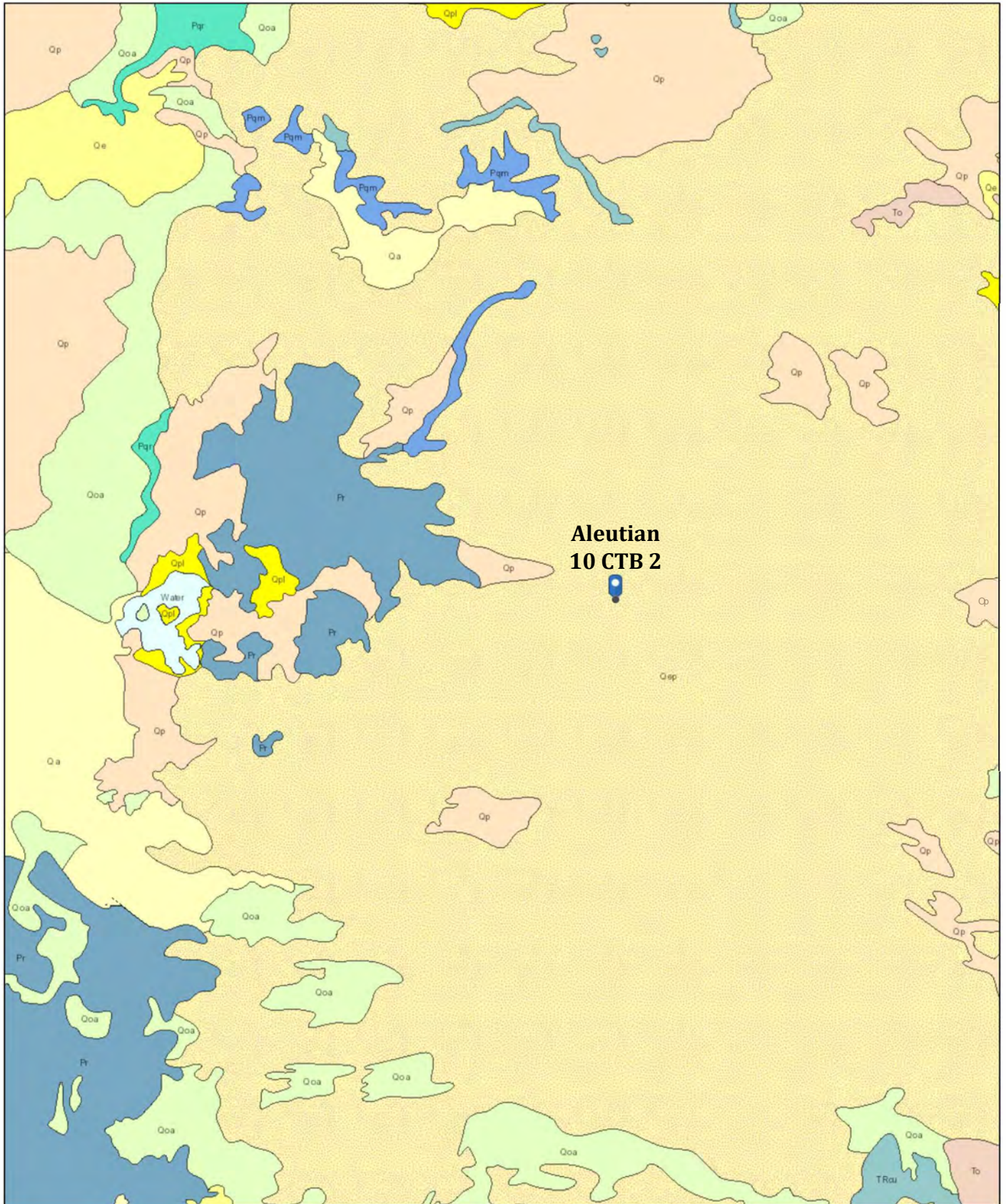
13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):

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:

Aleutian 10 CTB 2 - Geological Map



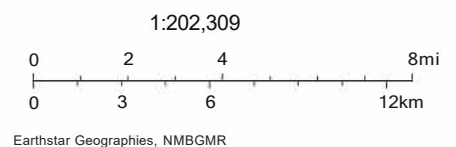
4/19/2025, 10:31:23AM

Lithologic Units

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

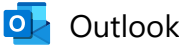
Geological Classification

Qep



APPENDIX C

CORRESPONDENCE



RE: [EXTERNAL] nAPP2509923225 Aleutian 10 CTB 2 Liner Inspection Notification

From Raley, Jim <Jim.Raley@dvn.com>
Date Mon 2025-04-21 6:52 AM
To Monica Peppin <Monica.Peppin@kljeng.com>
Cc Will Harmon <will.harmon@kljeng.com>

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Submitted 4/21/2025

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



From: Monica Peppin <Monica.Peppin@kljeng.com>
Sent: Friday, April 18, 2025 12:29 PM
To: Raley, Jim <Jim.Raley@dn.com>
Cc: Will Harmon <will.harmon@kljeng.com>
Subject: [EXTERNAL] nAPP2509923225 Aleutian 10 CTB 2 Liner Inspection Notification

Jim,

Please see the inspection notification for the Aleutian. I will update once liner has been inspected.

KLJ Engineering anticipates conducting liner inspection activities at the following site on Wednesday, April 23, 2025 at approximately 11:00 AM to 12:00 PM. Details Below:

Proposed Date:	4/23/2025
Time Frame:	11 AM to 12 PM
Site Name:	Aleutian 10 CTB 2
Incident ID:	nAPP2509923225
API/Facility ID:	fAPP2300331384

Liner Inspection Notification	
Incident ID and Site Name:	nAPP2509923225 Aleutian 10 CTB 2
API # and Corresponding Agency:	fAPP2300331384 NMOCD & BLM
Question	Answer (Fill In)

What is the liner inspection surface area in square feet (secondary containmet):	5,179 feet
Have all the impacted materials been removed from the liner and cleaned?	Yes/Pressure washed 4.11.25
Liner inspection date pursuant to Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC: 48 HOURS PRIOR TO INSPECTION	4.23.25
Time liner inspection will commence:	11:30
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)	128/Red Rd travel north on red road 4.66 miles, left turn on lease rd west for 1.55 miles, right turn, north for 0.37 miles, dead end onto location 32.315443, -103.762228

Thanks!
MP

Monica Peppin, A.S.
Environmental Specialist II



575-213-9010 Direct

575-909-3418 Cell

Carlsbad, NM 88220

kljeng.com

[Book time to meet with me](#)



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

QUESTIONS

Action 465365

QUESTIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 465365
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2509923225
Incident Name	NAPP2509923225 ALEUTIAN 10 CTB 2 @ 0
Incident Type	Produced Water Release
Incident Status	Remediation Closure Report Received
Incident Facility	[fAPP2300331384] ALEUTIAN 10 CTB 2

Location of Release Source

Please answer all the questions in this group.

Site Name	ALEUTIAN 10 CTB 2
Date Release Discovered	04/07/2025
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: 5 BBL Recovered: 5 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)	Transfer pump suction pipe failed allowing release of approx 5 bbls produced water to lined secondary containment. Release was mixed with recent rainwater in lined secondary containment. All was removed and disposed.

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QUESTIONS, Page 2

Action 465365

QUESTIONS (continued)

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 465365
	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)	More info needed to determine if this will be treated as 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	<i>Unavailable.</i>
<i>With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.</i>	

Initial Response

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

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

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

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

I hereby agree and sign off to the above statement	Name: James Raley Title: EHS Professional Email: jim.raley@dvsn.com Date: 05/20/2025
--	---

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QUESTIONS, Page 3

Action 465365

QUESTIONS (continued)

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 465365
	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 51 and 75 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
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 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 1 and 5 (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	Between 1 and 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	04/23/2025
On what date will (or did) the final sampling or liner inspection occur	04/23/2025
On what date will (or was) the remediation complete(d)	04/23/2025
What is the estimated surface area (in square feet) that will be remediated	5179
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 465365

QUESTIONS (continued)

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 465365
	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@dv.com Date: 05/20/2025
<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 465365

QUESTIONS (continued)

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 465365
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Liner Inspection Information	
Last liner inspection notification (C-141L) recorded	453617
Liner inspection date pursuant to Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC	04/23/2025
Was all the impacted materials removed from the liner	Yes
What was the liner inspection surface area in square feet	5179

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	5179
What was the total volume (cubic yards) remediated	0
Summarize any additional remediation activities not included by answers (above)	Liner inspected

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@dmv.com Date: 05/20/2025
--	--

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CONDITIONS

Action 465365

CONDITIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 465365
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

Created By	Condition	Condition Date
scott.rodgers	App ID 465365 Liner Inspection approved	5/29/2025