Form C-141
Page 3

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | NHMP1420427160 |
| District RP | 2RP-2386 |
| 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? | 430 (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.***

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

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

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State of New Mexico
Oil Conservation Division

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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: Dale Woodall Title: EHS Professional

Signature: Dale Woodall date: 3/15/2023

email: dale.woodall@dvn.com Telephone: 575-748-0186

**OCD Only**

Received by: Jocelyn Harimon Date: 03/15/2023

State of New Mexico
Oil Conservation Division

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# 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.***

[X] 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)

[X] 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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Signature: Dale Woodall Date: 3/15/2023

email: dale.woodall@dvn.com Telephone: 575-748-0186

**OCD Only**

Received by: Jocelyn Harimon Date: 03/15/2023

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

Closure Approved by: Ashley Maxwell Date: 3/16/2023

Printed Name: Ashley Maxwell Title: Environmental Specialist

July 9, 2020 Vertex Project #: 20E-00141-037

**Spill Closure Report:** Todd 26G Federal 1
Unit G, Section 26, Township 23 South, Range 31 East
County: Eddy
API: 30-015-20242
Tracking Number: NHMP1420427160

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

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

Devon Energy Production Company (Devon) retained Vertex Resource Services Inc. (Vertex) to conduct a spill assessment and remediation for a produced water release that occurred at Todd 26G Federal 1, API 30-015-20242 (hereafter referred to as "Todd 26"). Devon provided immediate notification of the spill to New Mexico Oil Conservation Division (NM OCD) District 2 and the Bureau of Land Management (BLM), who own the property, on July 18, 2014. The initial C-141 Release Notification was submitted on July 22, 2014 (Attachment 1). The tracking number assigned to this incident is NHMP1420427160.

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

## Incident Description

On July 18, 2014, a release occurred at Todd 26 when the well went online before the transfer pump and water tank were checked. This incident resulted in the overflow of the water tank and the release of approximately 15 barrels (bbls) of produced water into the unlined, earthen-bermed containment. Following the release, a hydrovac truck was dispatched to site to recover free liquids. Approximately 5 bbls of produced water were recovered from the containment and removed for disposal off-site. All fluids were contained on-pad and no produced water was released into undisturbed areas or waterways.

## Site Characterization

The release at Todd 26 occurred on federally-owned land, N 32.277193, W 103.746485, approximately 20 miles east of Loving, New Mexico. The legal description for the site is Unit G, Section 26, Township 23 South, Range 31 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. An aerial photograph and site schematic are included in

Attachment 2.

Todd 26 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 in which the Todd 26 wellpad is located.

The surrounding landscape is associated with plains and alluvial fans typical of elevations of 3,000 to 4,200 feet above sea level. The climate is semi-arid, with average annual precipitation ranging between 10 and 14 inches. Litter and, to a lesser extent, bare ground are a significant proportion of ground cover, while grasses compose the remainder. The dominant grass species are black grama, dropseeds and bluestems, with perennial and annual forb abundance relative to precipitation (United States Department of Agriculture, Natural Resources Conservation Service, 2020). Limited to no vegetation is allowed to grow on the compacted wellpad.

The *Geological Map of New Mexico* indicates the surface geology at Todd 26 is comprised of Qep – Eolian and piedmont deposits, that include eolian sands interlaid with piedmont-slope deposits (New Mexico Bureau of Geology and Mineral Resources, 2020). The Natural Resources Conservation Service Web Soil Survey indicates the soil at the release site is Kermit-Berino fine sands, characterized by deep, fine sands. This type of soil tends to be excessively-drained with negligible runoff and low available moisture levels in the soil profile (United States Department of Agriculture, Natural Resources Conservation Service, 2020). There is low potential for karst geology to be present near Todd 26 (United States Department of the Interior, United States Geological Survey, 2020a).

There is no surface water located at on-site. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is an intermittent stream located approximately 4 miles west-southwest of the release site (United States Fish and Wildlife Service, 2020). The closest continuously flowing watercourse is the Pecos River, located approximately 16 miles west of the site (United States Department of the Interior, United States Geological Survey, 2020b). A freshwater stock pond is located approximately 1.1 miles east of the release site (United States Fish and Wildlife Service, 2020). At Todd 26, there are no continuously flowing watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features nearby as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

The nearest active groundwater well to Todd 26 is a New Mexico Office of the State Engineer (NM OSE)-identified well from 2013, located approximately 0.5 miles south-southwest of the site, with a depth to groundwater of 430 feet below ground surface (bgs; New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System, 2020). Documentation pertaining to site characterization and depth to groundwater determination is included in Attachment 3.

## Closure Criteria Determination

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

Based on data included in the closure criteria determination worksheet, the release at Todd 26 is not subject to the requirements of Paragraph (4) of Subsection C of 19.15.29.12 NMAC and the closure criteria for the site are determined to be associated with constituent concentration limits based on depth to groundwater.

| Table 1. Closure Criteria for Soils Impacted by a Release | | |
|---|---|---|
| **Depth to Groundwater** | **Constituent** | **Limit** |
| > 100 feet | Chloride | 20,000 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)

## Remedial Actions

As a significant amount of time has passed since the release at Todd 26, it was believed that the site would not require remediation. On March 24, 2020, Vertex provided 48-hour notification of confirmation sampling to NM OCD and the BLM (Attachment 4) as required by Subparagraph (a) of Paragraph (1) of Subsection D 19.15.29.12 NMAC. On March 27, 2020, Vertex was on-site to conduct an initial spill inspection and site characterization, and collect confirmatory samples, if possible. Initial field screening activities indicated that all constituents of concern within the area of potential impact from this release were below closure criteria as outlined in Table 1 and confirmatory sampling could commence. The Daily Field Report (DFR) associated with the site activities is included in Attachment 5.

A total of eight five-point composite confirmatory samples were collected from the surface within the bermed containment where the release occurred. Each composite sample was representative of no more than 200 square feet, per the alternate sampling method outlined in Subparagraph (c) of Paragraph (1) of Subsection D 19.15.29.12 NMAC, which does not require prior NM OCD approval. The composite samples were placed into laboratory-provided containers, preserved on ice, and submitted to a National Environmental Laboratory Accreditation Program-approved laboratory for chemical analysis.

Laboratory analyses included Method 300.0 for chlorides, Method 8021B for volatile organics, including BTEX, and Environmental Protection Agency (EPA) Method 8015 for TPH, including MRO, DRO and GRO. Confirmatory sampling analytical data are summarized in Table 2 (Attachment 6). Laboratory data reports and chain of custody forms are included in Attachment 7.

A GeoExplorer 7000 Series Trimble global positioning system (GPS) unit, or equivalent, was used to map the approximate center of each of the five-point composite samples. The confirmatory sample locations are presented on Figure 1 (Attachment 2). Relevant equipment and prominent features/reference points were mapped as well.

Of the eight confirmatory samples, one sample (BS20-03) failed to meet NM OCD closure criteria. Excavation was completed in the area of BS20-03 on May 18, 2020, and the confirmatory sample was re-collected. Two wall samples were also collected at that time from the edge of the berm to bring the total number of confirmatory samples to 10. The final laboratory results for this site are presented in Table 2 (Attachment 6).

## Closure Request

Vertex recommends no additional remediation action to address the release at Todd 26. Laboratory analyses of the confirmatory samples showed constituent of concern concentration levels below NM OCD closure criteria for areas where depth to groundwater is greater than 100 feet bgs, as shown in Table 1. There are no anticipated risks to human, ecological or hydrological receptors associated with the release site.

The small area of excavation was backfilled with non-waste-containing, uncontaminated, earthen material, sourced locally, and placed to meet the site's existing grade to prevent ponding of water and erosion.

Vertex requests that this incident (NHMP1420427160) be closed as all closure requirements set forth in Subsection E of 19.15.29.12 NMAC have been met. Devon certifies that all information in this report and the attachments is correct, and that they have complied with all applicable closure requirements and conditions specified in Division rules and directives to meet NM OCD requirements to obtain closure on the July 18, 2014, release at Todd 26.

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

Sincerely,

Natalie Gordon
PROJECT MANAGER

## Attachments

Attachment 1. NM OCD C-141 Release Notification
Attachment 2. Site Schematic and Confirmatory Sampling Locations
Attachment 3. Closure Criteria for Soils Impacted by a Release Research Determination Documentation
Attachment 4. Required 48-hr Notification of Confirmatory Sampling to Regulatory Agencies
Attachment 5. Daily Field Report(s) with Photographs
Attachment 6. Confirmatory Sampling Laboratory Data Results
Attachment 7. Laboratory Data Reports/Chain of Custody Forms

## References

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

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

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

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

United States Department of the Interior, United States Geological Survey. (2020a). *Caves and Karst in the U.S. National Park Service*. Retrieved from https://www.arcgis.com/home/webmap/viewer.html?webmap=14675403c37948129acb758138f2dd1e

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

United States Fish and Wildlife Service. (2020). *National Wetlands Inventory*. Retrieved from https://www.fws.gov/wetlands/data/Mapper.html.

## Limitations

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

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

# ATTACHMENT 1

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

# Release Notification and Corrective Action

nTMP1420427160

## OPERATOR

☒ Initial Report ☐ Final Report

| | |
|---|---|
| Name of Company **Devon Energy** (6137) | Contact |
| Address **PO Box 250 Artesia, NM 88211** | Telephone No. **575- 748-3371** |
| Facility Name Todd 26G-1 | Facility Type **Oil** |

| | | |
|---|---|---|
| Surface Owner Federal | Mineral Owner Federal | API No. **30-015-20242** |

## LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|---|---|---|---|---|---|---|---|---|
| **G** | **26** | **23S** | **31E** | **1980** | **FNL** | **1980** | **FEL** | **Eddy** |

**Latitude:** 32.277193 **Longitude:** 103.746485

## NATURE OF RELEASE

| | | |
|---|---|---|
| Type of Release<br>Produced water | Volume of Release<br>15 BBL | Volume Recovered<br>5 BBL |
| Source of Release<br>Water Tank overflowed | Date and Hour of Occurrence<br>7.18.14 - 9:30 AM | Date and Hour of Discovery<br>7.18.14 - 10:30 |
| Was Immediate Notice Given?<br>☒ Yes ☐ No ☐ Not Required | If YES, To Whom?<br>Dandy Dade -OCD<br>Jeff Robertson - BLM | |
| By Whom?<br>Kevin Phillips Asst. Foreman | Date and Hour<br>7.18.14 1:45 | |
| Was a Watercourse Reached?<br>☐ Yes ☒ No | If YES, Volume Impacting the Watercourse. | |

If a Watercourse was Impacted, Describe Fully.*

NM OIL CONSERVATION
ARTESIA DISTRICT
JUL 22 2014
RECEIVED

Describe Cause of Problem and Remedial Action Taken.*
July 17, 2014 at the Todd 26G-1 Water tank overflowed into containment.

Describe Area Affected and Cleanup Action Taken.*
July 17, 2014 at the Todd 26G-1The lease operator put this well online and never checked the transfer pump or water tank to make sure it was working properly. Total fluid 15 BBL of produced water and 5 BBL recovered.

Thereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature: Jeanette Barron

Printed Name: **Jeanette Barron**

Title: **Field Admin Support**

E-mail Address: **Jeanette.barron@dvn.com**

Date: 7.18.14 Phone: **575-748-1813**

OIL CONSERVATION DIVISION

Approved by Environmental Specialist:

Approval Date: 7/23/14 Expiration Date: NA

Conditions of Approval:
Remediation per OCD Rule & Guidelines, & like approval by BLM. SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 8/23/14

Attached ☐

2RP-2386

* Attach Additional Sheets If Necessary

| | |
|---|---|
| Incident ID | NHMP1420427160 |
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Printed Name: Dale Woodall Title: EHS Professional

Signature: Dale Woodall date: 3/15/2023

email: dale.woodall@dvn.com Telephone: 575-748-0186

**OCD Only**

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

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Printed Name: Dale Woodall Title: EHS Professional

Signature: Dale Woodall Date: 3/15/2023

email: dale.woodall@dvn.com Telephone: 575-748-0186

**OCD Only**

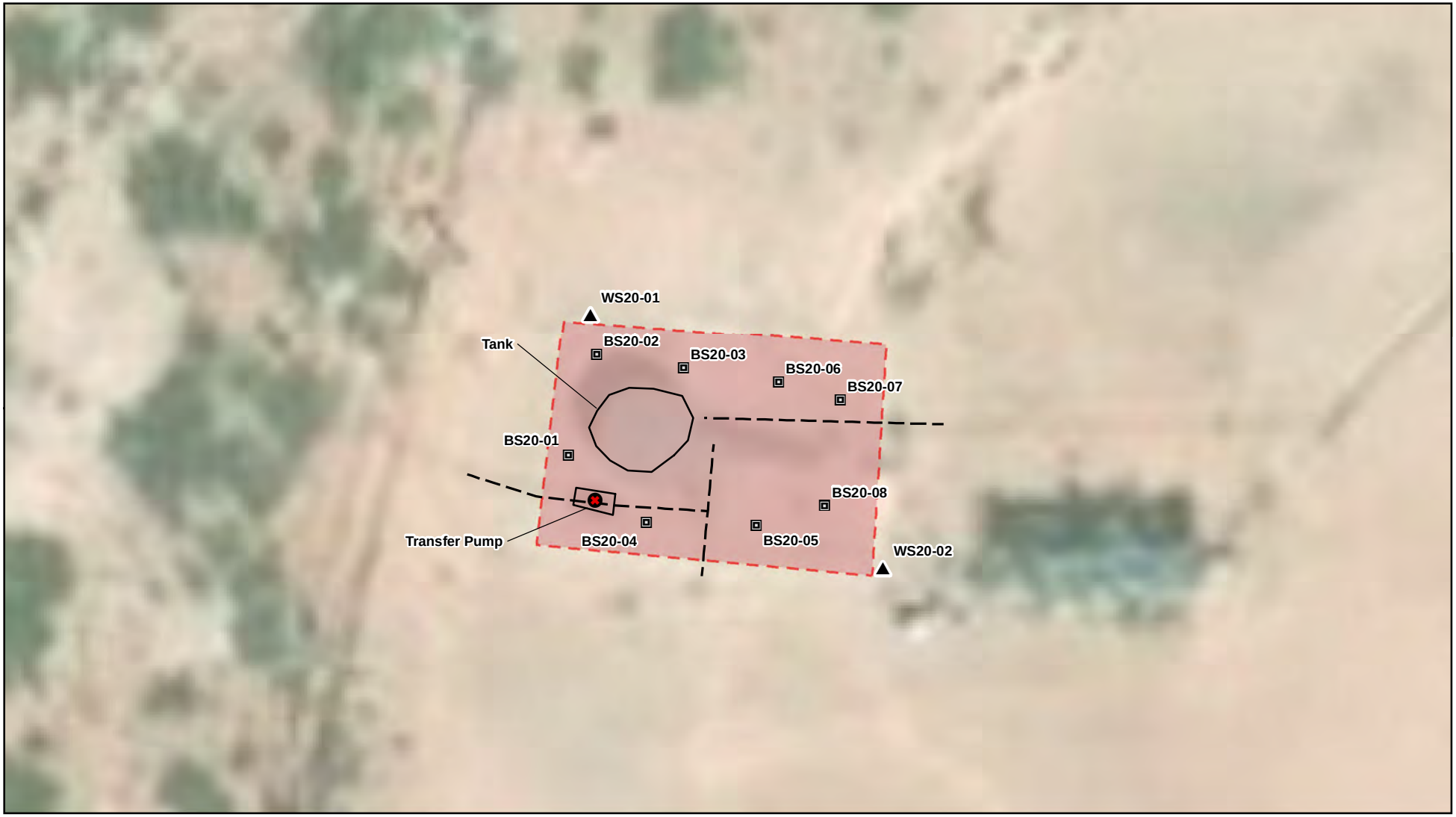
Received by: Date:

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: Date:

Printed Name: Title:

# ATTACHMENT 2




Point of Release
Base Sample
Wall Sample
Pipeline (Aboveground)
Infrastructure (Existing)
Spill inside Berm (~1,592.79 sq. ft.)

VERTEX

0 5 10 20 Feet

Map Center:
Lat/Long: 32.277309, -103.746709

NAD 1983 UTM Zone 13N
Date: May 25/20

N

**Site Schematic and Confirmatory Sampling Locations**
**Todd 26G Fed 1**

FIGURE:
**1**

devon

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

Note: Imagery from ESRI, 2018.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECT S\Devon Energy Corporation\20E-00141\037 - Todd 26G Federal 1\Figure 2 Confirmatory Schematic Todd 26G Fed 1.mxd

# ATTACHMENT 3

| Closure Criteria Determination | | | |
|---|---|---|---|
| Site Name: Todd 26 G Fed 1 | | | |
| Spill Coordinates: | | X: 32.27720 | Y: -103.74650 |
| Site Specific Conditions | | Value | Unit |
| 1 | Depth to Groundwater | **430** | feet |
| 2 | Within 300 feet of any continuously flowing watercourse or any other significant watercourse | 21,029 | feet |
| 3 | Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark) | 5,494 | feet |
| 4 | Within 300 feet from an occupied residence, school, hospital, institution or church | 26,655 | 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** | 2,601 | feet |
| | ii) Within 1000 feet of any fresh water well or spring | | 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 | 17,352 | feet |
| 8 | Within the area overlying a subsurface mine | No | (Y/N) |
| 9 | Within an unstable area (Karst Map) | | Critical<br>High<br>Medium<br>Low |
| 10 | Within a 100-year Floodplain | No | year |
| **NMAC 19.15.29.12 E (Table 1) Closure Criteria** | | >100' | <50'<br>51-100'<br>>100' |

# Todd 26 G Fed 1 - Nearest OSE Well


6/30/2020, 1:06:20 PM

1:18,056

0 0.17 0.35 0.7 mi

0 0.3 0.6 1.2 km

OSE District Boundary

GIS WATERS PODs

- Active
- Pending

Conveyances

- Acequia
- Acequia Tunnel
- Canal
- Channel
- Closed Drain
- Community Ditch
- Connector
- Culvert
- Ditch
- Diversion Weir
- Drain
- Feeder
- Interior Drain
- Lateral
- Pipe
- Wasteway
- Other
- Unknown

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user

# New Mexico Office of the State Engineer
# Water Column/Average Depth to Water

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

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

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

| POD Number | POD Sub-basin | County | Q 64 | Q 16 | Q 4 | Sec | Tws | Rng | X | Y | Distance | Depth Well | Depth Water | Water Column |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C 02258 | C | ED | | 3 | 2 | 26 | 23S | 31E | 618055 | 3571853* | 8 | 662 | | |
| C 02348 | C | ED | 1 | 4 | 3 | 26 | 23S | 31E | 617648 | 3571068 | 878 | 700 | 430 | 270 |
| C 02405 | CUB | ED | | 4 | 1 | 02 | 24S | 31E | 617690 | 3568631* | 3239 | 275 | 160 | 115 |
| C 02464 | C | ED | 3 | 4 | 1 | 02 | 24S | 31E | 617589 | 3568530* | 3352 | 320 | 205 | 115 |
| C 02460 | C | ED | | | 3 | 02 | 24S | 31E | 617496 | 3568022* | 3868 | 320 | | |
| C 02460 POD2 | C | ED | | | 3 | 02 | 24S | 31E | 617496 | 3568022* | 3868 | 320 | | |
| C 02777 | CUB | ED | 4 | 4 | 4 | 10 | 23S | 31E | 616974 | 3575662 | 3959 | 890 | | |
| C 03749 POD1 | CUB | ED | | 2 | 2 | 15 | 23S | 31E | 616974 | 3575662 | 3959 | 865 | 639 | 226 |
| C 03529 POD1 | C | LE | 2 | 4 | 3 | 29 | 23S | 32E | 622651 | 3571212 | 4649 | 550 | | |
| C 03851 POD1 | CUB | LE | 3 | 3 | 4 | 20 | 23S | 32E | 622880 | 3572660 | 4900 | 1392 | 713 | 679 |

Average Depth to Water: **429 feet**

Minimum Depth: **160 feet**

Maximum Depth: **713 feet**

**Record Count:** 10

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

**Easting (X):** 618046.25 **Northing (Y):** 3571851 **Radius:** 5000

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

# New Mexico Office of the State Engineer

# Active & Inactive Points of Diversion

## (with Ownership Information)

(acre ft per annum)

(R=POD has been replaced and no longer serves this file, C=the file is closed)

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

| WR File Nbr | Sub basin | Use | Diversion | Owner | County | POD Number | Well Tag | Code | Grant | Source | q q q 6416 4 | Sec | Tws | Rng | X | Y | Distance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C 02258 | C | PRO | 0 | DEVON ENERGY CORP.(NEVADA) | ED | C 02258 | | | | | 3 2 | 26 | 23S | 31E | 618055 | 3571853* | 8 |
| C 02348 | C | STK | 3 | NGL WATER SOLUTIONS PERMIAN | ED | C 02348 | | | | Shallow | 1 4 3 | 26 | 23S | 31E | 617647 | 3571068 | 879 |
| C 02602 | C | SAN | 0 | POGO PRODUCING COMPANY | ED | C 02602 | | | | | 2 2 | 35 | 23S | 31E | 618471 | 3570650* | 1274 |
| C 00225 A | CUB | IRR | 8.4 | GREGORY ROCKHOUSE RANCH | ED | C 02405 | | | | Shallow | 4 1 | 02 | 24S | 31E | 617690 | 3568631* | 3240 |
| C 01246 AO | CUB | IRR | 47.82 | CATHLEEN MC INTIRE | ED | C 02405 | | | | Shallow | 4 1 | 02 | 24S | 31E | 617690 | 3568631* | 3240 |
| C 02405 | C | PRO | 0 | TEXACO EXPLORATION & PROD. IND | ED | C 02405 | | | | Shallow | 4 1 | 02 | 24S | 31E | 617690 | 3568631* | 3240 |
| C 02452 | C | PRO | 0 | TEXACO EXPLORATION & PROD INC. | ED | C 02405 | | | | Shallow | 4 1 | 02 | 24S | 31E | 617690 | 3568631* | 3240 |
| | | | | | ED | C 02452 | | | | | 4 1 | 02 | 24S | 31E | 617690 | 3568631* | 3240 |
| C 02576 | C | PRO | 0 | SONAT EXPLORATION COMPANY | ED | C 02405 | | | | Shallow | 4 1 | 02 | 24S | 31E | 617690 | 3568631* | 3240 |
| C 02464 | C | PRO | 0 | COMMISSIONER OF PUBLIC LANDS | ED | C 02464 | | | | Shallow | 3 4 1 | 02 | 24S | 31E | 617589 | 3568530* | 3352 |
| C 02901 | C | PUB | 0 | B & H MAINTENANCE & CONST. | ED | C 02901 | | | | | 3 4 1 | 02 | 24S | 31E | 617589 | 3568530* | 3352 |
| C 02460 | C | PRO | 0 | SONAT EXPLORATION | ED | C 02460 | | | | Shallow | 3 | 02 | 24S | 31E | 617496 | 3568022* | 3868 |
| | | | | | ED | C 02460 POD2 | | | | Shallow | 3 | 02 | 24S | 31E | 617496 | 3568022* | 3868 |
| C 02777 | CUB | MON | 0 | US DEPT OF ENERGY WIPP | ED | C 02777 | | | | | 4 4 4 | 10 | 23S | 31E | 616973 | 3575662 | 3958 |
| C 03749 | CUB | MON | 0 | US DEPARTMENT OF ENERGY | ED | C 03749 POD1 | | | | Shallow | 2 2 | 15 | 23S | 31E | 616973 | 3575662 | 3958 |
| C 03529 | C | STK | 0 | ANNETTE MCCLOY | LE | C 03529 POD1 | | | | | 2 4 3 | 29 | 23S | 32E | 622651 | 3571212 | 4649 |
| C 03851 | CUB | MON | 0 | US DEPARTMENT OF ENERGY | LE | C 03851 POD1 | | NON | | Artesian | 3 3 4 | 20 | 23S | 32E | 622879 | 3572660 | 4900 |

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

**Record Count:** 17

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

**Easting (X):** 618046.25 **Northing (Y):** 3571851.53 **Radius:** 5000

**Sorted by:** Distance

# New Mexico Office of the State Engineer
# Wells with Well Log Information

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

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

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(in feet)

| POD Number | POD Sub-basin Code | County | Source | q 6416 | q 4 | q | Sec | Tws | Rng | X | Y | Distance | Start Date | Finish Date | Log File Date | Depth Well | Depth Water | Driller | License Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C 02258 | C | ED | | | 3 | 2 | 26 | 23S | 31E | 618055 | 3571853* | 8 | 09/18/1992 | 09/18/1992 | 09/25/1992 | 662 | | CORKY GLENN | 421 |
| C 02348 | C | ED | Shallow | 1 | 4 | 3 | 26 | 23S | 31E | 617648 | 3571068 | 879 | 10/31/2013 | 11/01/2013 | 11/07/2013 | 700 | 430 | JOHN SIRMAN | 1654 |
| C 02405 | CUB | ED | Shallow | | 4 | 1 | 02 | 24S | 31E | 617690 | 3568631* | 3240 | 09/29/1994 | 09/30/1994 | 12/05/1994 | 275 | 160 | COLLIS, ROBERT E. | 1184 |
| C 02464 | C | ED | Shallow | 3 | 4 | 1 | 02 | 24S | 31E | 617589 | 3568530* | 3352 | 08/24/1995 | 08/24/1995 | 09/07/1995 | 320 | 205 | GLENN, CLARK A."CORKY" (LD) | 421 |
| C 02460 | C | ED | Shallow | | | 3 | 02 | 24S | 31E | 617496 | 3568022* | 3868 | 08/21/1995 | 08/21/1995 | 09/07/1995 | 320 | | GLENN, CLARK A."CORKY" (LD) | 421 |
| C 02460 POD2 | C | ED | Shallow | | | 3 | 02 | 24S | 31E | 617496 | 3568022* | 3868 | 08/25/1995 | 08/25/1995 | 09/07/1995 | 320 | | GLENN, CLARK A."CORKY" (LD) | 421 |
| C 03749 POD1 | CUB | ED | Shallow | | 2 | 2 | 15 | 23S | 31E | 616974 | 3575662 | 3958 | 07/10/2014 | 08/06/2014 | 09/11/2014 | 865 | 639 | RANDY STEWART | 331 |
| C 03851 POD1 | CUB | LE | Artesian | 3 | 3 | 4 | 20 | 23S | 32E | 622880 | 3572660 | 4900 | 08/19/2015 | 10/02/2015 | 11/10/2015 | 1392 | 713 | STEWART, RANDAL P. | 1723 |

**Record Count:** 8

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

**Easting (X):** 618046.25 **Northing (Y):** 3571851.53 **Radius:** 5000

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

National Water Information System: Web Interface

USGS Water Resources

Data Category: Site Information ▼ Geographic Area: United States ▼ GO

Click to hideNews Bulletins

- Introducing The Next Generation of USGS Water Data for the Nation
- Full News

# USGS 321609103445901 23S.31E.26.34411

Available data for this site SUMMARY OF ALL AVAILABLE DATA ▼ GO

## Well Site

DESCRIPTION:

Latitude 32°16'11.9", Longitude 103°45'01.2" NAD83
Eddy County, New Mexico , Hydrologic Unit 13060011
Well depth: 365 feet
Land surface altitude: 3,451.00 feet above NGVD29.
Well completed in "Dewey Lake Redbeds" (312DYLK) local aquifer

AVAILABLE DATA:

| Data Type | Begin Date | End Date | Count |
|---|---|---|---|
| Field groundwater-level measurements | 1959-02-04 | 2013-02-14 | 5 |
| Field/Lab water-quality samples | 1972-09-20 | 1972-09-20 | 1 |
| Revisions | Unavailable (site:0) (timeseries:0) | | |

OPERATION:

Record for this site is maintained by the USGS New Mexico Water Science Center
Email questions about this site to New Mexico Water Science Center Water-Data Inquiries

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Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
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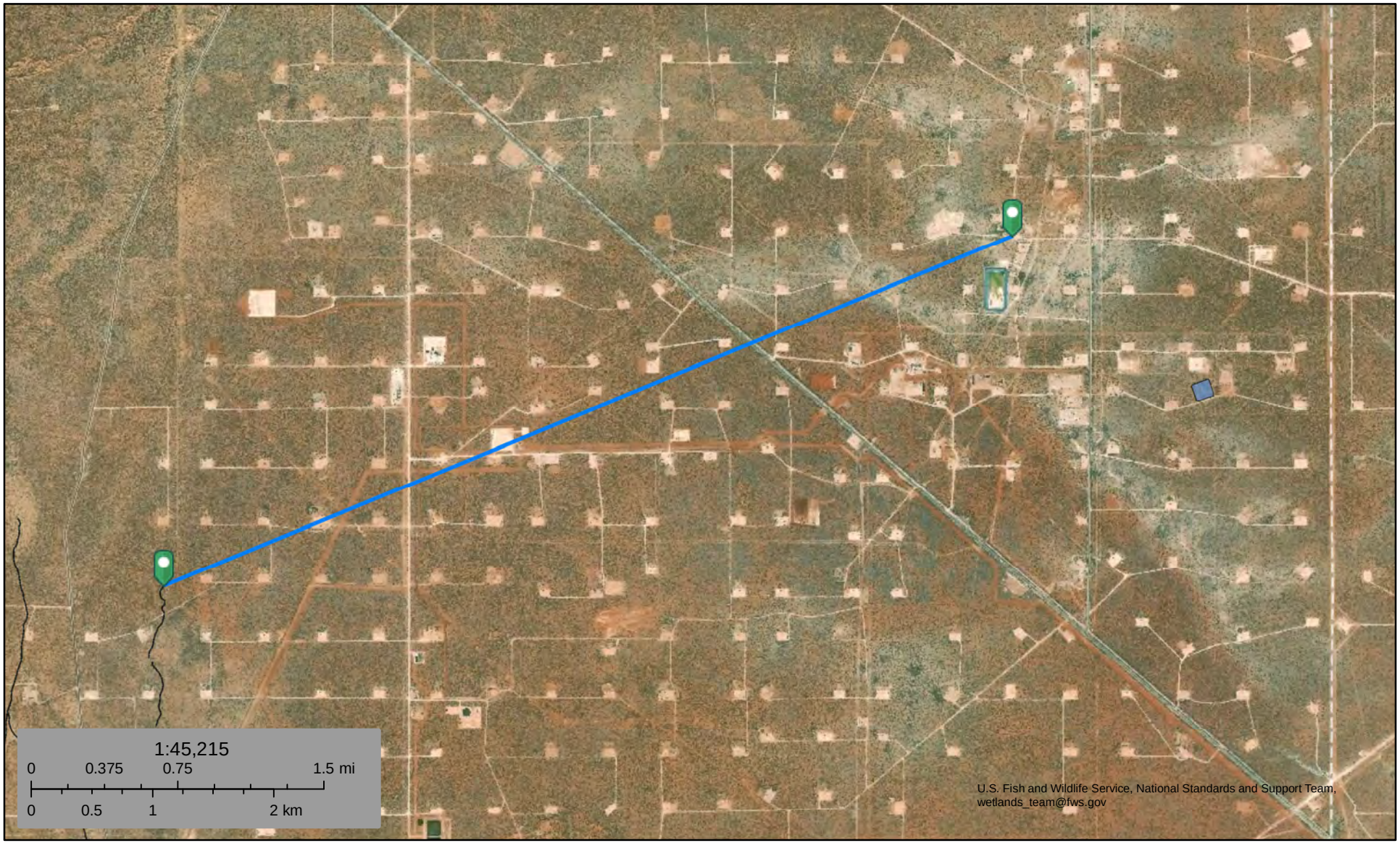
U.S. Department of the Interior | U.S. Geological Survey

**Title: NWIS Site Information for USA: Site Inventory**
**URL: https://waterdata.usgs.gov/nwis/inventory?agency_code=USGS&site_no=321609103445901**

Page Contact Information: New Mexico Water Data Support Team
Page Last Modified: 2020-03-04 08:53:58 EST
0.32 0.31 caww01

U.S. Fish and Wildlife Service
National Wetlands Inventory

# Todd 26 G Fed 1: Watercourse 21,029 ft




March 3, 2020

**Wetlands**

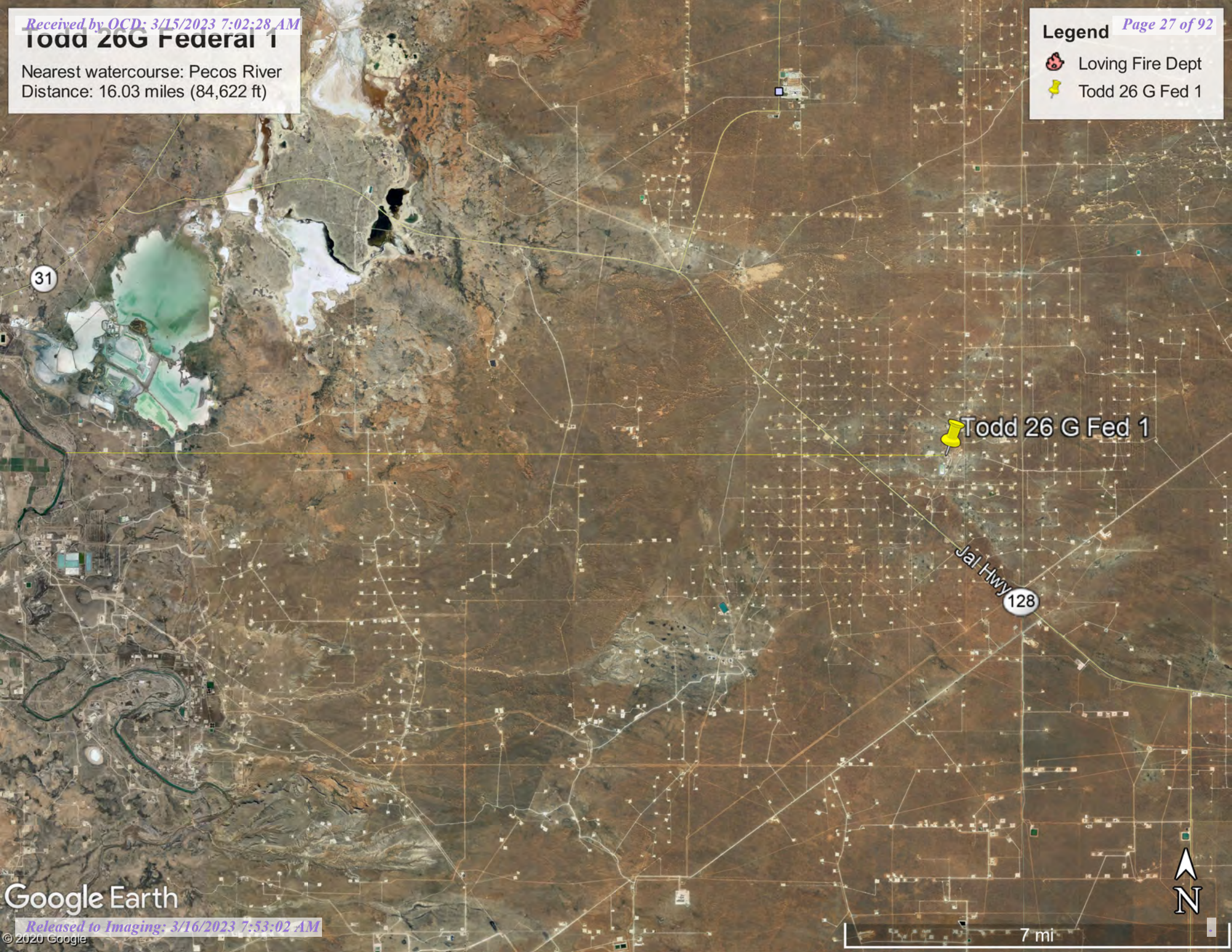
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

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

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

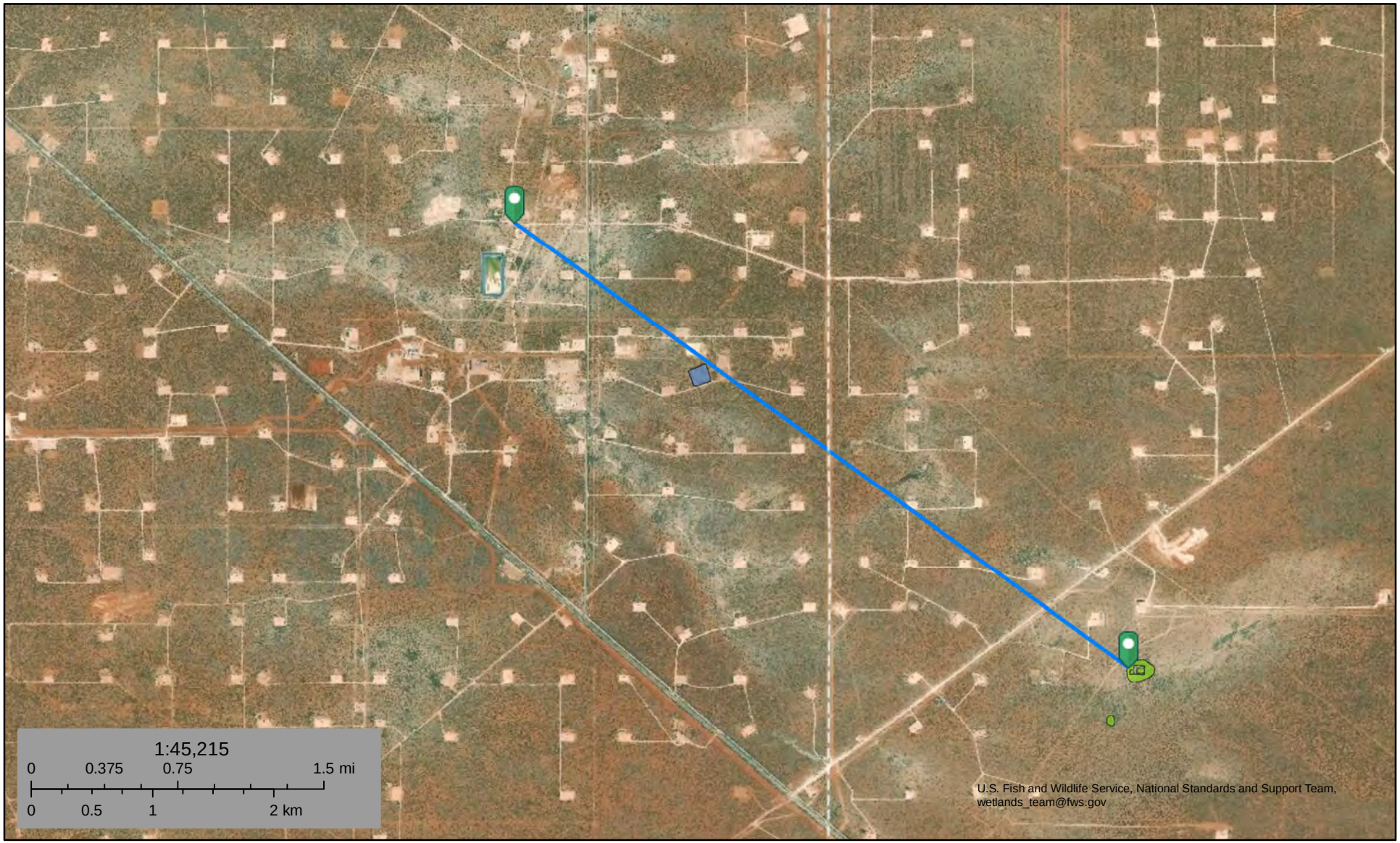
# Todd 26G Federal 1

Nearest watercourse: Pecos River
Distance: 16.03 miles (84,622 ft)



U.S. Fish and Wildlife Service
National Wetlands Inventory

# Todd 26 G Fed 1: Wetland 17,352 ft




March 3, 2020

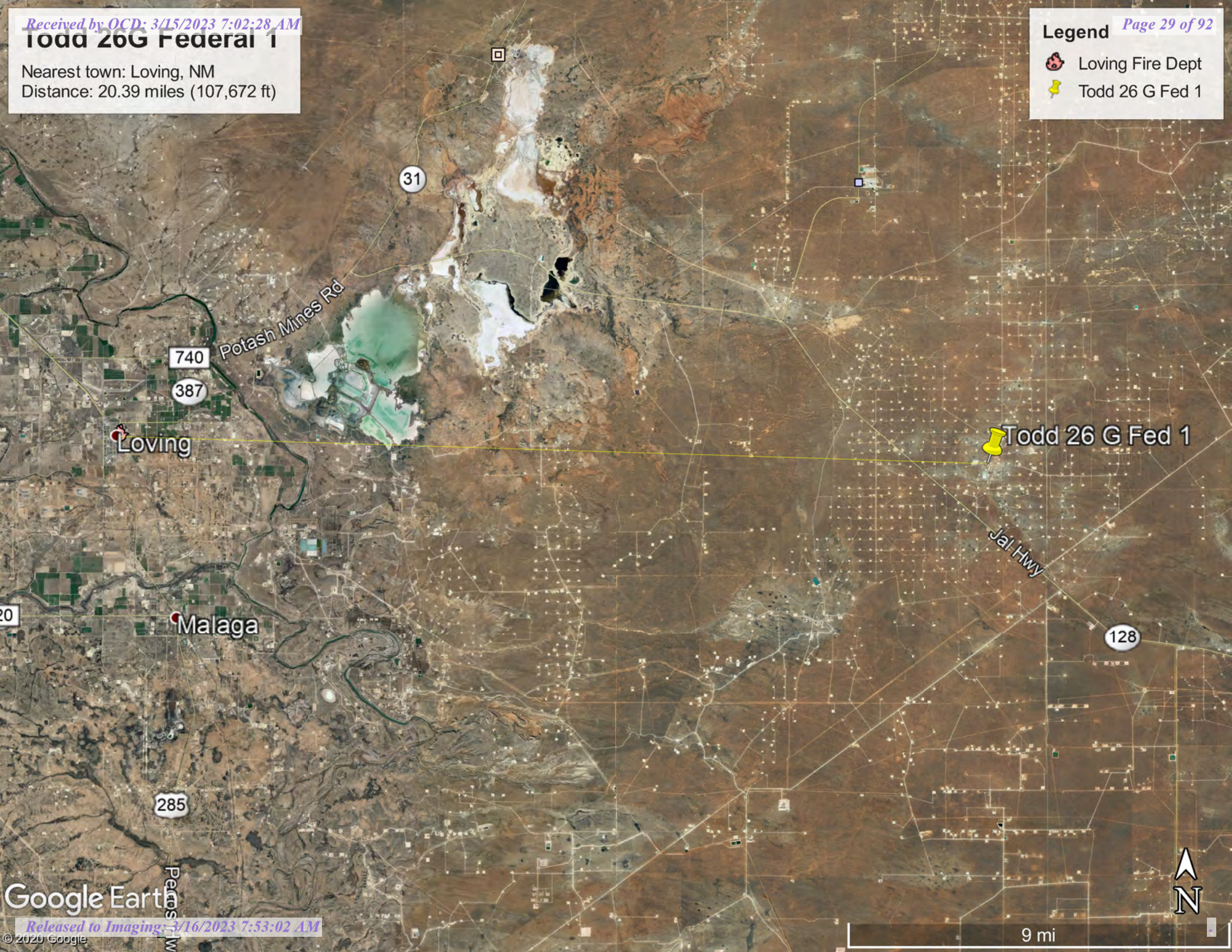
**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

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

# Todd 26G Federal 1

Nearest town: Loving, NM
Distance: 20.39 miles (107,672 ft)



U.S. Fish and Wildlife Service
National Wetlands Inventory

# Todd 26 G Fed 1: Pond 5,494 ft

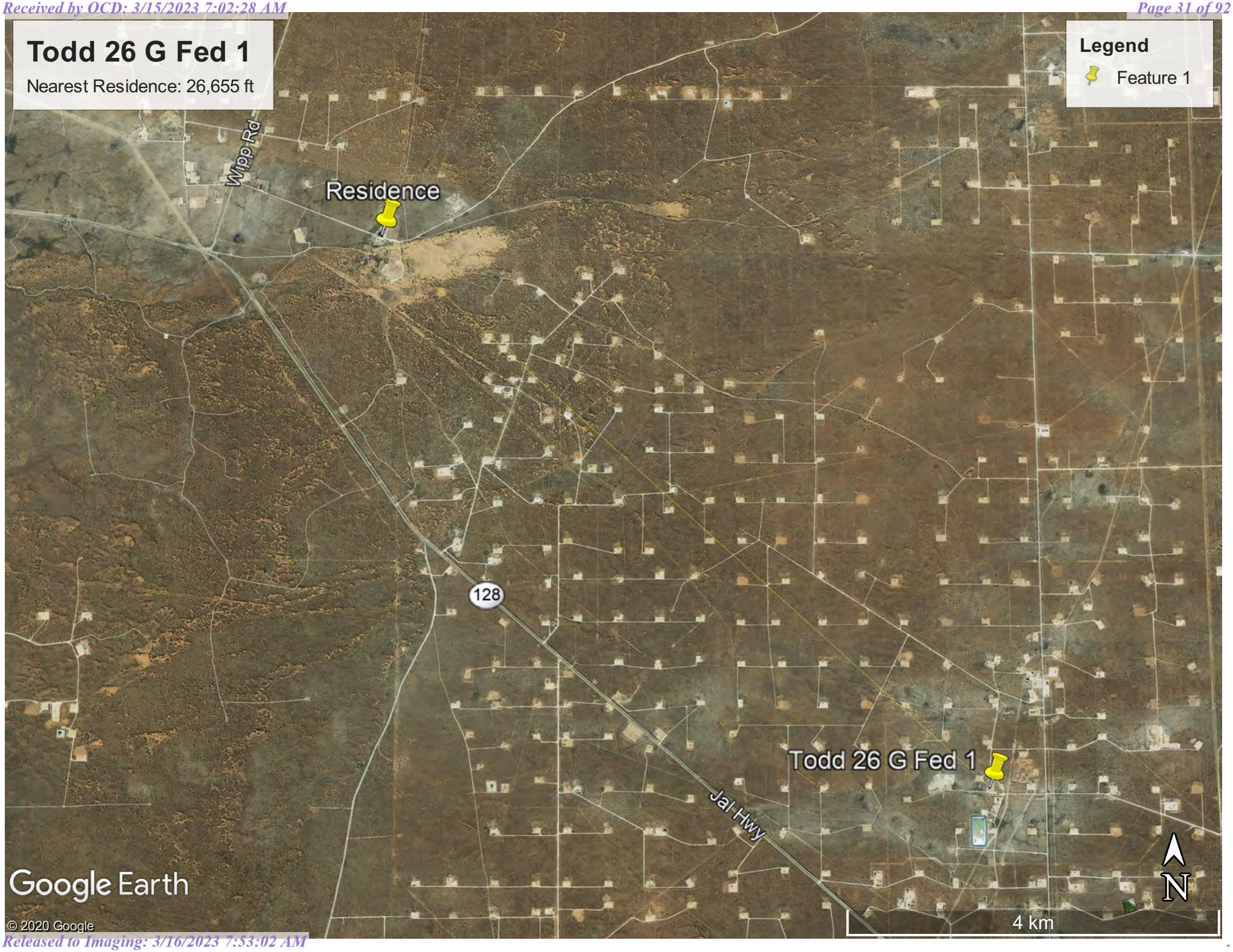

March 3, 2020

**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

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

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

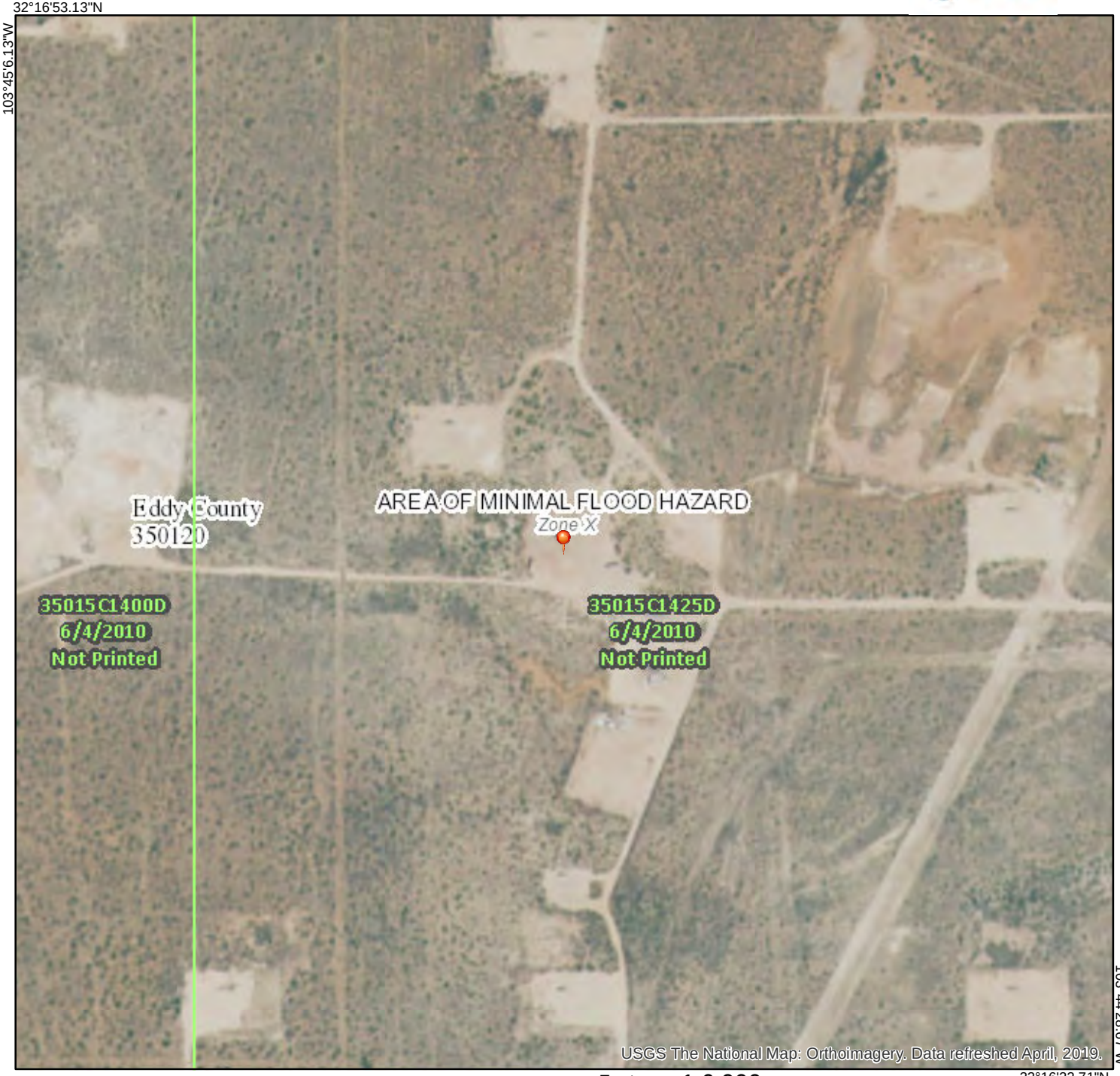

Todd 26 G Fed 1
Nearest Residence: 26,655 ft
Legend
Feature 1
Wipp Rd
Residence
128
Jal Hwy
Todd 26 G Fed 1
N
4 km
Google Earth
© 2020 Google

# National Flood Hazard Layer FIRMette

FEMA

32°16'53.13"N

103°45'6.13"W




103°44'28.67"W

32°16'22.71"N

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

1:6,000

## 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 3/3/2020 at 2:42:12 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
(Todd 26 G Fed 1 )


Map Scale: 1:509 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 5 10 20 30

Feet
0 20 40 80 120

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

Soil Map—Eddy Area, New Mexico
(Todd 26 G Fed 1 )

## 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 15, Sep 15, 2019

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

Date(s) aerial images were photographed: Dec 31, 2009—Sep 17, 2017

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

# Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| SN | Simona and Wink fine sandy loams, 0 to 3 percent slopes, eroded | 1.3 | 100.0% |
| **Totals for Area of Interest** | | **1.3** | **100.0%** |

# Eddy Area, New Mexico

## SN—Simona and Wink fine sandy loams, 0 to 3 percent slopes, eroded

### Map Unit Setting

*National map unit symbol:* 1w5y
*Elevation:* 3,000 to 4,200 feet
*Mean annual precipitation:* 10 to 14 inches
*Mean annual air temperature:* 60 to 64 degrees F
*Frost-free period:* 200 to 220 days
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Simona and similar soils:* 45 percent
*Wink and similar soils:* 40 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Simona

#### Setting

*Landform:* Alluvial fans, plains
*Landform position (three-dimensional):* Rise
*Down-slope shape:* Linear, convex
*Across-slope shape:* Linear
*Parent material:* Mixed alluvium and/or eolian sands

#### Typical profile

*H1 - 0 to 19 inches:* fine sandy loam
*H2 - 19 to 23 inches:* indurated

#### Properties and qualities

*Slope:* 0 to 3 percent
*Depth to restrictive feature:* 7 to 20 inches to petrocalcic
*Natural 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 in profile:* 15 percent
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Sodium adsorption ratio, maximum in profile:* 1.0
*Available water storage in profile:* Very low (about 2.5 inches)

#### Interpretive groups

*Land capability classification (irrigated):* 4s
*Land capability classification (nonirrigated):* 7e

*Hydrologic Soil Group:* D
*Ecological site:* Shallow Sandy (R042XC002NM)
*Hydric soil rating:* No

**Description of Wink**

**Setting**

*Landform:* Depressions, swales
*Landform position (three-dimensional):* Talf
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Parent material:* Mixed alluvium and/or eolian sands

**Typical profile**

*H1 - 0 to 8 inches:* fine sandy loam
*H2 - 8 to 38 inches:* fine sandy loam
*H3 - 38 to 60 inches:* stratified gravelly variable

**Properties and qualities**

*Slope:* 0 to 3 percent
*Depth to restrictive feature:* More than 80 inches
*Natural drainage class:* Well drained
*Runoff class:* Very low
*Capacity of the most limiting layer to transmit water (Ksat):* High (2.00 to 6.00 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Calcium carbonate, maximum in profile:* 30 percent
*Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Sodium adsorption ratio, maximum in profile:* 1.0
*Available water storage in profile:* Low (about 6.0 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 7e
*Hydrologic Soil Group:* A
*Ecological site:* Sandy (R042XC004NM)
*Hydric soil rating:* No

**Minor Components**

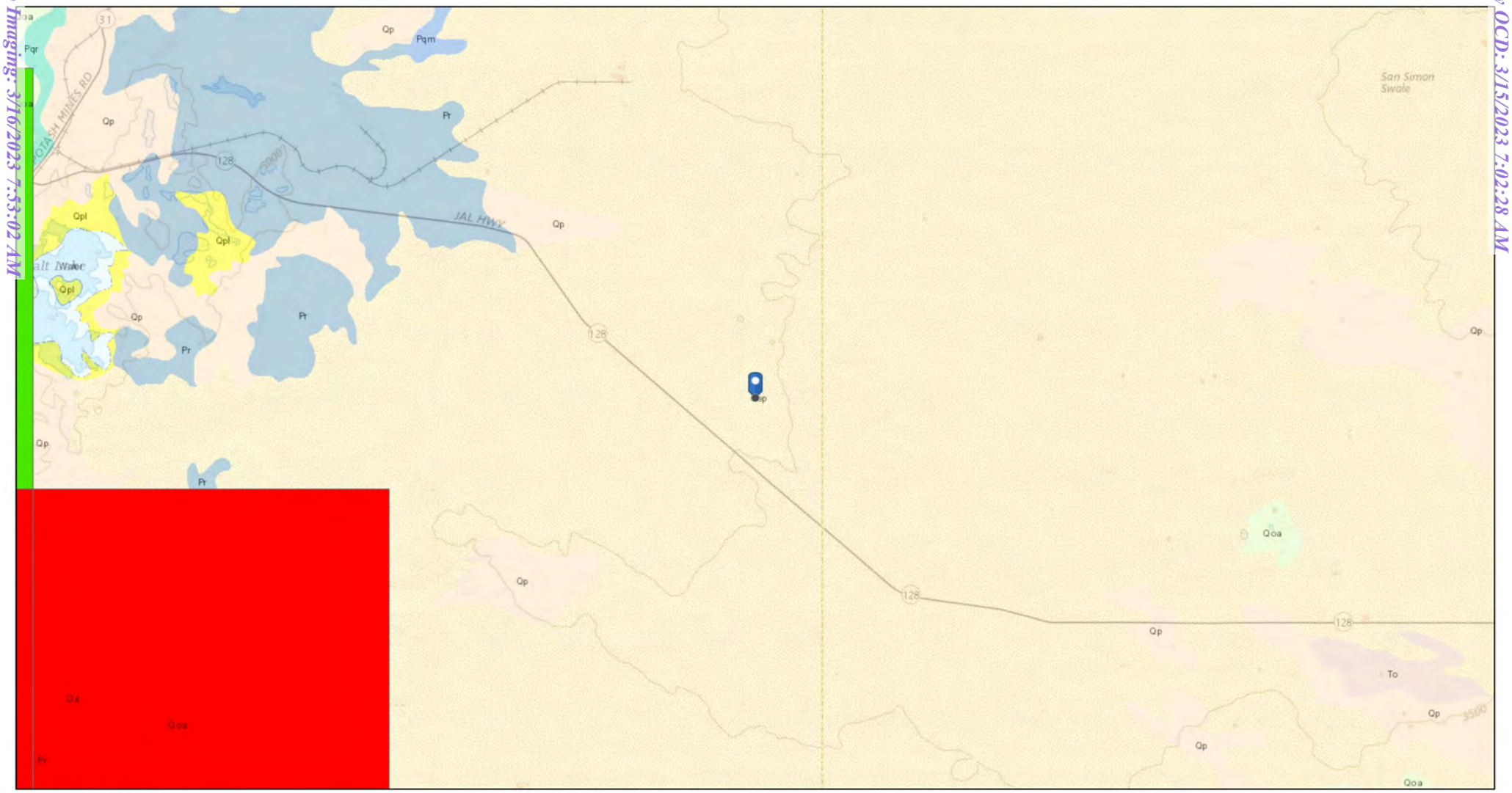
**Dune land**

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

# Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 15, Sep 15, 2019

# Todd 26G Fed 1 Qep Geology




5/26/2020, 12:00:43 PM

1:144,448

0 1.5 3 6 mi

0 2.5 5 10 km

**Faults**

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

**Dikes**

- <all other values>
- Dike
- Dike intruding fault
- Volcanic Vents

**STATEMAP (1993 to Present) [Publications]**

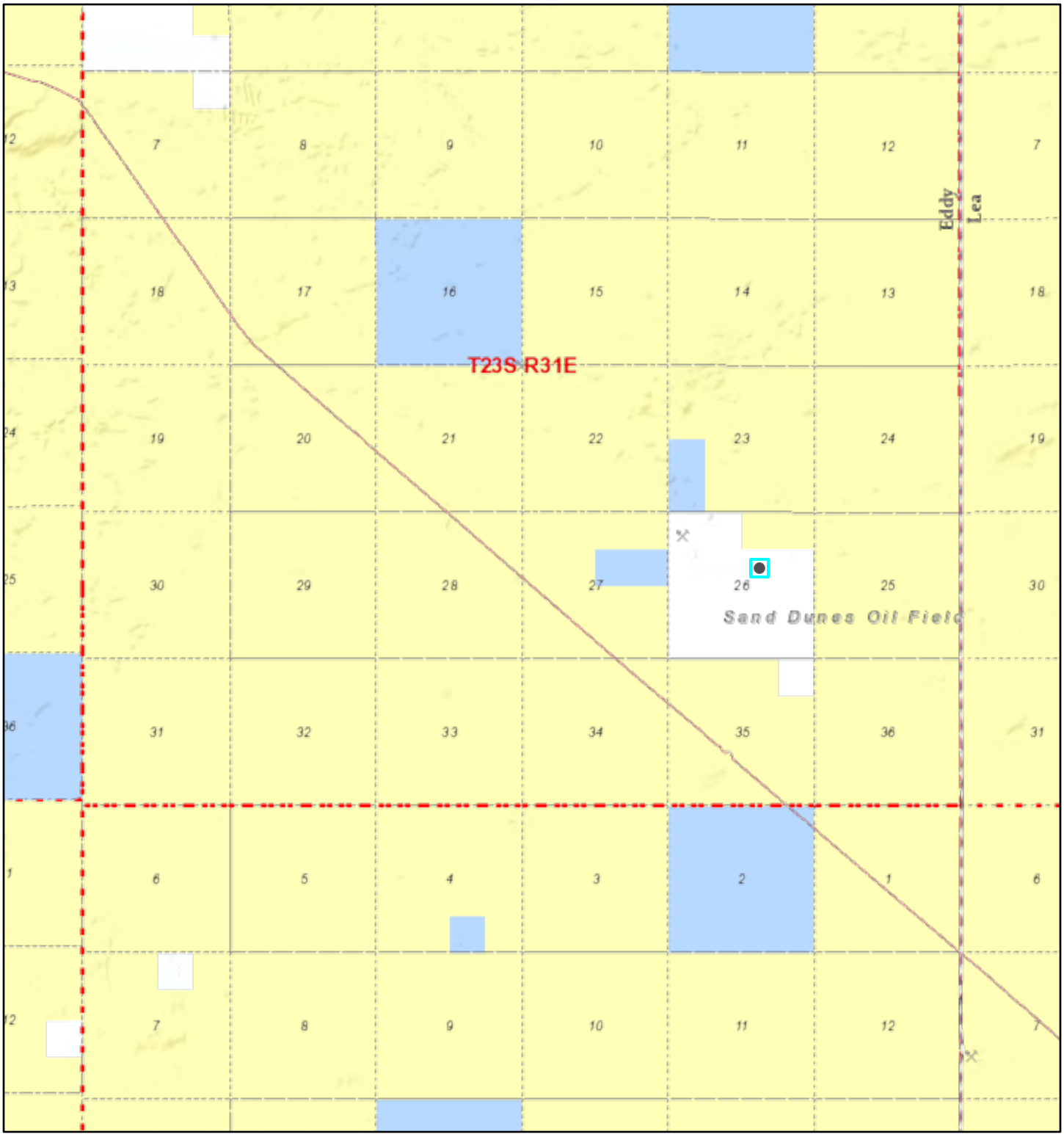
- Mapping in Complete
- Mapping in Progress

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS

Web AppBuilder for ArcGIS

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line

# Active Mines near Todd 26 G Fed 1




3/3/2020, 1:18:04 PM

1:72,224

0 0.5 1 2 mi

0 0.75 1.5 3 km

Registered Mines

- Aggregate, Stone etc.
- Aggregate, Stone etc.

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



EMNRD MMD GIS Coordinator

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

# ATTACHMENT 4

## Natalie Gordon

**From:** Dhugal Hanton <vertexresourcegroupusa@gmail.com>
**Sent:** Tuesday, March 24, 2020 4:04 PM
**To:** Natalie Gordon
**Subject:** Fwd: NAB1808526921/nHMP1420427160: Todd 26G Fed 1 - 48-hr Notification of Confirmation Sampling

---------- Forwarded message ---------
From: **Dhugal Hanton** <vertexresourcegroupusa@gmail.com>
Date: Tue, Mar 24, 2020 at 4:03 PM
Subject: NAB1808526921/nHMP1420427160: Todd 26G Fed 1 - 48-hr Notification of Confirmation Sampling
To: Bratcher, Mike, EMNRD <Mike.Bratcher@state.nm.us>, Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>, Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>, Kelsey <KWade@blm.gov>, <Jamos@blm.gov>
Cc: <tom.bynum@dvn.com>, <amanda.davis@dvn.com>, <Lupe.Carrasco@dvn.com>, <wesley.mathews@dvn.com>

All,

Please accept this email as 48-hr notification that Vertex Resource Services has scheduled confirmatory sampling to be conducted at Todd 26G Federal 1 for the following two open releases:

NAB1808526921 - DOR: March 7, 2018
nHMP1420427160 - DOR: July 18, 2014

On Friday, March 27, 2020 at approximately 1:30 p.m., Monica Peppin of Vertex will be onsite to conduct confirmatory sampling. She can be reached at 575-361-9880. If you need directions to the site, please do not hesitate to contact her. If you have any questions or concerns regarding this notification, please give me a call at 505-506-0040.

Thank you,
Natalie

**Natalie Gordon**
Project Manager

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

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

www.vertex.ca

# ATTACHMENT 5

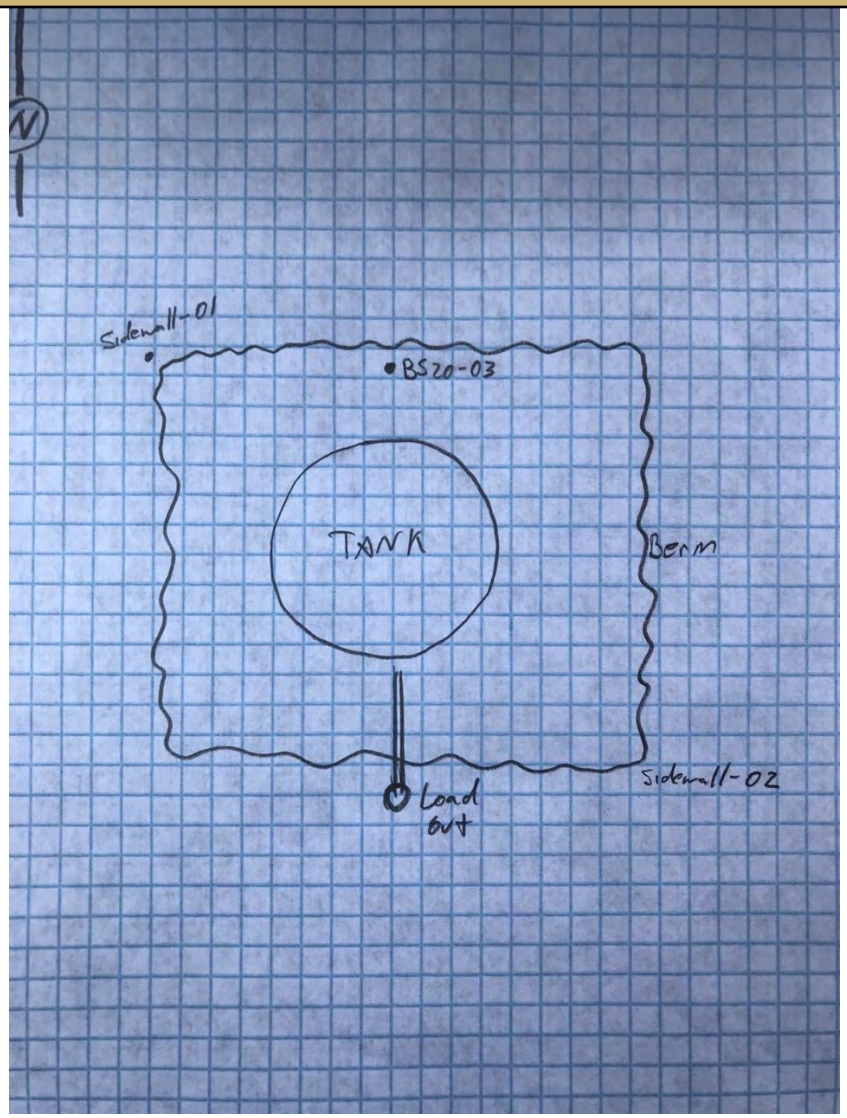
# Daily Site Visit Report

| | | | |
|---|---|---|---|
| Client: | Devon Energy Corporation | Inspection Date: | 5/18/2020 |
| Site Location Name: | Todd 26G Federal 1 | Report Run Date: | 5/18/2020 7:43 PM |
| Project Owner: | Amanda Davis | File (Project) #: | 20E-00141 |
| Project Manager: | Natalie Gordon | API #: | 30-015-20242 |
| Client Contact Name: | Amanda Davis | Reference | 2RP-4677, 2RP-2386 |
| Client Contact Phone #: | (575) 748-0176 | | |

| Summary of Times | |
|---|---|
| Left Office | 5/18/2020 8:15 AM |
| Arrived at Site | 5/18/2020 9:39 AM |
| Departed Site | 5/18/2020 12:25 PM |
| Returned to Office | 5/18/2020 1:27 PM |

# Daily Site Visit Report

## Site Sketch



# Daily Site Visit Report

## Summary of Daily Operations

**9:40** Arrive on site.
Complete safety paperwork.
Obtain confirmatory sample at BS20-03 location.
Field screen and record.
Complete DFR.
Return to office.

## Next Steps & Recommendations

**1** Submit confirmation samples to lab

## Sampling

**ES-Base20-03**

| Depth ft | VOC PID | Petro Flag TPH ppm | Quantab Range ppm | Quantab Reading ppm | Lab Analysis | Picture | Trimble Location | Marked On Site Sketch? |
|---|---|---|---|---|---|---|---|---|
| 0 ft. | 1.1 ppm | 141 ppm | | | BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M) | ✓ | 32.277331, -103.746739 | Yes |

**ES-Wall20-01**

| Depth ft | VOC PID | Petro Flag TPH ppm | Quantab Range ppm | Quantab Reading ppm | Lab Analysis | Picture | Trimble Location | Marked On Site Sketch? |
|---|---|---|---|---|---|---|---|---|
| 0 ft. | 0.5 ppm | 259 ppm | Low (30-600 ppm) | 1 ppm | BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M) | ✓ | 32.27736, -103.746782 | Yes |

# Daily Site Visit Report

**ES-Wall20-02**

| Depth ft | VOC PID | Petro Flag TPH ppm | Quantab Range ppm | Quantab Reading ppm | Lab Analysis | Picture | Trimble Location | Marked On Site Sketch? |
|---|---|---|---|---|---|---|---|---|
| 0 ft. | 1.5 ppm | 285 ppm | Low (30-600 ppm) | 1 ppm | BTEX (EPA SW-846 Method 8021B/8260B), Chloride (SW-4500 Cl), TPH (EPA SW-846 Method 8015M) | ✓ | 32.277249, -103.746624 | Yes |

# Daily Site Visit Report

## Site Photos

| **Viewing Direction**: Southeast | **Viewing Direction**: Northwest |
|---|---|
|  |  |
| NW corner, middle of wall sample 01 | Southeast corner, Middle of wall sample 02 |

# Daily Site Visit Report

## Depth Sample Photos

**Sample Point ID**: ES-Base20-03

**Depth:** 0 ft.

**Sample Point ID**: ES-Wall20-01

**Depth:** 0 ft.

**Sample Point ID**: ES-Wall20-02

**Depth:** 0 ft.

# Daily Site Visit Report

## Daily Site Visit Signature

**Inspector:** Austin Harris

**Signature:** 

Signature

# Daily Site Visit Report

| | | | |
|---|---|---|---|
| Client: | Devon Energy Corporation | Inspection Date: | 3/27/2020 |
| Site Location Name: | Todd 26G Federal 1 | Report Run Date: | 5/14/2020 12:13 AM |
| Project Owner: | Amanda Davis | File (Project) #: | 20E-00141 |
| Project Manager: | Natalie Gordon | API #: | 30-015-20242 |
| Client Contact Name: | Amanda Davis | Reference | 2RP-4677, 2RP-2386 |
| Client Contact Phone #: | (575) 748-0176 | | |

| Summary of Times | |
|---|---|
| Left Office | 3/27/2020 9:00 AM |
| Arrived at Site | 3/27/2020 9:30 AM |
| Departed Site | 3/27/2020 12:13 PM |
| Returned to Office | 3/27/2020 2:13 PM |

# Daily Site Visit Report

## Site Sketch

# Daily Site Visit Report

# Daily Site Visit Report

## Summary of Daily Operations

**9:32** Collect 12 composite samples for confirmation sampling event

**9:39** Collecting composite samples from containment and pasture

## Next Steps & Recommendations

**1** Send samples for lab analysis

**2** Closure report

# Daily Site Visit Report

## Site Photos

**Viewing Direction**: North

West side of battery

**Viewing Direction**: East

Tank battery containment

**Viewing Direction**: East

North side of containment

**Viewing Direction**: South

East side of containment

# Daily Site Visit Report

| **Viewing Direction**: West | **Viewing Direction**: West |
|---|---|
|  |  |
| East side of containment | Pasture area of spill next to right of way |
| **Viewing Direction**: South | **Viewing Direction**: North |
|  |  |
| Area of pasture spill next to right of way | Area of pasture spill |

# Daily Site Visit Report

## Daily Site Visit Signature

**Inspector:** Monica Peppin

**Signature:**

# ATTACHMENT 6

**Client Name: Devon Energy Production Company**
**Site Name: Todd 26G Federal 1**
**NM OCD Tracking #: NHMP1420427160**
**Project #: 20E-00141-037**
**Lab Reports: 2003C65 and 2005807**

**Table 2. Confirmatory Sampling Laboratory Data - Depth to Groundwater > 100 feet**

| 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 |
| | | | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) |
| BS 20-01 | 0 | March 27, 2020 | <0.025 | <0.225 | <5.0 | 170 | 660 | 170 | 830 | <60 |
| BS 20-02 | 0 | March 27, 2020 | <0.024 | <0.220 | <4.9 | 78 | 240 | 78 | 318 | <60 |
| BS 20-03 | 0 | March 27, 2020 | <0.025 | <0.222 | <4.9 | 1,700 | 3,000 | **1,700** | **4,700** | <60 |
| BS 20-03 | 0.5 | May 18, 2020 | <0.024 | <0.212 | <4.7 | <8.6 | <43 | <13.3 | <56.3 | <59 |
| BS 20-04 | 0 | March 27, 2020 | <0.025 | <0.222 | <4.9 | 210 | 330 | 210 | 540 | <60 |
| BS 20-05 | 0 | March 27, 2020 | <0.025 | <0.225 | <5.0 | 130 | 220 | 130 | 350 | <60 |
| BS 20-06 | 0 | March 27, 2020 | <0.025 | <0.222 | <4.9 | 210 | 550 | 210 | 760 | <59 |
| BS 20-07 | 0 | March 27, 2020 | <0.025 | <0.222 | <4.9 | <9.6 | <48 | <14.5 | <62.5 | <60 |
| BS 20-08 | 0 | March 27, 2020 | <0.025 | <0.221 | <4.9 | <9.4 | <47 | <14.3 | <61.3 | <60 |
| WS 20-01 | 0 - 0.5 | May 18, 2020 | <0.024 | <0.212 | <4.7 | <9.9 | 61 | <14.6 | 61 | <60 |
| WS 20-02 | 0 - 0.5 | May 18, 2020 | <0.024 | <0.219 | <4.9 | 12 | 53 | 12 | 65 | 110 |

**Bold and shaded indicates exceedance outside of applied action level**

# ATTACHMENT 7

HALL ENVIRONMENTAL ANALYSIS LABORATORY

*Hall Environmental Analysis Laboratory*
*4901 Hawkins NE*
*Albuquerque, NM 87109*
*TEL: 505-345-3975 FAX: 505-345-4107*
*Website: www.hallenvironmental.com*

April 06, 2020

Natalie Gordon

Devon Energy
6488 Seven Rivers Highway
Artesia, NM 88210
TEL: (575) 748-0176
FAX

This lab data report covers confirmatory sampling for two releases at Todd 26G:

NHMP1420427160 (BS20-01 through BS20-08, WS20-01 through WS20-02)

NAB1808526921 (BS20-09 through BS20-12)

RE: Todd 26 G Federal 1 OrderNo.: 2003C65

Dear Natalie Gordon:

Hall Environmental Analysis Laboratory received 12 sample(s) on 3/28/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

**Analytical Report**
Lab Order **2003C65**
Date Reported: **4/6/2020**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy
**Project:** Todd 26 G Federal 1
**Lab ID:** 2003C65-001 **Matrix:** SOIL

**Client Sample ID:** BS20-01 0'
**Collection Date:** 3/27/2020 9:40:00 AM
**Received Date:** 3/28/2020 8:15:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **BRM** |
| Diesel Range Organics (DRO) | 170 | 9.8 | | mg/Kg | 1 | 4/2/2020 12:31:15 AM |
| Motor Oil Range Organics (MRO) | 660 | 49 | | mg/Kg | 1 | 4/2/2020 12:31:15 AM |
| Surr: DNOP | 102 | 55.1-146 | | %Rec | 1 | 4/2/2020 12:31:15 AM |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **RAA** |
| Gasoline Range Organics (GRO) | ND | 5.0 | | mg/Kg | 1 | 4/4/2020 7:00:15 AM |
| Surr: BFB | 101 | 66.6-105 | | %Rec | 1 | 4/4/2020 7:00:15 AM |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **RAA** |
| Benzene | ND | 0.025 | | mg/Kg | 1 | 4/4/2020 7:00:15 AM |
| Toluene | ND | 0.050 | | mg/Kg | 1 | 4/4/2020 7:00:15 AM |
| Ethylbenzene | ND | 0.050 | | mg/Kg | 1 | 4/4/2020 7:00:15 AM |
| Xylenes, Total | ND | 0.10 | | mg/Kg | 1 | 4/4/2020 7:00:15 AM |
| Surr: 4-Bromofluorobenzene | 104 | 80-120 | | %Rec | 1 | 4/4/2020 7:00:15 AM |
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **JMT** |
| Chloride | ND | 60 | | mg/Kg | 20 | 4/2/2020 2:18:56 PM |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| PQL | Practical Quanitative Limit | RL | Reporting Limit |
| S | % Recovery outside of range due to dilution or matrix | | |

**Analytical Report**
Lab Order **2003C65**
Date Reported: **4/6/2020**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy
**Project:** Todd 26 G Federal 1
**Lab ID:** 2003C65-002 **Matrix:** SOIL

**Client Sample ID:** BS20-02 0'
**Collection Date:** 3/27/2020 9:45:00 AM
**Received Date:** 3/28/2020 8:15:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **CLP** |
| Diesel Range Organics (DRO) | 78 | 47 | | mg/Kg | 5 | 4/5/2020 11:17:53 PM |
| Motor Oil Range Organics (MRO) | 240 | 230 | | mg/Kg | 5 | 4/5/2020 11:17:53 PM |
| Surr: DNOP | 93.4 | 55.1-146 | | %Rec | 5 | 4/5/2020 11:17:53 PM |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **RAA** |
| Gasoline Range Organics (GRO) | ND | 4.9 | | mg/Kg | 1 | 4/4/2020 8:11:05 AM |
| Surr: BFB | 99.6 | 66.6-105 | | %Rec | 1 | 4/4/2020 8:11:05 AM |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **RAA** |
| Benzene | ND | 0.024 | | mg/Kg | 1 | 4/4/2020 8:11:05 AM |
| Toluene | ND | 0.049 | | mg/Kg | 1 | 4/4/2020 8:11:05 AM |
| Ethylbenzene | ND | 0.049 | | mg/Kg | 1 | 4/4/2020 8:11:05 AM |
| Xylenes, Total | ND | 0.098 | | mg/Kg | 1 | 4/4/2020 8:11:05 AM |
| Surr: 4-Bromofluorobenzene | 103 | 80-120 | | %Rec | 1 | 4/4/2020 8:11:05 AM |
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **JMT** |
| Chloride | ND | 60 | | mg/Kg | 20 | 4/2/2020 2:31:17 PM |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| PQL | Practical Quanitative Limit | RL | Reporting Limit |
| S | % Recovery outside of range due to dilution or matrix | | |

**Analytical Report**
Lab Order **2003C65**
Date Reported: **4/6/2020**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy
**Project:** Todd 26 G Federal 1
**Lab ID:** 2003C65-003 **Matrix:** SOIL

**Client Sample ID:** BS20-03 0'
**Collection Date:** 3/27/2020 9:50:00 AM
**Received Date:** 3/28/2020 8:15:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **BRM** |
| Diesel Range Organics (DRO) | 1700 | 95 | | mg/Kg | 10 | 4/2/2020 2:08:47 AM |
| Motor Oil Range Organics (MRO) | 3000 | 480 | | mg/Kg | 10 | 4/2/2020 2:08:47 AM |
| Surr: DNOP | 0 | 55.1-146 | S | %Rec | 10 | 4/2/2020 2:08:47 AM |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **RAA** |
| Gasoline Range Organics (GRO) | ND | 4.9 | | mg/Kg | 1 | 4/4/2020 9:22:01 AM |
| Surr: BFB | 99.1 | 66.6-105 | | %Rec | 1 | 4/4/2020 9:22:01 AM |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **RAA** |
| Benzene | ND | 0.025 | | mg/Kg | 1 | 4/4/2020 9:22:01 AM |
| Toluene | ND | 0.049 | | mg/Kg | 1 | 4/4/2020 9:22:01 AM |
| Ethylbenzene | ND | 0.049 | | mg/Kg | 1 | 4/4/2020 9:22:01 AM |
| Xylenes, Total | ND | 0.099 | | mg/Kg | 1 | 4/4/2020 9:22:01 AM |
| Surr: 4-Bromofluorobenzene | 102 | 80-120 | | %Rec | 1 | 4/4/2020 9:22:01 AM |
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **JMT** |
| Chloride | ND | 60 | | mg/Kg | 20 | 4/2/2020 2:43:37 PM |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| PQL | Practical Quanitative Limit | RL | Reporting Limit |
| S | % Recovery outside of range due to dilution or matrix | | |

**Analytical Report**
Lab Order **2003C65**
Date Reported: **4/6/2020**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy
**Project:** Todd 26 G Federal 1
**Lab ID:** 2003C65-004 **Matrix:** SOIL

**Client Sample ID:** BS20-04 0'
**Collection Date:** 3/27/2020 9:55:00 AM
**Received Date:** 3/28/2020 8:15:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **BRM** |
| Diesel Range Organics (DRO) | 210 | 9.9 | | mg/Kg | 1 | 4/2/2020 2:33:00 AM |
| Motor Oil Range Organics (MRO) | 330 | 50 | | mg/Kg | 1 | 4/2/2020 2:33:00 AM |
| Surr: DNOP | 104 | 55.1-146 | | %Rec | 1 | 4/2/2020 2:33:00 AM |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **RAA** |
| Gasoline Range Organics (GRO) | ND | 4.9 | | mg/Kg | 1 | 4/4/2020 9:45:48 AM |
| Surr: BFB | 100 | 66.6-105 | | %Rec | 1 | 4/4/2020 9:45:48 AM |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **RAA** |
| Benzene | ND | 0.025 | | mg/Kg | 1 | 4/4/2020 9:45:48 AM |
| Toluene | ND | 0.049 | | mg/Kg | 1 | 4/4/2020 9:45:48 AM |
| Ethylbenzene | ND | 0.049 | | mg/Kg | 1 | 4/4/2020 9:45:48 AM |
| Xylenes, Total | ND | 0.099 | | mg/Kg | 1 | 4/4/2020 9:45:48 AM |
| Surr: 4-Bromofluorobenzene | 104 | 80-120 | | %Rec | 1 | 4/4/2020 9:45:48 AM |
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **JMT** |
| Chloride | ND | 60 | | mg/Kg | 20 | 4/2/2020 2:55:58 PM |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | |
|---|---|
| * | Value exceeds Maximum Contaminant Level. |
| D | Sample Diluted Due to Matrix |
| H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit |
| PQL | Practical Quanitative Limit |
| S | % Recovery outside of range due to dilution or matrix |
| B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range |
| J | Analyte detected below quantitation limits |
| P | Sample pH Not In Range |
| RL | Reporting Limit |

**Analytical Report**
Lab Order **2003C65**
Date Reported: **4/6/2020**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy
**Project:** Todd 26 G Federal 1
**Lab ID:** 2003C65-005 **Matrix:** SOIL

**Client Sample ID:** BS20-05 0'
**Collection Date:** 3/27/2020 10:00:00 AM
**Received Date:** 3/28/2020 8:15:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **BRM** |
| Diesel Range Organics (DRO) | 130 | 9.3 | | mg/Kg | 1 | 4/2/2020 2:57:27 AM |
| Motor Oil Range Organics (MRO) | 220 | 46 | | mg/Kg | 1 | 4/2/2020 2:57:27 AM |
| Surr: DNOP | 95.2 | 55.1-146 | | %Rec | 1 | 4/2/2020 2:57:27 AM |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **RAA** |
| Gasoline Range Organics (GRO) | ND | 5.0 | | mg/Kg | 1 | 4/4/2020 10:09:34 AM |
| Surr: BFB | 97.1 | 66.6-105 | | %Rec | 1 | 4/4/2020 10:09:34 AM |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **RAA** |
| Benzene | ND | 0.025 | | mg/Kg | 1 | 4/4/2020 10:09:34 AM |
| Toluene | ND | 0.050 | | mg/Kg | 1 | 4/4/2020 10:09:34 AM |
| Ethylbenzene | ND | 0.050 | | mg/Kg | 1 | 4/4/2020 10:09:34 AM |
| Xylenes, Total | ND | 0.10 | | mg/Kg | 1 | 4/4/2020 10:09:34 AM |
| Surr: 4-Bromofluorobenzene | 102 | 80-120 | | %Rec | 1 | 4/4/2020 10:09:34 AM |
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **JMT** |
| Chloride | ND | 60 | | mg/Kg | 20 | 4/2/2020 3:08:18 PM |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | |
|---|---|
| * | Value exceeds Maximum Contaminant Level. |
| D | Sample Diluted Due to Matrix |
| H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit |
| PQL | Practical Quanitative Limit |
| S | % Recovery outside of range due to dilution or matrix |
| B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range |
| J | Analyte detected below quantitation limits |
| P | Sample pH Not In Range |
| RL | Reporting Limit |

**Analytical Report**
Lab Order **2003C65**
Date Reported: **4/6/2020**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy
**Project:** Todd 26 G Federal 1
**Lab ID:** 2003C65-006 **Matrix:** SOIL

**Client Sample ID:** BS20-06 0'
**Collection Date:** 3/27/2020 10:05:00 AM
**Received Date:** 3/28/2020 8:15:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **BRM** |
| Diesel Range Organics (DRO) | 210 | 96 | | mg/Kg | 10 | 4/2/2020 3:21:46 AM |
| Motor Oil Range Organics (MRO) | 550 | 480 | | mg/Kg | 10 | 4/2/2020 3:21:46 AM |
| Surr: DNOP | 0 | 55.1-146 | S | %Rec | 10 | 4/2/2020 3:21:46 AM |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **RAA** |
| Gasoline Range Organics (GRO) | ND | 4.9 | | mg/Kg | 1 | 4/4/2020 10:33:16 AM |
| Surr: BFB | 98.0 | 66.6-105 | | %Rec | 1 | 4/4/2020 10:33:16 AM |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **RAA** |
| Benzene | ND | 0.025 | | mg/Kg | 1 | 4/4/2020 10:33:16 AM |
| Toluene | ND | 0.049 | | mg/Kg | 1 | 4/4/2020 10:33:16 AM |
| Ethylbenzene | ND | 0.049 | | mg/Kg | 1 | 4/4/2020 10:33:16 AM |
| Xylenes, Total | ND | 0.099 | | mg/Kg | 1 | 4/4/2020 10:33:16 AM |
| Surr: 4-Bromofluorobenzene | 104 | 80-120 | | %Rec | 1 | 4/4/2020 10:33:16 AM |
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **JMT** |
| Chloride | ND | 59 | | mg/Kg | 20 | 4/2/2020 3:45:21 PM |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| PQL | Practical Quanitative Limit | RL | Reporting Limit |
| S | % Recovery outside of range due to dilution or matrix | | |

**Analytical Report**
Lab Order **2003C65**
Date Reported: **4/6/2020**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy
**Project:** Todd 26 G Federal 1
**Lab ID:** 2003C65-007 **Matrix:** SOIL

**Client Sample ID:** BS20-07 0'
**Collection Date:** 3/27/2020 10:10:00 AM
**Received Date:** 3/28/2020 8:15:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **BRM** |
| Diesel Range Organics (DRO) | ND | 9.6 | | mg/Kg | 1 | 4/2/2020 3:46:08 AM |
| Motor Oil Range Organics (MRO) | ND | 48 | | mg/Kg | 1 | 4/2/2020 3:46:08 AM |
| Surr: DNOP | 91.5 | 55.1-146 | | %Rec | 1 | 4/2/2020 3:46:08 AM |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **RAA** |
| Gasoline Range Organics (GRO) | ND | 4.9 | | mg/Kg | 1 | 4/4/2020 10:57:01 AM |
| Surr: BFB | 101 | 66.6-105 | | %Rec | 1 | 4/4/2020 10:57:01 AM |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **RAA** |
| Benzene | ND | 0.025 | | mg/Kg | 1 | 4/4/2020 10:57:01 AM |
| Toluene | ND | 0.049 | | mg/Kg | 1 | 4/4/2020 10:57:01 AM |
| Ethylbenzene | ND | 0.049 | | mg/Kg | 1 | 4/4/2020 10:57:01 AM |
| Xylenes, Total | ND | 0.099 | | mg/Kg | 1 | 4/4/2020 10:57:01 AM |
| Surr: 4-Bromofluorobenzene | 102 | 80-120 | | %Rec | 1 | 4/4/2020 10:57:01 AM |
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **JMT** |
| Chloride | ND | 60 | | mg/Kg | 20 | 4/2/2020 3:57:41 PM |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| PQL | Practical Quanitative Limit | RL | Reporting Limit |
| S | % Recovery outside of range due to dilution or matrix | | |

**Analytical Report**
Lab Order **2003C65**
Date Reported: **4/6/2020**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy
**Project:** Todd 26 G Federal 1
**Lab ID:** 2003C65-008 **Matrix:** SOIL

**Client Sample ID:** BS20-08 0'
**Collection Date:** 3/27/2020 10:15:00 AM
**Received Date:** 3/28/2020 8:15:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **BRM** |
| Diesel Range Organics (DRO) | ND | 9.4 | | mg/Kg | 1 | 4/2/2020 4:10:16 AM |
| Motor Oil Range Organics (MRO) | ND | 47 | | mg/Kg | 1 | 4/2/2020 4:10:16 AM |
| Surr: DNOP | 89.2 | 55.1-146 | | %Rec | 1 | 4/2/2020 4:10:16 AM |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **RAA** |
| Gasoline Range Organics (GRO) | ND | 4.9 | | mg/Kg | 1 | 4/4/2020 11:20:50 AM |
| Surr: BFB | 101 | 66.6-105 | | %Rec | 1 | 4/4/2020 11:20:50 AM |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **RAA** |
| Benzene | ND | 0.025 | | mg/Kg | 1 | 4/4/2020 11:20:50 AM |
| Toluene | ND | 0.049 | | mg/Kg | 1 | 4/4/2020 11:20:50 AM |
| Ethylbenzene | ND | 0.049 | | mg/Kg | 1 | 4/4/2020 11:20:50 AM |
| Xylenes, Total | ND | 0.098 | | mg/Kg | 1 | 4/4/2020 11:20:50 AM |
| Surr: 4-Bromofluorobenzene | 104 | 80-120 | | %Rec | 1 | 4/4/2020 11:20:50 AM |
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **JMT** |
| Chloride | ND | 60 | | mg/Kg | 20 | 4/2/2020 4:10:02 PM |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| PQL | Practical Quanitative Limit | RL | Reporting Limit |
| S | % Recovery outside of range due to dilution or matrix | | |

**Analytical Report**
Lab Order **2003C65**
Date Reported: **4/6/2020**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy
**Project:** Todd 26 G Federal 1
**Lab ID:** 2003C65-009 **Matrix:** SOIL

**Client Sample ID:** BS20-09
**Collection Date:** 3/27/2020 10:20:00 AM
**Received Date:** 3/28/2020 8:15:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **BRM** |
| Diesel Range Organics (DRO) | ND | 9.5 | | mg/Kg | 1 | 4/2/2020 4:34:31 AM |
| Motor Oil Range Organics (MRO) | ND | 47 | | mg/Kg | 1 | 4/2/2020 4:34:31 AM |
| Surr: DNOP | 99.3 | 55.1-146 | | %Rec | 1 | 4/2/2020 4:34:31 AM |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **RAA** |
| Gasoline Range Organics (GRO) | ND | 5.0 | | mg/Kg | 1 | 4/4/2020 11:44:21 AM |
| Surr: BFB | 99.9 | 66.6-105 | | %Rec | 1 | 4/4/2020 11:44:21 AM |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **RAA** |
| Benzene | ND | 0.025 | | mg/Kg | 1 | 4/4/2020 11:44:21 AM |
| Toluene | ND | 0.050 | | mg/Kg | 1 | 4/4/2020 11:44:21 AM |
| Ethylbenzene | ND | 0.050 | | mg/Kg | 1 | 4/4/2020 11:44:21 AM |
| Xylenes, Total | ND | 0.099 | | mg/Kg | 1 | 4/4/2020 11:44:21 AM |
| Surr: 4-Bromofluorobenzene | 105 | 80-120 | | %Rec | 1 | 4/4/2020 11:44:21 AM |
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **JMT** |
| Chloride | ND | 60 | | mg/Kg | 20 | 4/2/2020 4:22:23 PM |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| PQL | Practical Quanitative Limit | RL | Reporting Limit |
| S | % Recovery outside of range due to dilution or matrix | | |

**Analytical Report**
Lab Order **2003C65**
Date Reported: **4/6/2020**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy
**Project:** Todd 26 G Federal 1
**Lab ID:** 2003C65-010 **Matrix:** SOIL

**Client Sample ID:** BS20-10
**Collection Date:** 3/27/2020 10:25:00 AM
**Received Date:** 3/28/2020 8:15:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **BRM** |
| Diesel Range Organics (DRO) | ND | 9.6 | | mg/Kg | 1 | 4/2/2020 4:58:44 AM |
| Motor Oil Range Organics (MRO) | ND | 48 | | mg/Kg | 1 | 4/2/2020 4:58:44 AM |
| Surr: DNOP | 104 | 55.1-146 | | %Rec | 1 | 4/2/2020 4:58:44 AM |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **RAA** |
| Gasoline Range Organics (GRO) | ND | 5.0 | | mg/Kg | 1 | 4/4/2020 12:07:52 PM |
| Surr: BFB | 102 | 66.6-105 | | %Rec | 1 | 4/4/2020 12:07:52 PM |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **RAA** |
| Benzene | ND | 0.025 | | mg/Kg | 1 | 4/4/2020 12:07:52 PM |
| Toluene | ND | 0.050 | | mg/Kg | 1 | 4/4/2020 12:07:52 PM |
| Ethylbenzene | ND | 0.050 | | mg/Kg | 1 | 4/4/2020 12:07:52 PM |
| Xylenes, Total | ND | 0.099 | | mg/Kg | 1 | 4/4/2020 12:07:52 PM |
| Surr: 4-Bromofluorobenzene | 107 | 80-120 | | %Rec | 1 | 4/4/2020 12:07:52 PM |
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **JMT** |
| Chloride | ND | 60 | | mg/Kg | 20 | 4/2/2020 4:34:44 PM |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| PQL | Practical Quanitative Limit | RL | Reporting Limit |
| S | % Recovery outside of range due to dilution or matrix | | |

**Analytical Report**
Lab Order **2003C65**
Date Reported: **4/6/2020**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy
**Client Sample ID:** BS20-11
**Project:** Todd 26 G Federal 1
**Collection Date:** 3/27/2020 10:30:00 AM
**Lab ID:** 2003C65-011 **Matrix:** SOIL
**Received Date:** 3/28/2020 8:15:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **BRM** |
| Diesel Range Organics (DRO) | ND | 10 | | mg/Kg | 1 | 4/2/2020 5:23:03 AM |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 4/2/2020 5:23:03 AM |
| Surr: DNOP | 90.8 | 55.1-146 | | %Rec | 1 | 4/2/2020 5:23:03 AM |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** |
| Gasoline Range Organics (GRO) | ND | 4.9 | | mg/Kg | 1 | 4/4/2020 8:52:24 PM |
| Surr: BFB | 101 | 66.6-105 | | %Rec | 1 | 4/4/2020 8:52:24 PM |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** |
| Benzene | ND | 0.025 | | mg/Kg | 1 | 4/4/2020 8:52:24 PM |
| Toluene | ND | 0.049 | | mg/Kg | 1 | 4/4/2020 8:52:24 PM |
| Ethylbenzene | ND | 0.049 | | mg/Kg | 1 | 4/4/2020 8:52:24 PM |
| Xylenes, Total | ND | 0.099 | | mg/Kg | 1 | 4/4/2020 8:52:24 PM |
| Surr: 4-Bromofluorobenzene | 103 | 80-120 | | %Rec | 1 | 4/4/2020 8:52:24 PM |
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **JMT** |
| Chloride | ND | 61 | | mg/Kg | 20 | 4/2/2020 4:47:05 PM |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | |
|---|---|
| * | Value exceeds Maximum Contaminant Level. |
| B | Analyte detected in the associated Method Blank |
| D | Sample Diluted Due to Matrix |
| E | Value above quantitation range |
| H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below quantitation limits |
| ND | Not Detected at the Reporting Limit |
| P | Sample pH Not In Range |
| PQL | Practical Quanitative Limit |
| RL | Reporting Limit |
| S | % Recovery outside of range due to dilution or matrix |

**Analytical Report**
Lab Order **2003C65**
Date Reported: **4/6/2020**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy
**Project:** Todd 26 G Federal 1
**Lab ID:** 2003C65-012 **Matrix:** SOIL

**Client Sample ID:** BS20-12
**Collection Date:** 3/27/2020 10:35:00 AM
**Received Date:** 3/28/2020 8:15:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **BRM** |
| Diesel Range Organics (DRO) | ND | 9.4 | | mg/Kg | 1 | 4/2/2020 5:47:09 AM |
| Motor Oil Range Organics (MRO) | ND | 47 | | mg/Kg | 1 | 4/2/2020 5:47:09 AM |
| Surr: DNOP | 92.3 | 55.1-146 | | %Rec | 1 | 4/2/2020 5:47:09 AM |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** |
| Gasoline Range Organics (GRO) | ND | 5.0 | | mg/Kg | 1 | 4/4/2020 9:16:09 PM |
| Surr: BFB | 98.3 | 66.6-105 | | %Rec | 1 | 4/4/2020 9:16:09 PM |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** |
| Benzene | ND | 0.025 | | mg/Kg | 1 | 4/4/2020 9:16:09 PM |
| Toluene | ND | 0.050 | | mg/Kg | 1 | 4/4/2020 9:16:09 PM |
| Ethylbenzene | ND | 0.050 | | mg/Kg | 1 | 4/4/2020 9:16:09 PM |
| Xylenes, Total | ND | 0.099 | | mg/Kg | 1 | 4/4/2020 9:16:09 PM |
| Surr: 4-Bromofluorobenzene | 99.8 | 80-120 | | %Rec | 1 | 4/4/2020 9:16:09 PM |
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **JMT** |
| Chloride | ND | 60 | | mg/Kg | 20 | 4/2/2020 5:24:08 PM |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| PQL | Practical Quanitative Limit | RL | Reporting Limit |
| S | % Recovery outside of range due to dilution or matrix | | |

# QC SUMMARY REPORT
## Hall Environmental Analysis Laboratory, Inc.

WO#: **2003C65**
***06-Apr-20***

**Client:** Devon Energy
**Project:** Todd 26 G Federal 1

| Sample ID: **MB-51520** | SampType: **mblk** | TestCode: **EPA Method 300.0: Anions** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **PBS** | Batch ID: **51520** | RunNo: **67778** | | | | | | | |
| Prep Date: **4/2/2020** | Analysis Date: **4/2/2020** | SeqNo: **2342072** | Units: **mg/Kg** | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride | ND | 1.5 | | | | | | | | |

| Sample ID: **LCS-51520** | SampType: **lcs** | TestCode: **EPA Method 300.0: Anions** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **LCSS** | Batch ID: **51520** | RunNo: **67778** | | | | | | | |
| Prep Date: **4/2/2020** | Analysis Date: **4/2/2020** | SeqNo: **2342073** | Units: **mg/Kg** | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride | 14 | 1.5 | 15.00 | 0 | 92.7 | 90 | 110 | | | |

| Sample ID: **MB-51509** | SampType: **mblk** | TestCode: **EPA Method 300.0: Anions** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **PBS** | Batch ID: **51509** | RunNo: **67778** | | | | | | | |
| Prep Date: **4/2/2020** | Analysis Date: **4/2/2020** | SeqNo: **2342104** | Units: **mg/Kg** | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride | ND | 1.5 | | | | | | | | |

| Sample ID: **LCS-51509** | SampType: **lcs** | TestCode: **EPA Method 300.0: Anions** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **LCSS** | Batch ID: **51509** | RunNo: **67778** | | | | | | | |
| Prep Date: **4/2/2020** | Analysis Date: **4/2/2020** | SeqNo: **2342105** | Units: **mg/Kg** | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride | 14 | 1.5 | 15.00 | 0 | 92.2 | 90 | 110 | | | |

**Qualifiers:**

| | |
|---|---|
| * | Value exceeds Maximum Contaminant Level. |
| D | Sample Diluted Due to Matrix |
| H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit |
| PQL | Practical Quanitative Limit |
| S | % Recovery outside of range due to dilution or matrix |
| B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range |
| J | Analyte detected below quantitation limits |
| P | Sample pH Not In Range |
| RL | Reporting Limit |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **2003C65**

***06-Apr-20***

**Client:** Devon Energy

**Project:** Todd 26 G Federal 1

Sample ID: **LCS-51419** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **51419** RunNo: **67718**
Prep Date: **3/30/2020** Analysis Date: **3/31/2020** SeqNo: **2339279** Units: **%Rec**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: DNOP | 3.8 | | 5.000 | | 75.9 | 55.1 | 146 | | | |

Sample ID: **MB-51419** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **51419** RunNo: **67718**
Prep Date: **3/30/2020** Analysis Date: **3/31/2020** SeqNo: **2339280** Units: **%Rec**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: DNOP | 9.5 | | 10.00 | | 95.3 | 55.1 | 146 | | | |

Sample ID: **MB-51432** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **51432** RunNo: **67718**
Prep Date: **3/31/2020** Analysis Date: **4/2/2020** SeqNo: **2340291** Units: **%Rec**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: DNOP | 9.6 | | 10.00 | | 95.7 | 55.1 | 146 | | | |

Sample ID: **2003C65-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BS20-01 0'** Batch ID: **51433** RunNo: **67718**
Prep Date: **3/31/2020** Analysis Date: **4/2/2020** SeqNo: **2340660** Units: **mg/Kg**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 130 | 9.8 | 48.88 | 166.5 | -72.3 | 47.4 | 136 | | | S |
| Surr: DNOP | 4.4 | | 4.888 | | 90.2 | 55.1 | 146 | | | |

Sample ID: **2003C65-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BS20-01 0'** Batch ID: **51433** RunNo: **67718**
Prep Date: **3/31/2020** Analysis Date: **4/2/2020** SeqNo: **2340661** Units: **mg/Kg**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 130 | 9.8 | 49.02 | 166.5 | -76.4 | 47.4 | 136 | 1.61 | 43.4 | S |
| Surr: DNOP | 4.5 | | 4.902 | | 90.9 | 55.1 | 146 | 0 | 0 | |

Sample ID: **LCS-51433** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **51433** RunNo: **67718**
Prep Date: **3/31/2020** Analysis Date: **4/2/2020** SeqNo: **2340681** Units: **mg/Kg**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 50 | 10 | 50.00 | 0 | 100 | 70 | 130 | | | |
| Surr: DNOP | 4.6 | | 5.000 | | 91.9 | 55.1 | 146 | | | |

**Qualifiers:**

| | |
|---|---|
| * | Value exceeds Maximum Contaminant Level. |
| D | Sample Diluted Due to Matrix |
| H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit |
| PQL | Practical Quanitative Limit |
| S | % Recovery outside of range due to dilution or matrix |
| B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range |
| J | Analyte detected below quantitation limits |
| P | Sample pH Not In Range |
| RL | Reporting Limit |

# QC SUMMARY REPORT
## Hall Environmental Analysis Laboratory, Inc.

WO#: **2003C65**
***06-Apr-20***

**Client:** Devon Energy
**Project:** Todd 26 G Federal 1

| Sample ID: **MB-51433** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **51433** | RunNo: **67718** |
| Prep Date: **3/31/2020** | Analysis Date: **4/1/2020** | SeqNo: **2340683** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | ND | 10 | | | | | | | | |
| Motor Oil Range Organics (MRO) | ND | 50 | | | | | | | | |
| Surr: DNOP | 9.9 | | 10.00 | | 98.6 | 55.1 | 146 | | | |

| Sample ID: **LCS-51460** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **51460** | RunNo: **67718** |
| Prep Date: **3/31/2020** | Analysis Date: **4/2/2020** | SeqNo: **2341419** Units: **%Rec** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: DNOP | 5.0 | | 5.000 | | 100 | 55.1 | 146 | | | |

| Sample ID: **MB-51460** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **51460** | RunNo: **67718** |
| Prep Date: **3/31/2020** | Analysis Date: **4/2/2020** | SeqNo: **2341420** Units: **%Rec** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: DNOP | 11 | | 10.00 | | 113 | 55.1 | 146 | | | |

**Qualifiers:**

| | |
|---|---|
| * | Value exceeds Maximum Contaminant Level. |
| D | Sample Diluted Due to Matrix |
| H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit |
| PQL | Practical Quanitative Limit |
| S | % Recovery outside of range due to dilution or matrix |
| B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range |
| J | Analyte detected below quantitation limits |
| P | Sample pH Not In Range |
| RL | Reporting Limit |

# QC SUMMARY REPORT
## Hall Environmental Analysis Laboratory, Inc.

WO#: **2003C65**
***06-Apr-20***

**Client:** Devon Energy
**Project:** Todd 26 G Federal 1

| Sample ID: **2.5ug gro lcs** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **LCSS** | Batch ID: **G67819** | RunNo: **67819** | | | | | | | |
| Prep Date: | Analysis Date: **4/3/2020** | SeqNo: **2342508** | Units: **%Rec** | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: BFB | 1100 | | 1000 | | 110 | 66.6 | 105 | | | S |

| Sample ID: **mb** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **PBS** | Batch ID: **G67819** | RunNo: **67819** | | | | | | | |
| Prep Date: | Analysis Date: **4/3/2020** | SeqNo: **2342518** | Units: **%Rec** | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: BFB | 1100 | | 1000 | | 109 | 66.6 | 105 | | | S |

| Sample ID: **2003c65-002ams** | SampType: **MS** | TestCode: **EPA Method 8015D: Gasoline Range** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **BS20-02 0'** | Batch ID: **51426** | RunNo: **67819** | | | | | | | |
| Prep Date: **3/30/2020** | Analysis Date: **4/4/2020** | SeqNo: **2343506** | Units: **mg/Kg** | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 22 | 5.0 | 24.90 | 0 | 87.0 | 69.1 | 142 | | | |
| Surr: BFB | 1100 | | 996.0 | | 111 | 66.6 | 105 | | | S |

| Sample ID: **2003c65-002amsd** | SampType: **MSD** | TestCode: **EPA Method 8015D: Gasoline Range** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **BS20-02 0'** | Batch ID: **51426** | RunNo: **67819** | | | | | | | |
| Prep Date: **3/30/2020** | Analysis Date: **4/4/2020** | SeqNo: **2343507** | Units: **mg/Kg** | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 22 | 5.0 | 24.75 | 0 | 87.5 | 69.1 | 142 | 0.0461 | 20 | |
| Surr: BFB | 1100 | | 990.1 | | 111 | 66.6 | 105 | 0 | 0 | S |

| Sample ID: **lcs-51420** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **LCSS** | Batch ID: **51420** | RunNo: **67819** | | | | | | | |
| Prep Date: **3/30/2020** | Analysis Date: **4/3/2020** | SeqNo: **2343527** | Units: **%Rec** | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: BFB | 1100 | | 1000 | | 109 | 66.6 | 105 | | | S |

| Sample ID: **mb-51420** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **PBS** | Batch ID: **51420** | RunNo: **67819** | | | | | | | |
| Prep Date: **3/30/2020** | Analysis Date: **4/3/2020** | SeqNo: **2343529** | Units: **%Rec** | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: BFB | 990 | | 1000 | | 98.6 | 66.6 | 105 | | | |

**Qualifiers:**

| | |
|---|---|
| * | Value exceeds Maximum Contaminant Level. |
| D | Sample Diluted Due to Matrix |
| H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit |
| PQL | Practical Quanitative Limit |
| S | % Recovery outside of range due to dilution or matrix |
| B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range |
| J | Analyte detected below quantitation limits |
| P | Sample pH Not In Range |
| RL | Reporting Limit |

# QC SUMMARY REPORT
## Hall Environmental Analysis Laboratory, Inc.

WO#: **2003C65**
***06-Apr-20***

**Client:** Devon Energy
**Project:** Todd 26 G Federal 1

| Sample ID: **mb-51426** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **51426** | RunNo: **67819** |
| Prep Date: **3/30/2020** | Analysis Date: **4/4/2020** | SeqNo: **2343530** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | ND | 5.0 | | | | | | | | |
| Surr: BFB | 1000 | | 1000 | | 101 | 66.6 | 105 | | | |

| Sample ID: **lcs-51426** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **51426** | RunNo: **67872** |
| Prep Date: **3/30/2020** | Analysis Date: **4/4/2020** | SeqNo: **2344486** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 24 | 5.0 | 25.00 | 0 | 95.2 | 80 | 120 | | | |
| Surr: BFB | 1100 | | 1000 | | 107 | 66.6 | 105 | | | S |

| Sample ID: **mb-51471** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **51471** | RunNo: **67872** |
| Prep Date: **4/1/2020** | Analysis Date: **4/5/2020** | SeqNo: **2344497** Units: **%Rec** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: BFB | 950 | | 1000 | | 95.1 | 66.6 | 105 | | | |

| Sample ID: **lcs-51471** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **51471** | RunNo: **67872** |
| Prep Date: **4/1/2020** | Analysis Date: **4/5/2020** | SeqNo: **2344498** Units: **%Rec** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: BFB | 1100 | | 1000 | | 107 | 66.6 | 105 | | | S |

**Qualifiers:**

| | |
|---|---|
| * | Value exceeds Maximum Contaminant Level. |
| D | Sample Diluted Due to Matrix |
| H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit |
| PQL | Practical Quanitative Limit |
| S | % Recovery outside of range due to dilution or matrix |
| B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range |
| J | Analyte detected below quantitation limits |
| P | Sample pH Not In Range |
| RL | Reporting Limit |

# QC SUMMARY REPORT
## Hall Environmental Analysis Laboratory, Inc.

WO#: **2003C65**
***06-Apr-20***

**Client:** Devon Energy
**Project:** Todd 26 G Federal 1

Sample ID: **100ng btex lcs** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **R67819** RunNo: **67819**
Prep Date: Analysis Date: **4/3/2020** SeqNo: **2342520** Units: **%Rec**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 108 | 80 | 120 | | | |

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **R67819** RunNo: **67819**
Prep Date: Analysis Date: **4/3/2020** SeqNo: **2342530** Units: **%Rec**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 114 | 80 | 120 | | | |

Sample ID: **2003c65-001ams** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BS20-01 0'** Batch ID: **51426** RunNo: **67819**
Prep Date: **3/30/2020** Analysis Date: **4/4/2020** SeqNo: **2343554** Units: **mg/Kg**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.86 | 0.025 | 1.000 | 0 | 86.1 | 78.5 | 119 | | | |
| Toluene | 0.90 | 0.050 | 1.000 | 0 | 90.2 | 75.7 | 123 | | | |
| Ethylbenzene | 0.92 | 0.050 | 1.000 | 0 | 92.3 | 74.3 | 126 | | | |
| Xylenes, Total | 2.8 | 0.10 | 3.000 | 0 | 93.2 | 72.9 | 130 | | | |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 109 | 80 | 120 | | | |

Sample ID: **2003c65-001amsd** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BS20-01 0'** Batch ID: **51426** RunNo: **67819**
Prep Date: **3/30/2020** Analysis Date: **4/4/2020** SeqNo: **2343555** Units: **mg/Kg**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.88 | 0.024 | 0.9747 | 0 | 90.7 | 78.5 | 119 | 2.58 | 20 | |
| Toluene | 0.90 | 0.049 | 0.9747 | 0 | 92.3 | 75.7 | 123 | 0.277 | 20 | |
| Ethylbenzene | 0.92 | 0.049 | 0.9747 | 0 | 94.1 | 74.3 | 126 | 0.710 | 20 | |
| Xylenes, Total | 2.8 | 0.097 | 2.924 | 0 | 95.0 | 72.9 | 130 | 0.704 | 20 | |
| Surr: 4-Bromofluorobenzene | 1.0 | | 0.9747 | | 104 | 80 | 120 | 0 | 0 | |

Sample ID: **LCS-51420** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **51420** RunNo: **67819**
Prep Date: **3/30/2020** Analysis Date: **4/3/2020** SeqNo: **2343576** Units: **%Rec**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 107 | 80 | 120 | | | |

**Qualifiers:**

| | |
|---|---|
| * | Value exceeds Maximum Contaminant Level. |
| D | Sample Diluted Due to Matrix |
| H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit |
| PQL | Practical Quanitative Limit |
| S | % Recovery outside of range due to dilution or matrix |
| B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range |
| J | Analyte detected below quantitation limits |
| P | Sample pH Not In Range |
| RL | Reporting Limit |

# QC SUMMARY REPORT
## Hall Environmental Analysis Laboratory, Inc.

WO#: **2003C65**
***06-Apr-20***

**Client:** Devon Energy
**Project:** Todd 26 G Federal 1

Sample ID: **LCS-51426** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **51426** RunNo: **67819**
Prep Date: **3/30/2020** Analysis Date: **4/4/2020** SeqNo: **2343577** Units: **mg/Kg**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.86 | 0.025 | 1.000 | 0 | 86.4 | 80 | 120 | | | |
| Toluene | 0.87 | 0.050 | 1.000 | 0 | 87.4 | 80 | 120 | | | |
| Ethylbenzene | 0.89 | 0.050 | 1.000 | 0 | 88.8 | 80 | 120 | | | |
| Xylenes, Total | 2.7 | 0.10 | 3.000 | 0 | 89.2 | 80 | 120 | | | |
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 103 | 80 | 120 | | | |

Sample ID: **mb-51420** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **51420** RunNo: **67819**
Prep Date: **3/30/2020** Analysis Date: **4/3/2020** SeqNo: **2343578** Units: **%Rec**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 103 | 80 | 120 | | | |

Sample ID: **mb-51426** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **51426** RunNo: **67819**
Prep Date: **3/30/2020** Analysis Date: **4/4/2020** SeqNo: **2343579** Units: **mg/Kg**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.025 | | | | | | | | |
| Toluene | ND | 0.050 | | | | | | | | |
| Ethylbenzene | ND | 0.050 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 106 | 80 | 120 | | | |

Sample ID: **mb-51471** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **51471** RunNo: **67872**
Prep Date: **4/1/2020** Analysis Date: **4/5/2020** SeqNo: **2344549** Units: **%Rec**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: 4-Bromofluorobenzene | 0.98 | | 1.000 | | 97.9 | 80 | 120 | | | |

Sample ID: **LCS-51471** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **51471** RunNo: **67872**
Prep Date: **4/1/2020** Analysis Date: **4/5/2020** SeqNo: **2344550** Units: **%Rec**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: 4-Bromofluorobenzene | 0.99 | | 1.000 | | 99.1 | 80 | 120 | | | |

**Qualifiers:**

| | |
|---|---|
| * | Value exceeds Maximum Contaminant Level. |
| D | Sample Diluted Due to Matrix |
| H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit |
| PQL | Practical Quanitative Limit |
| S | % Recovery outside of range due to dilution or matrix |
| B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range |
| J | Analyte detected below quantitation limits |
| P | Sample pH Not In Range |
| RL | Reporting Limit |

HALL ENVIRONMENTAL ANALYSIS LABORATORY

*Hall Environmental Analysis Laboratory*
*4901 Hawkins NE*
*Albuquerque, NM 87109*
*TEL: 505-345-3975 FAX: 505-345-4107*
*Website: www.hallenvironmental.com*

# Sample Log-In Check List

Client Name: DEVON ENERGY Work Order Number: 2003C65 RcptNo: 1

Received By: **Erin Melendrez** 3/28/2020 8:15:00 AM

Completed By: **Erin Melendrez** 3/28/2020 3:22:34 PM

Reviewed By: JR 3/30/20

## Chain of Custody

| | | | |
|---|---|---|---|
| 1. Is Chain of Custody sufficiently complete? | Yes ☑ | No ☐ | Not Present ☐ |
| 2. How was the sample delivered? | Courier | | |

## Log In

| | | | |
|---|---|---|---|
| 3. Was an attempt made to cool the samples? | Yes ☑ | No ☐ | NA ☐ |
| 4. Were all samples received at a temperature of >0° C to 6.0°C | Yes ☑ | No ☐ | NA ☐ |
| 5. Sample(s) in proper container(s)? | Yes ☑ | No ☐ | |
| 6. Sufficient sample volume for indicated test(s)? | Yes ☑ | No ☐ | |
| 7. Are samples (except VOA and ONG) properly preserved? | Yes ☑ | No ☐ | |
| 8. Was preservative added to bottles? | Yes ☐ | No ☑ | NA ☐ |
| 9. Received at least 1 vial with headspace <1/4" for AQ VOA? | Yes ☐ | No ☐ | NA ☑ |
| 10. Were any sample containers received broken? | Yes ☐ | No ☑ | |
| 11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) | Yes ☑ | No ☐ | |
| 12. Are matrices correctly identified on Chain of Custody? | Yes ☑ | No ☐ | |
| 13. Is it clear what analyses were requested? | Yes ☑ | No ☐ | |
| 14. Were all holding times able to be met? (If no, notify customer for authorization.) | Yes ☑ | No ☐ | |

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: DAD 3/30/20

## Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|---|---|---|---|---|---|---|
| 1 | 2.7 | Good | | | | |
| 2 | 5.0 | Good | | | | |

# Chain-of-Custody Record

Client: Devon

Amanda Davis / Wes Mathews

Mailing Address: 6488 Seven Rivers Hwy

Artesia, NM 88210

Phone #: on file

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 Day Turn

☑ Standard ☐ Rush

Project Name: Todd 26 G Federal 1

Project #: 20E-00141

Project Manager: Natalie Gordon

Sampler: MJP

On Ice: ☑ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 2.9+0.2(CF)=2.7 (°C)

5.2+0.2(CF)=5.0°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

| Date | Time | Matrix | Sample Name | Container Type and # | Preservative Type | HEAL No. | BTEX / MTBE / TMB's (8021) | TPH:8015D(GRO / DRO / MRO) | 8081 Pesticides/8082 PCB's | EDB (Method 504.1) | PAHs by 8310 or 8270SIMS | RCRA 8 Metals | F, Br, $NO_3$, $NO_2$, $PO_4$, $SO_4$ | 8260 (VOA) | 8270 (Semi-VOA) | Total Coliform (Present/Absent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/27 | 9:40 | Soil | BS20-01 0' | 4 oz | ice | 2003C65-001 | ✓ | ✓ | | | | | ✓ | | | |
| | 9:45 | | BS20-02 0' | | | -002 | ✓ | ✓ | | | | | ✓ | | | |
| | 9:50 | | BS20-03 0' | | | -003 | ✓ | ✓ | | | | | ✓ | | | |
| | 9:55 | | BS20-04 0' | | | -004 | ✓ | ✓ | | | | | ✓ | | | |
| | 10:00 | | BS20-05 0' | | | -005 | ✓ | ✓ | | | | | ✓ | | | |
| | 10:05 | | BS20-06 0' | | | -006 | ✓ | ✓ | | | | | ✓ | | | |
| | 10:10 | | BS20-07 0' | | | -007 | ✓ | ✓ | | | | | ✓ | | | |
| | 10:15 | | BS20-08 0' | | | -008 | ✓ | ✓ | | | | | ✓ | | | |
| | 10:20 | | BS20-09 | | | -009 | ✓ | ✓ | | | | | ✓ | | | |
| | 10:25 | | BS20-10 | | | -010 | ✓ | ✓ | | | | | ✓ | | | |
| | 10:30 | | BS20-11 | | | -011 | ✓ | ✓ | | | | | ✓ | | | |
| | 10:35 | | BS20-12 | | | -012 | ✓ | ✓ | | | | | ✓ | | | |

| Date: | Time: | Relinquished by: | Received by: | Via: | Date | Time |
|---|---|---|---|---|---|---|
| 3/27 | 1400 | | | | 3/27 | 1432 |
| 3/27 | 1900 | | | courier | 3/28/20 | 0815 |

Remarks: CC: Natalie Gordon

Direct bill

Devon w/o # 20843202

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

*Hall Environmental Analysis Laboratory*
*4901 Hawkins NE*
*Albuquerque, NM 87109*
*TEL: 505-345-3975 FAX: 505-345-4107*
*Website: www.hallenvironmental.com*

May 26, 2020

Natalie Gordon

Vertex Resource Group Ltd.
3101 Boyd Drive
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX:

RE: Todd 26 6 Fed 1 OrderNo.: 2005807

Dear Natalie Gordon:

Hall Environmental Analysis Laboratory received 3 sample(s) on 5/19/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

**Analytical Report**
Lab Order **2005807**
Date Reported: **5/26/2020**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resource Group Ltd.
**Client Sample ID:** BS20-03 0.0'
**Project:** Todd 26 6 Fed 1
**Collection Date:** 5/18/2020 11:00:00 AM
**Lab ID:** 2005807-001 **Matrix:** SOIL
**Received Date:** 5/19/2020 9:30:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **CLP** |
| Diesel Range Organics (DRO) | ND | 8.6 | | mg/Kg | 1 | 5/21/2020 4:57:29 PM |
| Motor Oil Range Organics (MRO) | ND | 43 | | mg/Kg | 1 | 5/21/2020 4:57:29 PM |
| Surr: DNOP | 109 | 55.1-146 | | %Rec | 1 | 5/21/2020 4:57:29 PM |
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **MRA** |
| Chloride | ND | 59 | | mg/Kg | 20 | 5/23/2020 9:25:50 PM |
| **EPA METHOD 8260B: VOLATILES SHORT LIST** | | | | | | Analyst: **DJF** |
| Benzene | ND | 0.024 | | mg/Kg | 1 | 5/21/2020 8:43:38 PM |
| Toluene | ND | 0.047 | | mg/Kg | 1 | 5/21/2020 8:43:38 PM |
| Ethylbenzene | ND | 0.047 | | mg/Kg | 1 | 5/21/2020 8:43:38 PM |
| Xylenes, Total | ND | 0.094 | | mg/Kg | 1 | 5/21/2020 8:43:38 PM |
| Surr: 1,2-Dichloroethane-d4 | 96.3 | 70-130 | | %Rec | 1 | 5/21/2020 8:43:38 PM |
| Surr: 4-Bromofluorobenzene | 96.3 | 70-130 | | %Rec | 1 | 5/21/2020 8:43:38 PM |
| Surr: Dibromofluoromethane | 98.8 | 70-130 | | %Rec | 1 | 5/21/2020 8:43:38 PM |
| Surr: Toluene-d8 | 101 | 70-130 | | %Rec | 1 | 5/21/2020 8:43:38 PM |
| **EPA METHOD 8015D MOD: GASOLINE RANGE** | | | | | | Analyst: **DJF** |
| Gasoline Range Organics (GRO) | ND | 4.7 | | mg/Kg | 1 | 5/21/2020 8:43:38 PM |
| Surr: BFB | 102 | 70-130 | | %Rec | 1 | 5/21/2020 8:43:38 PM |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | |
|---|---|
| * | Value exceeds Maximum Contaminant Level. |
| D | Sample Diluted Due to Matrix |
| H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit |
| PQL | Practical Quanitative Limit |
| S | % Recovery outside of range due to dilution or matrix |
| B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range |
| J | Analyte detected below quantitation limits |
| P | Sample pH Not In Range |
| RL | Reporting Limit |

**Analytical Report**
Lab Order **2005807**
Date Reported: **5/26/2020**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resource Group Ltd.
**Client Sample ID:** WS20-01 0.0'
**Project:** Todd 26 6 Fed 1
**Collection Date:** 5/18/2020 11:20:00 AM
**Lab ID:** 2005807-002 **Matrix:** SOIL
**Received Date:** 5/19/2020 9:30:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **CLP** |
| Diesel Range Organics (DRO) | ND | 9.9 | | mg/Kg | 1 | 5/21/2020 5:21:43 PM |
| Motor Oil Range Organics (MRO) | 61 | 50 | | mg/Kg | 1 | 5/21/2020 5:21:43 PM |
| Surr: DNOP | 121 | 55.1-146 | | %Rec | 1 | 5/21/2020 5:21:43 PM |
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **MRA** |
| Chloride | ND | 60 | | mg/Kg | 20 | 5/23/2020 9:38:15 PM |
| **EPA METHOD 8260B: VOLATILES SHORT LIST** | | | | | | Analyst: **DJF** |
| Benzene | ND | 0.024 | | mg/Kg | 1 | 5/21/2020 9:13:36 PM |
| Toluene | ND | 0.047 | | mg/Kg | 1 | 5/21/2020 9:13:36 PM |
| Ethylbenzene | ND | 0.047 | | mg/Kg | 1 | 5/21/2020 9:13:36 PM |
| Xylenes, Total | ND | 0.094 | | mg/Kg | 1 | 5/21/2020 9:13:36 PM |
| Surr: 1,2-Dichloroethane-d4 | 92.8 | 70-130 | | %Rec | 1 | 5/21/2020 9:13:36 PM |
| Surr: 4-Bromofluorobenzene | 94.1 | 70-130 | | %Rec | 1 | 5/21/2020 9:13:36 PM |
| Surr: Dibromofluoromethane | 94.0 | 70-130 | | %Rec | 1 | 5/21/2020 9:13:36 PM |
| Surr: Toluene-d8 | 101 | 70-130 | | %Rec | 1 | 5/21/2020 9:13:36 PM |
| **EPA METHOD 8015D MOD: GASOLINE RANGE** | | | | | | Analyst: **DJF** |
| Gasoline Range Organics (GRO) | ND | 4.7 | | mg/Kg | 1 | 5/21/2020 9:13:36 PM |
| Surr: BFB | 102 | 70-130 | | %Rec | 1 | 5/21/2020 9:13:36 PM |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | |
|---|---|
| * | Value exceeds Maximum Contaminant Level. |
| D | Sample Diluted Due to Matrix |
| H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit |
| PQL | Practical Quanitative Limit |
| S | % Recovery outside of range due to dilution or matrix |
| B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range |
| J | Analyte detected below quantitation limits |
| P | Sample pH Not In Range |
| RL | Reporting Limit |

**Analytical Report**
Lab Order **2005807**
Date Reported: **5/26/2020**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resource Group Ltd.
**Client Sample ID:** WS20-02 0.0'
**Project:** Todd 26 6 Fed 1
**Collection Date:** 5/18/2020 11:30:00 AM
**Lab ID:** 2005807-003 **Matrix:** SOIL
**Received Date:** 5/19/2020 9:30:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **CLP** |
| Diesel Range Organics (DRO) | 12 | 9.8 | | mg/Kg | 1 | 5/21/2020 5:46:12 PM |
| Motor Oil Range Organics (MRO) | 53 | 49 | | mg/Kg | 1 | 5/21/2020 5:46:12 PM |
| Surr: DNOP | 114 | 55.1-146 | | %Rec | 1 | 5/21/2020 5:46:12 PM |
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **MRA** |
| Chloride | 110 | 60 | | mg/Kg | 20 | 5/23/2020 9:50:40 PM |
| **EPA METHOD 8260B: VOLATILES SHORT LIST** | | | | | | Analyst: **DJF** |
| Benzene | ND | 0.024 | | mg/Kg | 1 | 5/21/2020 9:43:05 PM |
| Toluene | ND | 0.049 | | mg/Kg | 1 | 5/21/2020 9:43:05 PM |
| Ethylbenzene | ND | 0.049 | | mg/Kg | 1 | 5/21/2020 9:43:05 PM |
| Xylenes, Total | ND | 0.097 | | mg/Kg | 1 | 5/21/2020 9:43:05 PM |
| Surr: 1,2-Dichloroethane-d4 | 93.8 | 70-130 | | %Rec | 1 | 5/21/2020 9:43:05 PM |
| Surr: 4-Bromofluorobenzene | 93.6 | 70-130 | | %Rec | 1 | 5/21/2020 9:43:05 PM |
| Surr: Dibromofluoromethane | 92.6 | 70-130 | | %Rec | 1 | 5/21/2020 9:43:05 PM |
| Surr: Toluene-d8 | 102 | 70-130 | | %Rec | 1 | 5/21/2020 9:43:05 PM |
| **EPA METHOD 8015D MOD: GASOLINE RANGE** | | | | | | Analyst: **DJF** |
| Gasoline Range Organics (GRO) | ND | 4.9 | | mg/Kg | 1 | 5/21/2020 9:43:05 PM |
| Surr: BFB | 102 | 70-130 | | %Rec | 1 | 5/21/2020 9:43:05 PM |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | |
|---|---|
| * | Value exceeds Maximum Contaminant Level. |
| D | Sample Diluted Due to Matrix |
| H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit |
| PQL | Practical Quanitative Limit |
| S | % Recovery outside of range due to dilution or matrix |
| B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range |
| J | Analyte detected below quantitation limits |
| P | Sample pH Not In Range |
| RL | Reporting Limit |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **2005807**

***26-May-20***

**Client:** Vertex Resource Group Ltd.

**Project:** Todd 26 6 Fed 1

| Sample ID: **MB-52667** | SampType: **mblk** | TestCode: **EPA Method 300.0: Anions** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **PBS** | Batch ID: **52667** | RunNo: **69127** | | | | | | | |
| Prep Date: **5/23/2020** | Analysis Date: **5/23/2020** | SeqNo: **2395515** | Units: **mg/Kg** | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride | ND | 1.5 | | | | | | | | |

| Sample ID: **LCS-52667** | SampType: **lcs** | TestCode: **EPA Method 300.0: Anions** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **LCSS** | Batch ID: **52667** | RunNo: **69127** | | | | | | | |
| Prep Date: **5/23/2020** | Analysis Date: **5/23/2020** | SeqNo: **2395516** | Units: **mg/Kg** | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride | 14 | 1.5 | 15.00 | 0 | 93.9 | 90 | 110 | | | |

**Qualifiers:**

| | |
|---|---|
| * | Value exceeds Maximum Contaminant Level. |
| D | Sample Diluted Due to Matrix |
| H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit |
| PQL | Practical Quanitative Limit |
| S | % Recovery outside of range due to dilution or matrix |
| B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range |
| J | Analyte detected below quantitation limits |
| P | Sample pH Not In Range |
| RL | Reporting Limit |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **2005807**

***26-May-20***

**Client:** Vertex Resource Group Ltd.

**Project:** Todd 26 6 Fed 1

| Sample ID: **MB-52627** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **PBS** | Batch ID: **52627** | RunNo: **69068** | | | | | | | |
| Prep Date: **5/21/2020** | Analysis Date: **5/21/2020** | SeqNo: **2392013** | Units: **%Rec** | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | 9.7 | | 10.00 | | 96.8 | 55.1 | 146 | | | |

| Sample ID: **LCS-52627** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **LCSS** | Batch ID: **52627** | RunNo: **69068** | | | | | | | |
| Prep Date: **5/21/2020** | Analysis Date: **5/21/2020** | SeqNo: **2392014** | Units: **%Rec** | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | 4.5 | | 5.000 | | 90.5 | 55.1 | 146 | | | |

| Sample ID: **MB-52598** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **PBS** | Batch ID: **52598** | RunNo: **69068** | | | | | | | |
| Prep Date: **5/20/2020** | Analysis Date: **5/22/2020** | SeqNo: **2392532** | Units: **%Rec** | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | 11 | | 10.00 | | 107 | 55.1 | 146 | | | |

| Sample ID: **MB-52605** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **PBS** | Batch ID: **52605** | RunNo: **69068** | | | | | | | |
| Prep Date: **5/20/2020** | Analysis Date: **5/21/2020** | SeqNo: **2392533** | Units: **mg/Kg** | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | ND | 10 | | | | | | | | |
| Motor Oil Range Organics (MRO) | ND | 50 | | | | | | | | |
| Surr: DNOP | 9.6 | | 10.00 | | 95.9 | 55.1 | 146 | | | |

| Sample ID: **LCS-52598** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **LCSS** | Batch ID: **52598** | RunNo: **69068** | | | | | | | |
| Prep Date: **5/20/2020** | Analysis Date: **5/22/2020** | SeqNo: **2392534** | Units: **%Rec** | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | 4.2 | | 5.000 | | 83.8 | 55.1 | 146 | | | |

| Sample ID: **LCS-52605** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **LCSS** | Batch ID: **52605** | RunNo: **69068** | | | | | | | |
| Prep Date: **5/20/2020** | Analysis Date: **5/21/2020** | SeqNo: **2392535** | Units: **mg/Kg** | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 43 | 10 | 50.00 | 0 | 87.0 | 70 | 130 | | | |
| Surr: DNOP | 4.4 | | 5.000 | | 87.7 | 55.1 | 146 | | | |

**Qualifiers:**

| | |
|---|---|
| * | Value exceeds Maximum Contaminant Level. |
| D | Sample Diluted Due to Matrix |
| H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit |
| PQL | Practical Quanitative Limit |
| S | % Recovery outside of range due to dilution or matrix |
| B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range |
| J | Analyte detected below quantitation limits |
| P | Sample pH Not In Range |
| RL | Reporting Limit |

# QC SUMMARY REPORT
## Hall Environmental Analysis Laboratory, Inc.

WO#: **2005807**
***26-May-20***

**Client:** Vertex Resource Group Ltd.
**Project:** Todd 26 6 Fed 1

Sample ID: **mb-52577** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS** Batch ID: **52577** RunNo: **69081**
Prep Date: **5/19/2020** Analysis Date: **5/21/2020** SeqNo: **2392357** Units: **mg/Kg**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.025 | | | | | | | | |
| Toluene | ND | 0.050 | | | | | | | | |
| Ethylbenzene | ND | 0.050 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 1,2-Dichloroethane-d4 | 0.47 | | 0.5000 | | 93.5 | 70 | 130 | | | |
| Surr: 4-Bromofluorobenzene | 0.48 | | 0.5000 | | 95.5 | 70 | 130 | | | |
| Surr: Dibromofluoromethane | 0.48 | | 0.5000 | | 96.2 | 70 | 130 | | | |
| Surr: Toluene-d8 | 0.50 | | 0.5000 | | 99.2 | 70 | 130 | | | |

Sample ID: **LCS-52577** SampType: **LCS4** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BatchQC** Batch ID: **52577** RunNo: **69081**
Prep Date: **5/19/2020** Analysis Date: **5/21/2020** SeqNo: **2392358** Units: **mg/Kg**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.89 | 0.025 | 1.000 | 0 | 88.9 | 80 | 120 | | | |
| Toluene | 1.1 | 0.050 | 1.000 | 0 | 106 | 80 | 120 | | | |
| Ethylbenzene | 1.1 | 0.050 | 1.000 | 0 | 107 | 80 | 120 | | | |
| Xylenes, Total | 3.2 | 0.10 | 3.000 | 0 | 106 | 80 | 120 | | | |
| Surr: 1,2-Dichloroethane-d4 | 0.48 | | 0.5000 | | 95.2 | 70 | 130 | | | |
| Surr: 4-Bromofluorobenzene | 0.46 | | 0.5000 | | 93.0 | 70 | 130 | | | |
| Surr: Dibromofluoromethane | 0.47 | | 0.5000 | | 94.4 | 70 | 130 | | | |
| Surr: Toluene-d8 | 0.51 | | 0.5000 | | 102 | 70 | 130 | | | |

**Qualifiers:**

| | |
|---|---|
| * | Value exceeds Maximum Contaminant Level. |
| D | Sample Diluted Due to Matrix |
| H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit |
| PQL | Practical Quanitative Limit |
| S | % Recovery outside of range due to dilution or matrix |
| B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range |
| J | Analyte detected below quantitation limits |
| P | Sample pH Not In Range |
| RL | Reporting Limit |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **2005807**

***26-May-20***

**Client:** Vertex Resource Group Ltd.

**Project:** Todd 26 6 Fed 1

| Sample ID: **mb-52577** | SampType: **MBLK** | TestCode: **EPA Method 8015D Mod: Gasoline Range** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **52577** | RunNo: **69081** |
| Prep Date: **5/19/2020** | Analysis Date: **5/21/2020** | SeqNo: **2392372** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | ND | 5.0 | | | | | | | | |
| Surr: BFB | 520 | | 500.0 | | 103 | 70 | 130 | | | |

| Sample ID: **LCS-52577** | SampType: **LCS** | TestCode: **EPA Method 8015D Mod: Gasoline Range** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **52577** | RunNo: **69081** |
| Prep Date: **5/19/2020** | Analysis Date: **5/21/2020** | SeqNo: **2392377** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 24 | 5.0 | 25.00 | 0 | 95.7 | 70 | 130 | | | |
| Surr: BFB | 520 | | 500.0 | | 104 | 70 | 130 | | | |

**Qualifiers:**

| | |
|---|---|
| * | Value exceeds Maximum Contaminant Level. |
| D | Sample Diluted Due to Matrix |
| H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit |
| PQL | Practical Quanitative Limit |
| S | % Recovery outside of range due to dilution or matrix |
| B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range |
| J | Analyte detected below quantitation limits |
| P | Sample pH Not In Range |
| RL | Reporting Limit |

HALL ENVIRONMENTAL ANALYSIS LABORATORY

*Hall Environmental Analysis Laboratory*
*4901 Hawkins NE*
*Albuquerque, NM 87109*
*TEL: 505-345-3975 FAX: 505-345-4107*
*Website: www.hallenvironmental.com*

# Sample Log-In Check List

Client Name: VERTEX CARLSBAD Work Order Number: 2005807 RcptNo: 1

Received By: Isaiah Ortiz 5/19/2020 9:30:00 AM I_OK

Completed By: Isaiah Ortiz 5/19/2020 10:32:31 AM I_OK

Reviewed By: LB 5/19/20

## Chain of Custody

| | | | |
|---|---|---|---|
| 1. Is Chain of Custody complete? | Yes ☑ | No ☐ | Not Present ☐ |
| 2. How was the sample delivered? | Courier | | |

## Log In

| | | | |
|---|---|---|---|
| 3. Was an attempt made to cool the samples? | Yes ☑ | No ☐ | NA ☐ |
| 4. Were all samples received at a temperature of >0° C to 6.0°C | Yes ☑ | No ☐ | NA ☐ |
| 5. Sample(s) in proper container(s)? | Yes ☑ | No ☐ | |
| 6. Sufficient sample volume for indicated test(s)? | Yes ☑ | No ☐ | |
| 7. Are samples (except VOA and ONG) properly preserved? | Yes ☑ | No ☐ | |
| 8. Was preservative added to bottles? | Yes ☐ | No ☑ | NA ☐ |
| 9. Received at least 1 vial with headspace <1/4" for AQ VOA? | Yes ☐ | No ☐ | NA ☑ |
| 10. Were any sample containers received broken? | Yes ☐ | No ☑ | |
| 11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) | Yes ☑ | No ☐ | |
| 12. Are matrices correctly identified on Chain of Custody? | Yes ☑ | No ☐ | |
| 13. Is it clear what analyses were requested? | Yes ☑ | No ☐ | |
| 14. Were all holding times able to be met? (If no, notify customer for authorization.) | Yes ☑ | No ☐ | |

# of preserved bottles checked for pH: (<2 or >12 unless noted)

Adjusted?

Checked by: DAD 5/19/20

## Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|---|---|---|---|---|---|---|
| 1 | 4.2 | Good | Not Present | | | |

# Chain-of-Custody Record

Client: Vertex

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time: 5 day TURN
☑ Standard ☐ Rush

Project Name: Todd 26 6 Fed 1

Project #: 20E-00141

Project Manager: Natalie Gordon

Sampler: Austin Harris

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 4.3 0.1 CF 4.2 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

| Date | Time | Matrix | Sample Name | Container Type and # | Preservative Type | HEAL No. 2005807 | BTEX / MTBE / TMB's (8021) | TPH:8015D(GRO / DRO / MRO) | 8081 Pesticides/8082 PCB's | EDB (Method 504.1) | PAHs by 8310 or 8270SIMS | RCRA 8 Metals | Cl, F, Br, $NO_3$, $NO_2$, $PO_4$, $SO_4$ | 8260 (VOA) | 8270 (Semi-VOA) | Total Coliform (Present/Absent) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5-18 | 1100 | Soil | BS20-03 0.0' | 4oz | Ice | -001 | ✓ | ✓ | | | | | ✓ | | | |
| ↓ | 1120 | ↓ | WS20-01 0.0' | ↓ | ↓ | -002 | | | | | | | | | | |
| ↓ | 1130 | ↓ | WS20-02 0.0' | ↓ | ↓ | -003 | | | | | | | | | | |

| Date | Time | Relinquished by | Received by | Via | Date | Time |
|---|---|---|---|---|---|---|
| 5-18 | 1330 | Austin Harris | | | | |
| 5/18/20 | 1900 | | | | 5/18/20 | 1330 |
| | | | IQ courier | | 5/19/20 | 0930 |

Remarks: CC: Natalie Gordon

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

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

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

CONDITIONS

Action 197181

## CONDITIONS

| | |
|---|---|
| Operator:<br>DEVON ENERGY PRODUCTION COMPANY, LP<br>333 West Sheridan Ave.<br>Oklahoma City, OK 73102 | OGRID:<br>6137 |
| | Action Number:<br>197181 |
| | Action Type:<br>[C-141] Release Corrective Action (C-141) |

**CONDITIONS**

| Created By | Condition | Condition Date |
|---|---|---|
| amaxwell | None | 3/16/2023 |