Location:	**Big Eddy Unit DI 29**	
Spill Date:	**6/27/2025**	
Incident #:	**NAPP2518149545**	

Area 1		
Approximate Area =	1564	sq. ft.
Average Saturation (or depth) of spill =	2.00	inches
Average Porosity Factor =	0.25	
VOLUME OF LEAK		
Total Crude Oil =	9.00	bbls
Total Produced Water =	1.00	bbls
TOTAL VOLUME OF LEAK		
Total Crude Oil =	**9.00**	**bbls**
Total Produced Water =	**1.0**	**bbls**
TOTAL VOLUME RECOVERED		
Total Crude Oil =	**0.00**	**bbls**
Total Produced Water =	**0**	**bbls**

Incident Number: NAPP2518149545

Release Assessment and Incident Closure

Big Eddy Unit DI 29 Battery

Section 21, Township 20 South, Range 32 East

Facility: FAPP2123046227

County: Lea

Coordinates: 32.56479, -103.77798

Vertex File Number: 25A-03635

Prepared for:

ExxonMobil Production Company

Prepared by:

Vertex Resource Services Inc.

Date:

October 2025

Big Eddy Unit DI 29 Battery
Section 21, Township 20 South, Range 32 East
Facility: FAPP2123046227
County: Lea
Coordinates: 32.56479, -103.77798

Prepared for:
ExxonMobil Production Company
3104 East Greene Street
Carlsbad, New Mexico 88220

New Mexico Oil Conservation Division – District 1
508 West Texas Avenue
Artesia, New Mexico 88210

Prepared by:
Vertex Resource Services Inc.
3101 Boyd Drive
Carlsbad, New Mexico 88220

Stephanie McCarty

October 3, 2025

Stephanie McCarty, B.Sc.
ENVIRONMENTAL SPECIALIST, REPORTING

Date

October 3, 2025

Chad Hensley, B.Sc. GCNR
SENIOR PROJECT MANAGER, REPORT REVIEW

Date

Table of Contents

In-text Tables

List of Figures

List of Tables

List of Appendices

1.0 Introduction

ExxonMobil Production Company (Exxon) retained Vertex Resource Services Inc. (Vertex) to conduct an Incident Closure for a crude oil and produced water release that occurred on June 26, 2025, at Big Eddy Unit DI 29 Battery, Facility: FAPP2123046227 (hereafter referred to as the "site"). Exxon submitted a Notification of Release to New Mexico Oil Conservation Division (NMOCD) District 1 on June 30, 2025. On July 3, 2025, Exxon then submitted an initial C-141 that was accepted and incident ID number nAPP2518149545 was assigned to this incident.

This report provides a description of the release assessment and remediation activities associated with the site. The information presented demonstrates that closure criteria established in Table I of 19.15.29.12 of the *New Mexico Administrative Code* (NMAC; New Mexico Oil Conservation Division, 2018) related to NMOCD has been met and all applicable regulations are being followed. This document is intended to serve as a final report to obtain approval from NMOCD for closure of this release, with the understanding that restoration of the release site will be deferred until such time as all oil and gas activities are terminated and the site is reclaimed as per NMAC 19.15.29.13.

2.0 Incident Description

The release occurred on June 26, 2025, due to equipment failure and resulted in a flare fire. The incident was initially reported on June 30, 2025, and involved the release of approximately 9 barrels (bbl) of crude oil and 1 bbl of produced water on the pad site. During initial clean-up, 0 bbl of free fluid was removed. Additional details relevant to the release are presented in the C-141 Report.

3.0 Site Characteristics

The site is located approximately 25.5 miles northeast of Carlsbad New Mexico. The legal location for the site is Section 21, Township 20 South and Range 32 East in Lea County, New Mexico (32.56479, -103.77798). The release area is located on Bureau of Land Management property. An aerial photograph and site schematic are presented on Figure 1.

The Geological Map of New Mexico (New Mexico Bureau of Geology and Mineral Resources, 2025) indicates the site's surface geology primarily comprises Qp – piedmont alluvial deposits of the upper and middle quaternary. Predominant soil texture on the site is Shallow Sandy. Additional soil characteristics include a drainage class of well drained with a runoff class of very high. The karst geology potential for the site is medium (United States Department of the Interior, Bureau of Land Management, 2018).

The location is typical of oil and gas exploration and production sites in the Permian Basin and is currently used for oil and gas storage and production. The following sections specifically describe the release area around the flare on the constructed pad (Figure 1).

The surrounding landscape is associated with plains with elevations ranging between 2,842 and 4,500 feet. The climate is semiarid with average annual precipitation ranging between 8 and 13 inches. Using information from the United States Department of Agriculture, the dominant vegetation was determined to be grasses, specifically black grama, but are notably characterized by the presence of shrubs such as mesquite, creosote bush or broom snakeweed. Black grama

dominate the historical plant community (United States Department of Agriculture, Natural Resources Conservation Service, 2025). Limited to no vegetation is sanctioned to grow on the compacted production pad.

4.0 Closure Criteria Determination

The nearest depth to groundwater reference to the site is CP-01891-POD1, a plugged New Mexico Office of the State Engineer monitoring well located approximately 0.14 miles north of the site. Data from 2021 shows the United States Geological Survey borehole recorded a depth to groundwater of 33 feet below ground surface (bgs). Information pertaining to the depth to ground water determination is included in Appendix A.

There is no surface water present at the site. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is an intermittent stream located 0.15 miles north of the release (National Wetlands Inventory) located (United States Fish and Wildlife Service, 2025).

At the site, 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.

Table 1. Closure Criteria Determination			
Site Name: Big Eddy Unit DI 29			
Spill Coordinates: 32.56479, -103.7779		**X: 614724.36**	**Y: 3603699.82**
Site Specific Conditions		**Value**	**Unit**
1	Depth to Groundwater (nearest reference)	**33**	feet
	Distance between release and nearest DTGW reference	**764**	feet
		0.14	miles
	Date of nearest DTGW reference measurement	**October 26, 2021**	
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	810	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	1,823	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	14,657	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, **or**	162,906	feet
	ii) Within 1000 feet of any fresh water well or spring	162,906	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	600	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
	Distance between release and nearest registered mine	8,302	feet
9	Within an unstable area (Karst Map)	**Medium**	Critical High Medium Low
	Distance between release and nearest unstable area	**0**	feet
10	Within a 100-year Floodplain	Undetermined	year
	Distance between release and nearest FEMA Zone A (100-year Floodplain)	50,925	feet
11	Soil Type	Simona-Upton association	
12	Ecological Classification	Shallow Sandy	
13	Geology	Qp - Piedmont Deposits	
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	<50'	<50' 51-100' >100'

The closure criteria determined for the site are associated with the following constituent concentration limits as presented in Table 2.

Table 2. Closure Criteria for Soils Impacted by a Release DTGW ≤ 50 feet bgs

Minimum depth below any point within the horizontal boundary of the release to groundwater less than 10,000 mg/l TDS	Constituent	Limit
≤ 50 feet	Chloride	600 mg/kg
	TPH (GRO+DRO+MRO)	100 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

DTGW – depth to groundwater
bgs – below ground surface
TDS – total dissolved solids
TPH – total petroleum hydrocarbons, GRO – gas range organics, DRO – diesel range organics, MRO – motor oil range organics
BTEX – benzene, toluene, ethylbenzene, and xylenes

5.0 Remedial Actions Taken

An initial site assessment of the release area was concluded on July 16, 2025, which identified an area of interest containing staining as specified in the initial C-141 Report. Due to safety concerns about prolonged work near an active flare, delineation sampling was limited, and a stop work was issued to shut in the well for a safer work environment. Returning on September 22, 2025, after the well was shut in, a further detailed delineation was conducted. Delineation of the release area was completed during excavation and confirmation sampling. In total, eight sample points were established, one borehole with at least two discrete samples, for each cardinal direction. Eighteen delineation samples were collected and submitted for laboratory analysis. Daily Field Reports including site photographs are included in Appendix B. Laboratory results are presented in Table 3 and the laboratory data reports are included in Appendix C. Sample locations and release area are presented on Figure 1.

Remediation efforts began on September 22, 2025, and were finalized on September 25, 2025. Vertex personnel guided the excavation of impacted soils. Field screening was completed on sample points to guide the excavation and consisted of analysis using a Dexsil Petroflag using EPA SW-846 Method 9074 (extractable hydrocarbons) and silver nitrate (chlorides). Field screening results were used to identify areas requiring further remediation. Soils were removed to a depth of 1.1 to 1.2 feet bgs. Impacted soil was transported by a licensed waste hauler and disposed of at an approved waste management facility. Daily Field Reports containing site photographs documenting various phases of the remediation are included in Appendix B. A total of three confirmation samples were collected and submitted for laboratory analysis. The sample for BS25-01 exceeded closure criteria and was recollected utilizing a rock bar on September 25, 2025. Notification that confirmatory samples were being collected was provided to the NMOCD at least 48 hours in advance, on September 19, 2025, for all sampling events. Confirmatory composite samples were collected from the base and walls of the excavation in 200 square foot increments. Samples were submitted to Cardinal Laboratories under chain-of-custody protocols and analyzed for BTEX (EPA Method 8021B), total petroleum hydrocarbons (GRO, DRO, MRO – EPA Method 8015D) and total chlorides (EPA Method 300.0). Laboratory results are

presented in Table 4, and the laboratory data reports are included in Appendix C. Confirmation sampling and remediation areas are presented on Figure 2.

6.0 Closure Request

The release area was fully delineated and remediated by September 25, 2025. Confirmatory samples were analyzed by the laboratory and found to be below allowable concentrations as per the NMAC Closure Criteria for Soils Impacted by a Release location “under 50 feet to groundwater”. Based on these findings, Exxon requests that this release be closed.

Should you have any questions or concerns, please do not hesitate to contact Chad Hensley at 575.200.6167 or CHensley@vertex.ca.

7.0 References

Google Inc. (2025). *Google Earth Pro (Version 7.3.3)* [Software]. Retrieved from https://earth.google.com

New Mexico Bureau of Geology and Mineral Resources. (2025). *Interactive Geologic Map*. Retrieved from https://maps.nmt.edu/

New Mexico Department of Surface Water Quality Bureau. (2025). *Assessed and Impaired Waters of New Mexico*. Retrieved from https://gis.web.env.nm.gov/oem/?map=swqb

New Mexico Energy, Minerals and Natural Resources Department. (2025). *OCD Permitting - Spill Search*. Retrieved from https://wwwapps.emnrd.nm.gov/ocd/ocdpermitting/Data/Spills/Spills.aspx

New Mexico Office of the State Engineer. (2025a). *Point of Diversion Location Report - New Mexico Water Rights Reporting System*. Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/wellSurfaceDiversion.html

New Mexico Office of the State Engineer. (2025b). *Water Column/Average Depth to Water Report - New Mexico Water Rights Reporting System*. Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html

New Mexico Office of the State Engineer. (2025c). *Well Log/Meter Information Report - New Mexico Water Rights Reporting System*. Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/meterReport.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. (2025). *Web Soil Survey*. Retrieved from https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

United States Department of Homeland Security, Federal Emergency Management Agency. (2025). *FEMA Flood Map Service: Search by Address*. Retrieved from https://msc.fema.gov/portal/search?AddressQuery=malaga%20new%20mexico#searchresultsanchor

United States Department of the Interior, Bureau of Land Management. (2018). *New Mexico Cave/Karst*. Retrieved from https://www.nm.blm.gov/shapeFiles/cfo/carlsbad_spatial_data.html

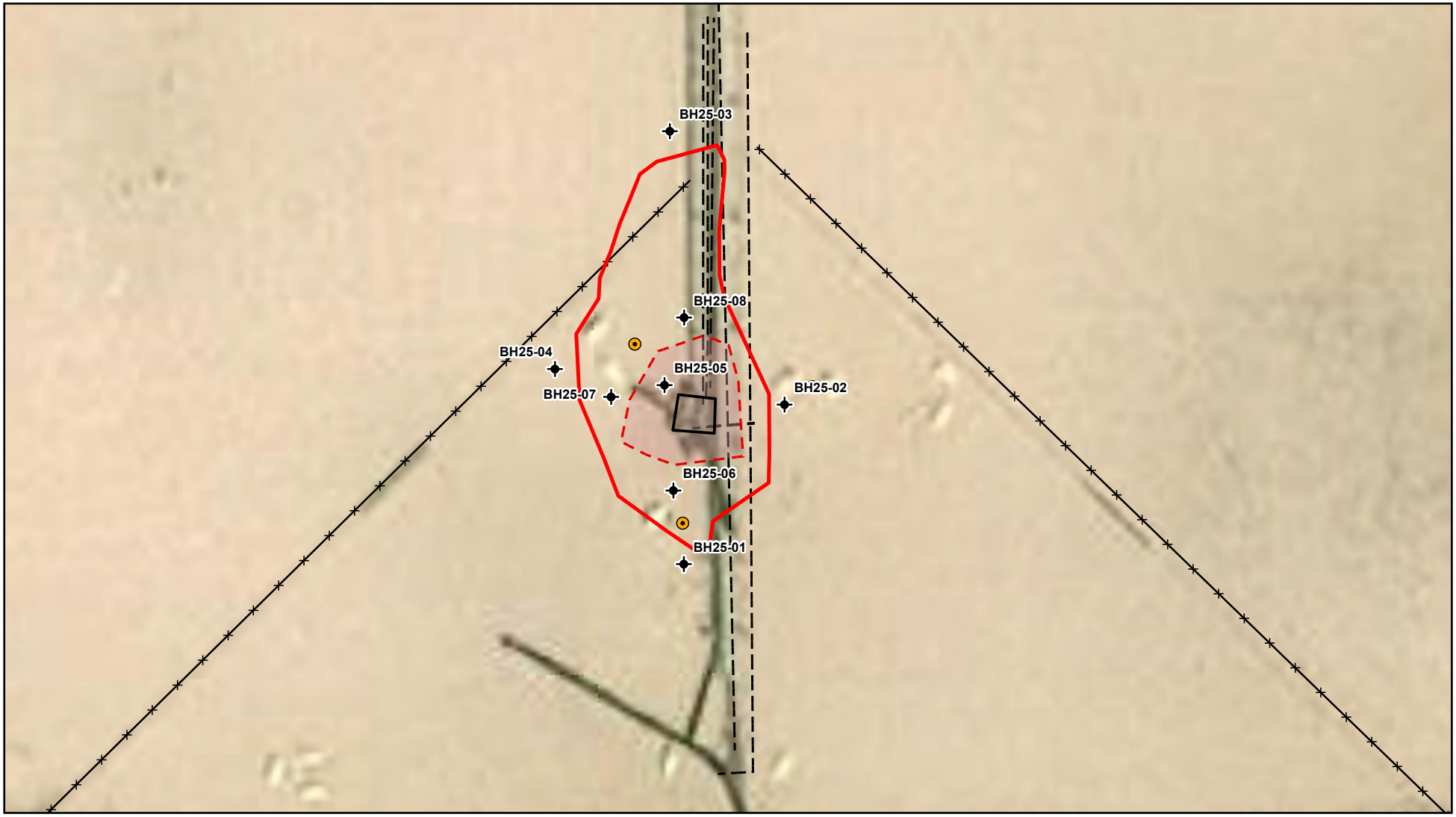
United States Fish and Wildlife Service. (2025). *National Wetland Inventory - Surface Waters and Wetlands*. Retrieved from https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/

8.0 Limitations

This report has been prepared for the sole benefit of ExxonMobil Production Company. This document may not be used by any other person or entity, with the exception of the New Mexico Oil Conservation Division and the Bureau of Land Management, without the express written consent of Vertex Resource Services Inc. (Vertex) and ExxonMobil Production Company. 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.

FIGURES



Borehole
Guide Wire
Fence
Pipeline (Aboveground)
Approximate Release Area (~362 sq.ft. | 72 ft.)
Area of Interest
Production Equiptment

VERTEX

0 10 20 ft.

Map Center:
Lat: 32.564297°N,
Long:103.778144°W

NAD 1983 UTM Zone 13N
Date: Oct 01/25

N

Characterization Sampling Site Schematic
Big Eddy Unit DI 29

FIGURE:
1

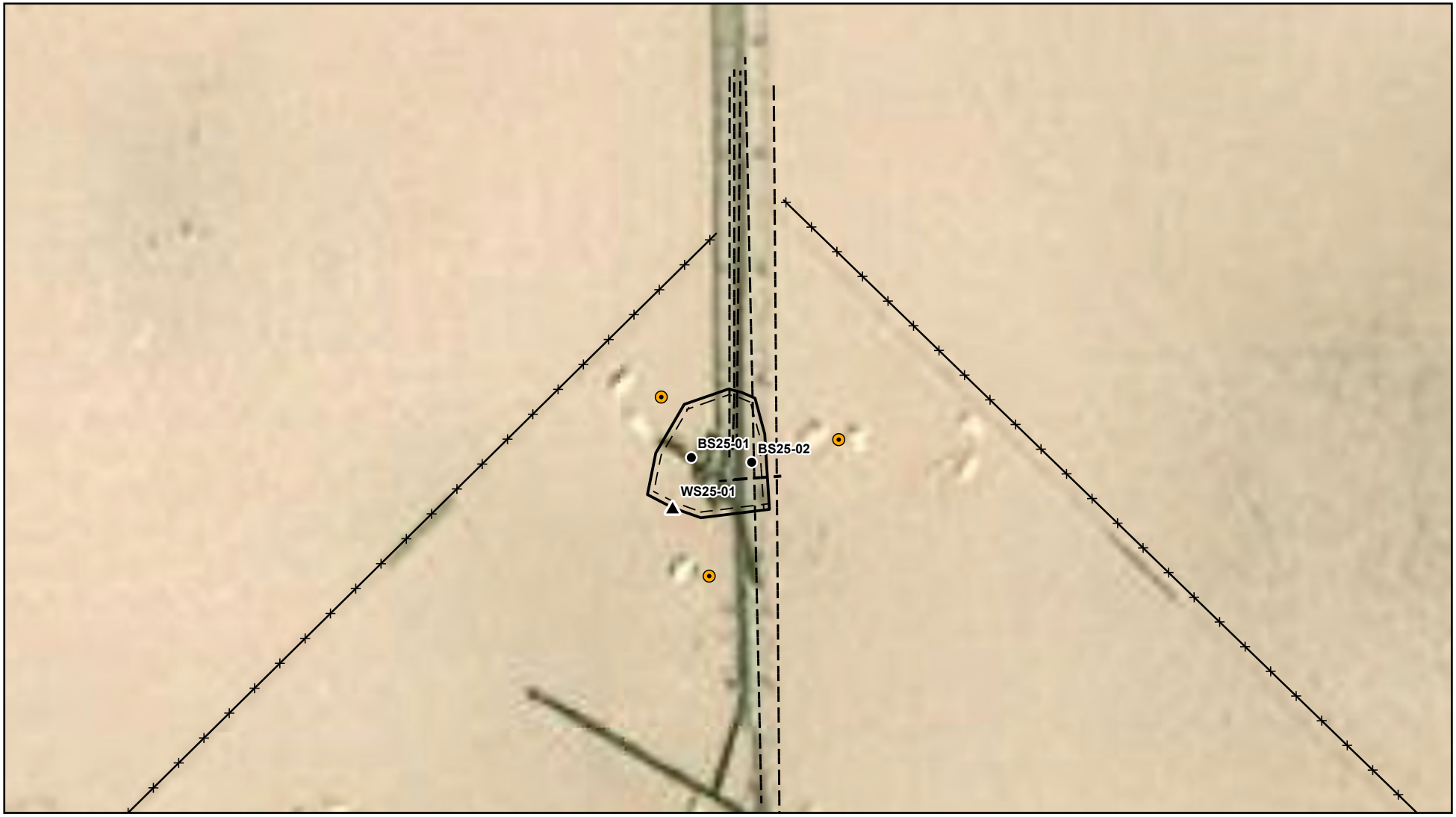
ExxonMobil

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: Georeferenced image from Esri, 2023. Approximate lease boundary from imagery by Vertex Professional Services Ltd. (VPS), 2025.
Site features from GPS by VPS, 2025.

VERSATILITY. EXPERTISE.

Document Path: S:\04 - Geomatics\1-Projects_US PROJECTS\ExxonMobil Upstream Comp (Former XTO)\XTO Energy\2025\25A-03635\00 - ArcPro\25A-03635.aprx



▲ Wall Sample
● Base Sample
Guide Wire
Fence
Pipeline (Aboveground)
Excavation to 1.1 bgs (~362 sq.ft. | 72 ft.)

VERTEX

0 10 20 ft.

Map Center:
Lat: 32.564323°N,
Long:103.778159°W

NAD 1983 UTM Zone 13N
Date: Oct 01/25

N

Confirmation Sampling Site Schematic
Big Eddy Unit DI 29

FIGURE:
2

ExxonMobil

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: Georeferenced image from Esri, 2023. Approximate lease boundary from imagery by Vertex Professional Services Ltd. (VPS), 2025.
Site features from GPS by VPS, 2025.

VERSATILITY. EXPERTISE.

Document Path: S:\04 - Geomatics\1-Projects_US PROJECTS\ExxonMobil Upstream Comp (Former XTO)\XTO Energy\2025\25A-03635\00 - ArcPro\25A-03635.aprx

TABLES

Client Name: ExxonMobil Production Company
Site Name: Big Eddy Unit DI 29 Battery
NMOCD Tracking #:nAPP2518149545
Project #: 25A-03635
Lab Reports: H254368, H254105, & H255969

Table 3. Initial Characterization Laboratory Results

Sample Description			Petroleum Hydrocarbons							Inorganic
			Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
			Depth to Groundwater <50							
BH25-01	0	July 9, 2025	ND	ND	ND	ND	ND	ND	ND	ND
	1R	July 15, 2025	ND	ND	ND	ND	ND	ND	ND	32
BH25-02	0	July 9, 2025	ND	ND	ND	ND	ND	ND	ND	32
	1R	July 16, 2025	ND	ND	ND	ND	ND	ND	ND	32
	1	September 23, 2025	ND	ND	ND	15	ND	15	15	32
BH25-03	0	July 9, 2025	ND	ND	ND	ND	ND	ND	ND	48
	1R	July 16, 2025	ND	ND	ND	ND	ND	ND	ND	48
BH25-04	0	July 9, 2025	ND	ND	ND	ND	ND	ND	ND	32
	1R	July 16, 2025	ND	ND	ND	ND	ND	ND	ND	16
BH25-05	0	July 9, 2025	ND	ND	ND	19,200	7,710	19,200	**26,910**	112
	0.5	July 9, 2025	ND	ND	ND	1,210	466	1,210	**1,676**	48
	1R	July 9, 2025	ND	ND	ND	84	36	84	**120**	144
BH25-06	0	September 23, 2025	ND	ND	ND	ND	ND	ND	ND	ND
	1	September 23, 2025	ND	ND	ND	ND	ND	ND	ND	16
BH25-07	0	September 23, 2025	ND	ND	ND	ND	ND	ND	ND	32
	1	September 23, 2025	ND	ND	ND	ND	ND	ND	ND	16
BH25-08	0	September 23, 2025	ND	ND	ND	13	ND	13	13	32
	1	September 23, 2025	ND	ND	ND	ND	ND	ND	ND	16

"ND" Not Detected at the Reporting Limit
"R" indicates refusal with hand tools
"-" indicates not analyzed/assessed
Bold and grey shaded indicates exceedance outside of NMOCD Closure Criteria (on-pad)

Client Name: ExxonMobil Production Company
Site Name: Big Eddy Unit DI 29 Battery
NMOCD Tracking #:nAPP2518149545
Project #: 25A-03635
Lab Reports: H255969 and H256105

Table 4. Confirmation Sample Laboratory Results

Sample Description			Petroleum Hydrocarbons							Inorganic
			Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
			Depth to Groundwater <50							
BS25-01	1.1	September 23, 2025	ND	ND	ND	90.3	47.5	90.3	**137.8**	64
	1.2	September 25, 2025	ND	ND	ND	26.1	10.7	26.1	36.8	48
BS25-02	1.1	September 23, 2025	ND	ND	ND	24.7	ND	24.7	24.7	16
WS25-01	0-1.1	September 23, 2025	ND	ND	ND	ND	ND	ND	ND	16

"ND" Not Detected at the Reporting Limit
"-" indicates not analyzed/assessed
Bold and grey shaded indicates exceedance outside of NMOCD Closure Criteria (on-pad)

APPENDIX B – Daily Field and Sampling Reports

Daily Site Visit Report

Client:	ExxonMobil	Incident ID #:	
Site Location Name:	Big Eddy Unit DI 29	API #:	
Inspection Date:	7/9/2025		

Summary of Times	
Arrived at Site	7/9/2025 8:45 AM
Departed Site	7/9/2025 1:30 PM

Daily Site Visit Report

Field Notes

9:07 Travel to site/ safety paperwork

9:07 Production equipment was mapped out

9:08 BH25-01 through BH25-05 were collected at 0’ and field screened

12:53 BH25-05 was collected at 0.5’ and 1’R

12:55 All samples were jarred, labeled, and coc’s were created

Next Steps & Recommendations

1 Complete delineation

2 Create work plan

3 Excavation

Daily Site Visit Report

Site Photos

Viewing Direction: North	**Viewing Direction**: East
	
BH25-01 @ 0’	BH25-04 @ 0’
Viewing Direction: South	**Viewing Direction**: Southeast
	
BH25-03 @ 0’	BH25-05 @ 0’

Daily Site Visit Report

Viewing Direction: Northeast	**Viewing Direction**: North
	
BH25-05 @ 0.5’	BH25-05 @ 1’R

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Riley Arnold

Signature: 
Signature

Daily Site Visit Report

Client:	ExxonMobil	Incident ID #:	
Site Location Name:	Big Eddy Unit DI 29	API #:	
Inspection Date:	7/16/2025		

Summary of Times	
Arrived at Site	7/16/2025 9:30 AM
Departed Site	7/16/2025 1:45 PM

Daily Site Visit Report

Field Notes

9:39 BH25-01 through BH25-04 were collected at 1’ refusal

9:39 Samples were field screened

9:40 Samples were jarred and labeled / coc’s were created

12:18 Map edits were made

Next Steps & Recommendations

1 Send to lab for further analysis

2 Creat scope of work

Daily Site Visit Report

Site Photos

Viewing Direction: East

BH25-04 @ 1'R

Viewing Direction: North

BH25-01 @ 1'R

Viewing Direction: West

BH25-02 @ 1'R

Viewing Direction: South

BH25-03 @ 1'R

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Riley Arnold

Signature:

Daily Site Visit Report

Client:	ExxonMobil	Incident ID #:	
Site Location Name:	Big Eddy Unit DI 29	API #:	
Inspection Date:	9/22/2025		

Summary of Times	
Arrived at Site	9/22/2025 7:55 AM
Departed Site	9/22/2025 2:15 PM

Daily Site Visit Report

Field Notes

9:03 Completed saftey paperwork upon arrival and met with Kent Retz

9:02 Marked out the release area for the Hydrovac

9:02 Started out 1ft out from around the stained area and 1ft down

14:00 The ground contained an excessive amount of rocky material making it difficult for the Hydrovac to break through

14:15 Excavation area was already contained inside fencing

Next Steps & Recommendations

1

Daily Site Visit Report

Site Photos

Viewing Direction: South	**Viewing Direction**: Northeast
	
Hydrovacced caliche reveals hard packed material	Large boulders are in the release area around what's being Hydrovaced
Viewing Direction: Southwest	**Viewing Direction**: Northeast
	
Excavation area at end of day	Excavation area at end of day

Daily Site Visit Report

Viewing Direction: North

Excavation area at end of day

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Katrina Taylor

Signature: 

Daily Site Visit Report

Client:	ExxonMobil	Incident ID #:	
Site Location Name:	Big Eddy Unit DI 29	API #:	
Inspection Date:	9/23/2025		

Summary of Times	
Arrived at Site	9/23/2025 8:10 AM
Departed Site	9/23/2025 5:30 PM

Daily Site Visit Report

Field Notes

9:51 Completed safety paperwork, had a safety meeting, received work authorization, and confirmed the flare was shut off before starting work

9:51 Continued hydrovaccing to start then began breaking up some of the bolders with rock bars

17:27 Base is at refusal for hand excavation and hydrovaccing at end of day. Field screened indicated that the base was clean

17:27 BS25-01, BS25-02, WS25-01 and the remainder of delineation was collected

17:28 The extent of the excavation was to 1ft past the visible stain

Next Steps & Recommendations

1

Daily Site Visit Report

Site Photos

Viewing Direction: East

Bolders broken up with rock bar

Viewing Direction: South

BH25-08 0-1 north of the excavation

Viewing Direction: East

BH25-07 0-1 west of the excavation

Viewing Direction: North

BH25-06 0-1 south of the excavation

Daily Site Visit Report

Viewing Direction: West	**Viewing Direction**: East
	
BH25-02 0-1 east of the excavation	Excavation at end of day

Viewing Direction: North	**Viewing Direction**: North
	
Excavation at end of day	Excavation at end of day

Daily Site Visit Report

Viewing Direction: East

Excavation at end of day

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Katrina Taylor

Signature: 
Signature

Daily Site Visit Report

Client:	ExxonMobil	Incident ID #:	
Site Location Name:	Big Eddy Unit DI 29	API #:	
Inspection Date:	9/25/2025		

Summary of Times	
Arrived at Site	9/25/2025 12:31 PM
Departed Site	9/25/2025 1:40 PM

Daily Site Visit Report

Field Notes

12:32 Completed saftey paperwork upon arrival

12:34 Conducting a site visit to recollect BS25-01

12:35 Sample is located around the north and west areas of the flair and was field screened on location for TPH

Next Steps & Recommendations

1

Daily Site Visit Report

Site Photos

Viewing Direction: East	**Viewing Direction**: Southeast
	
BS25-01	BS25-01

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Katrina Taylor

Signature: 

APPENDIX C – Laboratory Data Reports and Chain of Custody Forms

CARDINAL Laboratories

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

July 24, 2025

CHAD HENSLEY

VERTEX RESOURCE

3101 BOYD DRIVE

CARLSBAD, NM 88220

RE: BEU DI 29 CTB

Enclosed are the results of analyses for samples received by the laboratory on 07/21/25 12:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C25-00101. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	07/21/2025	Sampling Date:	07/16/2025
Reported:	07/24/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Alyssa Parras
Project Location:	EXXON MOBIL		

Sample ID: BH 25-01 @ 1' R (H254368-01)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/23/2025	ND	2.09	104	2.00	1.20	
Toluene*	<0.050	0.050	07/23/2025	ND	2.13	106	2.00	1.37	
Ethylbenzene*	<0.050	0.050	07/23/2025	ND	2.07	104	2.00	0.618	
Total Xylenes*	<0.150	0.150	07/23/2025	ND	6.08	101	6.00	0.542	
Total BTEX	<0.300	0.300	07/23/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *95.7 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	07/22/2025	ND	400	100	400	7.69	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/23/2025	ND	200	100	200	0.347	
DRO >C10-C28*	<10.0	10.0	07/23/2025	ND	193	96.7	200	0.386	
EXT DRO >C28-C36	<10.0	10.0	07/23/2025	ND					

Surrogate: 1-Chlorooctane *82.7 %* *44.4-145*

Surrogate: 1-Chlorooctadecane *76.6 %* *40.6-153*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	07/21/2025	Sampling Date:	07/16/2025
Reported:	07/24/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Alyssa Parras
Project Location:	EXXON MOBIL		

Sample ID: BH 25-02 @ 1' R (H254368-02)

BTEX 8021B mg/kg **Analyzed By: JH**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/23/2025	ND	2.09	104	2.00	1.20	
Toluene*	<0.050	0.050	07/23/2025	ND	2.13	106	2.00	1.37	
Ethylbenzene*	<0.050	0.050	07/23/2025	ND	2.07	104	2.00	0.618	
Total Xylenes*	<0.150	0.150	07/23/2025	ND	6.08	101	6.00	0.542	
Total BTEX	<0.300	0.300	07/23/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *94.7 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg **Analyzed By: KH**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	07/22/2025	ND	400	100	400	7.69	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/23/2025	ND	200	100	200	0.347	
DRO >C10-C28*	<10.0	10.0	07/23/2025	ND	193	96.7	200	0.386	
EXT DRO >C28-C36	<10.0	10.0	07/23/2025	ND					

Surrogate: 1-Chlorooctane *80.7 %* *44.4-145*

Surrogate: 1-Chlorooctadecane *76.2 %* *40.6-153*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	07/21/2025	Sampling Date:	07/16/2025
Reported:	07/24/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Alyssa Parras
Project Location:	EXXON MOBIL		

Sample ID: BH 25-03 @ 1' R (H254368-03)

BTEX 8021B mg/kg **Analyzed By: JH**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/23/2025	ND	2.09	104	2.00	1.20	
Toluene*	<0.050	0.050	07/23/2025	ND	2.13	106	2.00	1.37	
Ethylbenzene*	<0.050	0.050	07/23/2025	ND	2.07	104	2.00	0.618	
Total Xylenes*	<0.150	0.150	07/23/2025	ND	6.08	101	6.00	0.542	
Total BTEX	<0.300	0.300	07/23/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *95.0 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg **Analyzed By: KH**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	07/22/2025	ND	400	100	400	7.69	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/23/2025	ND	200	100	200	0.347	
DRO >C10-C28*	<10.0	10.0	07/23/2025	ND	193	96.7	200	0.386	
EXT DRO >C28-C36	<10.0	10.0	07/23/2025	ND					

Surrogate: 1-Chlorooctane *76.5 %* *44.4-145*

Surrogate: 1-Chlorooctadecane *70.5 %* *40.6-153*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	07/21/2025	Sampling Date:	07/16/2025
Reported:	07/24/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Alyssa Parras
Project Location:	EXXON MOBIL		

Sample ID: BH 25-04 @ 1' R (H254368-04)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/23/2025	ND	2.09	104	2.00	1.20	
Toluene*	<0.050	0.050	07/23/2025	ND	2.13	106	2.00	1.37	
Ethylbenzene*	<0.050	0.050	07/23/2025	ND	2.07	104	2.00	0.618	
Total Xylenes*	<0.150	0.150	07/23/2025	ND	6.08	101	6.00	0.542	
Total BTEX	<0.300	0.300	07/23/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *94.0 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	07/22/2025	ND	400	100	400	7.69	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/23/2025	ND	200	100	200	0.347	
DRO >C10-C28*	<10.0	10.0	07/23/2025	ND	193	96.7	200	0.386	
EXT DRO >C28-C36	<10.0	10.0	07/23/2025	ND					

Surrogate: 1-Chlorooctane *79.8 %* *44.4-145*

Surrogate: 1-Chlorooctadecane *73.9 %* *40.6-153*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

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

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Vertex Resource
Project Manager:	Chad Hensley
Address:	3101 Boyd drive
City:	Carlsbad State: NM Zip: 88220
Phone #:	575-200-6167 Fax #:
Project #:	25A-03635 Project Owner:
Project Name:	BEU DI 29 CTB
Project Location:	
Sampler Name:	Riley Arnold

BILL TO

P.O. #:	2108251001
Company:	ExxonMobil
Attn:	Ashley McFee
Address:	3104 E Greene St
City:	Carlsbad
State:	NM Zip: 88220
Phone #:	
Fax #:	

FOR LAB USE ONLY

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	PRESERV.: ACID/BASE	ICE / COOL	OTHER	SAMPLING: DATE	TIME	ANALYSIS REQUEST: BTEX	TPH	Chloride
H25436																	
1	BH25-01 @ 1'R	G	1			X					X		7.16.25	9:45	X	X	X
2	BH25-02 @ 1'R	"	"			"					"		"	10:20	"	"	"
3	BH25-03 @ 1'R	"	"			"					"		"	10:50	"	"	"
4	BH25-04 @ 1'R	"	"			"					"		"	11:22	"	"	"

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 7.21.25	Received By:	
Relinquished By:	Time: 1235	Received By:	
	Date:		
	Time:		

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:
chensley@vertexresource.com
REMARKS:

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Observed Temp. °C 1.6
Corrected Temp. °C 1.9

Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials) AD

Turnaround Time: Standard ☑ Rush ☐

Thermometer ID #113 #140
Correction Factor -0.5°C +0.3

Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No; Intact ☐ Yes ☐ No
Observed Temp. °C
Corrected Temp. °C

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

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

July 17, 2025

CHAD HENSLEY

VERTEX RESOURCE

3101 BOYD DRIVE

CARLSBAD, NM 88220

RE: BEU DI 29 CTB

Enclosed are the results of analyses for samples received by the laboratory on 07/10/25 13:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C25-00101. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	07/10/2025	Sampling Date:	07/09/2025
Reported:	07/17/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Tamara Oldaker
Project Location:	EXXON MOBIL		

Sample ID: BH 25 - 01 @ 0' (H254105-01)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/11/2025	ND	1.68	84.0	2.00	10.5	
Toluene*	<0.050	0.050	07/11/2025	ND	1.73	86.6	2.00	10.2	
Ethylbenzene*	<0.050	0.050	07/11/2025	ND	1.72	86.0	2.00	10.1	
Total Xylenes*	<0.150	0.150	07/11/2025	ND	5.06	84.3	6.00	10.3	
Total BTEX	<0.300	0.300	07/11/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *95.4 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	07/11/2025	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/16/2025	ND	203	101	200	0.281	
DRO >C10-C28*	<10.0	10.0	07/16/2025	ND	226	113	200	0.266	
EXT DRO >C28-C36	<10.0	10.0	07/16/2025	ND					

Surrogate: 1-Chlorooctane *113 %* *44.4-145*

Surrogate: 1-Chlorooctadecane *114 %* *40.6-153*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	07/10/2025	Sampling Date:	07/09/2025
Reported:	07/17/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Tamara Oldaker
Project Location:	EXXON MOBIL		

Sample ID: BH 25 - 02 @ 0' (H254105-02)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/11/2025	ND	1.68	84.0	2.00	10.5	
Toluene*	<0.050	0.050	07/11/2025	ND	1.73	86.6	2.00	10.2	
Ethylbenzene*	<0.050	0.050	07/11/2025	ND	1.72	86.0	2.00	10.1	
Total Xylenes*	<0.150	0.150	07/11/2025	ND	5.06	84.3	6.00	10.3	
Total BTEX	<0.300	0.300	07/11/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *94.2 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	07/11/2025	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/11/2025	ND	203	101	200	0.281	
DRO >C10-C28*	<10.0	10.0	07/11/2025	ND	226	113	200	0.266	
EXT DRO >C28-C36	<10.0	10.0	07/11/2025	ND					

Surrogate: 1-Chlorooctane *96.5 %* *44.4-145*

Surrogate: 1-Chlorooctadecane *97.0 %* *40.6-153*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	07/10/2025	Sampling Date:	07/09/2025
Reported:	07/17/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Tamara Oldaker
Project Location:	EXXON MOBIL		

Sample ID: BH 25 - 03 @ 0' (H254105-03)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/11/2025	ND	1.68	84.0	2.00	10.5	
Toluene*	<0.050	0.050	07/11/2025	ND	1.73	86.6	2.00	10.2	
Ethylbenzene*	<0.050	0.050	07/11/2025	ND	1.72	86.0	2.00	10.1	
Total Xylenes*	<0.150	0.150	07/11/2025	ND	5.06	84.3	6.00	10.3	
Total BTEX	<0.300	0.300	07/11/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *94.2 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	07/11/2025	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/11/2025	ND	203	101	200	0.281	
DRO >C10-C28*	<10.0	10.0	07/11/2025	ND	226	113	200	0.266	
EXT DRO >C28-C36	<10.0	10.0	07/11/2025	ND					

Surrogate: 1-Chlorooctane *97.7 %* *44.4-145*

Surrogate: 1-Chlorooctadecane *97.8 %* *40.6-153*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	07/10/2025	Sampling Date:	07/09/2025
Reported:	07/17/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Tamara Oldaker
Project Location:	EXXON MOBIL		

Sample ID: BH 25 - 04 @ 0' (H254105-04)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/11/2025	ND	1.68	84.0	2.00	10.5	
Toluene*	<0.050	0.050	07/11/2025	ND	1.73	86.6	2.00	10.2	
Ethylbenzene*	<0.050	0.050	07/11/2025	ND	1.72	86.0	2.00	10.1	
Total Xylenes*	<0.150	0.150	07/11/2025	ND	5.06	84.3	6.00	10.3	
Total BTEX	<0.300	0.300	07/11/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *94.9 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	07/11/2025	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/11/2025	ND	203	101	200	0.281	
DRO >C10-C28*	<10.0	10.0	07/11/2025	ND	226	113	200	0.266	
EXT DRO >C28-C36	<10.0	10.0	07/11/2025	ND					

Surrogate: 1-Chlorooctane *97.4 %* *44.4-145*

Surrogate: 1-Chlorooctadecane *97.4 %* *40.6-153*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	07/10/2025	Sampling Date:	07/09/2025
Reported:	07/17/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Tamara Oldaker
Project Location:	EXXON MOBIL		

Sample ID: BH 25 - 05 @ 0' (H254105-05)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/11/2025	ND	1.68	84.0	2.00	10.5	
Toluene*	<0.050	0.050	07/11/2025	ND	1.73	86.6	2.00	10.2	
Ethylbenzene*	<0.050	0.050	07/11/2025	ND	1.72	86.0	2.00	10.1	
Total Xylenes*	<0.150	0.150	07/11/2025	ND	5.06	84.3	6.00	10.3	
Total BTEX	<0.300	0.300	07/11/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *91.9 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**112**	16.0	07/11/2025	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS **S-06**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	07/11/2025	ND	203	101	200	0.281	
DRO >C10-C28*	**19200**	50.0	07/11/2025	ND	226	113	200	0.266	
EXT DRO >C28-C36	**7710**	50.0	07/11/2025	ND					

Surrogate: 1-Chlorooctane *113 %* *44.4-145*

Surrogate: 1-Chlorooctadecane *861 %* *40.6-153*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	07/10/2025	Sampling Date:	07/09/2025
Reported:	07/17/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Tamara Oldaker
Project Location:	EXXON MOBIL		

Sample ID: BH 25 - 05 @ 0.5' (H254105-06)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/11/2025	ND	1.75	87.6	2.00	9.38	
Toluene*	<0.050	0.050	07/11/2025	ND	1.82	91.0	2.00	9.55	
Ethylbenzene*	<0.050	0.050	07/11/2025	ND	1.81	90.4	2.00	9.60	
Total Xylenes*	<0.150	0.150	07/11/2025	ND	5.31	88.5	6.00	10.0	
Total BTEX	<0.300	0.300	07/11/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *94.2 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	07/11/2025	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/11/2025	ND	203	101	200	0.281	
DRO >C10-C28*	**1210**	10.0	07/11/2025	ND	226	113	200	0.266	
EXT DRO >C28-C36	**466**	10.0	07/11/2025	ND					

Surrogate: 1-Chlorooctane *102 %* *44.4-145*

Surrogate: 1-Chlorooctadecane *146 %* *40.6-153*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	07/10/2025	Sampling Date:	07/09/2025
Reported:	07/17/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Tamara Oldaker
Project Location:	EXXON MOBIL		

Sample ID: BH 25 - 05 @ 1' (H254105-07)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/11/2025	ND	1.75	87.6	2.00	9.38	
Toluene*	<0.050	0.050	07/11/2025	ND	1.82	91.0	2.00	9.55	
Ethylbenzene*	<0.050	0.050	07/11/2025	ND	1.81	90.4	2.00	9.60	
Total Xylenes*	<0.150	0.150	07/11/2025	ND	5.31	88.5	6.00	10.0	
Total BTEX	<0.300	0.300	07/11/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *95.7 %* *71.5-134*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**144**	16.0	07/11/2025	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/11/2025	ND	203	101	200	0.281	
DRO >C10-C28*	**83.5**	10.0	07/11/2025	ND	226	113	200	0.266	
EXT DRO >C28-C36	**35.7**	10.0	07/11/2025	ND					

Surrogate: 1-Chlorooctane *92.9 %* *44.4-145*

Surrogate: 1-Chlorooctadecane *95.4 %* *40.6-153*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Vertex Resource
Project Manager: Chad Hensley
Address: 3101 Boyd drive
City: Carlsbad State: NM Zip: 88220
Phone #: 575-200-6167 Fax #:
Project #: 25A-03635 Project Owner:
Project Name: BEU DI 29 CTB
Project Location:
Sampler Name: Riley Arnold

BILL TO
P.O. #: 2108251001
Company: ExxonMobil
Attn: Ashley McAfee
Address: 310 E Greene St
City: Carlsbad
State: NM Zip: 88220
Phone #:
Fax #:

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	BTEX	TPH	Chloride
H254105																	
1	BH25-01 @ 0'	G	1			X					X		7.9.25	9:15	X	X	X
2	BH25-02 @ 0'													9:26			
3	BH25-03 @ 0'													9:42			
4	BH25-04 @ 0'													9:59			
5	BH25-05 @ 0'													10:20			
6	BH25-05 @ 0.5'													10:45			
7	BH25-05 @ 1'													11:30			

Relinquished By: Date: 7-10-25 Time: 1340 Received By:
Relinquished By: Date: Time: Received By:

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:
chensley@vertexresource.com
REMARKS: Rarnold@vertexresource.com

Delivered By: (Circle One) Sampler - UPS - Bus - Other:
Observed Temp. °C 00
Corrected Temp. °C 0.3
Sample Condition: Cool ☑ Yes ☐ No Intact ☑ Yes ☐ No
CHECKED BY: (Initials) T.O.

Turnaround Time: Standard ☑ Rush ☐
Thermometer ID #140
Correction Factor +0.3°C
Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No Observed Temp. °C Corrected Temp. °C

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

FORM-006 R 3.6 02/12/25

CARDINAL Laboratories

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

September 25, 2025

CHAD HENSLEY

VERTEX RESOURCE

3101 BOYD DRIVE

CARLSBAD, NM 88220

RE: BEU DI 29 CTB

Enclosed are the results of analyses for samples received by the laboratory on 09/24/25 11:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C25-00101. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	09/24/2025	Sampling Date:	09/23/2025
Reported:	09/25/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Tamara Oldaker
Project Location:	EXXON MOBIL		

Sample ID: BS25 - 01 1.1 (H255969-01)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/24/2025	ND	1.97	98.7	2.00	1.26	
Toluene*	<0.050	0.050	09/24/2025	ND	1.93	96.4	2.00	0.643	
Ethylbenzene*	<0.050	0.050	09/24/2025	ND	1.87	93.4	2.00	0.378	
Total Xylenes*	<0.150	0.150	09/24/2025	ND	5.46	91.0	6.00	0.485	
Total BTEX	<0.300	0.300	09/24/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *89.3 %* *70.4-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**64.0**	16.0	09/24/2025	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2025	ND	196	97.9	200	2.20	
DRO >C10-C28*	**90.3**	10.0	09/24/2025	ND	209	104	200	4.64	QM-07
EXT DRO >C28-C36	**47.5**	10.0	09/24/2025	ND					

Surrogate: 1-Chlorooctane *89.2 %* *52.4-130*

Surrogate: 1-Chlorooctadecane *95.5 %* *39.9-141*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	09/24/2025	Sampling Date:	09/23/2025
Reported:	09/25/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Tamara Oldaker
Project Location:	EXXON MOBIL		

Sample ID: BS25 - 02 1.1 (H255969-02)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/24/2025	ND	1.97	98.7	2.00	1.26	
Toluene*	<0.050	0.050	09/24/2025	ND	1.93	96.4	2.00	0.643	
Ethylbenzene*	<0.050	0.050	09/24/2025	ND	1.87	93.4	2.00	0.378	
Total Xylenes*	<0.150	0.150	09/24/2025	ND	5.46	91.0	6.00	0.485	
Total BTEX	<0.300	0.300	09/24/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *89.2 %* *70.4-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	09/24/2025	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2025	ND	196	97.9	200	2.20	
DRO >C10-C28*	**24.7**	10.0	09/24/2025	ND	209	104	200	4.64	
EXT DRO >C28-C36	<10.0	10.0	09/24/2025	ND					

Surrogate: 1-Chlorooctane *83.7 %* *52.4-130*

Surrogate: 1-Chlorooctadecane *86.6 %* *39.9-141*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	09/24/2025	Sampling Date:	09/23/2025
Reported:	09/25/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Tamara Oldaker
Project Location:	EXXON MOBIL		

Sample ID: WS25 - 01 0-1.1 (H255969-03)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/24/2025	ND	1.97	98.7	2.00	1.26	
Toluene*	<0.050	0.050	09/24/2025	ND	1.93	96.4	2.00	0.643	
Ethylbenzene*	<0.050	0.050	09/24/2025	ND	1.87	93.4	2.00	0.378	
Total Xylenes*	<0.150	0.150	09/24/2025	ND	5.46	91.0	6.00	0.485	
Total BTEX	<0.300	0.300	09/24/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *88.6 %* *70.4-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	09/24/2025	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2025	ND	196	97.9	200	2.20	
DRO >C10-C28*	<10.0	10.0	09/24/2025	ND	209	104	200	4.64	
EXT DRO >C28-C36	<10.0	10.0	09/24/2025	ND					

Surrogate: 1-Chlorooctane *83.3 %* *52.4-130*

Surrogate: 1-Chlorooctadecane *85.6 %* *39.9-141*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	09/24/2025	Sampling Date:	09/23/2025
Reported:	09/25/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Tamara Oldaker
Project Location:	EXXON MOBIL		

Sample ID: BH25 - 02 1 (H255969-04)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/24/2025	ND	1.97	98.7	2.00	1.26	
Toluene*	<0.050	0.050	09/24/2025	ND	1.93	96.4	2.00	0.643	
Ethylbenzene*	<0.050	0.050	09/24/2025	ND	1.87	93.4	2.00	0.378	
Total Xylenes*	<0.150	0.150	09/24/2025	ND	5.46	91.0	6.00	0.485	
Total BTEX	<0.300	0.300	09/24/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *88.7 %* *70.4-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	09/24/2025	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2025	ND	196	97.9	200	2.20	
DRO >C10-C28*	**15.2**	10.0	09/24/2025	ND	209	104	200	4.64	
EXT DRO >C28-C36	<10.0	10.0	09/24/2025	ND					

Surrogate: 1-Chlorooctane *78.9 %* *52.4-130*

Surrogate: 1-Chlorooctadecane *81.2 %* *39.9-141*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	09/24/2025	Sampling Date:	09/23/2025
Reported:	09/25/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Tamara Oldaker
Project Location:	EXXON MOBIL		

Sample ID: BH25 - 06 0 (H255969-05)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/24/2025	ND	1.97	98.7	2.00	1.26	
Toluene*	<0.050	0.050	09/24/2025	ND	1.93	96.4	2.00	0.643	
Ethylbenzene*	<0.050	0.050	09/24/2025	ND	1.87	93.4	2.00	0.378	
Total Xylenes*	<0.150	0.150	09/24/2025	ND	5.46	91.0	6.00	0.485	
Total BTEX	<0.300	0.300	09/24/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *89.7 %* *70.4-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/24/2025	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2025	ND	196	97.9	200	2.20	
DRO >C10-C28*	<10.0	10.0	09/24/2025	ND	209	104	200	4.64	
EXT DRO >C28-C36	<10.0	10.0	09/24/2025	ND					

Surrogate: 1-Chlorooctane *86.0 %* *52.4-130*

Surrogate: 1-Chlorooctadecane *88.7 %* *39.9-141*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	09/24/2025	Sampling Date:	09/23/2025
Reported:	09/25/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Tamara Oldaker
Project Location:	EXXON MOBIL		

Sample ID: BH25 - 06 1 (H255969-06)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/24/2025	ND	1.97	98.7	2.00	1.26	
Toluene*	<0.050	0.050	09/24/2025	ND	1.93	96.4	2.00	0.643	
Ethylbenzene*	<0.050	0.050	09/24/2025	ND	1.87	93.4	2.00	0.378	
Total Xylenes*	<0.150	0.150	09/24/2025	ND	5.46	91.0	6.00	0.485	
Total BTEX	<0.300	0.300	09/24/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *90.4 %* *70.4-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	09/24/2025	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2025	ND	196	97.9	200	2.20	
DRO >C10-C28*	<10.0	10.0	09/24/2025	ND	209	104	200	4.64	
EXT DRO >C28-C36	<10.0	10.0	09/24/2025	ND					

Surrogate: 1-Chlorooctane *85.6 %* *52.4-130*

Surrogate: 1-Chlorooctadecane *88.1 %* *39.9-141*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	09/24/2025	Sampling Date:	09/23/2025
Reported:	09/25/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Tamara Oldaker
Project Location:	EXXON MOBIL		

Sample ID: BH25 - 07 0 (H255969-07)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/24/2025	ND	1.97	98.7	2.00	1.26	
Toluene*	<0.050	0.050	09/24/2025	ND	1.93	96.4	2.00	0.643	
Ethylbenzene*	<0.050	0.050	09/24/2025	ND	1.87	93.4	2.00	0.378	
Total Xylenes*	<0.150	0.150	09/24/2025	ND	5.46	91.0	6.00	0.485	
Total BTEX	<0.300	0.300	09/24/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *88.8 %* *70.4-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	09/24/2025	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2025	ND	196	97.9	200	2.20	
DRO >C10-C28*	<10.0	10.0	09/24/2025	ND	209	104	200	4.64	
EXT DRO >C28-C36	<10.0	10.0	09/24/2025	ND					

Surrogate: 1-Chlorooctane *82.8 %* *52.4-130*

Surrogate: 1-Chlorooctadecane *84.6 %* *39.9-141*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	09/24/2025	Sampling Date:	09/23/2025
Reported:	09/25/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Tamara Oldaker
Project Location:	EXXON MOBIL		

Sample ID: BH25 - 07 1 (H255969-08)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/24/2025	ND	1.76	88.2	2.00	8.47	
Toluene*	<0.050	0.050	09/24/2025	ND	1.88	93.9	2.00	6.74	
Ethylbenzene*	<0.050	0.050	09/24/2025	ND	1.92	95.8	2.00	4.68	
Total Xylenes*	<0.150	0.150	09/24/2025	ND	5.94	98.9	6.00	4.13	
Total BTEX	<0.300	0.300	09/24/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *113 %* *70.4-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	09/24/2025	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2025	ND	196	97.9	200	2.20	
DRO >C10-C28*	<10.0	10.0	09/24/2025	ND	209	104	200	4.64	
EXT DRO >C28-C36	<10.0	10.0	09/24/2025	ND					

Surrogate: 1-Chlorooctane *86.4 %* *52.4-130*

Surrogate: 1-Chlorooctadecane *88.4 %* *39.9-141*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	09/24/2025	Sampling Date:	09/23/2025
Reported:	09/25/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Tamara Oldaker
Project Location:	EXXON MOBIL		

Sample ID: BH25 - 08 0 (H255969-09)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/24/2025	ND	1.76	88.2	2.00	8.47	
Toluene*	<0.050	0.050	09/24/2025	ND	1.88	93.9	2.00	6.74	
Ethylbenzene*	<0.050	0.050	09/24/2025	ND	1.92	95.8	2.00	4.68	
Total Xylenes*	<0.150	0.150	09/24/2025	ND	5.94	98.9	6.00	4.13	
Total BTEX	<0.300	0.300	09/24/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *116 %* *70.4-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	09/24/2025	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2025	ND	196	97.9	200	2.20	
DRO >C10-C28*	**12.4**	10.0	09/24/2025	ND	209	104	200	4.64	
EXT DRO >C28-C36	<10.0	10.0	09/24/2025	ND					

Surrogate: 1-Chlorooctane *87.2 %* *52.4-130*

Surrogate: 1-Chlorooctadecane *90.1 %* *39.9-141*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	09/24/2025	Sampling Date:	09/23/2025
Reported:	09/25/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Tamara Oldaker
Project Location:	EXXON MOBIL		

Sample ID: BH25 - 08 1 (H255969-10)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/24/2025	ND	1.76	88.2	2.00	8.47	
Toluene*	<0.050	0.050	09/24/2025	ND	1.88	93.9	2.00	6.74	
Ethylbenzene*	<0.050	0.050	09/24/2025	ND	1.92	95.8	2.00	4.68	
Total Xylenes*	<0.150	0.150	09/24/2025	ND	5.94	98.9	6.00	4.13	
Total BTEX	<0.300	0.300	09/24/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *114 %* *70.4-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	09/24/2025	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/24/2025	ND	196	97.9	200	2.20	
DRO >C10-C28*	<10.0	10.0	09/24/2025	ND	209	104	200	4.64	
EXT DRO >C28-C36	<10.0	10.0	09/24/2025	ND					

Surrogate: 1-Chlorooctane *84.0 %* *52.4-130*

Surrogate: 1-Chlorooctadecane *84.9 %* *39.9-141*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: ~~Exxon~~ Vertex Resource (Bill to Exxon)	**BILL TO**
Project Manager: CHAD HENSLEY	P.O. #:
Address: 3101 BOYD DR	Company: Exxon Mobil
City: CARLSBAD State: NM Zip: 88220	Attn: DALE WOODALE
Phone #: Fax #:	Address:
Project #: Project Owner:	City:
Project Name: BEU D1 29	State: Zip:
Project Location:	Phone #:
Sampler Name: KATRINA TAYLOR	Fax #:

FOR LAB USE ONLY				MATRIX							PRESERV.			SAMPLING		ANALYSIS REQUEST		
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER	DATE	TIME	Chloride	GRO, DRO, MRO	BTEX
H259269																	
1	BS25-01 1.1	C	1			X					X		9/23	12:00	X	X	X
2	BS25-02 1-1													12:30			
3	WS25-01 0-1.1													13:00			
4	BH25-02 1	G												13:30			
5	BH25-0~~8~~6 0													14:00			
6	BH25-06 1													14:30			
7	BH25-07 0													15:00			
8	BH25-07 1													15:30			
9	BH25-08 0													16:00			
10	BH25-08 1													16:30			

all 0402401K

Relinquished By: Katrina Taylor	Date: 9-24-25	Received By: Tamara Oldaker	Verbal Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 1105		All Results are emailed. Please provide Email address: CHENSLEY@VERTEX.CA, KATRINA.TAYLOR@VERTEX.CA
Relinquished By:	Date:	Received By:	REMARKS: Cost Code 2108251001
	Time:		

Delivered By: (Circle One)	Observed Temp. °C 4.4	Sample Condition Cool ☑ Yes ☐ No / Intact ☑ Yes ☐ No	CHECKED BY: (Initials)	Turnaround Time: +0.3c #140 Standard ☐ / Rush ☒ 24hr
Sampler - UPS - Bus - Other:	Corrected Temp. °C 4.7			Thermometer ID #113 / Correction Factor -0.3°C

Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No / Intact ☐ Yes ☐ No; Observed Temp. °C; Corrected Temp. °C

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

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

October 01, 2025

CHAD HENSLEY

VERTEX RESOURCE

3101 BOYD DRIVE

CARLSBAD, NM 88220

RE: BEU DI 29 CTB

Enclosed are the results of analyses for samples received by the laboratory on 09/30/25 13:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number TX-C25-00101. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

VERTEX RESOURCE
CHAD HENSLEY
3101 BOYD DRIVE
CARLSBAD NM, 88220
Fax To: NA

Received:	09/30/2025	Sampling Date:	09/25/2025
Reported:	10/01/2025	Sampling Type:	Soil
Project Name:	BEU DI 29 CTB	Sampling Condition:	Cool & Intact
Project Number:	25A - 03635	Sample Received By:	Tamara Oldaker
Project Location:	EXXON MOBIL		

Sample ID: BS25 - 01 1.2' (H256105-01)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/30/2025	ND	1.73	86.7	2.00	1.21	
Toluene*	<0.050	0.050	09/30/2025	ND	1.78	88.8	2.00	0.604	
Ethylbenzene*	<0.050	0.050	09/30/2025	ND	1.75	87.6	2.00	1.05	
Total Xylenes*	<0.150	0.150	09/30/2025	ND	5.11	85.2	6.00	1.13	
Total BTEX	<0.300	0.300	09/30/2025	ND					

Surrogate: 4-Bromofluorobenzene (PID *91.1 %* *70.4-141*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	09/30/2025	ND	448	112	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/30/2025	ND	216	108	200	2.24	
DRO >C10-C28*	**26.1**	10.0	09/30/2025	ND	217	109	200	2.93	
EXT DRO >C28-C36	**10.7**	10.0	09/30/2025	ND					

Surrogate: 1-Chlorooctane *88.3 %* *52.4-130*

Surrogate: 1-Chlorooctadecane *90.6 %* *39.9-141*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

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

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	VERTEX RESOURCE SERVICES	**BILL TO**	
Project Manager:	CHAD HENSLEY	P.O. #:	
Address:	3101 BOYD DR	Company:	Exxon Mobil
City:	CARLSBAD State: NM Zip: 88220	Attn:	DALE WOODALE
Phone #:	575-725-5001 Fax #:	Address:	
Project #:	25-03635 Project Owner: Chad Hensley	City:	
Project Name:	BEU DI 29	State: Zip:	
Project Location:		Phone #:	
Sampler Name:	KATRINA TAYLOR	Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	Chlorides	BTEX	TPH
H256105-1	BS25-01 1.2'	C	X	x						x			9/25/25	13:35	✓	✓	✓

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 9-30-25 Time: 1305	Received By:	
Relinquished By:	Date: Time:	Received By:	
Delivered By: (Circle One)	Observed Temp. °C 3.4	Sample Condition: Cool: Yes / No; Intact: Yes / No	CHECKED BY: (Initials)
Sampler - UPS - Bus - Other:	Corrected Temp. °C 3.7		

Verbal Result: ☐ Yes ☐ No Add'l Phone #:
All Results are emailed. Please provide Email address:
CHensley@Vertex.Ca, KATRINA.TAYLOR@VERTEX.CA
REMARKS: GFCM: 48605000, Cost Code: 210825001
NAPP2518149545

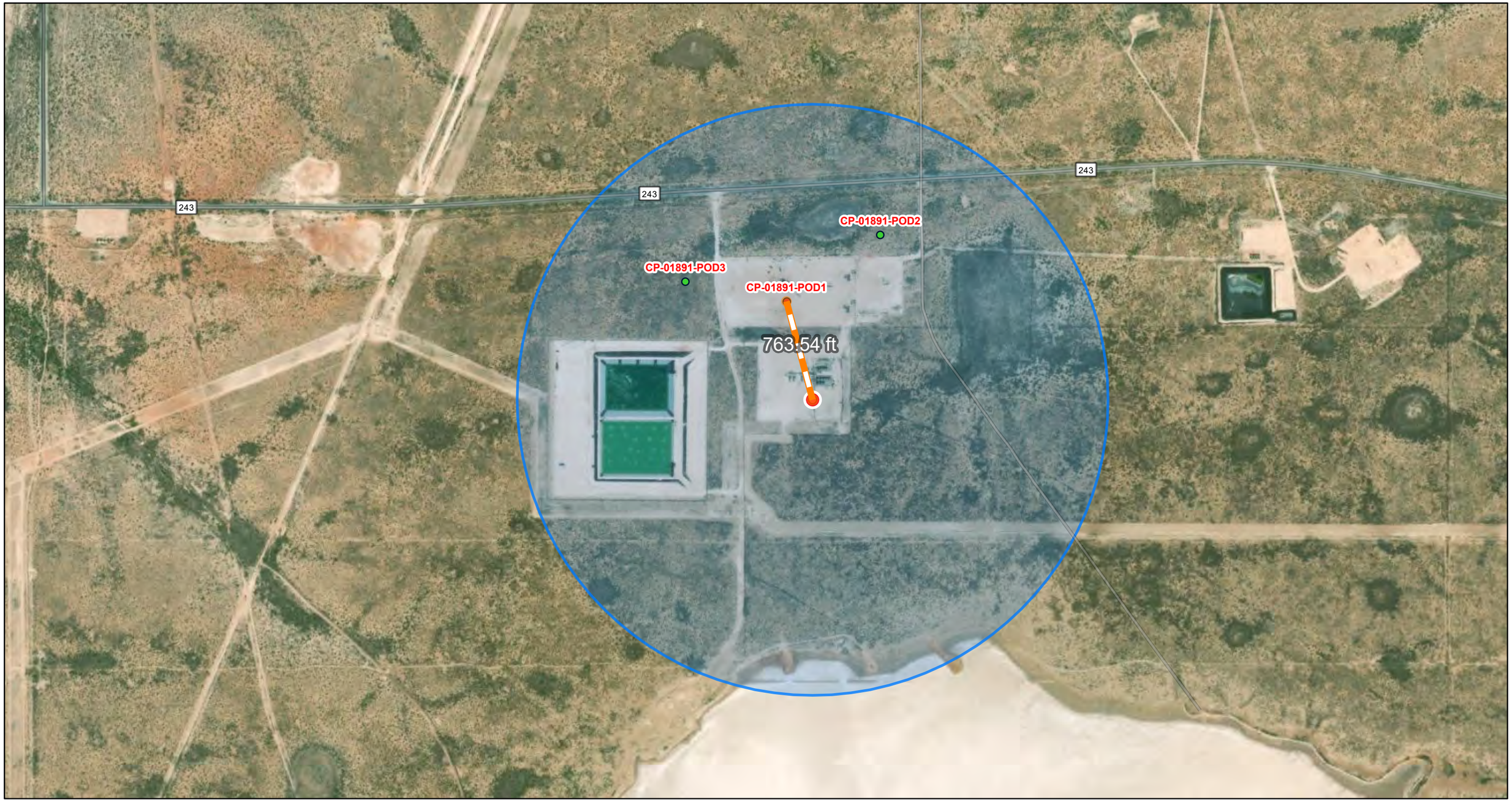
Turnaround Time: #140 Standard ☒ Rush 24hr
Thermometer ID: #113 Correction Factor: +0.3°C
Bacteria (only) Sample Condition: Cool: ☐ Yes ☐ Nc; Intact: ☐ Yes ☐ No
Observed Temp. °C
Corrected Temp. °C

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

9/30/25 2/30/25

Closure Criteria Determination			
Site Name: Big Eddy Unit DI 29			
Spill Coordinates: 32.56479, -103.7779		**X: 614724.36**	**Y: 3603699.82**
Site Specific Conditions		**Value**	**Unit**
1	Depth to Groundwater (nearest reference)	**33**	feet
	Distance between release and nearest DTGW reference	**764**	feet
		0.14	miles
	Date of nearest DTGW reference measurement	**October 26, 2021**	
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	810	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	1,823	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	14,657	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, **or**	162,906	feet
	ii) Within 1000 feet of any fresh water well or spring	162,906	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	600	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
	Distance between release and nearest registered mine	8,302	feet
9	Within an unstable area (Karst Map)	**Medium**	Critical High Medium Low
	Distance between release and nearest unstable area	**0**	feet
10	Within a 100-year Floodplain	Undetermined	year
	Distance between release and nearest FEMA Zone A (100-year Floodplain)	50,925	feet
11	Soil Type	Simona-Upton association	
12	Ecological Classification	Shallow Sandy	
13	Geology	Qp - Piedmont Deposits	
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	<50'	<50' 51-100' >100'

OSE POD Locations Map



6/28/2025, 10:41:05 AM

GIS WATERS PODs

- Pending
- Plugged

1:10,232

0 0.1 0.2 0.4 mi

0 0.15 0.3 0.6 km

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

Point of Diversion Summary

quarters are 1=NW 2=NE 3=SW 4=SE
quarters are smallest to largest
NAD83 UTM in meters

Well Tag	POD Nbr	Q64	Q16	Q4	Sec	Tws	Rng	X	Y	Map
NA	CP 01891 POD1	SW	SW	SW	16	20S	32E	614636.4	3603890.9	🌎

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

Driller License:	1249	**Driller Company:**	ATKINS ENGINEERING ASSOC. INC.		
Driller Name:	ATKINS, JACKIE D.UELENER				
Drill Start Date:	2021-10-26	**Drill Finish Date:**	2021-10-26	**Plug Date:**	2021-11-01
Log File Date:	2021-11-29	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:		**Depth Well:**	55	**Depth Water:**	33

Water Bearing Stratifications:

Top	Bottom	Description
26	36	Sandstone/Gravel/Conglomerate
36	49	Sandstone/Gravel/Conglomerate
49	55	Sandstone/Gravel/Conglomerate

Casing Perforations:

Top	Bottom
0	55

Water Right Summary

get image list

WR File Number:	CP 01891	**Subbasin:**	CP	**Cross Reference:**
Primary Purpose:	MON MONITORING WELL			
Primary Status:	PMT Permit			
Total Acres:		**Subfile:**		**Header:**
Total Diversion:	0.000	**Cause/Case:**		
Owner:	XTO ENERGY INC	**Owner Class:**	Agent	
Contact:	ADRIAN BAKER			
Owner:	WSP USA	**Owner Class:**	User	
Contact:	KALEI JENNINGS			

Documents on File

(acre-fee

Transaction Images	Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/To	Acres	Diversion
get images	709444	EXPL	2021-10-06	PMT	LOG	CP 01891 POD1-3	T	0.000	0.000

Current Points of Diversion

POD Number	Well Tag	Source	Q64	Q16	Q4	Sec	Tws	Rng	X	Y	Map	Other Location Desc
CP 01891 POD1	NA	Shallow	SW	SW	SW	16	20S	32E	614636.4	3603890.9	🌎	BH01
CP 01891 POD2	NA		NE	SW	SW	16	20S	32E	614850.3	3604045.5	🌎	BG01
CP 01891 POD3	NA		SE	SE	SE	17	20S	32E	614404.0	3603933.5	🌎	BG02

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

6/28/25 10:28 AM MST **Water Rights Summary**

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO.	OSE FILE NO(S).
POD1 (BH-01)	n/a	CP-1891

WELL OWNER NAME(S)	PHONE (OPTIONAL)
XTO Energy (Adrian Baker)	

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
6401 Holiday Hill Dr.	Midland	TX	79707

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	33	59.48	N
	LONGITUDE	103	46	41.34	W

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

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

SE SE Unit M Sec16 T20S R32E, NMPM

2. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1249	Jackie D. Atkins	Atkins Engineering Associates, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
10/26/2021	10/26/2021	temporary well material	55	±33

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

STATIC WATER LEVEL IN COMPLETED WELL (FT): 33.20

DRILLING FLUID: ☐ AIR ☐ MUD ADDITIVES – SPECIFY:

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

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	55	±8.5	Boring- HSA	--	--	--	--

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT

OSE DII NOV 29 2021 PM4:02

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/30/17)

FILE NO. CP-1891	POD NO. 1	TRN NO. 709444
LOCATION 20S.32E.16.333	WELL TAG ID NO. —	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	4	4	Caliche, Mod. Consolidated, Tan, Dry	Y ✓ N	
4	8	4	Sand, fine-very grained, poorly graded, Brown, moist	Y ✓ N	
8	16	8	Sand, fine-very grained, poorly graded, with gravel Pinkish Brown, moist	Y ✓ N	
16	20	4	Sand, fine-very grained, poorly graded, with clayey gravel, Light Brown, moist	Y ✓ N	
20	26	6	Clayey Sand, very fine grained, poorly graded, caliche gravel, Tan , moist	Y ✓ N	
26	36	10	Clayey Sand, med-fine grained, poorly graded, caliche gravel, Brown , moist	✓ Y N	
36	49	13	Sandstone, mod consolidated, with increasing clay Reddish Brown, Moist	✓ Y N	
49	55	6	Claystone, low plasticity, cohesive, Dark Brown, moist	✓ Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

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

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

5. TEST; RIG SUPERVISION

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

MISCELLANEOUS INFORMATION: Temporary well materials removed and the soil boring plugged using Type I/II neat cement from total depth to surface with augers as tremie.
Logs adapted from WSP on-site geologist.

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

Shane Eldridge

6. SIGNATURE

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

Jack Atkins — Jackie D. Atkins — 11/16/2021

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/30/2017)

FILE NO.	POD NO.	TRN NO.	
LOCATION		WELL TAG ID NO.	PAGE 2 OF 2

U.S. Fish and Wildlife Service
National Wetlands Inventory

02 Big Eddy Unit DI 29 Intermittent Stream - 810ft

June 28, 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.

U.S. Fish and Wildlife Service
National Wetlands Inventory

Big Eddy Unit DI 29_Lake_1,823 ft

June 28, 2025

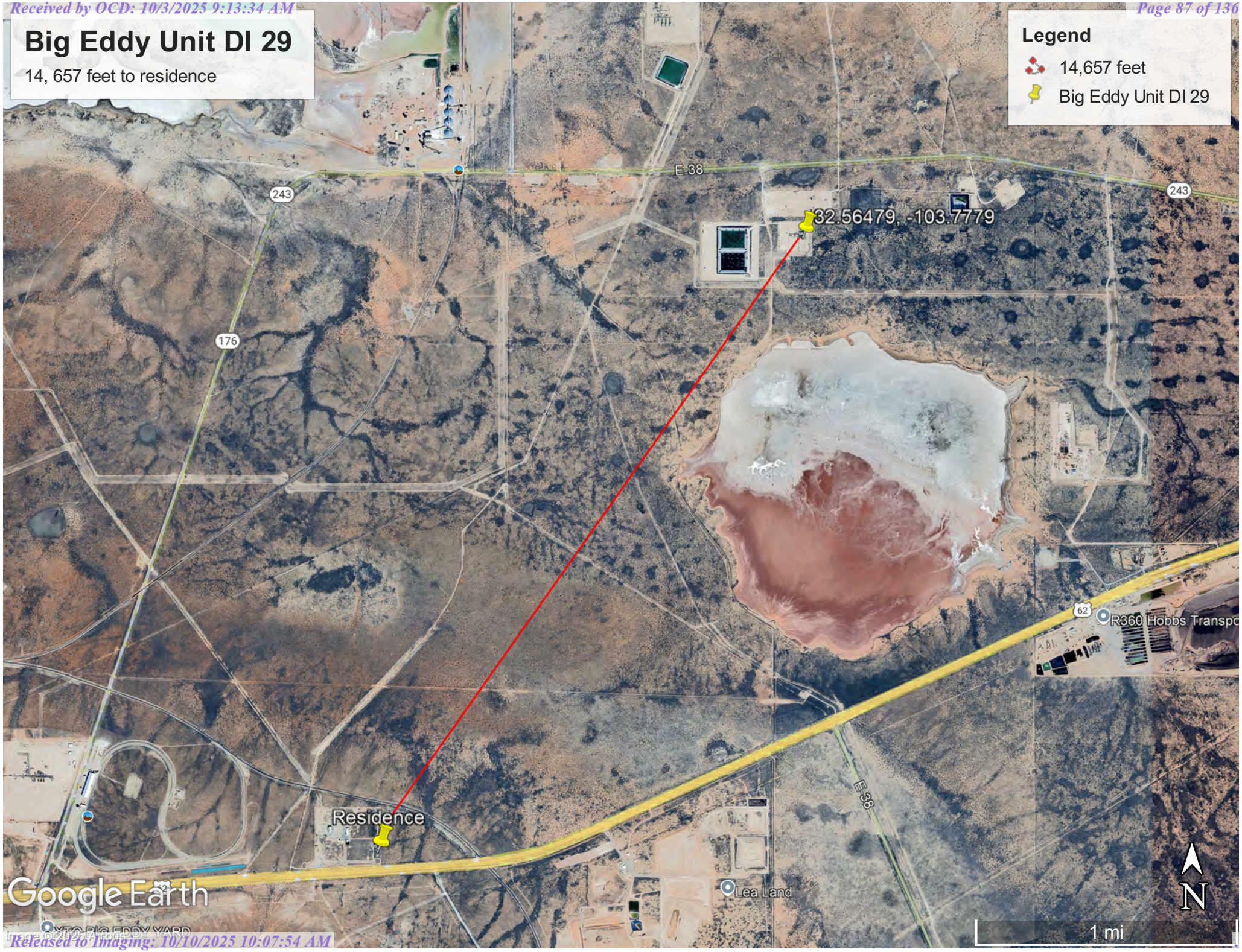
Wetlands

- 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.

Big Eddy Unit DI 29

14, 657 feet to residence

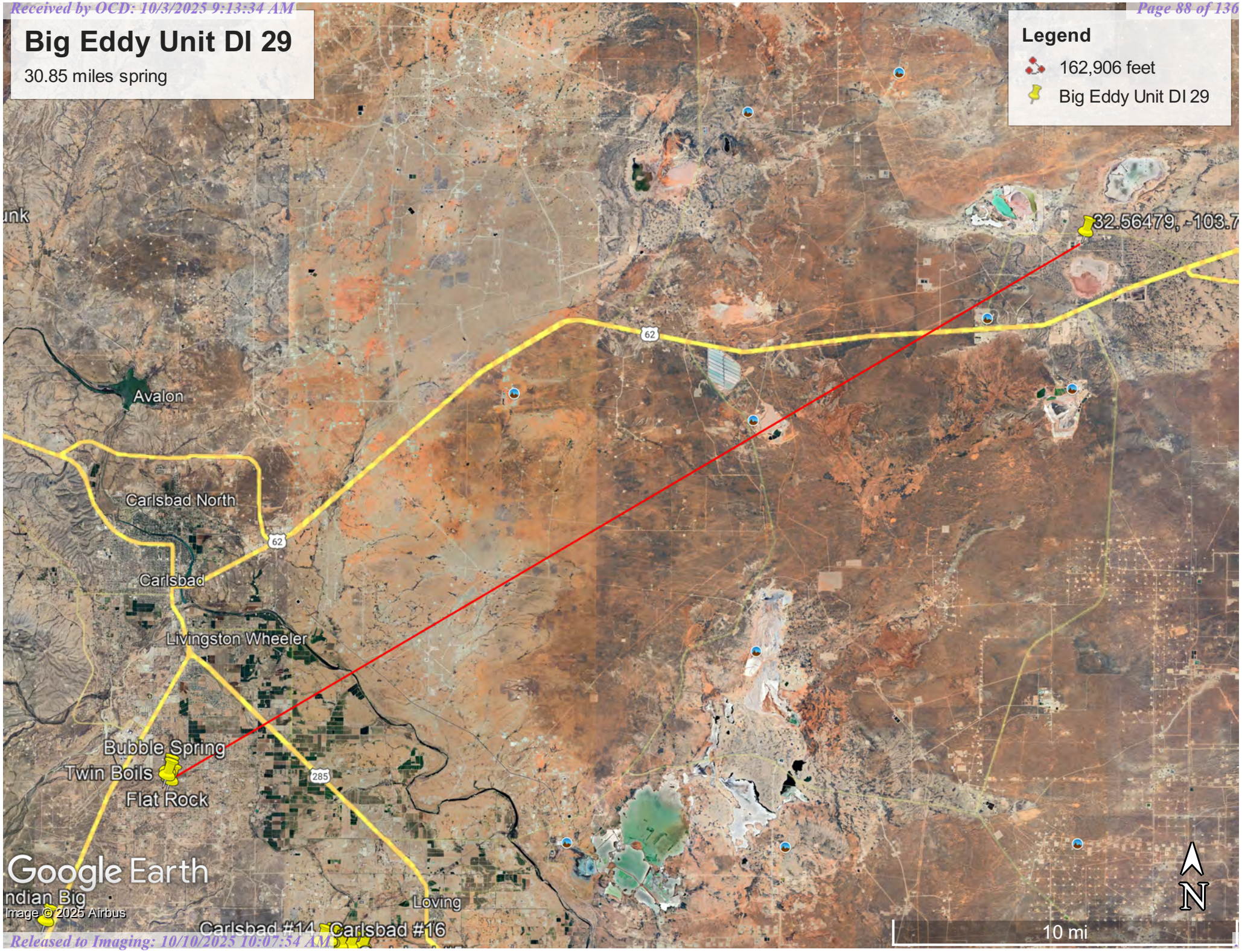


Big Eddy Unit DI 29

30.85 miles spring

Legend

- 162,906 feet
- Big Eddy Unit DI 29



Water Right Summary

get image list

WR File Number:	CP 01891	**Subbasin:**	CP	**Cross Reference:**
Primary Purpose:	MON MONITORING WELL			
Primary Status:	PMT Permit			
Total Acres:		**Subfile:**		**Header:**
Total Diversion:	0.000	**Cause/Case:**		
Owner:	XTO ENERGY INC	**Owner Class:**	Agent	
Contact:	ADRIAN BAKER			
Owner:	WSP USA	**Owner Class:**	User	
Contact:	KALEI JENNINGS			

Documents on File

(acre-fee

Transaction Images	Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/To	Acres	Diversion
get images	709444	EXPL	2021-10-06	PMT	LOG	CP 01891 POD1-3	T	0.000	0.000

Current Points of Diversion

POD Number	Well Tag	Source	Q64	Q16	Q4	Sec	Tws	Rng	X	Y	Map	Other Location Desc
CP 01891 POD1	NA	Shallow	SW	SW	SW	16	20S	32E	614636.4	3603890.9	🌎	BH01
CP 01891 POD2	NA		NE	SW	SW	16	20S	32E	614850.3	3604045.5	🌎	BG01
CP 01891 POD3	NA		SE	SE	SE	17	20S	32E	614404.0	3603933.5	🌎	BG02

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

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)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source
CP 01891	CP	MON	0.000	XTO ENERGY INC	LE	CP 01891 POD1	NA			Shallow
					LE	CP 01891 POD2	NA			
					LE	CP 01891 POD3	NA			

Record Count: 3

Filters Applied:

UTM Filters (in meters):
Easting: 614724.36
Northing: 3603699.82
Radius: 1610

Sorted By: Distance

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

U.S. Fish and Wildlife Service
National Wetlands Inventory

07_Big Eddy Unit DI 29_Wetland_600ft

June 28, 2025

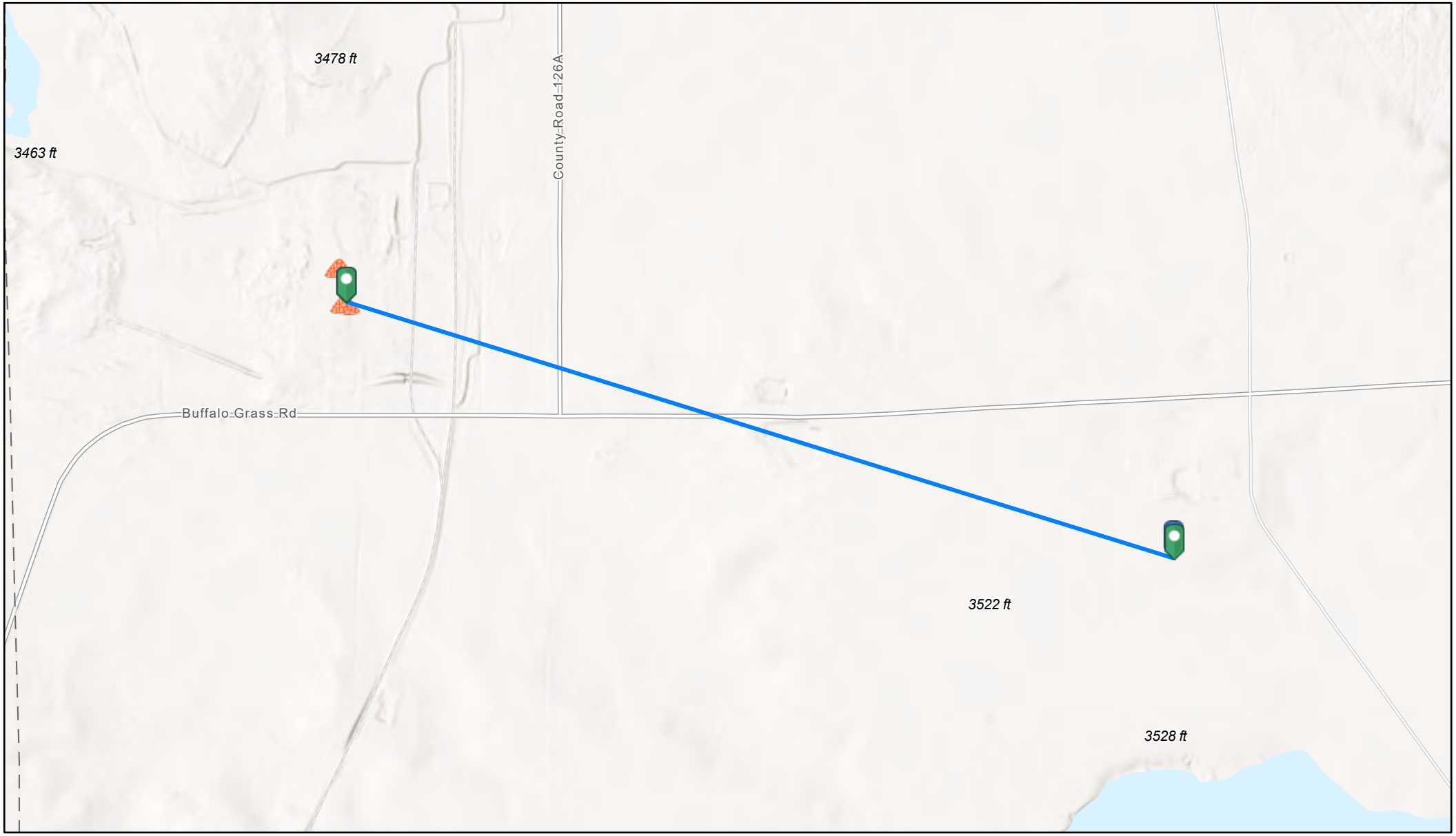
Wetlands

- 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.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Big Eddy Unit DI 29_Mine_8,302 ft



6/28/2025, 9:36:59 AM

Registered Mines

Potash

1:18,056

0 0.13 0.25 0.5 mi

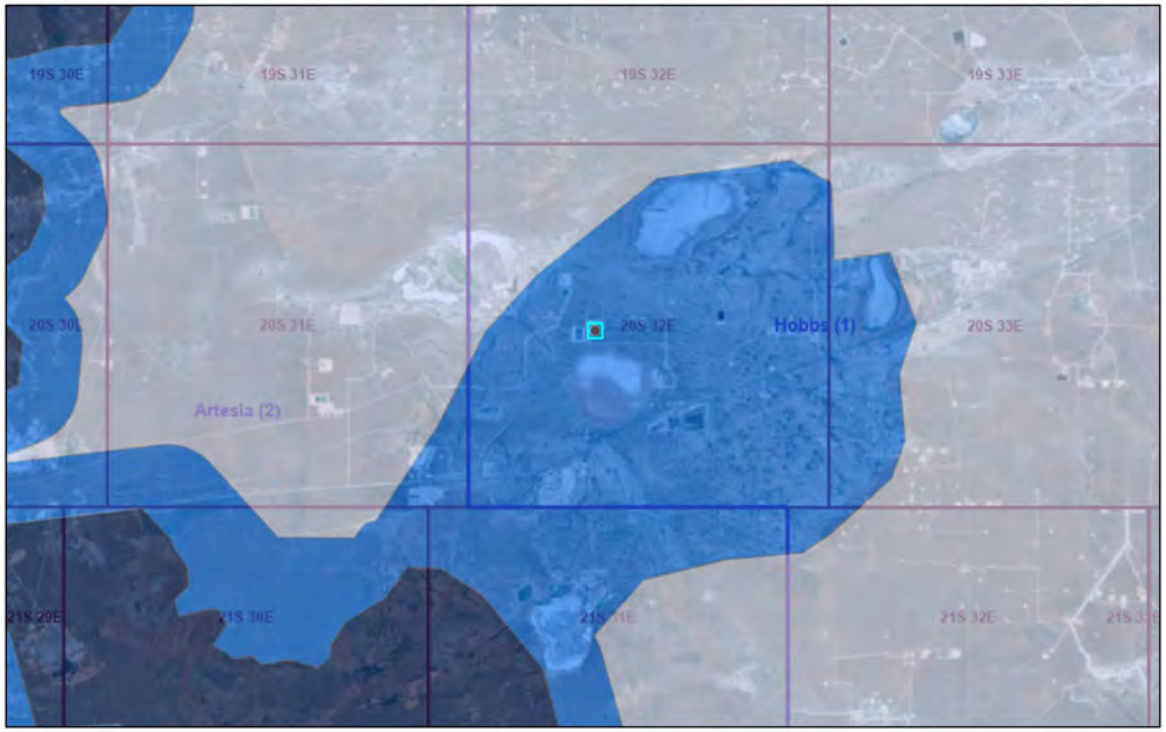
0 0.2 0.4 0.8 km

Esri, NASA, NGA, USGS, FEMA, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

EMNRD MMD GIS Coordinator

NM Energy, Minerals and Natural Resources Department (http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=1b5e577974664d689b47790897ca2795)

Big Eddy Unit DI 29 Karst Potential



10/1/2025, 9:56:46 AM

Karst Occurrence Potential

High

Medium

Low

OCD Districts

PLSS Townships

1:144,448

0 1 2 4 mi

0 1.5 3 6 km

BLM, OCD, New Mexico Tech, Earthstar Geographics, OCD, BLM

New Mexico Oil Conservation Division

NM OCD Oil and Gas Map. http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=4d017f2306164de29fd2fb9f8f35ca75: New Mexico Oil Conservation Division

Big Eddy Unit DI 29 Karst Potential

10/1/2025

World_Boundaries_and_Places

BLM NM Carlsbad Field Office Karst Potential Areas

High - Survey Required

Not Karst

Medium

World Imagery

Low Resolution 15m Imagery

High Resolution 60cm Imagery

High Resolution 30cm Imagery

Citations

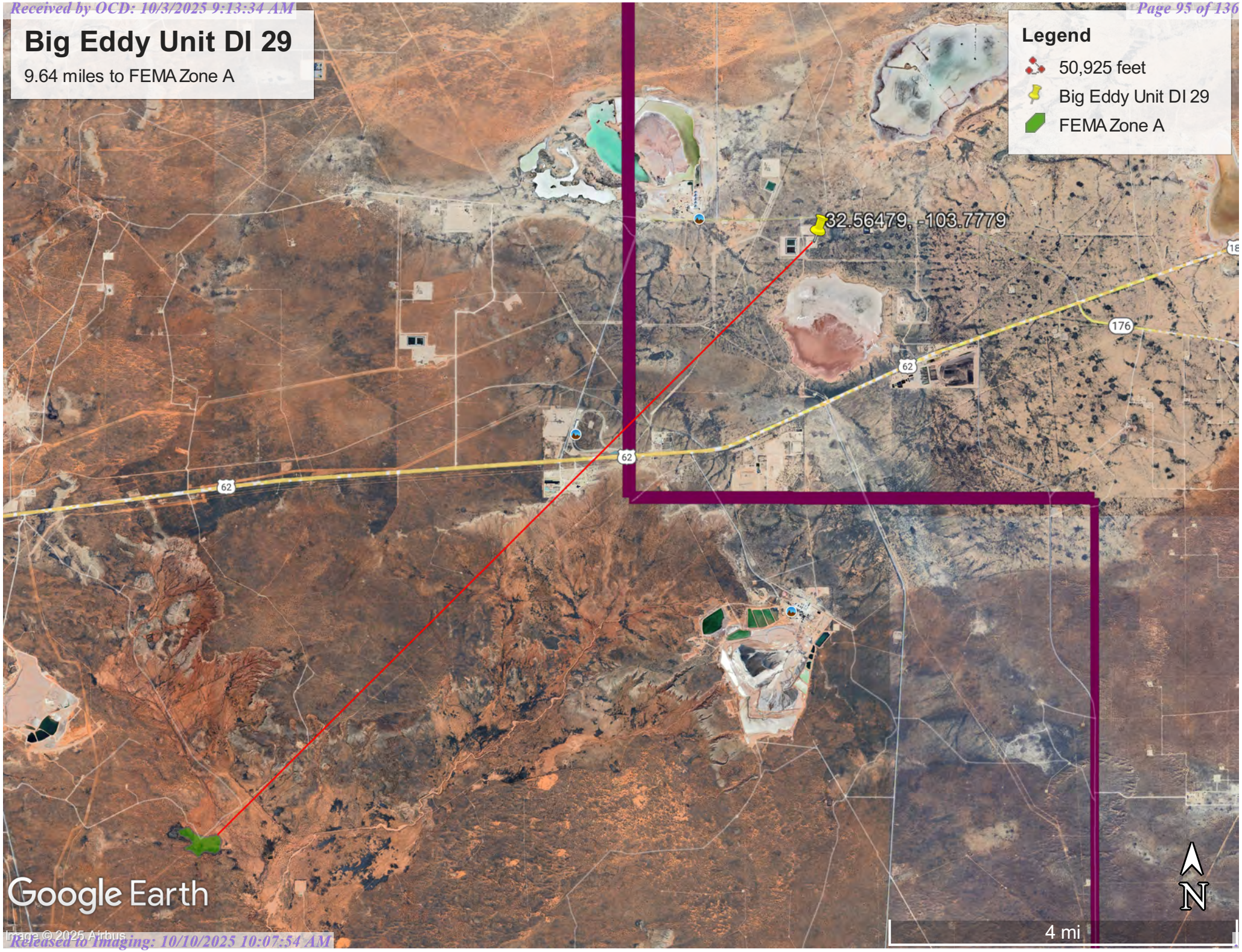
38m Resolution Metadata

1:144,448

0 1 2 4 mi

0 1.5 3 6 km

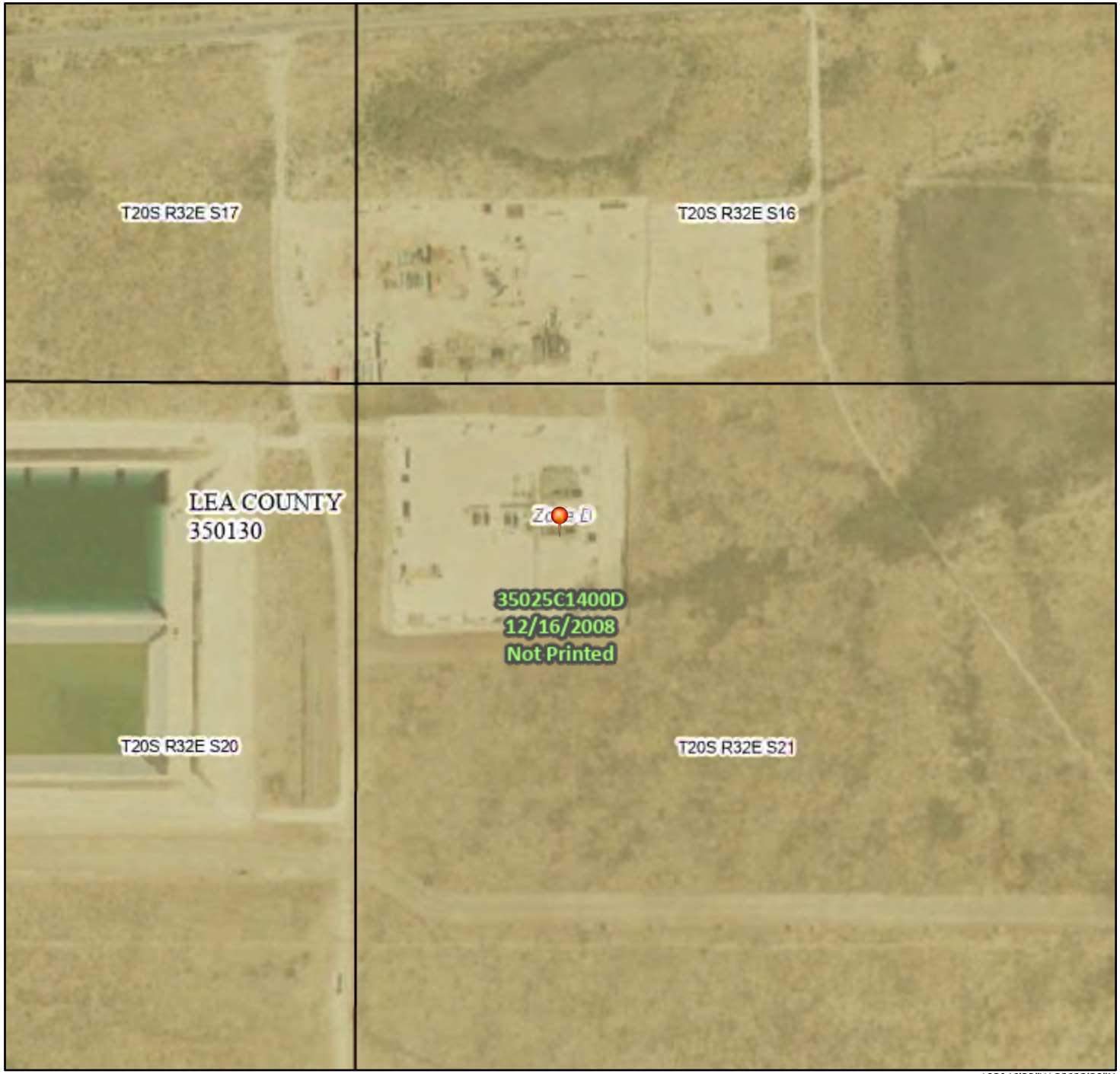
Esri, HERE, Garmin, Earthstar Geographics


Big Eddy Unit DI 29
9.64 miles to FEMA Zone A
Legend
50,925 feet
Big Eddy Unit DI 29
FEMA Zone A
32.56479, -103.7779
62
62
62
176
Google Earth
Image © 2025 Airbus
4 mi
N

National Flood Hazard Layer FIRMette

FEMA

103°46'59"W 32°34'8"N



103°46'22"W 32°33'38"N

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

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

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

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

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 6/28/2025 at 3:40 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.

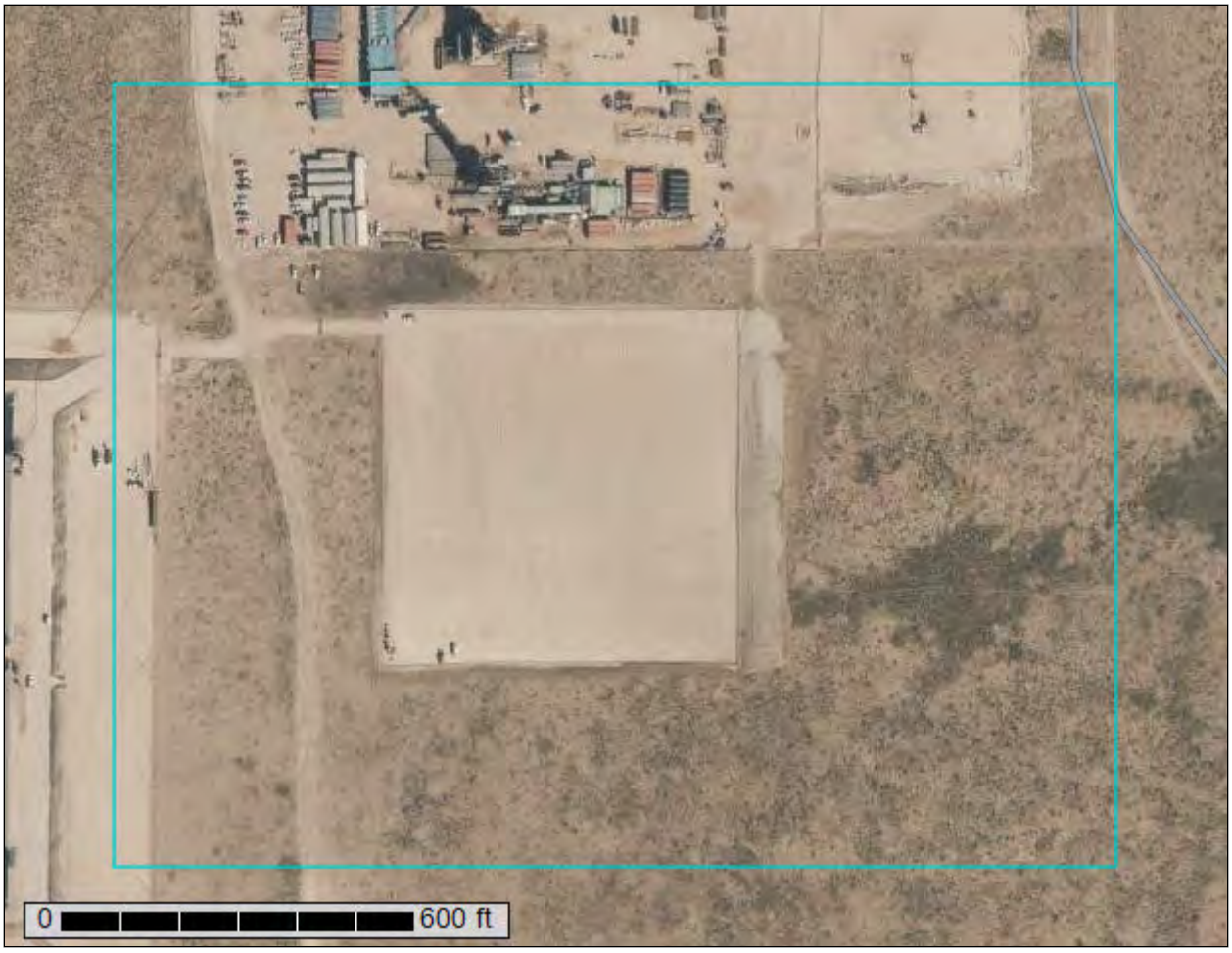
United States Department of Agriculture

NRCS

Natural Resources 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



June 28, 2025

Preface

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).

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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

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

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.

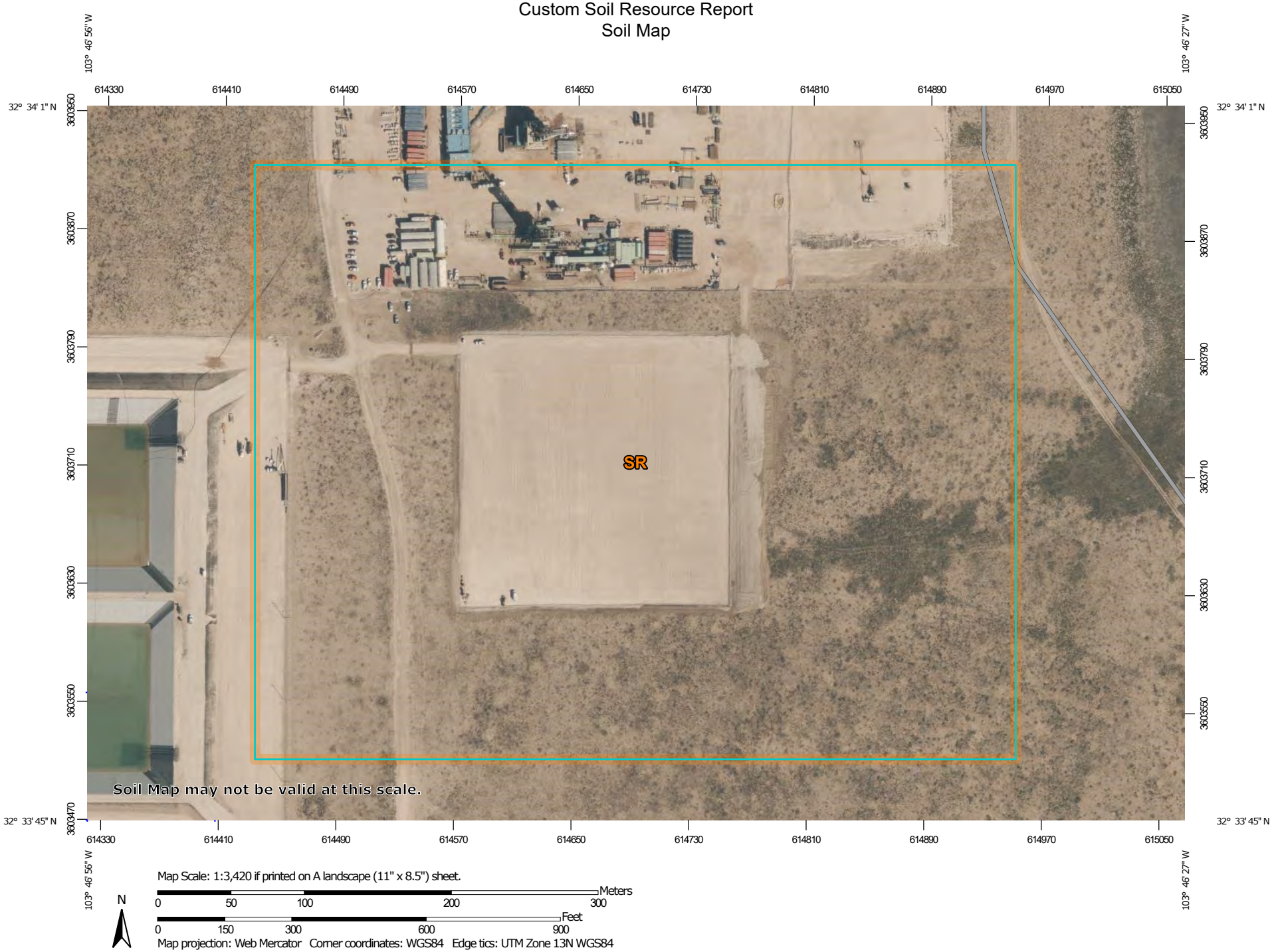
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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

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



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

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

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

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

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
SR	Simona-Upton association	51.7	100.0%
Totals for Area of Interest		**51.7**	**100.0%**

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, 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.

Lea County, New Mexico

SR—Simona-Upton association

Map Unit Setting

National map unit symbol: dmr3
Elevation: 3,000 to 4,400 feet
Mean annual precipitation: 10 to 16 inches
Mean annual air temperature: 58 to 62 degrees F
Frost-free period: 190 to 205 days
Farmland classification: Not prime farmland

Map Unit Composition

Simona and similar soils: 50 percent
Upton and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Simona

Setting

Landform: Ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Calcareous eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 8 inches: gravelly fine sandy loam
Bk - 8 to 16 inches: fine sandy loam
Bkm - 16 to 26 inches: cemented material

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 7 to 20 inches to petrocalcic
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 50 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R070BD002NM - Shallow Sandy
Hydric soil rating: No

Description of Upton

Setting

Landform: Ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Calcareous eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 8 inches: gravelly loam
Bkm - 8 to 18 inches: cemented material
BCk - 18 to 60 inches: very gravelly loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 7 to 20 inches to petrocalcic
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 75 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Very low (about 0.9 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R070BC025NM - Shallow
Hydric soil rating: No

Minor Components

Kimbrough

Percent of map unit: 6 percent
Ecological site: R077CY037TX - Very Shallow 16-21" PZ
Hydric soil rating: No

Stegall

Percent of map unit: 5 percent
Ecological site: R077CY028TX - Limy Upland 16-21" PZ
Hydric soil rating: No

Slaughter

Percent of map unit: 4 percent
Ecological site: R077CY028TX - Limy Upland 16-21" PZ
Hydric soil rating: No

Custom Soil Resource Report

References

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

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

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

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

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=stelprdb1043084

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

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

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

USDA Natural Resources Conservation Service

Ecological site R070BD002NM
Shallow Sandy

Accessed: 06/28/2025

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 sites often occur in association or in a complex with Shallow Sandy Sites.

Similar sites

R070BD004NM	**Sandy** Sandy ecological sites are similar to Shallow Sandy sites in species composition and Transition pathways.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occures on plains, alluvial fans, uplands, or fan piedmonts. The parent material consists of mixed loamy alluvium or eolian material derived from igneous and sedimentory bedrock. The petrocalcic layer is at a depth of 10 to 25 inches and undulating.

Slopes are nearly level to undulating, usually less than 9 percent. Elevations range from 2,842 to 4,500 feet.

Table 2. Representative physiographic features

Landforms	(1) Plain (2) Fan piedmont (3) Alluvial fan
Elevation	2,842–4,500 ft
Slope	1–9%
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 from 207 to 220 days. The last killing frost is in late March or early April, and the first killing frost is in late October or early November.
Temperature and rainfall both favor warm season perennial plant growth. In years of abundant spring moisture, annual forbs and cool season grasses can make up an important component of the site. The vegetation of this site can take advantage of the moisture and the time it falls. Because of the soil profile, little moisture can be stored in the soil for any length of time. Moisture is readily available to the plants from the time it falls. Strong winds from the southwest blow from January through June which rapidly dries out the soil profile during a critical period for 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 very shallow to shallow, less than 20 inches in depth. Surface and subsurface textures are gravelly loamy sand, gravelly fine sandy loam or fine sandy loam.

An indurated calache layer occurs at depths of 6 to 25 inches and is at an average of 15 inches from the surface. Underlying material textures are very gravelly fine sandy loam, very gravelly sandy loam, gravelly fine sandy loam. Gravels are calcium carbonate concretions, calcium carbonate content ranges from 30 to 65 percent.

The indurated caliche layer typically holds water up in the profile for short periods within the root zone of plants. These soils will blow if left unprotected by vegetation.

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

Characteristic soils are:
Simona
Jerag

Table 4. Representative soil features

Surface texture	(1) Fine sandy loam (2) Loamy fine sand (3) Gravelly fine sandy loam
Family particle size	(1) Loamy
Drainage class	Well drained to moderately well drained
Permeability class	Moderately slow to moderate
Soil depth	7–24 in
Surface fragment cover <=3"	5–25%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	1–2 in
Calcium carbonate equivalent (0-40in)	5–15%
Electrical conductivity (0-40in)	0–4 mmhos/cm

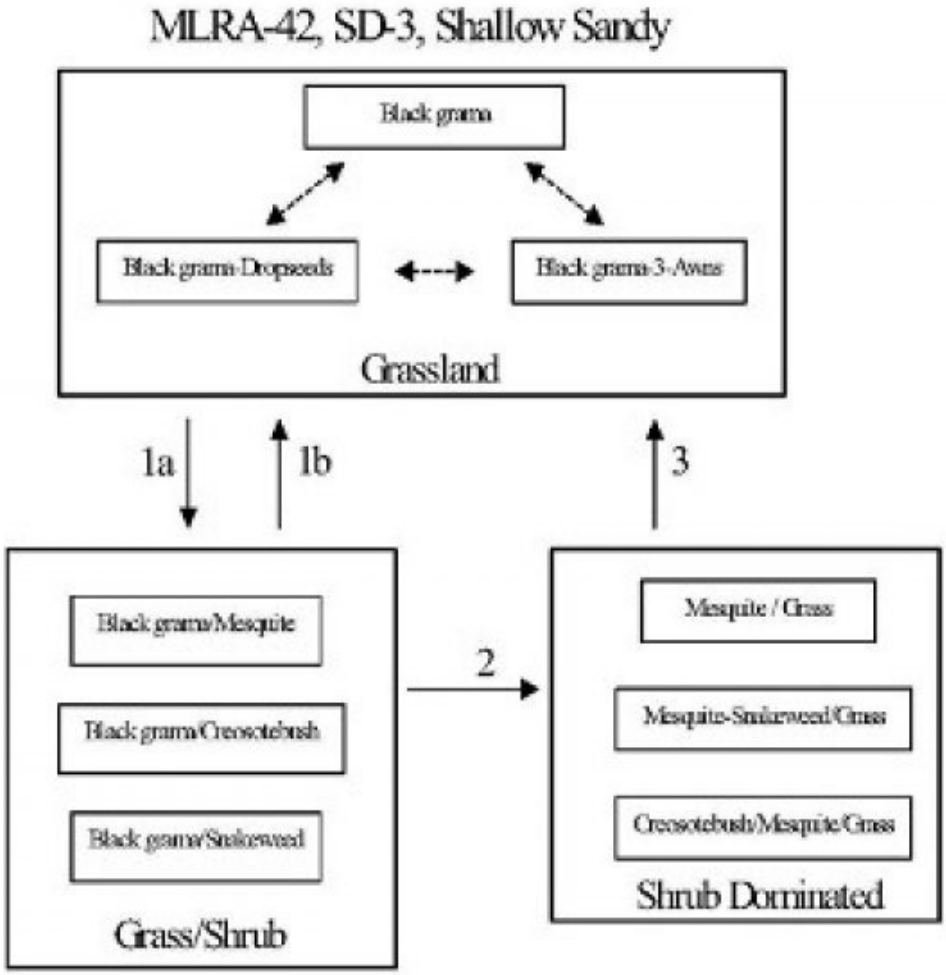
Sodium adsorption ratio (0-40in)	0
Soil reaction (1:1 water) (0-40in)	7.4–8
Subsurface fragment volume <=3" (Depth not specified)	5–25%
Subsurface fragment volume >3" (Depth not specified)	0%

Ecological dynamics

Overview
The Shallow Sandy site occurs on upland plains, and tops of low ridges and mesas, associated with Sandy, Loamy Sand, and Shallow sites. Coarse to moderately coarse soil surface textures, shallow depth (<20 inches) to an indurated caliche layer (petrocalcic horizon), and an overwhelming dominance by black grama help to distinguish this site. The historic plant community of the Shallow Sandy site is a black grama dominated grassland sparsely dotted with shrubs. Shrubs, especially mesquite and creosotebush can increase or colonize due to the dispersal of shrub seeds by livestock or wildlife. This increase in mesquite and colonization of creosotebush may be enhanced by proximity to areas with existing high shrub densities. Fire suppression, and the loss of grass cover due to overgrazing or drought may facilitate the increase and encroachment of shrubs. Persistent loss of grass cover, competition for resources by shrubs, and periods of climate with increased winter precipitation and dry summers, may initiate the transition to a shrub-dominated state.

State and transition model

Plant Communities and Transitional Pathways (diagram)



1a. Seed dispersal, drought, overgrazing, fire suppression.
1b. Prescribed fire, brush control, prescribed grazing.

2. Persistent loss of grass cover, resource competition, increased winter precipitation.

3. Brush control, range seeding, prescribed grazing.

State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

Grassland: This site responds well to management and is resistant to state change, due to the shallow depth to petrocalcic horizon and sandy surface textures. The sandy surface textures allow rapid water infiltration and the petrocalcic horizon helps to keep water

perched and available to shallow rooted grasses. Black grama is the dominant species in the historic plant community, averaging 50 to 60 percent of the total production for this site. Bush muhly, blue grama, and dropseeds are present as sub-dominants. Typically, yucca, javalinabush, range ratany, prickly pear, and mesquite are sparsely dotted across the landscape. Leatherweed croton, cutleaf happlopappus, wooly groundsel, and threadleaf groundsel are common forbs. Continuous heavy grazing or extended periods of drought will cause a loss of grass cover characterized by a decrease in black grama, bush muhly, blue and sideoats grama, plains bristlegrass, and Arizona cottontop. Dropseeds and or threeawns may increase and become sub-dominant to black grama. Continued loss of grass cover in conjunction with dispersal of shrub seeds and fire suppression is believed to cause the transition to a state with increased amounts of shrubs (Grass/Shrub state). Diagnosis: Black grama is the dominant grass species. Grass cover uniformly distributed. Shrubs are a minor component averaging only two to five percent canopy cover. Litter cover is high (40-50 percent of area), and litter movement is limited to smaller size class litter and short distances (<. 5m). Other grasses that could appear on this site would include: six-weeks grama, fluffgrass, false-buffalograss, hairy grama, little bluestem, bristle panicum, cane bluestem, Indian ricegrass, tridens spp., and red lovegrass. Other woody plants include: pricklypear, cholla, fourwing saltbush, catclaw mimosa, winterfat, American tarbush and mesquite. Other forbs include: globemallow, verbena, desert holly, senna, plains blackfoot, trailing fleabane, fiddleneck, deerstongue, wooly Indianwheat, and locoweed.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	474	652	830
Forb	78	107	136
Shrub/Vine	48	66	84
Total	**600**	**825**	**1050**

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	30-35%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	40-50%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%

Bedrock	0%
Water	0%
Bare ground	15-25%

Figure 5. Plant community growth curve (percent production by month). NM2802, R042XC002NM-Shallow Sandy-HCPC. SD-3 Shallow Sandy - 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: This state is characterized by the notable presence of shrubs, especially mesquite, broom snakeweed, and/or creosotebush, however grasses remain as the dominant species. Black grama is the dominant grass species. Threeawns and or dropseeds are sub-dominant. The susceptibility of the Shallow Sandy site to shrub encroachment may be higher when located adjacent to other sites with high densities of mesquite or creosotebush. Retrogression within this site is characterized by decreases in grass cover and increasing densities of shrubs. Diagnosis: Black grama remains as the dominant grass species. Grass cover varies in response to the amount of shrub increase, ranging from uniform to patchy. Shrubs are found at increased densities relative to the grassland state, especially mesquite, creosotebush, or broom snakeweed. Transition to Grass/Shrub (1a) Historically fire may have kept mesquite and other shrubs in check by completely killing some species and disrupting seed production cycles and suppressing the establishment of shrub seedlings in others. Fire suppression combined with seed dispersal by livestock and wildlife is believed to be the factors responsible for the establishment and increase in shrubs.1, 3 Loss of grass cover due to overgrazing, prolonged periods of drought, or their combination, reduces fire fuel loads and increases the susceptibility of the site to shrub establishment. Key indicators of approach to transition: Increase in the relative abundance of dropseeds and threeawns Presence of shrub seedlings Loss of organic matter—evidenced by an increase in physical soil crusts 8 Transition back to Grassland (1b) Brush control is necessary to initiate the transition back to the grassland state. If adequate fuel loads remain, possibly the reintroduction of fire as a management tool will assist in the transition back, however, mixed results have been observed concerning the effects of fire on black grama grasslands.6 Prescribed grazing will help ensure adequate rest following brush control and will assist in the establishment and maintenance of grass cover capable of sustaining fire.

State 3
Shrub Dominated

Community 3.1
Shrub Dominated

Shrub-Dominated: Across the range of soil types included in the Shallow Sandy site, mesquite is typically the dominant shrub, but it does occur as a co-dominant or sub-dominant species with creosotebush or broom snakeweed. Mesquite tends to dominate when the Shallow Sandy site occurs as part of a complex or in association with Sandy or Loamy Sand sites. Creosotebush tends to dominate on Shallow Sandy sites that occur as part of, or adjacent to Shallow Sites. Broom snakeweed increases in response to heavy grazing, but tends to cycle in and out depending on timing of rainfall. However, once the site is dominated by shrubs and snakeweed becomes well established, it tends to remain as a major component in the shrub dominated state. Diagnosis: Mesquite, creosotebush, or snakeweed cover is high, exceeding that of grasses. Grass cover is patchy with large connected bare areas present. Black grama, threeawns, or dropseeds may be the dominant grass. Evidence of accelerated wind erosion in the form of pedestalling of plants, and soil deposition around shrub bases may be common. Transition to Shrub-Dominated (2) Persistent loss of grass cover and the resulting increased competition between shrubs and remaining grasses for dwindling resources (especially soil moisture) may drive this transition.5 Additionally periods of increased winter precipitation may facilitate periodic episodes of shrub expansion and establishment. 4 Key indicators of approach to transition: Increase in size and frequency of bare patches. Loss of grass cover in shrub interspaces. Increased signs of erosion, evidenced by pedestalling of plants, and soil and litter deposition on leeward side of plants. 7 Transition back to Grassland (3) Brush control is necessary to reduce competition from shrubs and reestablish grasses. Range seeding may be necessary if insufficient grasses remain, The benefits, and costs, will vary depending upon the degree of site degradation, and adequate precipitation following seeding.

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**			413–495	
	black grama	BOER4	*Bouteloua eriopoda*	413–495	–
2	**Warm Season**			41–83	
	bush muhly	MUPO2	*Muhlenbergia porteri*	41–83	–
3	**Warm Season**			41–83	

	blue grama	BOGR2	*Bouteloua gracilis*	41–83	–
4	**Warm Season**			25–41	
	sideoats grama	BOCU	*Bouteloua curtipendula*	25–41	–
5	**Warm Season**			41–83	
	spike dropseed	SPCO4	*Sporobolus contractus*	41–83	–
	sand dropseed	SPCR	*Sporobolus cryptandrus*	41–83	–
	mesa dropseed	SPFL2	*Sporobolus flexuosus*	41–83	–
6	**Warm Season**			17–41	
	threeawn	ARIST	*Aristida*	17–41	–
7	**Warm Season**			41–83	
	Arizona cottontop	DICA8	*Digitaria californica*	41–83	–
	plains bristlegrass	SEVU2	*Setaria vulpiseta*	41–83	–
8	**Warm Season**			41–83	
	mat sandbur	CELO3	*Cenchrus longispinus*	41–83	–
	hooded windmill grass	CHCU2	*Chloris cucullata*	41–83	–
9	**Other Perennial Grasses**			25–41	
	Grass, perennial	2GP	*Grass, perennial*	25–41	–
Shrub/Vine					
10	**Shrub**			8–25	
	javelina bush	COER5	*Condalia ericoides*	8–25	–
11	**Shrub**			8–25	
	yucca	YUCCA	*Yucca*	8–25	–
12	**Shrub**			8–25	
	jointfir	EPHED	*Ephedra*	8–25	–
	littleleaf ratany	KRER	*Krameria erecta*	8–25	–
13	**Shrub**			8–25	
	featherplume	DAFO	*Dalea formosa*	8–25	–
14	**Shrub**			8–25	
	broom snakeweed	GUSA2	*Gutierrezia sarothrae*	8–25	–
15	**Other Shrubs**			25–41	
	Shrub (>.5m)	2SHRUB	*Shrub (>.5m)*	25–41	–
Forb					
16	**Forb**			17–41	
	leatherweed	CRPOP	*Croton pottsii var. pottsii*	17–41	–

	Goodding's tansyaster	MAPIG2	*Machaeranthera pinnatifida ssp. gooddingii var. gooddingii*	17–41	–
17	**Forb**			17–41	
	woolly groundsel	PACA15	*Packera cana*	17–41	–
	threadleaf ragwort	SEFLF	*Senecio flaccidus var. flaccidus*	17–41	–
18	**Forb**			8–25	
	whitest evening primrose	OEAL	*Oenothera albicaulis*	8–25	–
19	**Other Forbs**			8–25	
	Forb (herbaceous, not grass nor grass-like)	2FORB	*Forb (herbaceous, not grass nor grass-like)*	8–25	–

Animal community

This site provides habitats which support a resident animal community that is characterized by pronghorn antelope, swift fox, black-tailed jackrabbit, spotted ground squirrel, Ord’s kangaroo rat, northern grasshopper mouse, coyote, horned lark, meadowlark, lark bunting, scaled quail, morning dove, side-blotched lizard, round-tailed horned lizard, marbled whiptail, prairie rattlesnake and ornate box turtle.

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
Jarag D
Simona D

Recreational uses

This site offers recreation for hiking, horseback riding, nature observation and photography, and quail and dove hunting. During years of abundant spring moisture, this site displays a riot of color from wildflowers during May and June. A few summer and fall flowers also occur.

Wood products

The natural potential plant community of this site affords little or no wood products. Where the site has been invaded by mesquite or cholla cactus the roots and stems of these plants provide attractive material for a variety of curiosities, such as lamps and small furniture.

Other products

This site is suitable for grazing by all kinds and classes of livestock during all seasons of the year. Because of the sandy textures and shallow profile, this site will respond rapidly to management. As this site deteriorates, plants such as black grama, bush muhly, blue and sideoats grama, plains bristlegrass and Arizona cottontop, will decrease and be replaced by plants such as threeawns, mesquite, creosote bush, and broom snakeweed. This also causes a decrease in ground cover, leaving the soil to blow. This site responds best 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 2.5 – 3.5
75 – 51 3.2 – 4.6
50 – 26 4.5 – 7.5
25 – 0 7.6 +

Inventory data references

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

Other references

Literature References:

1. Brooks, M.L. and D.A. Pyke. 2001. Invasive plants and fire in the deserts of North America. Pages 1–14 in K.E.M. Galley and T.P. Wilson (eds.). Proceedings of the Invasive Species Workshop: the Role of Fire in the Control and Spread of Invasive Species.

2. Hennessy, J.T., R.P. Gibbens, J.M. Tromble, and M. Cardenas. 1983. Water properties of caliche. J. Range Manage. 36: 723-726.

3. Humphrey, R.R. 1974. Fire in the deserts and desert grassland of North America. In:

Kozlowski, T. T.; Ahlgren, C. E., eds. Fire and ecosystems. New York: Academic Press: 365-400.

4. Moir, W.H., and J. A. Ludwig. 1991. Plant succession and changing land features in desert grasslands. P. 15-18. In P.F. Ffolliott and W.T. Swank (eds.) People and the temperate region: a summary of research from the United States Man and the Biosphere Program 1991. U.S. Dept. State, Publ No. 9839, Nat. Tech. Info. Serv., U.S. Dept. Commerce, Springfield, Illinois. 63 p.

5. Tiedemann, A. R. and J. O. Klemmedson. 1977. Effect of mesquite trees on vegetation and soils in the desert grassland. J. Range Manage. 30: 361-367.

6. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (2002, September). Fire Effects Information System, [Online]. Available: http://www.fs.fed.us/database/feis/ [accessed 2/10/03].

7. U.S. Department of Agriculture, Natural Resources Conservation Service. 2001. Soil Quality Information Sheets. Rangeland Soil Quality—Wind Erosion. Rangeland Sheet 10 [Online]. Available: http://www.statlab.iastate.edu/survey/SQI/range.html

8. U.S. Department of Agriculture, Natural Resources Conservation Service. 2001. Soil Quality Information Sheets. Rangeland Soil Quality—Physical and Biological Soil Crusts. Rangeland Sheet 7 [Online]. Available: http://www.statlab.iastate.edu/survey/SQI/range.html

Contributors

David Trujillo
Don Sylvester

Rangeland health reference sheet

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

Author(s)/participant(s)	
Contact for lead author	
Date	

Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:**

   _____

2. **Presence of water flow patterns:**

   _____

3. **Number and height of erosional pedestals or terracettes:**

   _____

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

   _____

5. **Number of gullies and erosion associated with gullies:**

   _____

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

   _____

7. **Amount of litter movement (describe size and distance expected to travel):**

   _____

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**

   _____

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

   _____

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**

---

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**

---

12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

    Dominant:

    Sub-dominant:

    Other:

    Additional:

---

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

---

14. **Average percent litter cover (%) and depth (in):**

---

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**

---

16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:**

17. **Perennial plant reproductive capability:**

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

General Information
Phone: (505) 629-6116

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

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

QUESTIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 511987
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAPP2518149545**
Incident Name	**NAPP2518149545 BIG EDDY UNIT DI 29 BATTERY @ D-21-20S-32E**
Incident Type	**Oil Release**
Incident Status	**Remediation Closure Report Received**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	BIG EDDY UNIT DI 29 BATTERY
Date Release Discovered	06/26/2025
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Oil Release
Did this release result in a fire or is the result of a fire	Yes
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	Cause: Equipment Failure | Well | Crude Oil | Released: 9 BBL | Recovered: 0 BBL | Lost: 9 BBL.
Produced Water Released (bbls) Details	Cause: Equipment Failure | Well | Produced Water | Released: 1 BBL | Recovered: 0 BBL | Lost: 1 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	*Not answered.*
Natural Gas Vented (Mcf) Details	*Not answered.*
Natural Gas Flared (Mcf) Details	*Not answered.*
Other Released Details	*Not answered.*
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	*Not answered.*

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

General Information
Phone: (505) 629-6116

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

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

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 511987
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	**No, according to supplied volumes this does not appear to be a "gas only" report.**
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	**Yes**
Reasons why this would be considered a submission for a notification of a major release	**From paragraph A. "Major release" determine using:** **(2) an unauthorized release of a volume that:** **(a) results in a fire or is the result of a fire.**

With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.

Initial Response	
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.	
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	*Not answered.*

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

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

I hereby agree and sign off to the above statement	Name: Robert Woodall Title: Environmental Analyst Email: robert.d.woodall@exxonmobil.com Date: 10/03/2025

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

General Information
Phone: (505) 629-6116

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

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

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 511987
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Site Characterization	
Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 26 and 50 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 500 and 1000 (ft.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1000 (ft.) and ½ (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	Greater than 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 500 and 1000 (ft.)
A subsurface mine	Between 1 and 5 (mi.)
An (non-karst) unstable area	Zero feet, overlying, or within area
Categorize the risk of this well / site being in a karst geology	Medium
A 100-year floodplain	Greater than 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan		
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.		
Requesting a remediation plan approval with this submission		Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.		
Have the lateral and vertical extents of contamination been fully delineated		Yes
Was this release entirely contained within a lined containment area		No
Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)		
Chloride	(EPA 300.0 or SM4500 Cl B)	144
TPH (GRO+DRO+MRO)	(EPA SW-846 Method 8015M)	26910
GRO+DRO	(EPA SW-846 Method 8015M)	19200
BTEX	(EPA SW-846 Method 8021B or 8260B)	0
Benzene	(EPA SW-846 Method 8021B or 8260B)	0
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.		
On what estimated date will the remediation commence		09/22/2025
On what date will (or did) the final sampling or liner inspection occur		09/25/2025
On what date will (or was) the remediation complete(d)		09/25/2025
What is the estimated surface area (in square feet) that will be reclaimed		362
What is the estimated volume (in cubic yards) that will be reclaimed		15
What is the estimated surface area (in square feet) that will be remediated		362
What is the estimated volume (in cubic yards) that will be remediated		15
These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.		
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.		

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

General Information
Phone: (505) 629-6116

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

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

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 511987
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Remediation Plan (continued)	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
(Select all answers below that apply.)	
(Ex Situ) Excavation and **off-site** disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for **off-site** disposal	fEEM0112334510 HALFWAY DISPOSAL AND LANDFILL
OR which OCD approved well (API) will be used for **off-site** disposal	*Not answered.*
OR is the **off-site** disposal site, to be used, out-of-state	*Not answered.*
OR is the **off-site** disposal site, to be used, an NMED facility	*Not answered.*
(Ex Situ) Excavation and **on-site** remediation (i.e. On-Site Land Farms)	*Not answered.*
(In Situ) Soil Vapor Extraction	*Not answered.*
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	*Not answered.*
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	*Not answered.*
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	*Not answered.*
Ground Water Abatement pursuant to 19.15.30 NMAC	*Not answered.*
OTHER (Non-listed remedial process)	*Not answered.*
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
I hereby agree and sign off to the above statement	Name: Robert Woodall Title: Environmental Analyst Email: robert.d.woodall@exxonmobil.com Date: 10/03/2025
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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

General Information
Phone: (505) 629-6116

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

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

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 511987
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Deferral Requests Only *Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.*	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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

General Information
Phone: (505) 629-6116

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

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

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 511987
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	**507494**
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	**09/26/2025**
What was the (estimated) number of samples that were to be gathered	**9**
What was the sampling surface area in square feet	**1750**

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	**No**
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	362
What was the total volume (cubic yards) remediated	15
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	362
What was the total volume (in cubic yards) reclaimed	15
Summarize any additional remediation activities not included by answers (above)	see report

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: Robert Woodall Title: Environmental Analyst Email: robert.d.woodall@exxonmobil.com Date: 10/03/2025

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

General Information
Phone: (505) 629-6116

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

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

QUESTIONS (continued)

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 511987
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Reclamation Report	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	No

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

General Information
Phone: (505) 629-6116

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

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

CONDITIONS

Operator: XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707	OGRID: 5380
	Action Number: 511987
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

Created By	Condition	Condition Date
scwells	None	10/10/2025