State of New Mexico
Oil Conservation Division

Incident ID	nAPP2111148844
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

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

[N/A] A scaled site and sampling diagram as described in 19.15.29.11 NMAC

[X] Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

[N/A] Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

[X] Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Arsenio Jones Title: RES Specialist

Signature: Date: 6/15/21

email: arsenio.jones@matadorresources.com Telephone: 575-361-4333

OCD Only

Received by: Robert Hamlet Date: 7/21/2021

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

Closure Approved by: Robert Hamlet Date: 7/21/2021

Printed Name: Robert Hamlet Title: Environmental Specialist - Advanced

VERTEX

May 19, 2021 Vertex Project #: 21E-00087-012

Spill Closure Report: Black River SWD #1
Unit C, Section 31, Township 23 South, Range 28 East
County: Eddy
API: 30-015-43807
NMOCD Tracking Number: nAPP2111148844

Prepared For: Matador Production Company
5400 Lyndon B. Johnson Freeway
Dallas, Texas 75240

New Mexico Oil Conservation Division – District 2 – Artesia
811 South First Street
Artesia, New Mexico 88210

Matador Production Company (Matador) retained Vertex Resource Services Inc. (Vertex) to conduct a spill assessment for the April 10, 2021, produced water release that occurred at Black River SWD #1, API: 30-015-43807 (hereafter referred to as "Black River"). Matador provided notification of the spill to New Mexico Oil Conservation Division (NMOCD) District 2 via submission of an initial C-141 Release Notification (Attachment 1) on April 21, 2021. The NMOCD tracking number assigned to this release is nAPP2111148844.

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

Incident Description

On April 10, 2021, a release occurred at Matador's Black River site due to a pin hole leak in the barrel of the injection pump. This incident resulted in the release of approximately 6 barrels (bbls) of produced water; approximately 6 bbls of produced water were recovered from the location. All fluids were contained with the lined Spill Prevention Control and Countermeasures containment and no produced water was released into undisturbed areas or waterways.

Site Characterization

The release at Black River occurred on privately-owned land, N 32.268005, W 104.127387, approximately 2 miles southwest of Loving, New Mexico. The legal description for the site is Unit C, Section 31, Township 23 South, Range 28 East, Eddy County, New Mexico. This location is within the Permian Basin in southeast New Mexico and has historically been used for oil and gas exploration and production, and rangeland.

Black River is typical of oil and gas exploration and production sites in the western portion of the Permian Basin, and is currently used for oil and gas production, and storage. The following sections specifically describe the area surrounding

the constructed well pad where the tank battery is located.

The surrounding landscape is associated with alluvial fans and fan remnants at elevations of 1,100 to 4,400 feet above sea level. The climate is semi-arid, with average annual precipitation ranging between 7 and 14 inches. Historically, the plant community has been predominantly black grama, tobosa, dropseeds and three awns, such as soaptree yucca, fourwing saltbrush and ephedra. Litter should be small and its movement should be minimal (United States Department of Agriculture, Natural Resources Conservation Service, 2020). Limited to no vegetation is allowed to grow on the compacted well pad.

The *Geological Map of New Mexico* indicates the surface geology at Black River is comprised primarily of Qa – Alluvium, Holocene to upper Pleistocene (New Mexico Bureau of Geology and Mineral Resources, 2020). The Natural Resources Conservation Service Web Soil Survey characterizes the soil at the site as Reagan loam, characterized by loam. It tends to be well-drained with low runoff and moderate available moisture levels in the soil profile (United States Department of Agriculture, Natural Resources Conservation Service, 2020). There is medium potential for karst geology to be present near Black River (United States Department of the Interior, Bureau of Land Management, 2020).

There is no surface water located on-site. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is the Pecos River located approximately 5 miles east of the site (Google Earth Pro, 2020). There are no continuously flowing watercourses or significant watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

The nearest active well to Black River is a 1993 United States Geological Survey well located approximately 0.41 miles southeast of the site with a depth to groundwater of 57 feet below ground surface (United States Department of the Interior, United States Geological Survey, 2020). Documentation pertaining to site characterization and depth to groundwater determination is included in Attachment 2.

Closure Criteria Determination

Using site characterization information, a closure criteria determination worksheet (Attachment 2) was completed to determine if the release would be subject to any of the special case scenarios outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC, if the release had not been contained within secondary containment.

Based on data included in the closure criteria determination worksheet, the release at Black River would not be subject to the requirements of Paragraph (4) of Subsection C of 19.15.29.12 NMAC and the closure criteria for the site would be determined to be associated with the following constituent concentration limits based on depth to groundwater.

Table 1. Closure Criteria for Soils Impacted by a Release		
Depth to Groundwater	**Constituent**	**Limit**
<50 feet	Chloride	10,000 mg/kg
	TPH[1] (GRO + DRO + MRO)	2,500 mg/kg
	GRO + DRO	1,000 mg/kg
	BTEX[2]	50 mg/kg
	Benzene	10 mg/kg

[1] Total petroleum hydrocarbons (TPH) = gasoline range organics (GRO) + diesel range organics (DRO) + motor oil range organics (MRO)

[2] Benzene, toluene, ethylbenzene and xylenes (BTEX)

Liner Inspection

On April 26, 2021, Vertex provided 48-hour notification of the liner inspection to NMOCD District 2, as required by Subparagraph (a) of Paragraph (5) of Subsection A 19.15.29.11 NMAC (Attachment 4). On April 28, 2021, Vertex was on-site to conduct a visual inspection of the production equipment secondary containment liner for cracks, tears, cuts, and other signs of damage, and to verify that the liner remained intact and had the ability to contain the release. The Daily Field Report (DFR) associated with the inspection is included in Attachment 3.

Closure Request

Vertex recommends no remediation action to address the release at Black River. The secondary containment liner appeared to be intact and had the ability to contain the release, as shown in the inspection photographs included with the DFR (Attachment 3). There are no anticipated risks to human, ecological or hydrological receptors associated with the release site.

Vertex requests that incident nAPP2111148844 be closed as all closure requirements set forth in Subsection E of 19.15.29.12 NMAC have been met. Matador certifies that all information in this report and the attachments is correct, and that they have complied with all applicable closure requirements and conditions specified in Division rules and directives to meet NMOCD requirements to obtain closure on the April 10, 2021, release at Black River.

Should you have any questions or concerns, please do not hesitate to contact the undersigned at 575.361.9880 or mpeppin@vertex.ca.

Sincerely,

Monica Peppin
PROJECT MANAGER

Attachments

Attachment 1. NMOCD C-141 Report
Attachment 2. Closure Criteria for Soils Impacted by a Release Research Determination Documentation
Attachment 3. Daily Field Report(s) with Photographs
Attachment 4. Required 48-hr Notification of Confirmation Sampling to Regulatory Agencies

References

Google Earth Pro. (2020). *Measured Distance from the Subject Site to Nearest Waterway.* Retrieved from http://earth.google.com.

New Mexico Bureau of Geology and Mineral Resources. (2020). *Interactive Geologic Map.* Retrieved from http://geoinfo.nmt.edu.

New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System. (2020). *Water Column/Average Depth to Water Report.* Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html

New Mexico Oil Conservation Division. (2018). *New Mexico Administrative Code – Natural Resources and Wildlife Oil and Gas Releases*. Santa Fe, New Mexico.

United States Department of Agriculture, Natural Resources Conservation Service. (2020). *Web Soil Survey*. Retrieved from https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

United States Department of the Interior, Bureau of Land Management. (2020). *New Mexico Cave/Karsts*. Retrieved from https://www.blm.gov/programs/recreation/recreation-programs/caves/new-mexico.

United States Department of the Interior, United States Geological Survey. (2020). *Groundwater for New Mexico: Water Levels*. Retrieved from https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?.

Limitations

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

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

ATTACHMENT 1

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	nAPP2111148844
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Matador Production Company	OGRID 228937
Contact Name Arsenio Jones	Contact Telephone 575-361-4333
Contact email arsenio.jones@matadorresources.com	Incident # *(assigned by OCD)* nAPP2111148844
Contact mailing address 5400 LBJ Freeway, Suite 1500 Dallas, TX75240	

Location of Release Source

Latitude 32.268005 Longitude -104.127387
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Black River SWD #1	Site Type SWD
Date Release Discovered 04/10/2021	API# *(if applicable)* 30-015-43807

Unit Letter	Section	Township	Range	County
C	31	23S	28E	Eddy

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (*Name:* _____)

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 6	Volume Recovered (bbls) 6
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
Small hole in barrel of injection pump inside containment.

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2111148844
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

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

☒ The source of the release has been stopped.

☒ The impacted area has been secured to protect human health and the environment.

☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

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

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

Printed Name: Arsenio Jones Title: RES Specialist

Signature: Date: 6/15/21

email: arsenio.jones@matadorresources.com Telephone: 575-361-4333

OCD Only

Received by: Date:

Form C-141
Page 3

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2111148844
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	57 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2111148844
District RP	
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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Arsenio Jones Title: RES Specialist

Signature: Date: 6/15/21

email: arsenio.jones@matadorresources.com Telephone: 575-361-4333

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2111148844
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Closure

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

[N/A] A scaled site and sampling diagram as described in 19.15.29.11 NMAC

[X] Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

[N/A] Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

[X] Description of remediation activities

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Printed Name: Arsenio Jones Title: RES Specialist

Signature: _____ Date: 6/15/21

email: arsenio.jones@matadorresources.com Telephone: 575-361-4333

OCD Only

Received by: _____ Date: _____

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Closure Approved by: _____ Date: _____

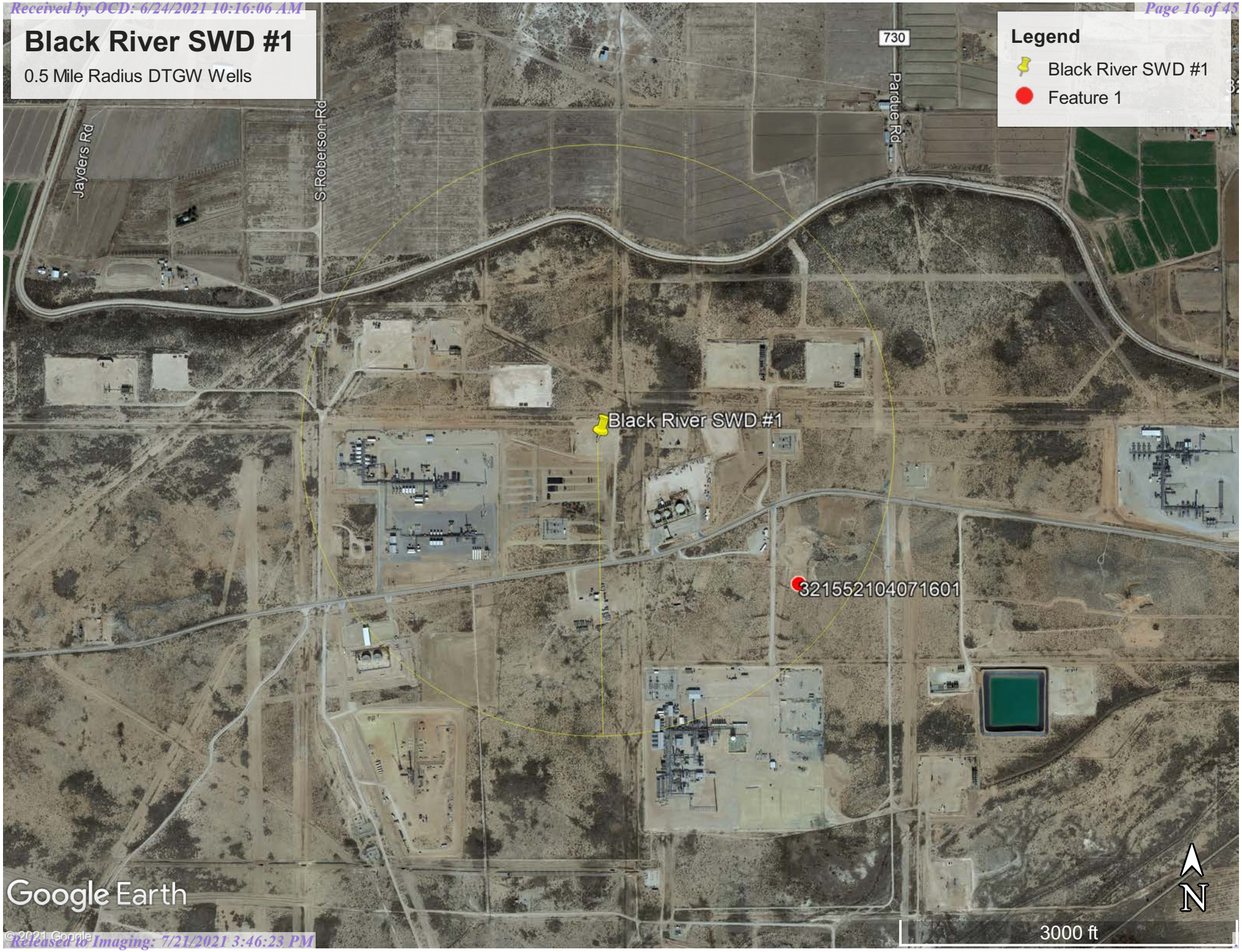
Printed Name: _____ Title: _____

ATTACHMENT 2

Closure Criteria Worksheet			
Site Name: Black River SWD #1			
Spill Coordinates:		X: 32.268005	Y: -103.127387
Site Specific Conditions		Value	Unit
1	Depth to Groundwater	**57**	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	27,555	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	31,054	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	4,050	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**	4,050	feet
	ii) Within 1000 feet of any fresh water well or spring	4,050	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	2,853	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	Medium	Critical High Medium Low
10	Within a 100-year Floodplain	500	year
11	Soil Type	Ra-Reagan loam	
12	Ecological Classification	Loamy	
13	Geology	Qa-Alluvium (Holocene to upper Pleistocene)	
NMAC 19.15.29.12 E (Table 1) Closure Criteria		<50'	<50' 51-100' >100'

Black River SWD #1

0.5 Mile Radius DTGW Wells



National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater | Geographic Area: United States | GO

Click to hideNews Bulletins

- Explore the **NEW** USGS National Water Dashboard to access real-time data from over 13,500 stations nationwide.
- Full News

Groundwater levels for the Nation

* IMPORTANT: Next Generation Station Page

Search Results -- 1 sites found

site_no list =

- 321552104071601

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

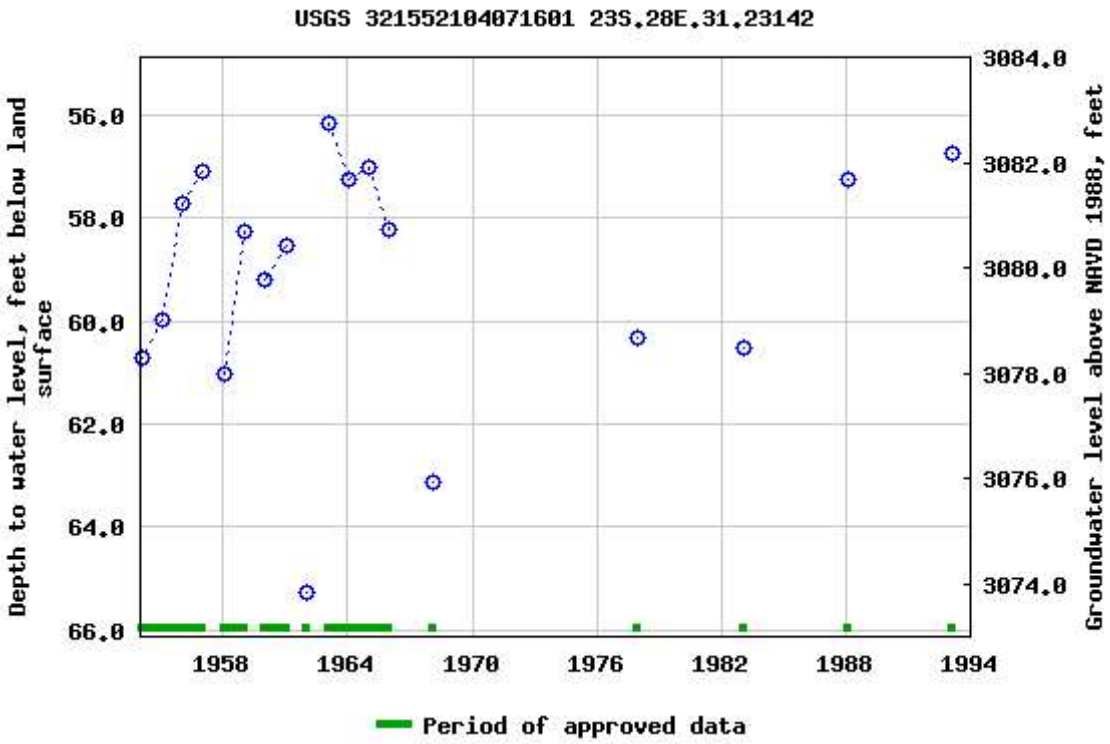
USGS 321552104071601 23S.28E.31.23142

Available data for this site | Groundwater: Field measurements | GO

Eddy County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°15'52", Longitude 104°07'16" NAD27
Land-surface elevation 3,139 feet above NAVD88
The depth of the well is 93 feet below land surface.
This well is completed in the Other aquifers (N9999OTHER) national aquifer.
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

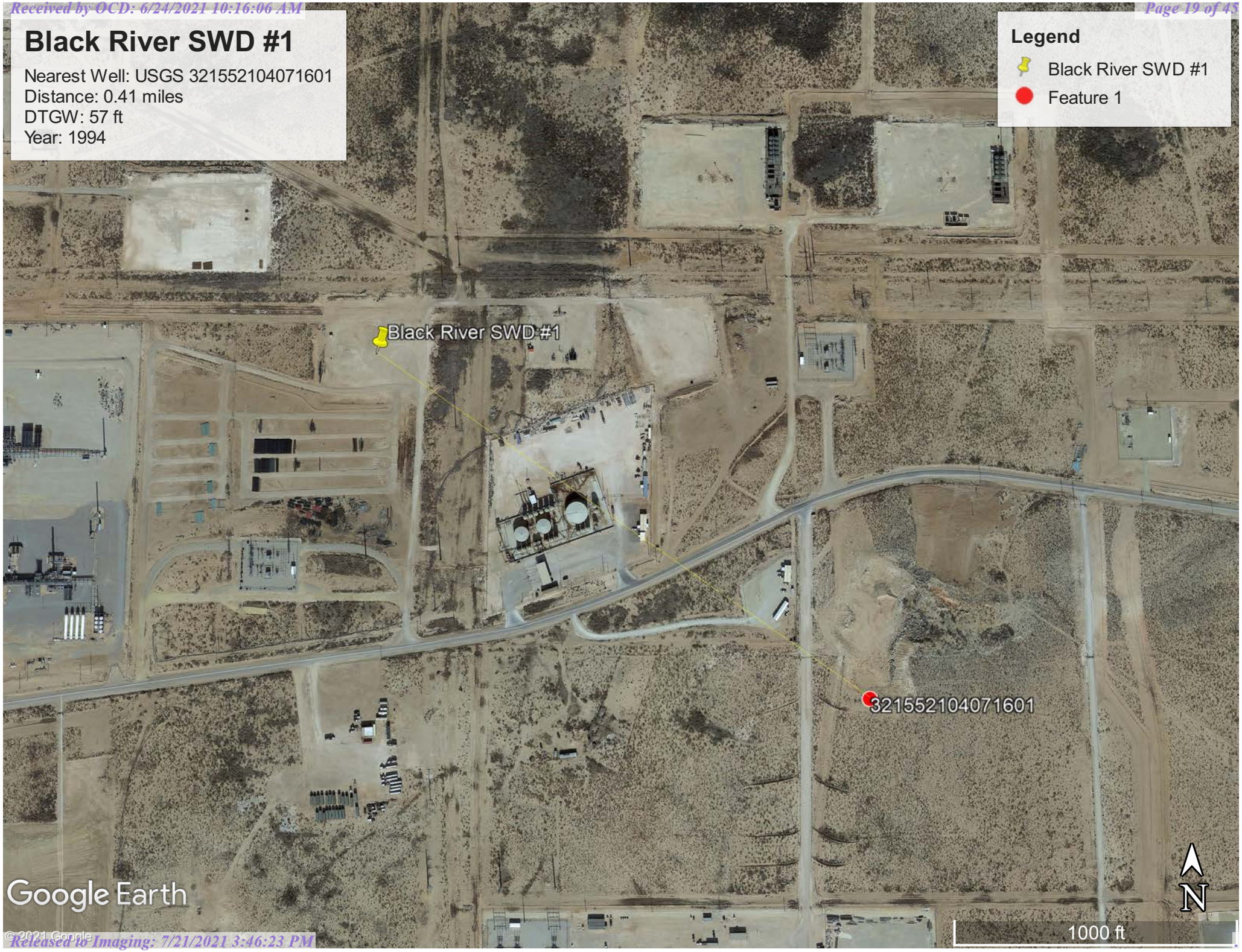
Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2021-04-29 13:37:13 EDT
0.62 0.53 nadww02

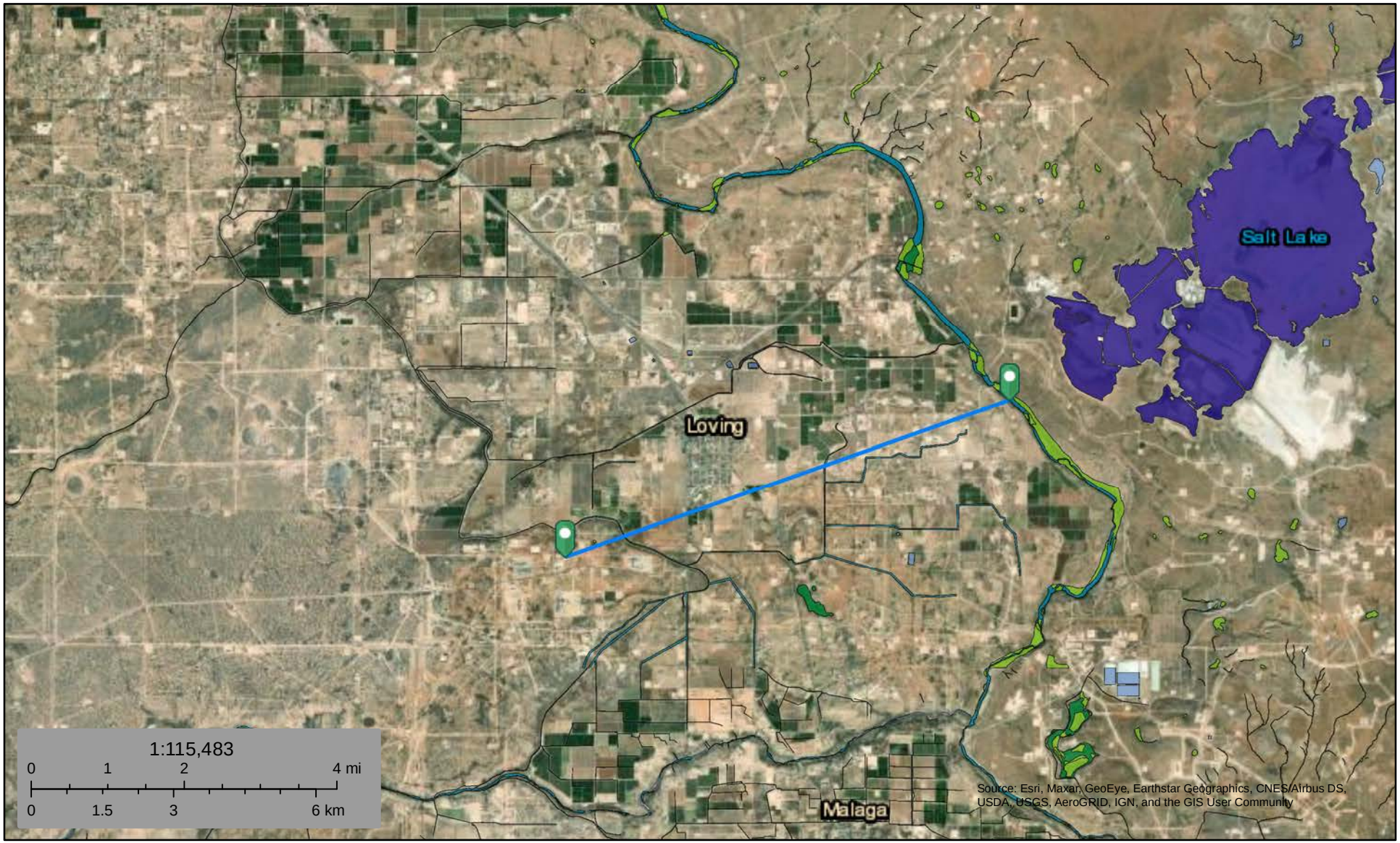
Black River SWD #1

Nearest Well: USGS 321552104071601
Distance: 0.41 miles
DTGW: 57 ft
Year: 1994



U.S. Fish and Wildlife Service
National Wetlands Inventory

Black River SWD #1



April 29, 2021

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

U.S. Fish and Wildlife Service
National Wetlands Inventory

Black River SWD #1

April 29, 2021

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
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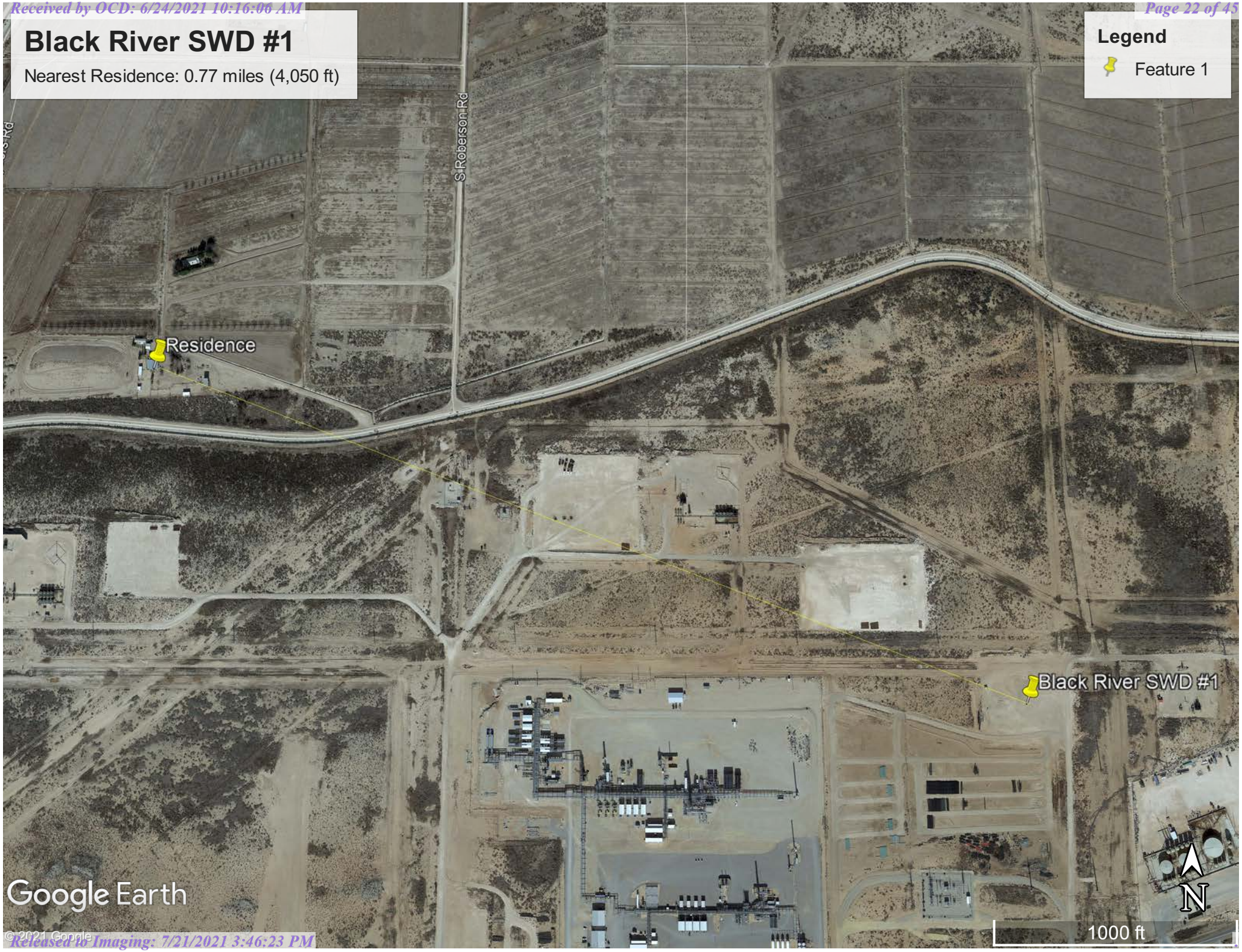
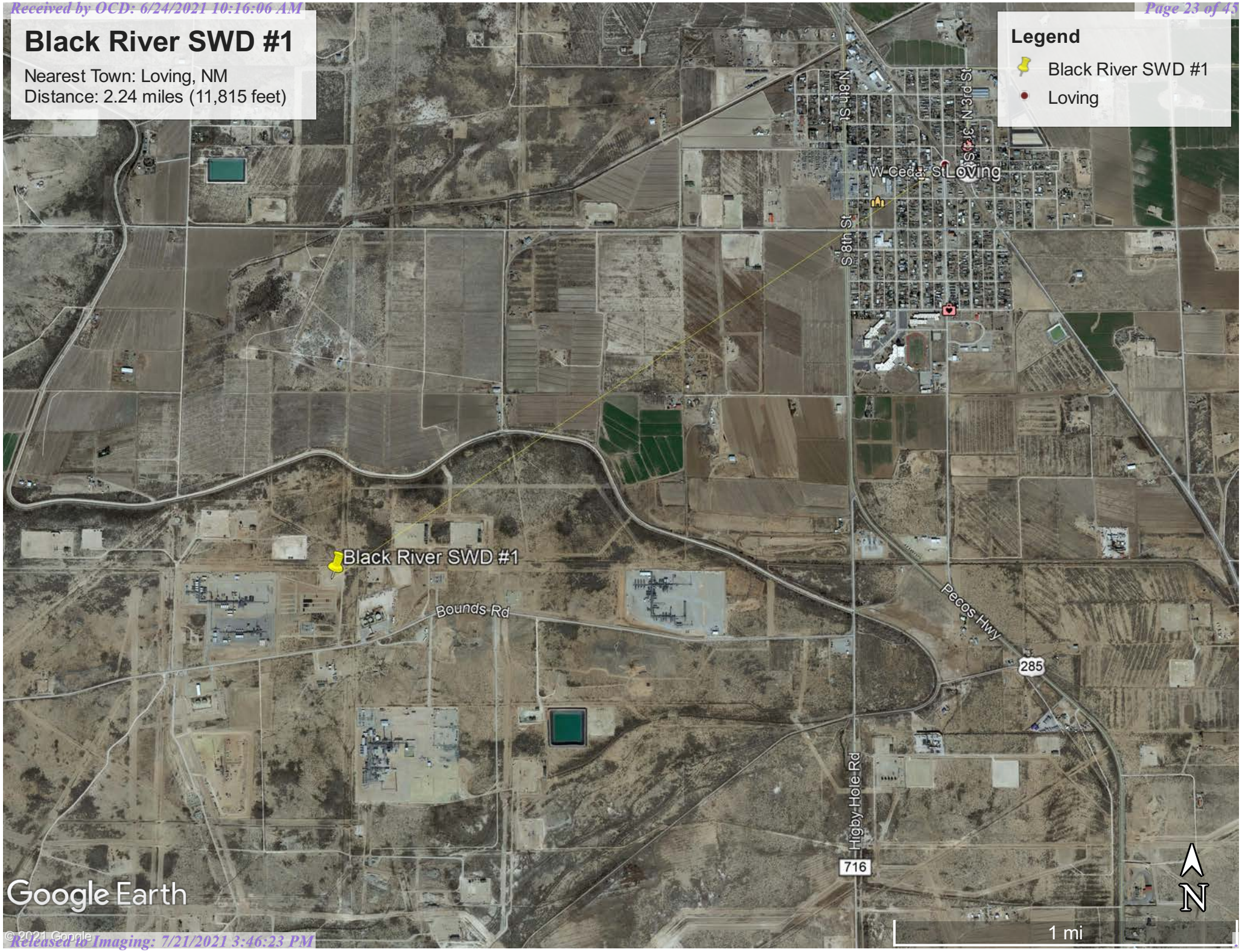
National Wetlands Inventory (NWI)
This page was produced by the NWI mapper


Black River SWD #1
Nearest Residence: 0.77 miles (4,050 ft)
Legend
Feature 1
S Roberson Rd
Residence
Black River SWD #1
Google Earth
© 2021 Google
N
1000 ft

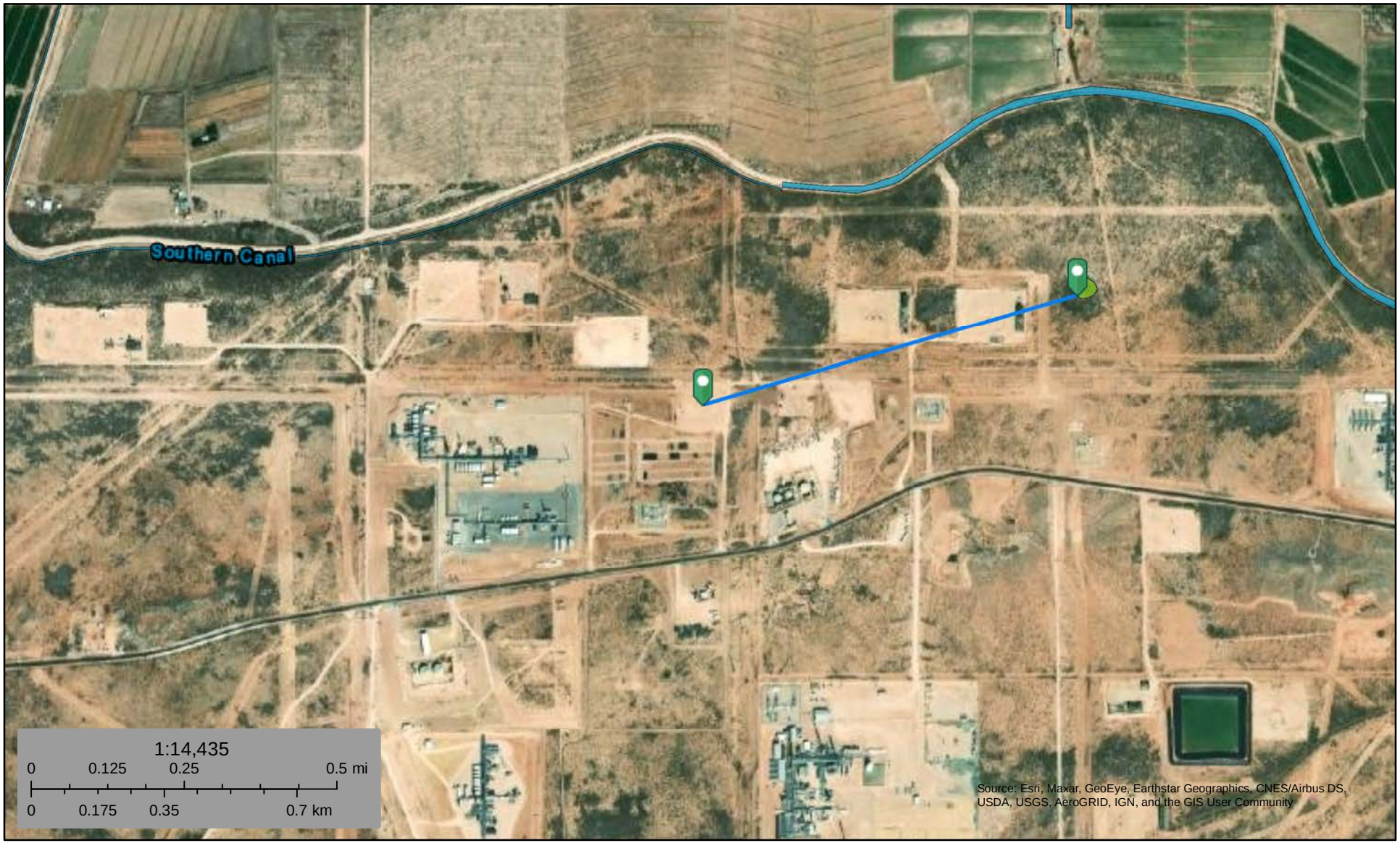
Black River SWD #1

Nearest Town: Loving, NM
Distance: 2.24 miles (11,815 feet)



U.S. Fish and Wildlife Service
National Wetlands Inventory

Black River SWD #1



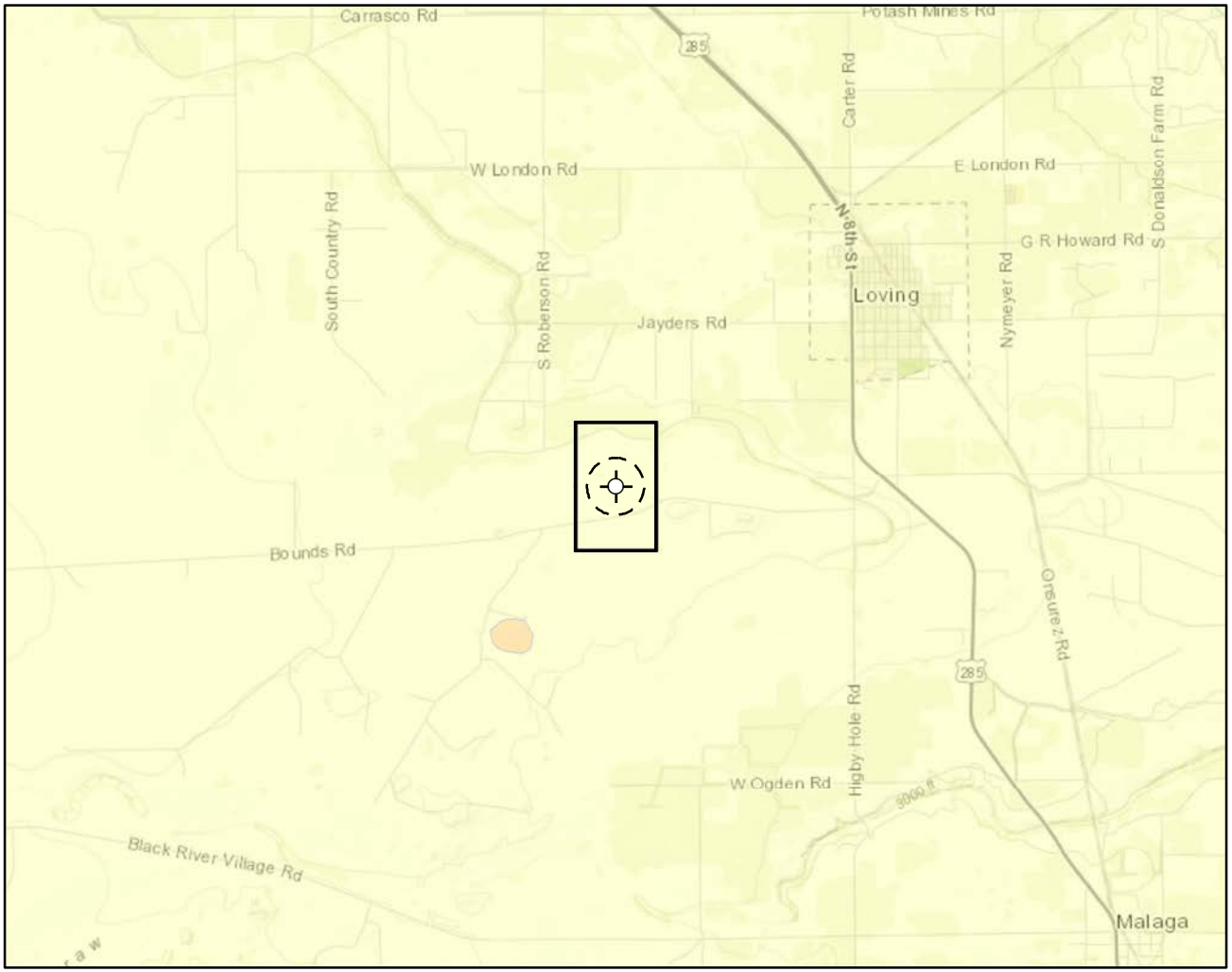
April 29, 2021

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



Karst Potential

- Critical
- High
- Medium
- Low

Site Location

Site Buffer (1,000 ft.)

Overview Map

0 0.25 0.5 1 mi

Detail Map

0 150 300 600 ft.

VERTEX

Map Center:
Lat/Long: 32.268005, -104.127387

NAD 1983 UTM Zone 13N
Date: May 10/21

N

Karst Potential Map
Black River SWD #1

FIGURE:
X

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

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

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\Matador Resources\21E-000870012 - Black River SWD\Fig. X Karst Potential (Black River) .mxd

National Flood Hazard Layer FIRMette

FEMA

104°7'57"W 32°16'20"N

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

1:6,000

104°7'20"W 32°15'50"N

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

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

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

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

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

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

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 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

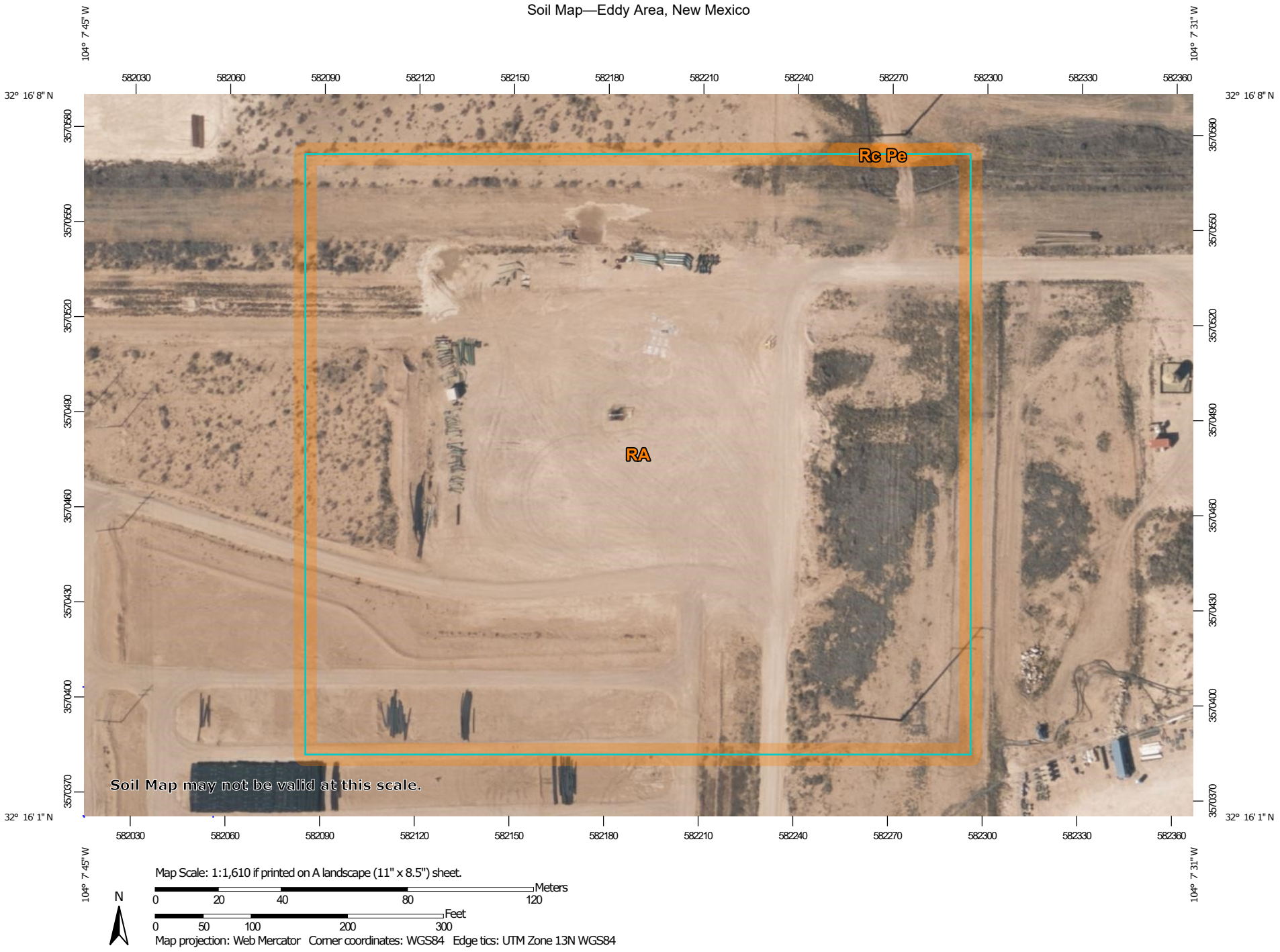
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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 4/29/2021 at 3:55 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

Soil Map—Eddy Area, New Mexico



MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 16, Jun 8, 2020

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

Date(s) aerial images were photographed: Feb 27, 2020—Feb 28, 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
Pe	Pima silt loam, 0 to 1 percent slopes	0.0	0.0%
RA	Reagan loam, 0 to 3 percent slopes	9.9	100.0%
Rc	Reagan loam, 0 to 1 percent slopes	0.0	0.0%
Totals for Area of Interest		**9.9**	**100.0%**

Eddy Area, New Mexico

RA—Reagan loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1w5c
Elevation: 1,100 to 4,400 feet
Mean annual precipitation: 7 to 14 inches
Mean annual air temperature: 60 to 70 degrees F
Frost-free period: 200 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Reagan and similar soils: 98 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Reagan

Setting

Landform: Alluvial fans, fan remnants
Landform position (three-dimensional): Rise
Down-slope shape: Linear, convex
Across-slope shape: Linear
Parent material: Alluvium and/or eolian deposits

Typical profile

H1 - 0 to 8 inches: loam
H2 - 8 to 60 inches: loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water capacity: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Ecological site: R042XC007NM - Loamy

Hydric soil rating: No

Minor Components

Upton

Percent of map unit: 1 percent
Ecological site: R042XC025NM - Shallow
Hydric soil rating: No

Atoka

Percent of map unit: 1 percent
Ecological site: R042XC007NM - Loamy
Hydric soil rating: No

Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 16, Jun 8, 2020

Ecological Reference Worksheet

Author(s) / participant(s): John Tunberg,

Contact for lead author : 505-761-4488 **Reference site used? Yes/No** No

Date: 2/12/2010 **MLRA:** 42.3 **Ecological Site:** Loamy This *must* be verified based on soils and climate (see Ecological Site Description). Current plant community *cannot* be used to identify the ecological site.

Indicators: For each indicator, describe the potential for the site. Where possible, **(1)** use numbers, **(2)** include expected range of values for above and below average years for **each** community within the reference state, when appropriate & **(3)** site data. Continue description on separate sheet.

1. Number and extent of rills There should not be any rills.

After wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances rills may double in number on steeper slopes at the margins of this site after high-intensity summer thunderstorms. Any rills formed should not be long lived or interconnected and should heal rapidly.

2. Presence of water flow patterns: There can be evidence of sheet flow.

There can be a few flow patterns that should be short and discontinuous. There can be some sheet flow. Water flow patterns should only be present following intense storm events on upper slope limits at the margins of this site. Numerous obstructions alter flow paths. Flow pattern length and numbers may double after wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances.

3. Number and height of erosional pedestals or terracettes: Pedestals should be rare. Terracettes can occure and should be discontinuous

There can be a few pedestals that should be less than 1 inch high. Terracettes can be common and should be discontinuous. If present plant or rock pedestals and terracettes are almost always in flow patterns. Wind caused pedestals are rare and only would be on the site following after wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances. These would show signs of healing within 1 year after event.

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

Bare ground can make up to 50% of the ground cover on this site according to the ESD. Bare patch size should be small.

5. Number of gullies and erosion associated with gullies:

Gullies and erosion associated with gullies should be rare are infrequent. Typically, gullies if present will only follow the micro topography. Natural drainages with little to no active cutting are common on this site. There should not be any accelerated erosion. After high-intensity summer thunderstorms or after wildfire, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances then gully formation would be accelerated for a year or two. Evidence of healing within 1 year of event and continuing after that.

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

There should not be any wind scoured, blowouts and/or depositional areas. However there can be potential for depositional areas. Wind erosion is minimal when the site is in a well vegetated condition. Significant wind erosion would only be present following high-intensity summer thunderstorms, after wildfire, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances. After rain events, exposed soil surfaces form physical crusts that tend to reduce wind erosion. Deposition from off site sources can be common on this site and is in fact a primary soil forming process. This site is succeptable to wind erosion when vegetation is removed or significantly decreased.

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

Litter should be small (less than “1 in diameter) and its movement should be minimal. This site has adequate vegetation to stop litter movement after short distances. Most of the litter movement on this site will be litter that has been transported onto the site from adjacent sites. Litter produced on this site stays on the site and only travels short distances.

8. Soil surface (top few mm) resistance to erosion (stability) values are averages - most sites will show a range of values for both plant canopy and interspaces, if different) :

This site can be susceptible to alluvial erosion. Stability values are estimated to be 1-2 in interspaces and 3-5 at bases of vegetation. This would l

9. Soil surface structures and SOM content (include type and strength of structure, and A-horizon color and thickness for both plant canopy and interspaces, if different) :

The SOM content should be less than 1%. A--0 to 6 inches; grayish brown (10YR 5/2) loam, dark grayish brown (10YR 4/2) moist; weak fine subangular blocky structure; hard, friable, slightly sticky; surface 1/2 to 2 inches has weak thin to medium platy structure; common very fine and fine pores; common very fine, fine and medium roots; strongly calcareous; slightly alkaline (pH 7.6); clear smooth boundary. (4 to 8 inches thick)

10. Effect of plant community composition (relative proportion of different functional groups) & spatial distribution on infiltration & runoff:

Overall, infiltration rates should be slow for this site but can be higher around bases of grasses than in interspaces and around bases of shrubs. The soils of this site are deep to moderately deep. The moderately deep soils have either a petrocalcic, petrogypsic or gypsum horizon between 30 and 40 inches. Surface textures are loam, silt loam, very fine sandy loam, or clay loam. Substratum textures are loam, silty clay loam, clay loam, or silt loams. Subsoil textures are silt loam , clay loam silty clay loam, gravelly loam, gravelly clay loam or very gravelly loam. Permeability is moderate to slow and the available water holding capacity is high to moderate.

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

There should not be any compaction layers on this site. There are soil profile features in the top 9 inches of the soil profile that would be mistaken for a management induced soil compaction layer. Management induced compaction layers will be more difficult to penetrate than clay lenses.

12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: indicate much greater than (>>) , greater than (>) , and equal to (=) :

black grama >> tobosa > C 4 bunch grasses (dropseeds) > C4 midgrasses (threeawns) >= soaptree yucca, ephedra, fourwing saltbush >= forbs (croton, desert marigold, globemallow, > broom snakeweed, prickly pear, = other forbs.

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

Black grama and bunchgrasses can show decadence in centers of plants.

14. Average percent litter cover (_____ %) and depth (_____ inches).

Average 15% cover and 0.75 inch deep. (As per ESD)

15. Expected annual production (this is <u>TOTAL</u> above-ground production, not just forage production):

(Low Production 650 lbs./ac.) (Average RV Production 925 lbs./ac.) (High Production 1200 lbs./ac.) After wildfires, high herbivore impacts, extended drought, or combinations of these disturbances, can cause production to be significantly reduced (100-200 lbs per ac. the first growing season following a wildfire) and recover slowly under below average precipitation regimes.

16. Potential invasive (including noxious) species (native and non-native). List species which characterize degraded states and which, after a threshold is crossed, "can, and often do , continue to increase regardless of the management of the site and may eventually dominate

Tarbush, creosote and mesquite can be invaders to this site. Invasive plants should not occur in reference plant community. However, lovegrass, Russian thistle, kochia, and other nonnative annuals may initialy invade following extended disturbance. Mesquite and tarbush and creosote and lovegrass are the greatest threat to dominate this site in the long term after disturbance (primarily following wildfire exclusion but also includes high human or herbivore impacts and extended drought). Mesquite and tarbush and creosote and lovegrass are most likely to retain dominance if allowed to alter natural fire regime (this alteration may require poor land management combined with years of wet winter-spring; dry summer-fall conditions). Any of these invaded communities represent a departure from the reference state.

17. Perennial plant reproductive capability :

Black grama reproduces by seed sporadically and reproduction by tiller and stolon can be common. The C4 midgrasses should have high reproductive potential and rapidly recover from drought in the absence of additional stresses (grazing).

Photograph (s)

MLRA : **Date :**

Ecological Site :

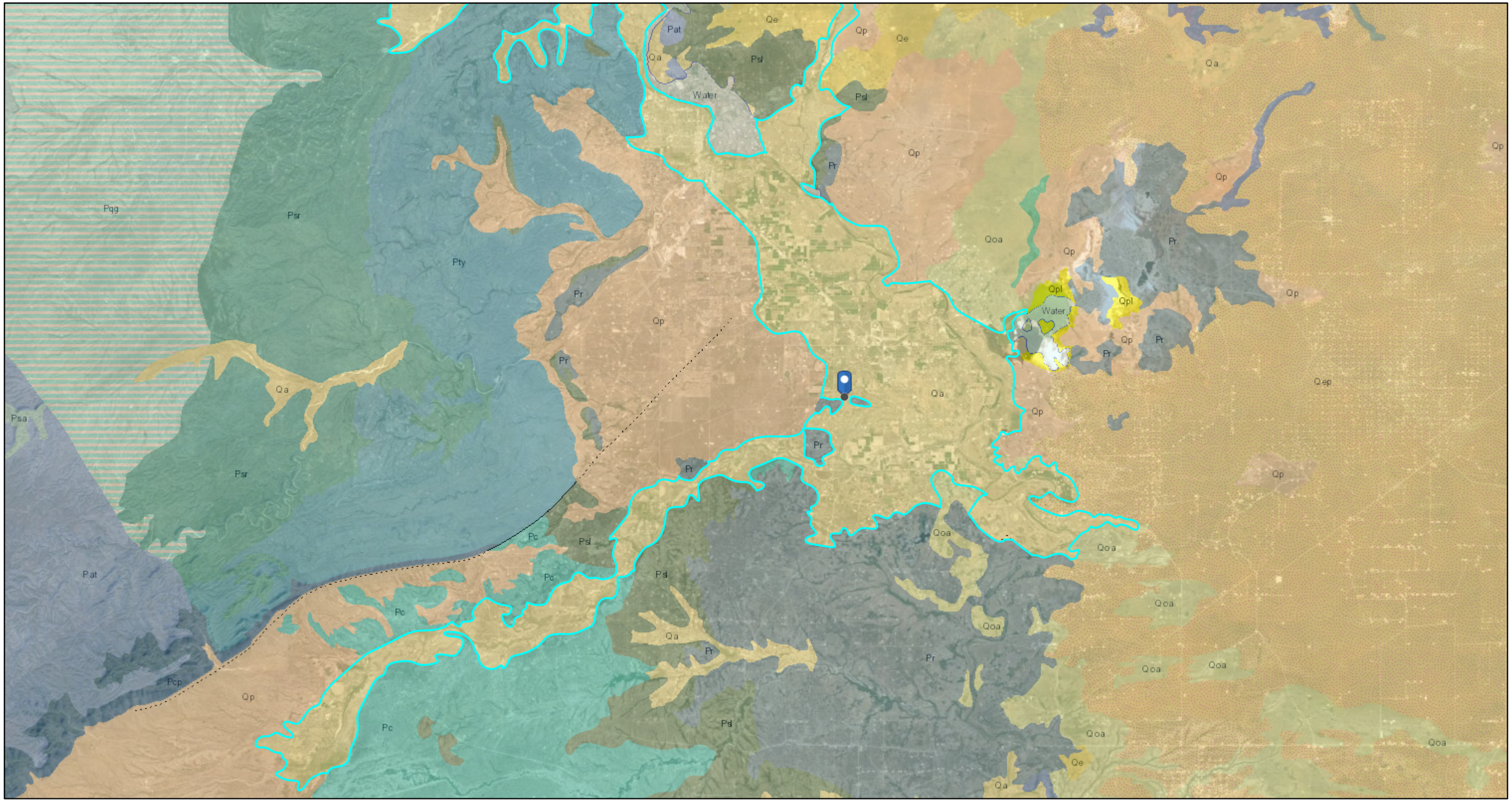
Photo # 1

Comments :

Photo # 2

Comments :

Black River SWD #1



4/29/2021, 11:50:15 AM

1:288,895

Faults

- Fault, Exposed
- Fault, Intermittent
- Fault, Concealed
- Shere Zone

0 3 6 12 mi

0 5 10 20 km

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, NMBGMR

ArcGIS Web AppBuilder

Bureau of Land Management, National Operations Center (NOC) | New Mexico Bureau of Geology & Mineral Resources, Bureau of Land Management | New Mexico Bureau of Geology and Mineral Resources | New Mexico Bureau of Geology & Mineral Resources | NMBGMR | Compiled by the Bureau of Land

ATTACHMENT 3

Daily Site Visit Report

Client:	Matador Resources	Inspection Date:	4/28/2021
Site Location Name:	Black River SWD #1	Report Run Date:	4/28/2021 5:20 PM
Client Contact Name:	John Hurt	API #:	
Client Contact Phone #:			
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	4/28/2021 7:50 AM
Departed Site	4/28/2021 11:50 AM

Field Notes

10:30 Arrived on site to assess liner inspection for Black River SWD.

10:31 Arsenio with Matador met me on site. Walked around and helped me identify anything that would fail inspection.

10:43 Multiple minor fractures along the containment wall that will probably need repair.

11:01 All fractures are minor and photographed. Will need sealing most likely.

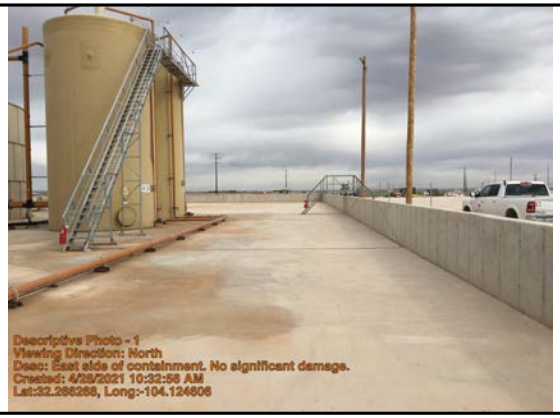
Next Steps & Recommendations

1

Daily Site Visit Report

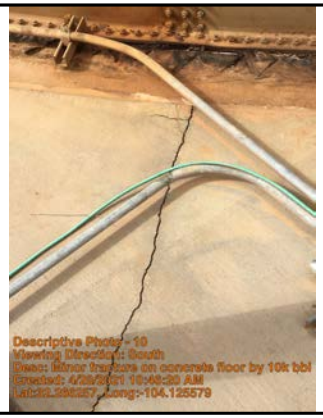
Site Photos

Viewing Direction: North



East side of containment. No significant damage.

Viewing Direction: South



Minor fracture on concrete floor by 10k bbl west tank.

Viewing Direction: West

No significant damage between OT tanks on south side.

Viewing Direction: Northwest

No significant damage between GB tanks on south side.

Daily Site Visit Report

Viewing Direction: West	**Viewing Direction**: South
	
No significant damage between IT tanks on north side.	No significant damage between GB tanks on east side.

Viewing Direction: Southwest	**Viewing Direction**: South
	
Crack on south side of containment wall. Unable to tell how far it goes. May need repair.	Fracture on south side of containment wall.

Daily Site Visit Report

Viewing Direction: South	**Viewing Direction**: South
	
Fracture on south side of containment wall.	Fracture on south side of containment wall.
Viewing Direction: South	**Viewing Direction**: West
	
Fracture on south side of containment wall.	Fracture on west side of containment wall.

Daily Site Visit Report

Viewing Direction: West	**Viewing Direction**: North
	
Fracture on west side of containment wall.	Fracture on north side of containment wall.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Chance Dixon

Signature: 

Signature

ATTACHMENT 4

Monica Peppin

From: Dhugal Hanton <vertexresourcegroupusa@gmail.com>
Sent: Monday, April 26, 2021 2:57 PM
To: Monica Peppin; John Hurt
Subject: Fwd: nAPP2111148844 48 HR notification Black River SWD Liner Inspection

---------- Forwarded message ---------
From: **Dhugal Hanton** <vertexresourcegroupusa@gmail.com>
Date: Mon, Apr 26, 2021 at 2:56 PM
Subject: nAPP2111148844 48 HR notification Black River SWD Liner Inspection
To: Enviro, OCD, EMNRD <OCD.Enviro@state.nm.us>
Cc: Arsenio Jones <arsenio.jones@matadorresources.com>, <csnow@matadorresources.com>

All,

Please accept this email as 48-hr notification that Vertex Resource Services has scheduled a liner inspection to be conducted at for the following release:

nAPP2111148844 DOR: 4/10/2021

This work will be completed on behalf of Matador Production Company.

On Wednesday, April 28, 2021 at approximately 9:00 a.m., Chance Dixon will be onsite to conduct a liner inspection. He can be reached at 575-988-1472. If you need directions to the site, please do not hesitate to contact him. If you have any questions or concerns regarding this notification, please give me a call at 575-361-9880.

Thank you,

Monica Peppin
Project Manager

Vertex Resource Group Ltd.
3101 Boyd Drive,
Carlsbad, NM 88220

P 575.725.5001 Ext. 711
C 575.361.9880
F

www.vertex.ca

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Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 28499

CONDITIONS

Operator: MATADOR PRODUCTION COMPANY One Lincoln Centre Dallas, TX 75240	OGRID: 228937
	Action Number: 28499
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your closure report and final C-141 for Incident #NAPP2111148844 BLACK RIVER SWD #1, thank you. This closure is approved.	7/21/2021