



June 24, 2020

Vertex Project #: 20E-00141-051

**Spill Closure Report:** Arena Roja Federal Unit #016H  
Unit D, Section 27, Township 26 South, Range 35 East  
County: Lea  
API: 30-025-42672  
Tracking Number: NOY1722038403

**Prepared For:** Devon Energy Production Company  
6488 Seven Rivers Highway  
Artesia, New Mexico 88210

**New Mexico Oil Conservation Division – District 1 – Hobbs**

1625 North French Drive  
Hobbs, New Mexico 88240

Devon Energy Production Company (Devon) retained Vertex Resource Services Inc. (Vertex) to conduct a spill assessment and remediation for an oil release that occurred at Arena Roja Federal Unit #016H (hereafter referred to as “Arena Roja”). Devon provided notification of the spill to New Mexico Oil Conservation Division (NM OCD) District 1 and the Bureau of Land Management (BLM), who owns the property, via submission of an initial C-141 Release Notification (Attachment 1). The NM OCD tracking number assigned to this release is NOY1722038403.

This letter provides a description of the spill assessment and liner inspection, and demonstrates that closure criteria established in 19.15.29.12 *New Mexico Administrative Code* (NMAC; New Mexico Oil Conservation Division, 2018) have been met and all applicable regulations are being followed. This document is intended to serve as a final report to obtain approval from NM OCD for closure of this release.

**Incident Description**

On August 8, 2017, a release occurred at Devon’s Arena Roja site when a loose hammer union began to leak. This incident resulted in the release of approximately 15 barrels (bbls) of oil into the lined secondary containment. Upon discovery of the release, the hammer union was isolated and tightened to stop the leak, and a hydrovac truck was dispatched to the site to recover free liquids. Approximately 15 bbls of oil were recovered from the secondary containment and removed for disposal off-site. All fluids were contained within the lined Spill Prevention Control and Countermeasures containment and no oil was released into undisturbed areas or waterways.

**Site Characterization**

The release at Arena Roja occurred on federally-owned land, N 32.0209383, W 103.3636699, approximately 10 miles southwest of Jal, New Mexico. The legal description for the site is Unit D, Section 27, Township 26 South, Range 35 East, Lea County, New Mexico. This location is within the Permian Basin in southeast New Mexico and has historically been used for oil and gas exploration and production, and rangeland. An aerial photograph and site schematic are included in Attachment 2.

[vertex.ca](http://vertex.ca)

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3101 Boyd Drive, Carlsbad, New Mexico 88220, USA | P 575.725.5001

Arena Roja is typical of oil and gas exploration and production sites in the western portion of the Permian Basin, and is currently used for oil and gas production, and storage. The following sections specifically describe the area surrounding the constructed wellpad where the storage tanks are located.

The surrounding landscape is associated with sandy plains and is not prime farmland. The climate is semi-arid, with average annual precipitation ranging between 10 and 12 inches. The historical plant community is a uniformly distributed grassland dominated by black grama, dropseeds and bluestems, with scattered shinnery oak and sand sage. Perennial and annual forbs are common, but their abundance and distribution fluctuate with precipitation. Litter and, to a lesser extent, bare ground make up a significant proportion of the ground cover (United States Department of Agriculture, Natural Resources Conservation Service, 2020). Limited to no vegetation is allowed to grow on the compacted wellpad.

The *Geological Map of New Mexico* indicates the surface geology at Arena Roja is comprised primarily of Qep-Eolian and piedmont deposits (Holocene to middle Pleistocene) characterized by interlaid eolian sand and piedmont deposits (New Mexico Bureau of Geology and Mineral Resources, 2020). The National Resources Conservation Service Web Soil Survey characterizes the soil at the site as Pyote and Maljamar fine sands, which are associated with sandy eolian deposits derived from sedimentary rock, and tend to be fine sand and sandy clay loam over a cemented material. This type of soil, typically found at elevations of 3,000 to 3,900 feet above sea level, tends to be well-drained with very low runoff and low available moisture in the soil profile (United States Department of Agriculture, Natural Resources Conservation Service, 2020). There is low potential for karst geology to be present near Arena Roja (United States Department of the Interior, Bureau of Land Management, 2020).

There is no surface water located on-site. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is an intermittent stream located approximately 0.81 miles northeast of the site (United States Fish and Wildlife Service, 2020). There are no continuously flowing watercourses or significant watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

The nearest recent groundwater well to Arena Roja is a New Mexico Office of the State Engineer-identified well from 2015 located 2.4 miles east of the site. Data for that well show a depth to groundwater of 250 feet below ground surface (bgs; New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System, 2020). Documentation pertaining to site characterization and depth to groundwater determination is included in Attachment 3.

## Closure Criteria Determination

Using site characterization information, a closure criteria determination worksheet (Attachment 3) was completed to determine if the release would be subject to any of the special case scenarios outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC, if the release had escaped secondary containment.

Based on data included in the closure criteria determination worksheet, the release at Arena Roja would not be subject to the requirements of Paragraph (4) of Subsection C of 19.15.29.12 NMAC and the closure criteria for the site would be determined to be associated with depth to groundwater. The nearest groundwater well is farther than ½ mile from the release site, which would nullify the depth to groundwater determination and change the closure criteria for the site to the below constituent concentration limits.

Devon Energy Production Company  
Arena Roja Federal Unit #016H

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Table 1. Closure Criteria for Soils Impacted by a Release		
Depth to Groundwater	Constituent	Limit
< 50 feet	Chloride	600 mg/kg
	TPH <sup>1</sup> (GRO + DRO + MRO)	100 mg/kg
	BTEX <sup>2</sup>	50 mg/kg
	Benzene	10 mg/kg

<sup>1</sup>Total petroleum hydrocarbons (TPH) = gasoline range organics (GRO) + diesel range organics (DRO) + motor oil range organics (MRO)

<sup>2</sup>Benzene, toluene, ethylbenzene and xylenes (BTEX)

## Remedial Actions

On June 18, 2020, Vertex provided 48-hour notification of the liner inspection to NM OCD, as required by Subparagraph (a) of Paragraph (5) of Subsection A 19.15.29.11 NMAC (Attachment 4), and the BLM. On June 22, 2020, Vertex conducted a visual inspection of the production equipment secondary containment liner for cracks, tears, cuts and other signs of damage to verify that the liner remained intact and had the ability to contain the release. The Daily Field Report (DFR) associated with the inspection is included in Attachment 5.

## Closure Request

Vertex recommends no remediation action to address the release at Arena Roja. The secondary containment liner appeared to be intact and had the ability to contain the release in question, as shown in the inspection photographs included with the DFR (Attachment 5). There are no anticipated risks to human, ecological or hydrological receptors associated with the release site.

Vertex requests that incident NOY1722038403 be closed as all closure requirements set forth in Subsection E of 19.15.29.12 NMAC have been met. Devon certifies that all information in this report and the attachments is correct, and that they have complied with all applicable closure requirements and conditions specified in Division rules and directives to meet NM OCD requirements to obtain closure on the August 8, 2017, release at Arena Roja.

Should you have any questions or concerns, please do not hesitate to contact the undersigned at 505.506.0040 or ngordon@vertex.ca.

Sincerely,



Natalie Gordon  
PROJECT MANAGER

vertex.ca

3101 Boyd Drive, Carlsbad, New Mexico 88220, USA | P 575.725.5001

**Devon Energy Production Company**  
Arena Roja Federal Unit #016H

**2020 Spill Assessment and Closure**  
June 2020

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## **Attachments**

- Attachment 1. NM OCD C-141 Report
- Attachment 2. Site Schematic
- Attachment 3. Closure Criteria for Soils Impacted by a Release Research Determination Documentation
- Attachment 4. Required 48-hr Notification of Liner Inspection to Regulatory Agencies
- Attachment 5. Daily Field Report(s) with Photographs

Devon Energy Production Company  
Arena Roja Federal Unit #016H

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## References

- New Mexico Bureau of Geology and Mineral Resources. (2020). *Interactive Geologic Map*. Retrieved from <http://geoinfo.nmt.edu>.
- New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System. (2020). *Water Column/Average Depth to Water Report*. Retrieved from <http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html>.
- New Mexico Oil Conservation Division. (2018). *New Mexico Administrative Code - Natural Resources and Wildlife Oil and Gas Releases*. Santa Fe, New Mexico.
- United States Department of Agriculture, Natural Resources Conservation Service. (2020). *Web Soil Survey*. Retrieved from <https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>.
- United States Department of the Interior, Bureau of Land Management. (2020). *New Mexico Cave/Karsts*. Retrieved from <https://www.blm.gov/programs/recreation/recreation-programs/caves/new-mexico>.
- United States Fish and Wildlife Service. (2020). *National Wetlands Inventory*. Retrieved from <https://www.fws.gov/wetlands/data/Mapper.html>.

**Devon Energy Production Company**  
Arena Roja Federal Unit #016H

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## Limitations

This report has been prepared for the sole benefit of Devon Energy Production Company (Devon). This document may not be used by any other person or entity, with the exception of the New Mexico Oil Conservation Division, without the express written consent of Vertex Resource Services Inc. (Vertex) and Devon. Any use of this report by a third party, or any reliance on decisions made based on it, or damages suffered as a result of the use of this report are the sole responsibility of the user.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted scientific practices current at the time the work was performed. The conclusions and recommendations presented represent the best judgement of Vertex based on the data collected during the assessment. Due to the nature of the assessment and the data available, Vertex cannot warrant against undiscovered environmental liabilities. Conclusions and recommendations presented in this report should not be considered legal advice.

## **ATTACHMENT 1**

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

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

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

Incident ID	NOY1722038403
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party: Devon Energy Production Company	OGRID: 06137
Contact Name: Amanda T. Davis	Contact Telephone: 575-748-0176
Contact email: amanda.davis@dvn.com	Incident # (assigned by OCD) NOY1722038403
Contact mailing address: 6488 Seven Rivers Highway, Artesia, NM 88210	

### Location of Release Source

Latitude 32.0209383 Longitude -103.3636699  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Arena Roja Federal Unit #016H	Site Type: Oil Well
Date Release Discovered: August 8, 2017	API# (if applicable) 30-025-42672

Unit Letter	Section	Township	Range	County
D	27	26S	35E	Lea

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

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

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 15 bbls	Volume Recovered (bbls) 15 bbls
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/>	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release:

Loose hammer union started leaking causing oil storage tanks to overflow into lined containment.

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Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

### Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped.	
<input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Amanda Davis</u>	Title: <u>EHS Professional</u>
Signature: <u>Amanda Davis</u>	Date: <u>6/24/2020</u>
email: <u>amanda.davis@dvn.com</u>	Telephone: <u>575-748-0176</u>
<b><u>OCD Only</u></b>	
Received by: _____	Date: _____

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Application ID	

## Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>250</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☐ Field data
- ☐ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☐ Laboratory data including chain of custody

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

State of New Mexico  
Oil Conservation Division

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Application ID	

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

Printed Name: Amanda Davis Title: EHS Professional  
Signature: Amanda Davis Date: 6/24/2020  
email: amanda.davis@dm.com Telephone: 575-748-0176

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	NOY1722038403
District RP	
Facility ID	
Application ID	

## Closure

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 (electronic submittals in .pdf format are preferred) 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.

**Closure Report Attachment Checklist:** *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☐ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

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.

Printed Name: Amanda Davis Title: EHS Professional  
Signature: Amanda Davis Date: 6/24/2020  
email: amanda.davis@dvn.com Telephone: 575-748-0176

**OCD Only**

Received by: OCD Date: 7/8/2020

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Ashley Maxwell Date: 9/20/2022  
Printed Name: Ashley Maxwell Title: Environmental Specialist



## OCD Permitting

Home &gt; Searches &gt; Wells &gt; Well Details

### 30-025-42672 ARENA ROJA FEDERAL UNIT #016H [34832]

#### General Well Information

Operator:	[6137] DEVON ENERGY PRODUCTION COMPANY, LP	Direction:	Horizontal
Status:	Active	Multi-Lateral:	No
Well Type:	Oil	Mineral Owner:	Federal
Work Type:	New	Surface Owner:	
Surface Location:	D-27-26S-35E 200 FNL 60 FWL		
Lat/Long:	32.0209383,-103.3636699 NAD83		
GL Elevation:	3112	Sing/Mult Compl:	Single
KB Elevation:		Potash Waiver:	False
DF Elevation:			

#### Proposed Formation and/or Notes

#### Depths

Proposed:	15586	True Vertical Depth:	9031
Measured Vertical Depth:	15883	Plugback Measured:	0

#### Formation Tops

Formation	Top	Producing	Method Obtained
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#### Event Dates

Initial APD Approval:	06/30/2015	Current APD Expiration:	06/30/2017
Most Recent APD Approval:	07/07/2015		
APD Cancellation:			
APD Extension Approval:			

#### Quick Links

- [General Well Information](#)
- [History](#)
- [Comments](#)
- [Operator](#) ↗
- [Pits](#)
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- [Transporters](#)
- [Points of Disposition](#)

#### Associated Images

- [Well Files \(23\)](#)
- [Well Logs \(6\)](#)
- [Well Admin Orders](#)

#### New Searches

- [New Facility Search](#) ↗
- [New Incident Search](#) ↗
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- [New Spill Search](#) ↗
- [New Tank Search](#) ↗
- [New Well Search](#) ↗





SIGN-IN HELP

Searches ▾ Operator Data ▾ Hearing Fee Application

Well Plugged:

Site Release:

Last Inspection: 03/22/2019

## History

Effective Date	Property	Well Number	Operator	C-101 Work Type	Well Type	Well Status	Apd Cancelled	Plug Date
07/07/2015	[34832] ARENA ROJA FEDERAL UNIT	#016H	[6137] DEVON ENERGY PRODUCTION COMPANY, LP	New	Oil	Active		

## Comments

## Pits

No Pits Found

## Casing

			Boreholes, Strings and Equipment Specifications			Specifications for Strings and Tubing			Strings Cemented and Intervals			Cement and Plug Description		
String/Hole Type	Taper	Date Set	Diameter	Top	Bottom (Depth)	Grade	Length	Weight	Bot of Cem	Top of Cem	Meth	Class of Cement	Sacks	Pressure Test (Y/N)
Hole 1	1	09/08/2015	17.500	0	1080		0	0.0	0	0			0	No
Surface Casing	1	09/10/2015	13.375	0	1074	J-55	1075	54.5	1074	0	Circ	Class C Cement	1135	No

BACK TO TOP



SIGN-IN HELP

Searches ▾ Operator Data ▾ Hearing Fee Application

Hole 2	1	09/13/2015	12.250	1074	5256		0	0.0	0	0			0	No
Intermediate 1 Casing	1	09/15/2015	9.625	0	5256	J-55	5256	40.0	5256	0	Circ	Class C Cement	1745	No
Hole 3	1	09/26/2015	8.500	5256	15883		0	0.0	0	0			0	No
Production Casing	1	09/29/2015	5.500	0	15864	P-110	15864	17.0	15864	0		Type H Cement	2505	No

## Well Completions

## [97597] JABALINA; DELAWARE, SOUTHWEST

**Status:** Active **Last Produced:** 03/01/2020  
**Bottomhole Location:** E-34-26S-35E Lot: 4 475 FSL 560 FWL  
**Lat/Long:** 32.001461,-103.3617269 NAD83  
**Acreage:** 233.44 27-26S-35E Units: D E L M  
34-26S-35E Units: D E(4)  
**DHC:** No **Consolidation Code:**  
**Production Method:** Flowing

## Well Test Data

**Production Test:** **Test Length:** 0 hours  
**Flowing Tubing Pressure:** 0 psi **Flowing Casing Pressure:** 0 psi  
**Choke Size:** 0.000 inches **Testing Method:**  
**Gas Volume:** 933.0 MCF **Oil Volume:** 683.0 bbls  
**Gas-Oil Ratio:** 0 Kcf / bbl **Oil Gravity:** 0.0 Corr. API  
**Disposition of Gas:** **Water Volume:** 2699.0 bbls

## Perforations

Date	Top Measured Depth (Where Completion Enters Formation)	Bottom Measured Depth (End of Lateral)	Top Vertical Depth	Bottom Vertical Depth
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## Notes

## Event Dates

Initial Effective/Approval:	07/07/2015	TA Expiration:	
Most Recent Approval:	09/08/2015	Confidential Until:	09/28/2016
Confidential Requested On:		Test Allowable End:	
Test Allowable Approval:		DHC:	
TD Reached:		Rig Released:	09/29/2015
Deviation Report Received:	No	Logs Received:	Yes
Directional Survey Run:	No	Closure Pit Plat Received:	
Directional Survey Received:	Yes	First Gas Production:	07/11/2016
First Oil Production:	07/11/2016	Completion Report Received:	
First Injection:		New Well C-104 Approval:	
Ready to Produce:	06/28/2016	Revoked Until:	
C-104 Approval:	07/22/2016		
Plug Back:			
Authorization Revoked Start:			

## Well Completion History

Effective Date	Property	Well Number	Operator	Completion Status	TA Expiration Date
09/08/2015	[34832] ARENA ROJA FEDERAL UNIT	#016H	[6137] DEVON ENERGY PRODUCTION COMPANY, LP	Active	
07/07/2015	[34832] ARENA ROJA FEDERAL UNIT	#016H	[6137] DEVON ENERGY PRODUCTION COMPANY, LP	New, Not Drilled	

## Financial Assurance

Effective	Bond Type	Base	Balance	Issuer	Cash/Surety	Cancellation Date
01/22/2019	Blanket	250000	250000	TRAVELERS CASUALTY AND SURETY OF AMERICA	Surety	
01/28/2019	Temporarily Abandoned	1000000	1000000	TRAVELERS CASUALTY AND SURETY OF AMERICA	Surety	

Requests to release bonds must be submitted in writing. You may send an e-mail to [OCDAdminComp@state.nm.us](mailto:OCDAdminComp@state.nm.us) or fax a letter to (505) 476-3462.



SIGN-IN HELP

Searches ▾ Operator Data ▾ Hearing Fee Application

## Incidents and Spills

Please note that incidents that impact ground water are recorded along with "facilities" which may not be wells, so although the initial report may be recorded here as a spill, information related to the abatement plans, remediation plans and ground water impact information are not yet part of this application.

### NOY1722038403 2017 MINOR A OS @ 30-025-42672

Action:

Notified: Industry Rep

### Event Dates

Date of Discovery: 08/08/2017

OCD Notified of Major Release: 07/24/2017

Characterization Report Received:

Closure Report Approved:

### Notes

Date	Detail
08/08/2017	No RP issued. Incident only. Lined containment. Oil storage tanks overflowed into lined containment as a result of a leak on the loose hammer union. The hammer union was isolated and then tightened back up to prevent any further release. Approx. 15 bbls of oil was released as a result of a loose hammer on an oil storage tank. Vacuum truck was dispatched and approx. 15 bbls was recovered. All fluid stayed inside the lined SPCC containment. Once fluids were removed, the liner was visually inspected by Devon field staff for any pinholes or punctures and none were found. Based on this inspection, there is no evidence that the spill fluids left the lined containment.

### Spills

Cause	Source	Product Spilled	Square Feet	Volume Spilled	Volume Recovered
Normal Operations	Tank ( Any)	Crude Oil	0	15	15 BBL

## Orders

1RP-3984-0



Applicant: [6137] DEVON ENERGY PRODUCTION COMPANY, LP





SIGN-IN HELP

Searches ▾ Operator Data ▾ Hearing Fee Application

Expiration:

Cancelled:

## Production / Injection

Earliest Production in OCD Records: 6/2016 Last

3/2020

[Show All Production](#) [Export to Excel](#)

Time Frame	Production				Injection				
	Oil(BBLS)	Gas(MCF)	Water(BBLS)	Days P/I	Water(BBLS)	Co2(MCF)	Gas(MCF)	Other	Pressure
⊕ 2016	104918	170359	307012	185	0	0	0	0	N/A
⊕ 2017	71022	143659	230968	308	0	0	0	0	N/A
⊕ 2018	4536	9215	31036	50	0	0	0	0	N/A
⊕ 2019	1	0	25	90	0	0	0	0	N/A
⊕ 2020	1	0	0	2	0	0	0	0	N/A
Grand Total:	180478	323233	569041	635	0	0	0	0	N/A

## Transporters

Transporter	Product	Most Recent for Property
[24650] TARGA MIDSTREAM SERVICES LLC	Gas	3/2019
[159160] VERSADO GAS PROCESSORS,LLC	Gas	3/2020
[2520] BLACKWOOD & NICHOLS CO., LTD	Oil	3/2019

BACK TO  
TOP



SIGN-IN HELP

Searches ▾ Operator Data ▾ Hearing Fee Application

[37480] EOTT ENERGY PIPELINE LP	Oil	2/2020
[248440] WESTERN REFINING COMPANY, L.P.	Oil	3/2020

## Points of Disposition



ID	Type	Description	Pool(s)
4028975	Gas	ARENA ROJA FEDERAL UNIT #016H	[97597] JABALINA;DELAWARE, SOUTHWEST
4028974	Oil	ARENA ROJA FEDERAL UNIT #016H	[97597] JABALINA;DELAWARE, SOUTHWEST

New Mexico Energy, Minerals and Natural Resources Department | Copyright 2012  
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[EMNRD Home](#) [OCD Main Page](#) [OCD Rules](#) [Help](#)

## **ATTACHMENT 2**



-  Lease Boundary  
 Release Inside Containment



0 50 100 Feet  
 Map Center:  
 Lat/Long: 32.0209383, -103.3636699

NAD 1983 UTM Zone 13N  
 Date: Jun 01/20



Site Schematic  
 Arena Roja Federal Unit #016H

FIGURE:

1



Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

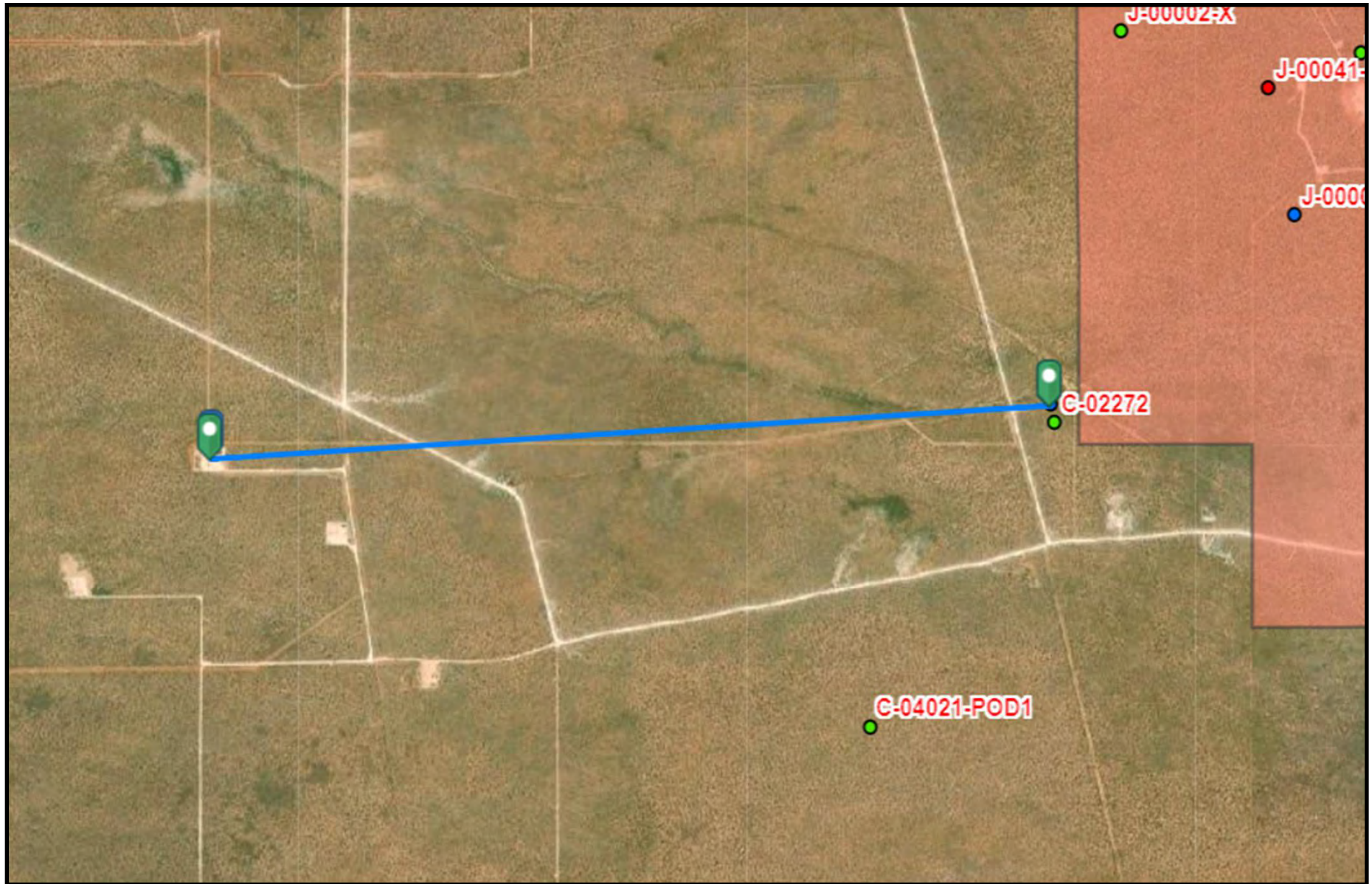
Note: Imagery from ESRI, 2018.

VERSATILITY. EXPERTISE.

## **ATTACHMENT 3**

Closure Criteria Worksheet			
Site Name: Arena Roja Federal Unit #016H			
Spill Coordinates:		32.0209383	-103.3636699
Site Specific Conditions		Value	Unit
1	Depth to Groundwater	250	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	158,928	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	16,115	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	15,808	feet
5	i) Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, <b>or</b>	10,402	feet
	ii) Within 1000 feet of any fresh water well or spring	10,402	feet
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)
7	Within 300 feet of a wetland	3,856	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	Low	Critical High Medium Low
10	Within a 100-year Floodplain	Undetermined	year
NMAC 19.15.29.12 E (Table 1) Closure Criteria		>100'	<50' 51-100' >100'

## Arena Roja Federal Unit #016H – Nearest Groundwater Well (OSE) – 2.4 miles





# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

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

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

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
<a href="#">C_03795 POD1</a>		C	LE	4	4	3	24	26S	35E	658419	3544221		3106	496	250 246
<a href="#">J_00005 POD1</a>		J	LE	2	2	2	13	26S	35E	659200	3547174*		3480	601	230 371
<a href="#">J_00041 POD1</a>		J	LE	1	1	1	19	26N	36E	659404	3545621		3523		270
<a href="#">J_00001</a>	R	J	LE	1	1	3	18	26S	36E	659416	3546374*		3524	550	253 297
<a href="#">J_00001 POD3</a>		J	LE	1	1	3	18	26S	36E	659416	3546374*		3524	550	253 297
<a href="#">J_00002 X3</a>		J	LE		3	1	19	26S	36E	659536	3545067*		3759	710	216 494
<a href="#">J_00002 X2</a>		J	LE		4	3	18	26S	36E	659929	3545879*		4025	650	214 436
<a href="#">J_00043 POD1</a>		J	LE	1	1	2	19	26S	36E	660221	3545607		4337		
<a href="#">J_00001 POD4</a>		J	LE	1	3	2	19	26S	36E	660244	3545180*		4423	640	250 390
<a href="#">J_00001 X</a>		J	LE	1	3	2	19	26S	36E	660244	3545180*		4423	640	250 390
<a href="#">CP_01170 POD1</a>		CP	LE	3	3	3	06	26S	36E	659282	3548984		4473	500	280 220
<a href="#">CP_01170 POD1</a>	C	CP	LE	3	3	3	06	26S	36E	659282	3548984		4473	500	280 220
<a href="#">CP_01267 POD1</a>		CP	LE	3	4	3	06	26S	36E	659759	3548807		4738	585	200 385

Average Depth to Water: **245 feet**

Minimum Depth: **200 feet**

Maximum Depth: **280 feet**

Record Count: 13

UTMNAD83 Radius Search (in meters):

Easting (X): 655906.63

Northing (Y): 3546048.55

Radius: 5000

\*UTM location was derived from PLSS - see Help

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

5/28/20 8:41 AM

WATER COLUMN/ AVERAGE DEPTH TO  
WATER



# New Mexico Office of the State Engineer

## Water Right Summary


[get image list](#)

**WR File Number:** C 03795      **Subbasin:** C      **Cross Reference:** -  
**Primary Purpose:** STK 72-12-1 LIVESTOCK WATERING  
**Primary Status:** PMT PERMIT  
**Total Acres:**      **Subfile:** -      **Header:** -  
**Total Diversion:** 3      **Cause/Case:** -  
**Owner:** BECKHAM RANCH INC  
**Contact:** M STAPLETON LLC  
**Owner:** BUREAU OF LAND MANAGEMENT  
**Contact:** GEORGE MACDONEIL

### Documents on File

	Trn #	Doc	File/Act	Status			Transaction Desc.	From/ To	Acres	Diversion	Consumptive
				1	2						
<a href="#">get images</a>	564689	COWNF	2015-03-09	CHG	PRC		C 03795	T		0	
<a href="#">get images</a>	556733	72121	2014-10-24	PMT	LOG		C 03795 POD1	T		3	

### Current Points of Diversion

POD Number	Well Tag	Source	Q					(NAD83 UTM in meters)		Other Location Desc
			64Q16Q4Sec	Tws	Rng			X	Y	
<a href="#">C 03795 POD1</a>		Shallow	4 4 3 24 26S 35E					658419	3544221	

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5/28/20 9:39 AM

WATER RIGHT SUMMARY



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[Contact USGS](#)  
[Search USGS](#)

**National Water Information System: Web Interface**


[USGS Water Resources](#)

**Data Category:**  
Groundwater ▼

**Geographic Area:**  
New Mexico ▼

GO

Click to hideNews Bulletins

- [Introducing The Next Generation of USGS Water Data for the Nation](#)
- [Full News](#) 

Click to hide state-specific text

## Search Results -- No sites found

No sites were found for groundwater level data using your search criteria.

The sites you requested may be available offline. For more information, contact [USGS Water Data Inquiries](#).

lat\_long\_bounding\_box

=

Position	Latitude	Longitude
Corner 1	32.039822	-103.349135
Corner 2	32.039822	-103.349135
Coordinates are entered as Decimal Degrees. DMS values are converted to Decimal degrees using NAD83 as the datum. Make your bounding box bigger if you are using NAD27 Datum for your DMS values		

Minimum number of 1  
levels =

Use the "Back" button on your browser to change your search criteria.

Return To Previous Page



U.S. Fish and Wildlife Service

## National Wetlands Inventory

## Arena Roja Federal Unit #016H - 0.81 Mile



June 18, 2020

**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.

# National Flood Hazard Layer FIRMette



32°2'40.73"N

103°21'15.20"W



## Legend

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

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



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 5/29/2020 at 3:15:56 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.

USGS The National Map: Orthoimagery, Data refreshed April, 2019.





32°2'10.23"N

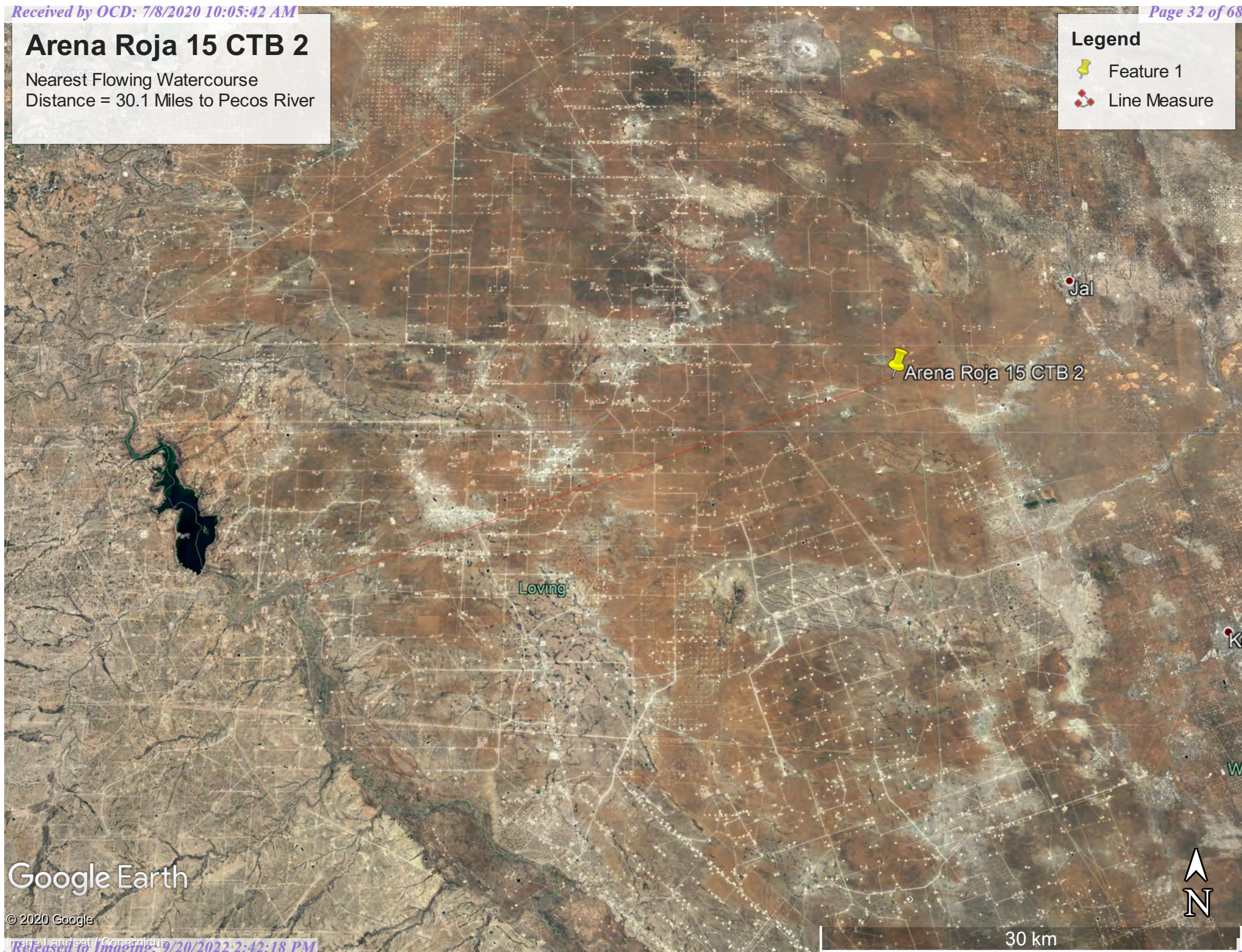
103°20'37.74"W

## Arena Roja 15 CTB 2

Nearest Flowing Watercourse  
Distance = 30.1 Miles to Pecos River

### Legend

-  Feature 1
-  Line Measure



Google Earth



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Released to Imaging: 9/20/2022 2:42:18 PM

## Arena Roja 15 CTB 2

Nearest Watering Stock POD = 10,408' from site

### Legend

-  Feature 1
-  Line Measure

Arena Roja 15 CTB 2

C 03795 POD1

Google Earth

3 km


















# New Mexico Office of the State Engineer

## Active & Inactive Points of Diversion

(with Ownership Information)

(acre ft per annum)						(R=POD has been replaced and no longer serves this file, C=the file is closed)			(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest)					(NAD83 UTM in meters)					
WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q 64	q 16	q 4	Sec	Tws	Rng	X	Y	Distance
<a href="#">J 00002</a>	J	MUN	986	CITY OF JAL	LE	<a href="#">J 00002 X</a>					3	4	13	26S	35E		658717	3545861*	2841
					LE	<a href="#">J 00002</a>					3	2	13	26S	35E		658705	3546666*	2876
<a href="#">C 03795</a>	C	STK	3	BUREAU OF LAND MANAGEMENT	LE	<a href="#">C 03795 POD1</a>			NON	Shallow	4	4	3	24	26S	35E	658419	3544221	3153
<a href="#">C 03845</a>	C	PRO	0	DEVON ENERGY CO	LE	<a href="#">C 03795 POD1</a>			NON	Shallow	4	4	3	24	26S	35E	658419	3544221	3153
<a href="#">C 03846</a>	C	PRO	0	DEVON ENERGY CO	LE	<a href="#">C 03795 POD1</a>			NON	Shallow	4	4	3	24	26S	35E	658419	3544221	3153
<a href="#">C 03847</a>	C	PRO	0	DEVON ENERGY CO	LE	<a href="#">C 03795 POD1</a>			NON	Shallow	4	4	3	24	26S	35E	658419	3544221	3153
<a href="#">J 00003</a>	J	COM	30	NGL SOUTH RANCH INC	LE	<a href="#">J 00003</a>	NA			Shallow	4	2	13	26S	35E		659042	3546648	3205
<a href="#">C 02272</a>	C	STK	3	BUREAU OF LAND MANAGEMENT	LE	<a href="#">C 02272</a>					4	4	3	24	26S	35E	658439	3544144*	3215
<a href="#">J 00005</a>	J	MUN	383.97	EL PASO NATURAL GAS COMPANY	LE	<a href="#">J 00005 POD1</a>				Shallow	2	2	2	13	26S	35E	659200	3547174*	3485
<a href="#">J 00005 A</a>	J	COM	0	EL PASO NATURAL GAS COMPANY	LE	<a href="#">J 00005 POD1</a>				Shallow	2	2	2	13	26S	35E	659200	3547174*	3485
<a href="#">J 00042</a>	J	EXP	0	GLORIETA GEOSCIENCE INC	LE	<a href="#">J 00042 POD1</a>	NA				3	1	3	18	26S	36E	659423	3546152	3538
<a href="#">J 00001</a>	J	MUN	600	CITY OF JAL	LE	<a href="#">J 00001</a>		R		Shallow	1	1	3	18	26S	36E	659416	3546374*	3541
					LE	<a href="#">J 00001 POD3</a>				Shallow	1	1	3	18	26S	36E	659416	3546374*	3541
<a href="#">J 00041</a>	J	EXP	0	CITY OF JAL	LE	<a href="#">J 00041 POD1</a>	NA				1	1	1	19	26N	36E	659404	3545621	3551
<a href="#">C 04021</a>	C	DOM	1	MARCOS YANEZ	LE	<a href="#">C 04021 POD1</a>			NON		2	4	4	26	26S	35E	657601	3542791	3724
<a href="#">J 00002</a>	J	MUN	986	CITY OF JAL	LE	<a href="#">J 00002 X3</a>				Shallow	3	1	19	26S	36E		659536	3545067*	3793
<a href="#">J 00045</a>	J	EXP	0	CITY OF JAL	LE	<a href="#">J 00045 POD1</a>	NA				3	4	3	18	26S	36E	659827	3545781	3954
<a href="#">J 00002</a>	J	MUN	986	CITY OF JAL	LE	<a href="#">J 00002 X2</a>				Shallow	4	3	18	26S	36E		659929	3545879*	4049
					LE	<a href="#">J 00002 X4</a>		R			3	1	20	26S	36E		660021	3546381*	4145
<a href="#">J 00043</a>	J	EXP	0	GLORIETA GEOSCIENCE INC	LE	<a href="#">J 00043 POD1</a>	NA			Shallow	1	1	2	19	26S	36E	660221	3545607	4363
<a href="#">J 00001</a>	J	MUN	600	CITY OF JAL	LE	<a href="#">J 00001 POD4</a>				Shallow	1	3	2	19	26S	36E	660244	3545180*	4454
					LE	<a href="#">J 00001 X</a>				Shallow	1	3	2	19	26S	36E	660244	3545180*	4454
<a href="#">CP 01170</a>	CP	COM	300	NGL SOUTH RANCH INC	LE	<a href="#">CP 01170 POD1</a>				Shallow	3	3	3	06	26S	36E	659281	3548984	4457
<a href="#">CP 01194</a>	CP	CLS	0	BECKHAM RANCH INC	LE	<a href="#">CP 01170 POD1</a>		C		Shallow	3	3	3	06	26S	36E	659281	3548984	4457
<a href="#">CP 01170</a>	CP	COM	300	NGL SOUTH RANCH INC	LE	<a href="#">CP 01267 POD1</a>				Shallow	3	4	3	06	26S	36E	659759	3548807	4727
<a href="#">CP 01263</a>	CP	COM	200	NGL SOUTH RANCH INC	LE	<a href="#">CP 01267 POD1</a>				Shallow	3	4	3	06	26S	36E	659759	3548807	4727
<a href="#">CP 01267</a>	CP	EXP	0	BECKHAM RANCH INC	LE	<a href="#">CP 01267 POD1</a>				Shallow	3	4	3	06	26S	36E	659759	3548807	4727

<a href="#">CP 01292</a>	CP	PRO	0	CONCHO OIL AND GAS	LE	<a href="#">CP 01267 POD1</a>	C	Shallow	3	4	3	06	26S	36E	659759	3548807		4727
<a href="#">CP 01293</a>	CP	PRO	0	GRR, INC	LE	<a href="#">CP 01267 POD1</a>		Shallow	3	4	3	06	26S	36E	659759	3548807		4727
<a href="#">CP 01294</a>	CP	PRO	0	CONCHO OIL AND GAS	LE	<a href="#">CP 01267 POD1</a>		Shallow	3	4	3	06	26S	36E	659759	3548807		4727
<a href="#">CP 01263</a>	CP	COM	200	NGL SOUTH RANCH INC	LE	<a href="#">CP 01263 POD2</a>			2	4	1	07	26S	36E	660060	3548343		4741
<a href="#">CP 01170</a>	CP	COM	300	NGL SOUTH RANCH INC	LE	<a href="#">CP 01170 POD2</a>			2	3	3	06	26S	36E	659541	3549183		4784
<a href="#">CP 01342</a>	CP	CLS	0	BECKHAM RANCH INC	LE	<a href="#">CP 01170 POD2</a>			2	3	3	06	26S	36E	659541	3549183		4784
<a href="#">J 00002</a>	J	MUN	986	CITY OF JAL	LE	<a href="#">J 00003 POD2</a>	Shallow	1	1	2	30	26S	36E	660265	3543972		4868	
<a href="#">J 00003</a>	J	COM	30	NGL SOUTH RANCH INC	LE	<a href="#">J 00003 POD2</a>	Shallow	1	1	2	30	26S	36E	660265	3543972		4868	
<a href="#">J 00004</a>	J	COM	5	NGL SOUTH RANCH INC	LE	<a href="#">J 00003 POD2</a>	Shallow	1	1	2	30	26S	36E	660265	3543972		4868	
<a href="#">J 00022</a>	J	DOL	0	BECKHAM RANCH, INC.	LE	<a href="#">J 00003 POD2</a>	Shallow	1	1	2	30	26S	36E	660265	3543972		4868	
<a href="#">J 00025</a>	J	COM	500	NGL SOUTH RANCH INC	LE	<a href="#">J 00003 POD2</a>	Shallow	1	1	2	30	26S	36E	660265	3543972		4868	
<a href="#">J 00026</a>	J	COM	500	NGL SOUTH RANCH INC	LE	<a href="#">J 00003 POD2</a>	Shallow	1	1	2	30	26S	36E	660265	3543972		4868	
<a href="#">CP 01305</a>	CP	COM	100	FULFER OIL & CATTLE COMPANY	LE	<a href="#">CP 01305 POD1</a>	Artesian		1	4	31	25S	37E	655627	3551065		4974	

**Record Count:** 40

**UTMNAD83 Radius Search (in meters):**

**Easting (X):** 655884.98

**Northing (Y):** 3546097.51

**Radius:** 5000

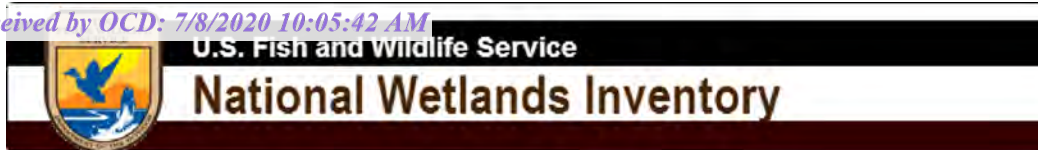
**Sorted by:** Distance

\*UTM location was derived from PLSS - see Help

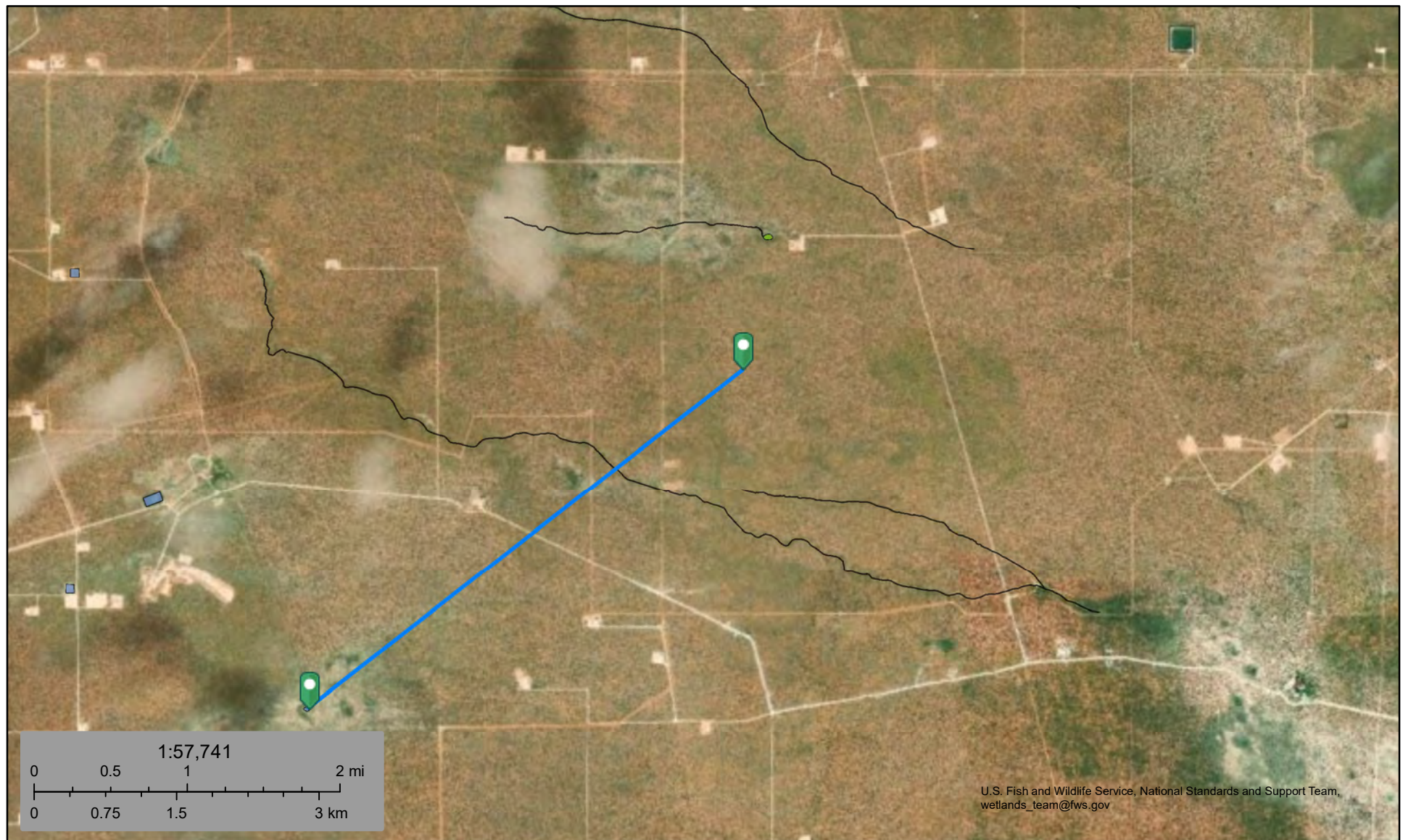
The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

5/28/20 9:38 AM

ACTIVE & INACTIVE POINTS OF DIVERSION



Arena Roja 15 CTB 2 - Pond = 16115'



May 28, 2020

**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

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



- Lake
- Other
- Riverine


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## Arena Roja 15 CTB 2

Nearest Residency  
Distance = 15,808'

### Legend

-  Feature 1
-  Line Measure

Arena Roja 15 CTB 2 

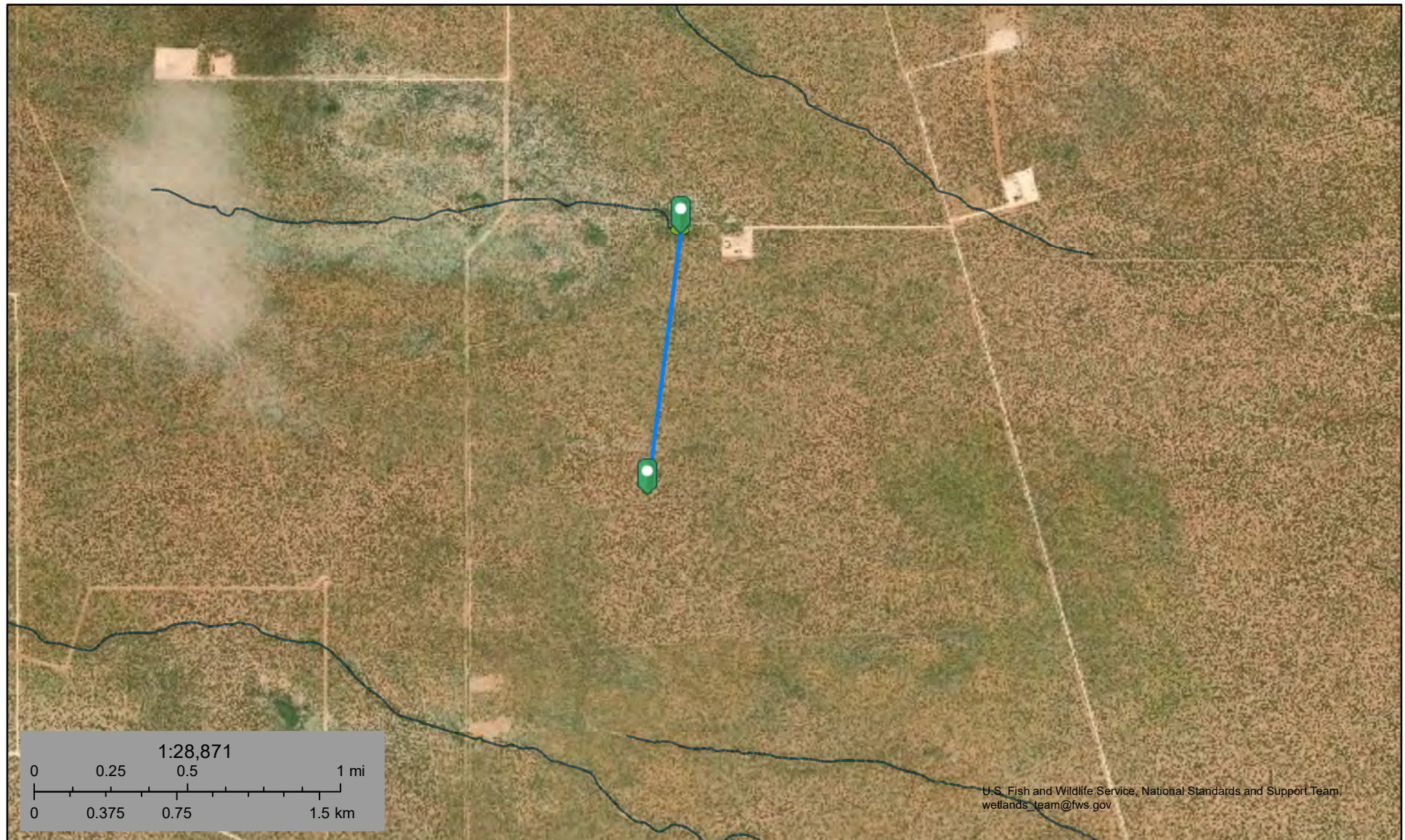
Google Earth



2 km



Arena Roja 15 CTB 2 - Wetland = 3,856'



May 28, 2020

#### Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

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

- Lake
- Other
- Riverine

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United States  
Department of  
Agriculture

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Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for **Lea County, New Mexico**



May 29, 2020

# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

## Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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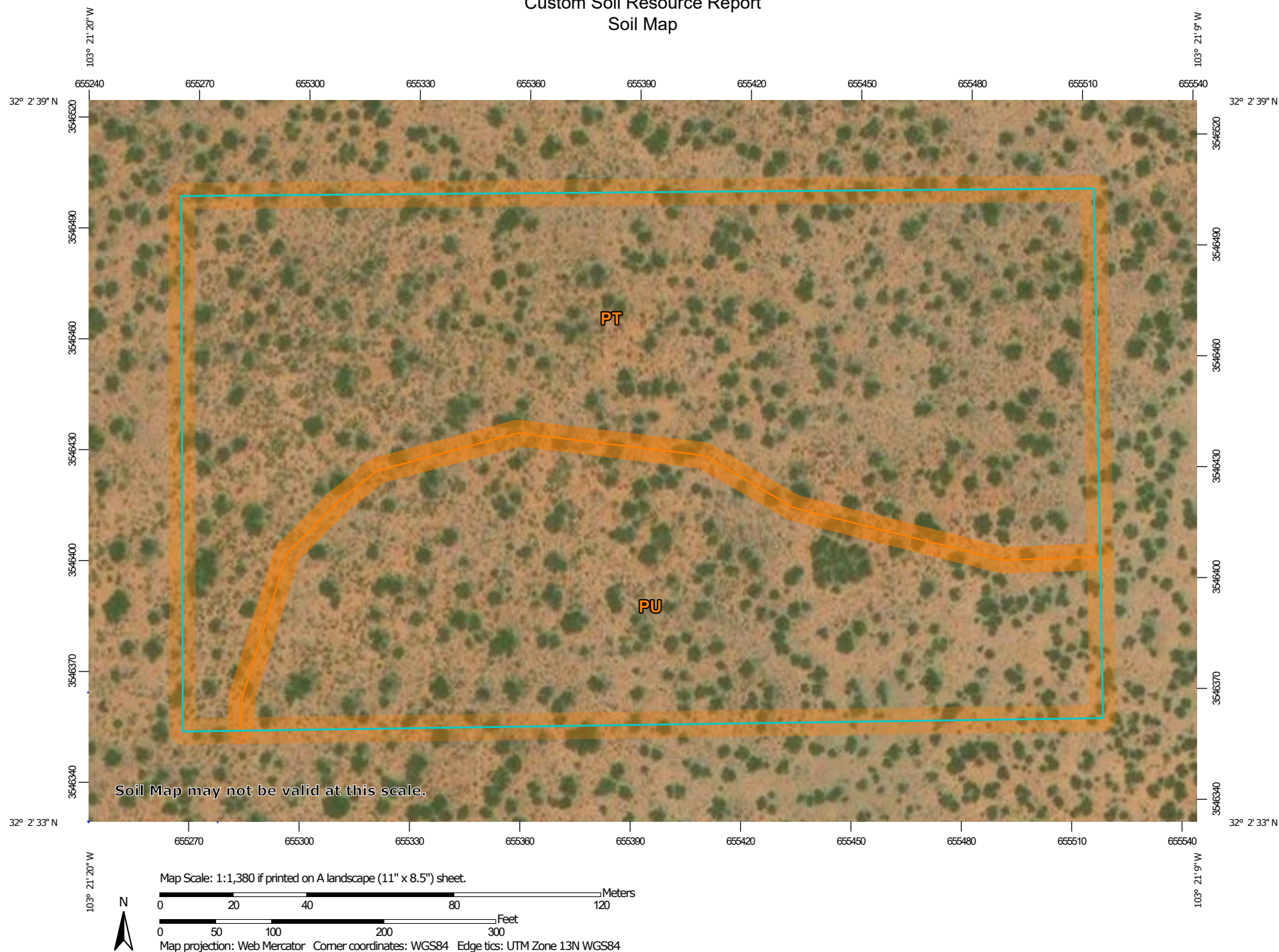
identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

## **Soil Map**

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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


# Custom Soil Resource Report Soil Map



## Custom Soil Resource Report

## MAP LEGEND

## Area of Interest (AOI)

 Area of Interest (AOI)


## Soils


 Soil Map Unit Polygons


 Soil Map Unit Lines


 Soil Map Unit Points

## Special Point Features

 Blowout

 Borrow Pit


 Clay Spot


 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole


 Slide or Slip


 Sodic Spot


 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

## Water Features

 Streams and Canals


## Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

## Background

 Aerial Photography

## MAP INFORMATION

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

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

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

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

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Lea County, New Mexico  
Survey Area Data: Version 16, Sep 15, 2019

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

Date(s) aerial images were photographed: Dec 31, 2009—Sep 19, 2017

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.

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## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PT	Pyote loamy fine sand	5.4	60.6%
PU	Pyote and maljamar fine sands	3.5	39.4%
<b>Totals for Area of Interest</b>		<b>8.9</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

## Custom Soil Resource Report

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

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## Lea County, New Mexico

## PT—Pyote loamy fine sand

## Map Unit Setting

*National map unit symbol:* dmqp

*Elevation:* 3,000 to 3,900 feet

*Mean annual precipitation:* 10 to 12 inches

*Mean annual air temperature:* 60 to 62 degrees F

*Frost-free period:* 190 to 200 days

*Farmland classification:* Farmland of statewide importance

## Map Unit Composition

*Pyote and similar soils:* 85 percent

*Minor components:* 15 percent

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

## Description of Pyote

## Setting

*Landform:* Plains

*Landform position (three-dimensional):* Rise

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Sandy eolian deposits derived from sedimentary rock

## Typical profile

*A - 0 to 25 inches:* loamy fine sand

*Bt - 25 to 60 inches:* fine sandy loam

## Properties and qualities

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Negligible

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

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum in profile:* 5 percent

*Gypsum, maximum in profile:* 1 percent

*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Sodium adsorption ratio, maximum in profile:* 2.0

*Available water storage in profile:* Low (about 5.3 inches)

## Interpretive groups

*Land capability classification (irrigated):* 6e

*Land capability classification (nonirrigated):* 7s

*Hydrologic Soil Group:* A

*Ecological site:* Loamy Sand (R042XC003NM)

*Hydric soil rating:* No

## Custom Soil Resource Report

**Minor Components****Maljamar***Percent of map unit: 8 percent**Ecological site: Loamy Sand (R042XC003NM)**Hydric soil rating: No***Palomas***Percent of map unit: 7 percent**Ecological site: Loamy Sand (R042XC003NM)**Hydric soil rating: No***PU—Pyote and maljamar fine sands****Map Unit Setting***National map unit symbol: dmqq**Elevation: 3,000 to 3,900 feet**Mean annual precipitation: 10 to 12 inches**Mean annual air temperature: 60 to 62 degrees F**Frost-free period: 190 to 205 days**Farmland classification: Not prime farmland***Map Unit Composition***Maljamar and similar soils: 45 percent**Pyote and similar soils: 45 percent**Minor components: 10 percent**Estimates are based on observations, descriptions, and transects of the mapunit.***Description of Maljamar****Setting***Landform: Plains**Landform position (three-dimensional): Rise**Down-slope shape: Linear**Across-slope shape: Linear**Parent material: Sandy eolian deposits derived from sedimentary rock***Typical profile***A - 0 to 24 inches: fine sand**Bt - 24 to 50 inches: sandy clay loam**Bkm - 50 to 60 inches: cemented material***Properties and qualities***Slope: 0 to 3 percent**Depth to restrictive feature: 40 to 60 inches to petrocalcic**Natural drainage class: Well drained**Runoff class: Very low**Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)**Depth to water table: More than 80 inches*

## Custom Soil Resource Report

Frequency of flooding: None  
Frequency of ponding: None  
Calcium carbonate, maximum in profile: 5 percent  
Gypsum, maximum in profile: 1 percent  
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
Sodium adsorption ratio, maximum in profile: 2.0  
Available water storage in profile: Low (about 5.6 inches)

**Interpretive groups**

Land capability classification (irrigated): 6e  
Land capability classification (nonirrigated): 7e  
Hydrologic Soil Group: B  
Ecological site: Loamy Sand (R042XC003NM)  
Hydric soil rating: No

**Description of Pyote****Setting**

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

**Typical profile**

A - 0 to 30 inches: fine sand  
Bt - 30 to 60 inches: fine sandy loam

**Properties and qualities**

Slope: 0 to 3 percent  
Depth to restrictive feature: More than 80 inches  
Natural drainage class: Well drained  
Runoff class: Negligible  
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)  
Depth to water table: More than 80 inches  
Frequency of flooding: None  
Frequency of ponding: None  
Calcium carbonate, maximum in profile: 5 percent  
Gypsum, maximum in profile: 1 percent  
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
Sodium adsorption ratio, maximum in profile: 2.0  
Available water storage in profile: Low (about 5.1 inches)

**Interpretive groups**

Land capability classification (irrigated): 6e  
Land capability classification (nonirrigated): 7s  
Hydrologic Soil Group: A  
Ecological site: Loamy Sand (R042XC003NM)  
Hydric soil rating: No

**Minor Components****Kermit**

Percent of map unit: 10 percent

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*Ecological site:* Sandhills (R042XC022NM)

*Hydric soil rating:* No

## References

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- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_054262](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262)
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053577](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577)
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053580](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580)
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2\\_053374](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374)
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelpdb1043084>

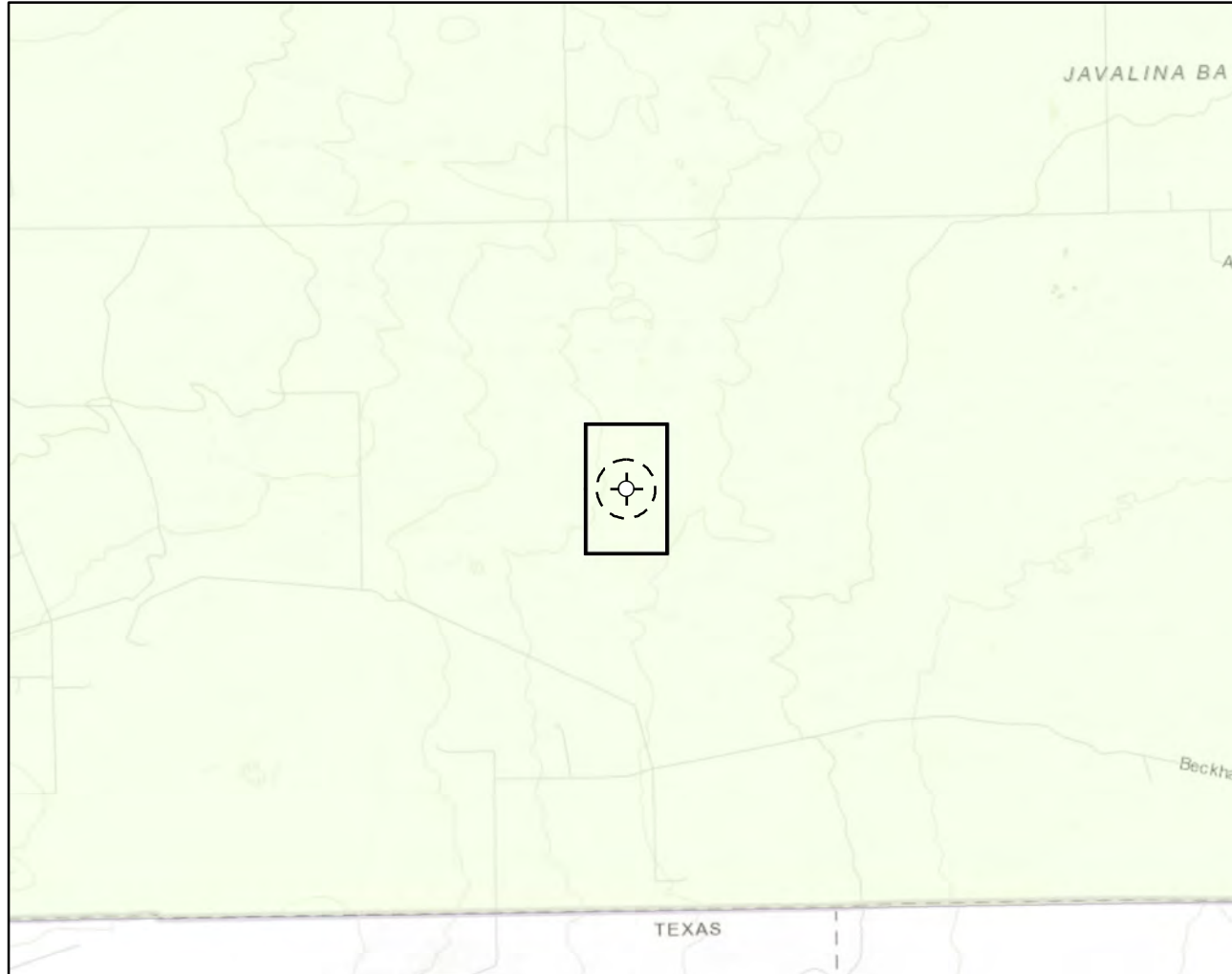
## Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2\\_054242](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242)

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053624](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624)

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. [http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs142p2\\_052290.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf)

Document Path: G:\Projects\US PROJECTS\Devon Energy Corporation\20E-00141051 - Arena Roja 15 CTB 2\Fig X Karst Potential Arena Roja 15 CTB 2.mxd



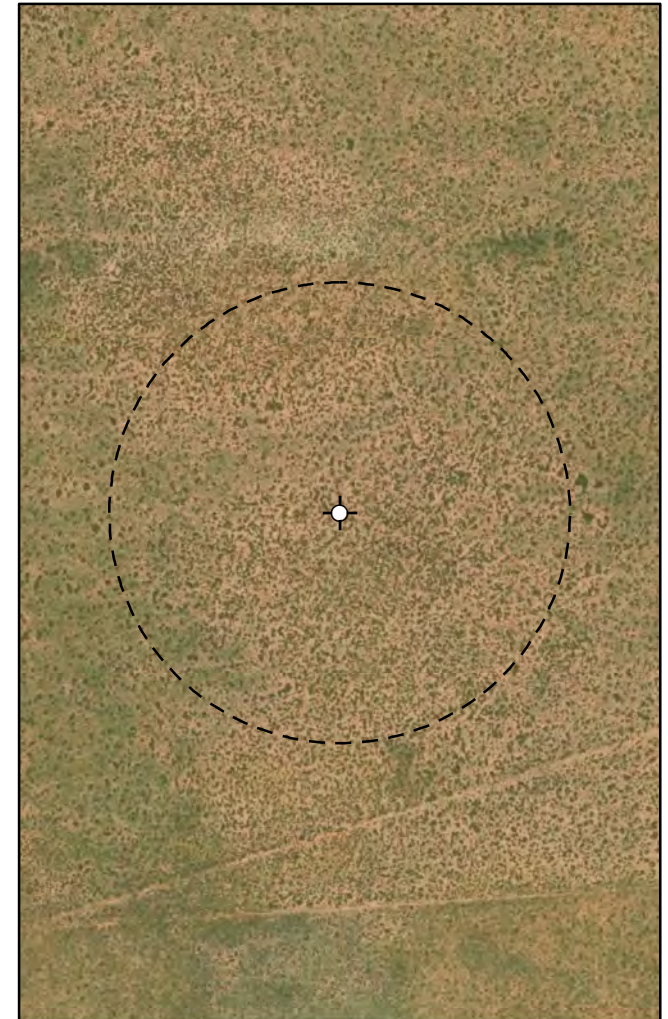
**Karst Potential**

- Critical
- High
- Medium
- Low

- Site
- Site Buffer

**Overview Map**

0 0.25 0.5 1 mi



**Detail Map**

0 150 300 600 ft.



Map Center:  
Lat/Long: 32.039841, -103.349150

NAD 1983 UTM Zone 13N  
Date: May 28/20



**Karst Potential  
Arena Roja 15 CTB 2**

FIGURE:

**X**



Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

Note: Inset Map, ESRI 20XX; Overview Map: ESRI World Topographic

**VERSATILITY. EXPERTISE.**

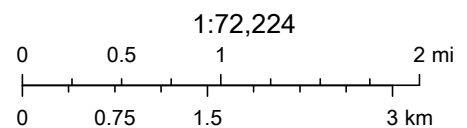
## Active Mines in New Mexico



5/28/2020, 9:57:30 AM

Registered Mines

✕ Aggregate, Stone etc.



U.S. Bureau of Land Management - New Mexico State Office, Sources:  
Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS

## **ATTACHMENT 4**

## Natalie Gordon

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**From:** Dhugal Hanton <vertexresourcegroupusa@gmail.com>  
**Sent:** Thursday, June 18, 2020 1:48 PM  
**To:** Natalie Gordon  
**Subject:** Fwd: NOY1722038403: Arena Roja Federal Unit #016H - 48-hr Notification of Liner Inspection

----- Forwarded message -----

From: **Dhugal Hanton** <[vertexresourcegroupusa@gmail.com](mailto:vertexresourcegroupusa@gmail.com)>  
Date: Thu, Jun 18, 2020 at 12:11 PM  
Subject: NOY1722038403: Arena Roja Federal Unit #016H - 48-hr Notification of Liner Inspection  
To: EMNRD-OCD-District1spills <[emnrd-ocd-district1spills@state.nm.us](mailto:emnrd-ocd-district1spills@state.nm.us)>, Bratcher, Mike, EMNRD <[Mike.Bratcher@state.nm.us](mailto:Mike.Bratcher@state.nm.us)>, <[ramona.marcus@state.nm.us](mailto:ramona.marcus@state.nm.us)>, Venegas, Victoria, EMNRD <[Victoria.Venegas@state.nm.us](mailto:Victoria.Venegas@state.nm.us)>, Hamlet, Robert, EMNRD <[Robert.Hamlet@state.nm.us](mailto:Robert.Hamlet@state.nm.us)>, Kelsey <[KWade@blm.gov](mailto:KWade@blm.gov)>, Amos, James A <[Jamos@blm.gov](mailto:Jamos@blm.gov)>, CFO\_Spill, BLM\_NM <[blm\\_nm\\_cfo\\_spill@blm.gov](mailto:blm_nm_cfo_spill@blm.gov)>  
Cc: <[Lupe.Carrasco@dvn.com](mailto:Lupe.Carrasco@dvn.com)>, <[amanda.davis@dvn.com](mailto:amanda.davis@dvn.com)>, <[wesley.mathews@dvn.com](mailto:wesley.mathews@dvn.com)>, <[tom.bynum@dvn.com](mailto:tom.bynum@dvn.com)>

All,

Please accept this email as 48-hr notification that Vertex Resource Services Inc. has scheduled a liner inspection to be conducted at Arena Roja Federal Unit #016H for the following open release:

NOY1722038403 - DOR: August 7, 2017

This work will be conducted on behalf of Devon Energy Production Company.

On Monday, June 22, 2020 at approximately 12:00p.m., Vertex will be onsite to conduct a final liner inspection for closure of the above reference incident. If you need directions to the site or have any questions or concerns regarding this notification, please give me a call at 505-506-0040.

Thank you,  
Natalie

**Natalie Gordon**  
Project Manager

Vertex Resource Group Ltd.  
213 S. Mesa Street  
Carlsbad, NM 88220

**P 575.725.5001 ext 709**  
**C 505.506.0040**  
**F**

[www.vertex.ca](http://www.vertex.ca)

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## **ATTACHMENT 5**



## Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	6/22/2020
Site Location Name:	Arena Roja Fed Unit 15H	Report Run Date:	6/23/2020 2:58 PM
Client Contact Name:	Amanda Davis	API #:	30-025-42671
Client Contact Phone #:	(575) 748-0176		
Unique Project ID	-Arena Roja Fed Unit 15H	Project Owner:	Amanda Davis
Project Reference #	Spill 1RP-3984	Project Manager:	Natalie Gordon

### Summary of Times

Arrived at Site	6/22/2020 11:54 AM
Departed Site	6/22/2020 12:37 PM

### Field Notes

**8:41** Onsite to conduct liner inspection.

**8:43** Liner has no visible tears, holes or punctures. No integrity deficiency identified.

### Next Steps & Recommendations

**1** Complete closure report.

## Daily Site Visit Report



## Site Photos

## Viewing Direction: South



Liner inspection

## Viewing Direction: East



Liner inspection

## Viewing Direction: North



Liner inspection




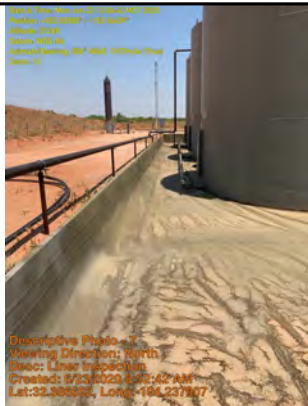
## Viewing Direction: West



Liner inspection





## Daily Site Visit Report

<p><b>Viewing Direction: South</b></p>  <p> <small> Date &amp; Time: Mon, Aug 23 12:45:42 PM 2020  Position: -402.851407° / -104.237628°  Altitude: 3114ft  Camera: WGS-84  Azimuth/Bearing: 109° S/W 285degaz True  Zoom: 1X </small> </p> <p> <b>Descriptive Photo - 4</b>  Viewing Direction: South  Desc: Liner Inspection  Created: 8/23/2020 8:45:42 AM  Lat:32.386735, Long:-104.237628 </p> <p>Liner inspection</p>	<p><b>Viewing Direction: West</b></p>  <p> <small> Date &amp; Time: Mon, Aug 23 12:45:42 PM 2020  Position: -402.851407° / -104.237628°  Altitude: 3114ft  Camera: WGS-84  Azimuth/Bearing: 307° S/W 62degaz True  Zoom: 1X </small> </p> <p> <b>Descriptive Photo - 5</b>  Viewing Direction: West  Desc: Liner Inspection  Created: 8/23/2020 8:45:49 AM  Lat:32.386735, Long:-104.237639 </p> <p>Liner inspection</p>
<p><b>Viewing Direction: West</b></p>  <p> <small> Date &amp; Time: Mon, Aug 23 12:45:43 PM 2020  Position: -402.851407° / -104.237628°  Altitude: 3122ft  Camera: WGS-84  Azimuth/Bearing: 279° N/W 450degaz True  Zoom: 1X </small> </p> <p> <b>Descriptive Photo - 6</b>  Viewing Direction: West  Desc: Liner Inspection  Created: 8/23/2020 8:45:43 AM  Lat:32.386728, Long:-104.237627 </p> <p>Liner inspection</p>	<p><b>Viewing Direction: North</b></p>  <p> <small> Date &amp; Time: Mon, Aug 23 12:45:43 PM 2020  Position: -402.851407° / -104.237628°  Altitude: 3114ft  Camera: WGS-84  Azimuth/Bearing: 69° N/W 510degaz True  Zoom: 1X </small> </p> <p> <b>Descriptive Photo - 7</b>  Viewing Direction: North  Desc: Liner Inspection  Created: 8/23/2020 8:45:42 AM  Lat:32.386693, Long:-104.237607 </p> <p>Liner inspection</p>



## Daily Site Visit Report

Viewing Direction: East	Viewing Direction: South
 <p>Photo - 8 Viewing Direction: East Desc: Liner Inspection Created: 6/23/2020 8:53:33 AM Lat:32.386727, Long:-104.237924</p>	 <p>Photo - 8 Viewing Direction: South Desc: Liner Inspection Created: 6/23/2020 8:55:33 AM Lat:32.386792, Long:-104.237924</p>
Liner inspection	Liner inspection

## Daily Site Visit Report



Daily Site Visit Signature

**Inspector:** Kevin Smith

**Signature:**   
Signature

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS  
  
Action 9113

CONDITIONS

Operator: Pima Environmental Services, LLC 5614 N Lovington Hwy Hobbs, NM 88240	OGRID: 329999
	Action Number: 9113
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	None	9/20/2022