VERTEX

January 29, 2021 Vertex Project #: 20E-00141-057

Spill Closure Report: Todd 26 SWD #2
Unit G, Section 26, Township 23 South, Range 31 East
County: Eddy
API: 30-015-20277
Tracking Number: NKMW1105935618

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 on February 2, 2011, at Todd 26 SWD #2, API 30-015-20277 (hereafter referred to as "Todd 26"). Devon provided 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 February 8, 2011, followed by submission of the C-141 Release Notification on February 23, 2011 (Attachment 1). The tracking number assigned to this incident is NKMW1105935618.

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 February 2, 2011, a release occurred at Todd 26 when, due to extreme cold weather, a 750 gunbarrel spilled fluid from a vent line and sprayed surrounding tanks. This incident resulted in the release of approximately 15 barrels (bbls) of produced water with a skim of oil onto the wellpad. No produced water was recovered from the spill site. The release was contained on-lease; no produced water was released into sensitive areas or waterways.

Site Characterization

The release associated with Todd 26 occurred on privately-owned land, N 32.2771912, W 103.7453842, 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 surrounding the constructed wellpad.

The surrounding landscape is associated with alluvial fans and plains 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. The ecological classification of the site is Shallow Sandy, which is a black grama-dominated grassland sparsely dotted with shrubs, such as yucca, javalinabush, prickly pear and mesquite (United States Department of Agriculture, Natural Resources Conservation Service, 2020).

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 Simona and Wink fine sandy loams, characterized by shallow layers of gravelly sandy and fine sandy loam over an indurated calache layer. This type of soil tends to be well-drained with very high runoff and very 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 Todd 26. 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 0.6 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 0.55 miles 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 the following constituent concentration limits based on depth to groundwater.

Table 1. Closure Criteria for Soils Impacted by a Release		
Depth to Groundwater	**Constituent**	**Limit**
> 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

Initial spill inspection and site characterization activities at Todd 26 were completed by Vertex on August 25, 2020. The Daily Field Report and field screening data associated with the site visit are included in Attachment 4. Using initial field screening and soil sampling laboratory data as shown in Table 2 (Attachment 5), the release was delineated horizontally and vertically as presented on Figure 1 (Attachment 2). The impacted area was determined to be approximately 155 feet long and 195 feet wide; the total affected area was determined to be approximately 8,372 square feet.

On October 30, 2020, Vertex provided 48-hour notification of confirmatory sampling to NM OCD, as required by Subparagraph (a) of Paragraph (1) of Subsection D 19.15.29.12 NMAC (Attachment 6). Excavation of impacted soils began on November 4, 2020, with a Vertex representative on-site to conduct field screening to guide the excavation and determine the final horizontal and vertical extents of the excavation as presented on Figure 2 (Attachment 2). Following completion of remediation activities, Vertex collected a total of 42 five-point composite confirmatory samples from the base and sidewalls of the excavation, at depths ranging between 0 and 0.5 feet bgs. 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 3 (Attachment 5). 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 sampling locations are presented on Figure 2 (Attachment 2).

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

Vertex requests that this incident (NKMW1105935618) 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 February 2, 2011, 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. Figures
Attachment 3. Closure Criteria for Soils Impacted by a Release Research Determination Documentation
Attachment 4. Daily Field Report(s) with Photographs
Attachment 5. Laboratory Data Tables
Attachment 6. Required 48-hr Notification of Confirmatory Sampling to Regulatory Agencies
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
1301 W. Grand Avenue, 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 March 17, 1999

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

30-015-20277

Release Notification and Corrective Action

nKMO 1105935618

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Devon Energy 6137	Contact☐ Tracy Kidd
Address P. O. Box 250 Artesia, NM 88211	Telephone No.☐ 575-513-1768
Facility Name Todd 26 SWD #2	Facility Type☐ Salt Water Disposal

Surface Owner	Mineral Owner	Lease No.☐

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	26	23	31E	1980	North	1650	East	Eddy County, NM

NATURE OF RELEASE

Type of Release Produced Water w/skim of oil	Volume of Release 15 BPW	Volume Recovered☐0
Source of Release 750 Gun Barrel tank	Date and Hour of Occurrence 2-2-11	Date and Hour of Discovery 2-4-11 9:00 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Jim Amos (BLM-Carlsbad) 2-8-11 1:50 PM Mike Bratcher OCD-Artesia 1:43 PM 2-8-11	
By Whom? ☐	Date and Hour☐	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

RECEIVED
FEB 23 2011
NMOCD ARTESIA

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*
A 750 gunbarrel spilled fluid from vent line onto ground and sprayed surrounding tanks.

Describe Area Affected and Cleanup Action Taken.*
Due to extreme cold weather the Todd 26-1 compressor suction line froze up on the 2nd of February and the compressor was left down as well as the pumping unit. On the 4th of February sometime early that morning the separator had about 200 psi in it when the dump controller froze up and opened the dump valve sending water and gas to the gunbarrel causing it to roll and spill about 15 barrels of water and a skim of oil out of the vent line and spraying the surrounding tanks. Vacuum truck was called to pick up some of the produced water.

I hereby 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: Adrienne Verkler	OIL CONSERVATION DIVISION Signed By Mike Bratcher
Printed Name: Adrienne Verkler,	Approved by☐District Supervisor:
Title: Field Tech II	Approval Date: 3/3/11 Expiration Date:
Date: February 8, 2011 Phone: (575) 748-0174	Conditions of Approval: Attached ☐

* Attach Additional Sheets If Necessary

Remediation per OCD Rules & Guidelines. **SUBMIT REMEDIATION PROPOSAL NOT LATER THAN:** 4/3/11

2RP-613

State of New Mexico
Oil Conservation Division

Incident ID	NKMW1105935618
District RP	2RP-613
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
- ☒ 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.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NKMW1105935618
District RP	2RP-613
Facility ID	
Application ID	

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

Printed Name: Wes Mathews Title: EHS Professional

Signature: Wesley Mathews Date: 4/21/2021

email: wesley.mathews@dvn.com Telephone: 575-513-8608

OCD Only

Received by: Date:

Form C-141
Page 6

State of New Mexico
Oil Conservation Division

Incident ID	NKMW1105935618
District RP	2RP-613
Facility ID	
Application ID	

Closure

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

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

[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

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

Printed Name: Wes Mathews Title: EHS Professional

Signature: Wesley Mathews Date: 4/21/2021

email: wesley.mathews@dvn.com Telephone: 575-513-8608

OCD Only

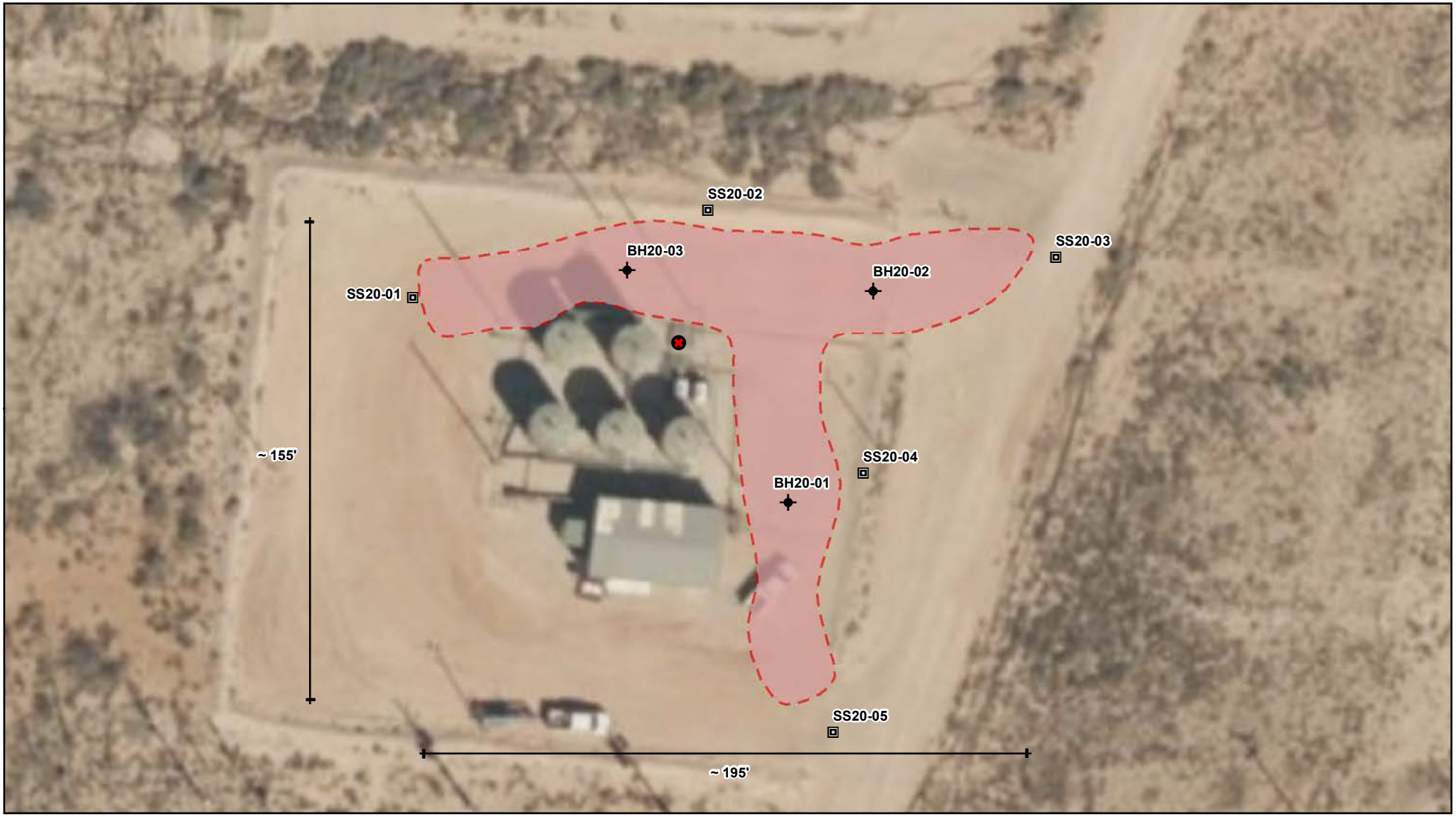
Received by: OCD Date: 4/22/2021

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

Closure Approved by: Ashley Maxwell Date: 1/26/2023

Printed Name: Ashley Maxwell Title: Environmental Specialist

ATTACHMENT 2



Borehole

Point of Release

Surface Sample

Approximate Spill Extent (~ 8,372 sq. ft.)

VERTEX

0 12.5 25 50 Feet

Map Center:
Lat/Long: 32.276204, -103.745521

NAD 1983 UTM Zone 13N
Date: Aug 27/20

N

Site Schematic and Characterization Sampling Locations
Todd 26 SWD #2

FIGURE:
1

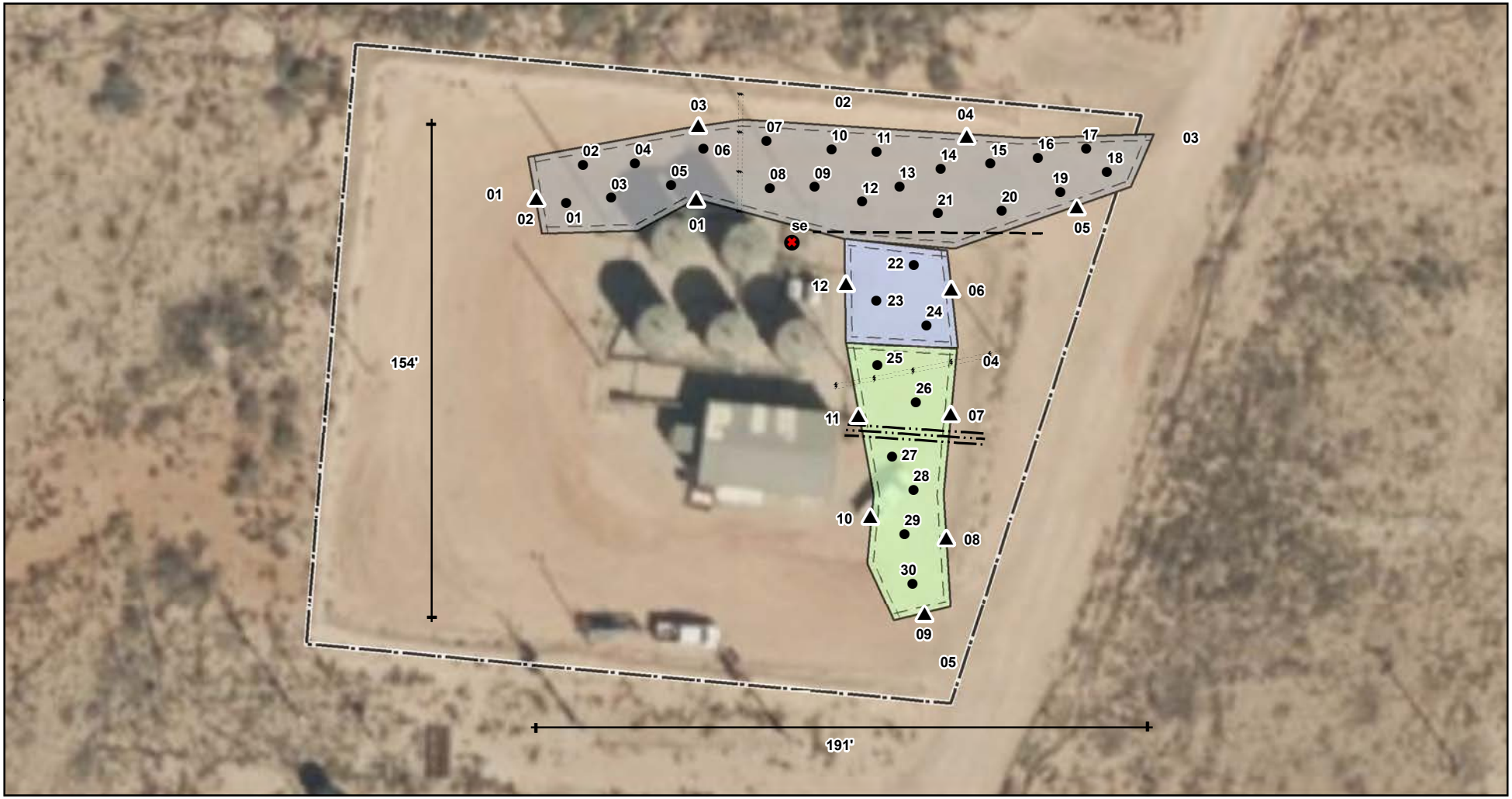
devon

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 Bing, 2019.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\Devon Energy Corporation\20E-00141\057 - Todd 26G Federal #002 SWD\Figure 1 Initial Characterization (Todd 26G Federal #002 SWD).mxd



Point of Release
Base Sample (Prefixed by "BS20-")
Wall Sample (Prefixed by "WS20-")
Electrical line (Underground)
Pipeline (Aboveground)
Pipeline (Underground)
Approximate Lease Boundary
0' Eexcavation (1,019 sq. ft.)
3" Excavation (5,243 sq. ft.)
6" Scrape (2,102 sq. ft.)

VERTEX

0 12.5 25 50 Feet

Map Center:
Lat/Long: 32.276129, -103.745608

NAD 1983 UTM Zone 13N
Date: Nov 06/20

N

Confirmatory Sampling Locations
Todd 26 SWD #2

FIGURE:
2

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 Bing, 2019.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\Devon Energy Corporation\20E-00141\057 - Todd 26G Federal #002 SWD\Figure 2 Confirmatory Schematic (Todd 26G Federal #002 SWD).mxd

ATTACHMENT 3

Closure Criteria Worksheet			
Site Name: Todd 26G Federal #002 SWD			
Spill Coordinates:		X: 32.276059°	Y: -103.745655°
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	84,480	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	54,580	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	27,298	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**	2,640	feet
	ii) Within 1000 feet of any fresh water well or spring	2,640	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	17,229	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)		Critical High Medium Low
10	Within a 100-year Floodplain	Undetermined	year
NMAC 19.15.29.12 E (Table 1) Closure Criteria		>100'	<50' 51-100' >100'

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

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

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 02258		C	ED		3	2	26	23S	31E	618055	3571853*	133	662		
C 02348		C	ED	1	4	3	26	23S	31E	617648	3571068	827	700	430	270
C 02405		CUB	ED		4	1	02	24S	31E	617690	3568631*	3141	275	160	115
C 02464		C	ED	2	3	1	02	24S	31E	617645	3568581	3196	320	205	115
C 02460		C	ED			3	02	24S	31E	617496	3568022*	3772	320		
C 02460 POD2		C	ED			3	02	24S	31E	617496	3568022*	3772	320		
C 02777		CUB	ED	4	4	4	10	23S	31E	616974	3575662	4087	890		
C 03749 POD1		CUB	ED		2	2	15	23S	31E	616974	3575662	4087	865	639	226
C 03529 POD1		C	LE	2	4	3	29	23S	32E	622651	3571212	4552	550		
C 03851 POD1		CUB	LE	3	3	4	20	23S	32E	622880	3572660	4838	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): 618129 **Northing (Y):** 3571741.36 **Radius:** 5000

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

WATER

New Mexico Office of the State Engineer

Point of Diversion Summary

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

Well Tag	POD Number	Q64	Q16	Q4	Sec	Twn	Rng	X	Y
	C 02348	1	4	3	26	23S	31E	617648	3571068

Driller License: 1654 **Driller Company:** NOT WORKING FOR HIRE--SIRMAN DRILLING AND CONSTRUC

Driller Name:

Drill Start Date: 10/31/2013 **Drill Finish Date:** 11/01/2013 **Plug Date:**

Log File Date: 11/07/2013 **PCW Rcv Date:** **Source:** Shallow

Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 10 GPM

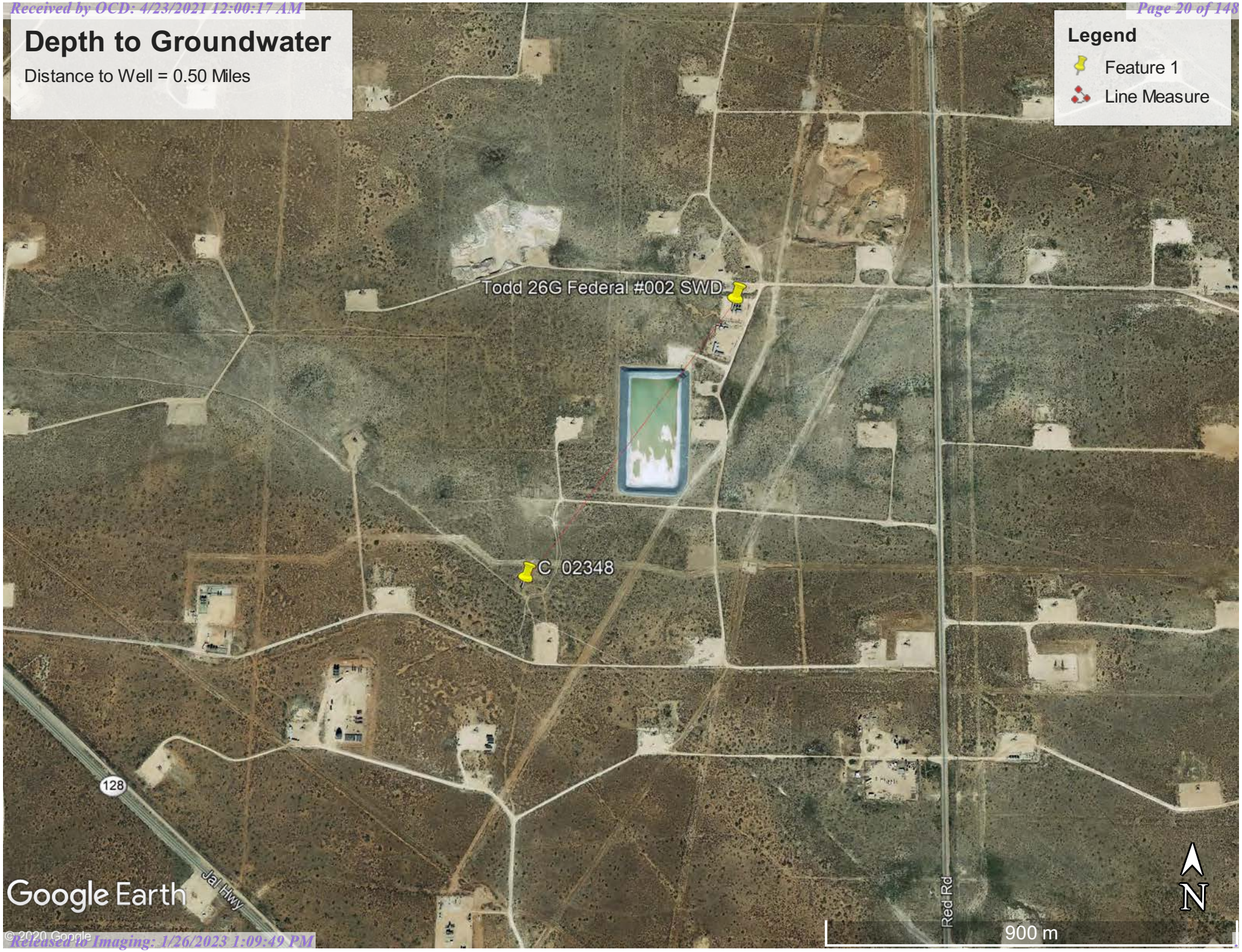
Casing Size: 6.00 **Depth Well:** 700 feet **Depth Water:** 430 feet

Water Bearing Stratifications:	Top	Bottom	Description
	15	125	Sandstone/Gravel/Conglomerate
	315	700	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	560	620
	680	700

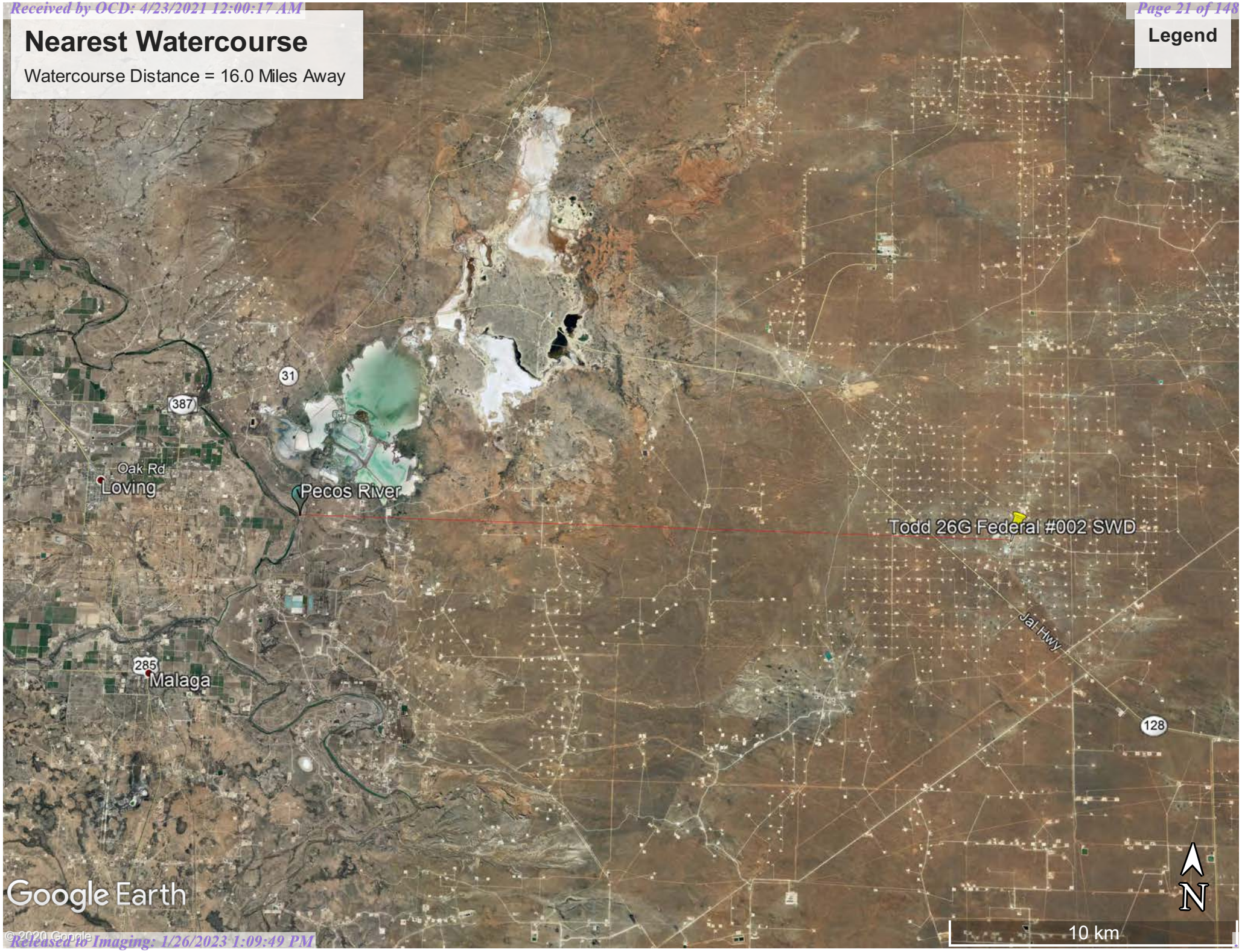
Depth to Groundwater

Distance to Well = 0.50 Miles



Nearest Watercourse

Watercourse Distance = 16.0 Miles Away



U.S. Fish and Wildlife Service

National Wetlands Inventory

Nearest Lake Distance = 54,580 Feet

August 27, 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

U.S. Fish and Wildlife Service

National Wetlands Inventory

Nearest Wetland Distance = 17,229 Feet

August 27, 2020

Wetlands

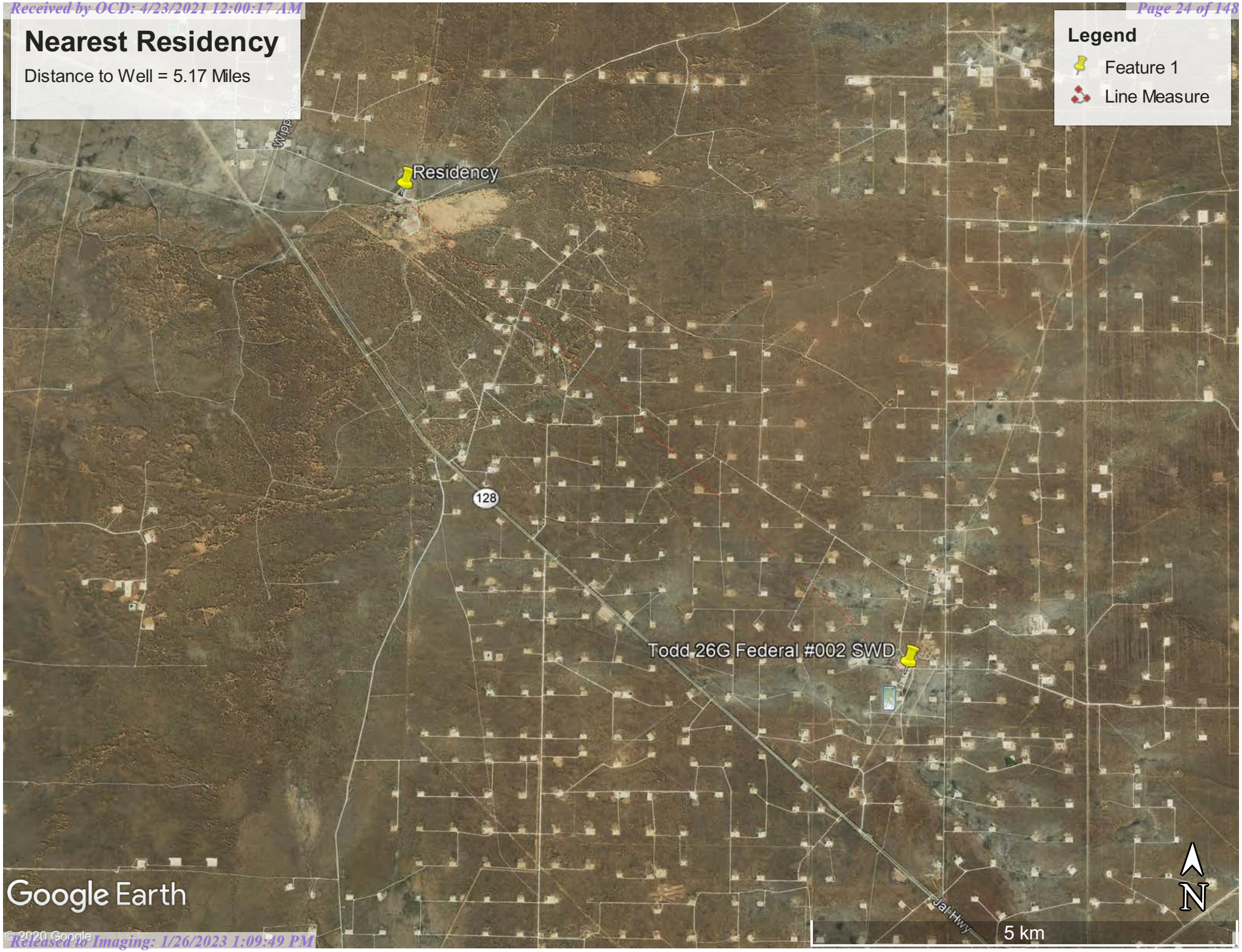
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

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

Nearest Residency

Distance to Well = 5.17 Miles



National Flood Hazard Layer FIRMette

FEMA

103°45'3"W 32°16'49"N

103°44'26"W 32°16'19"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 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

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

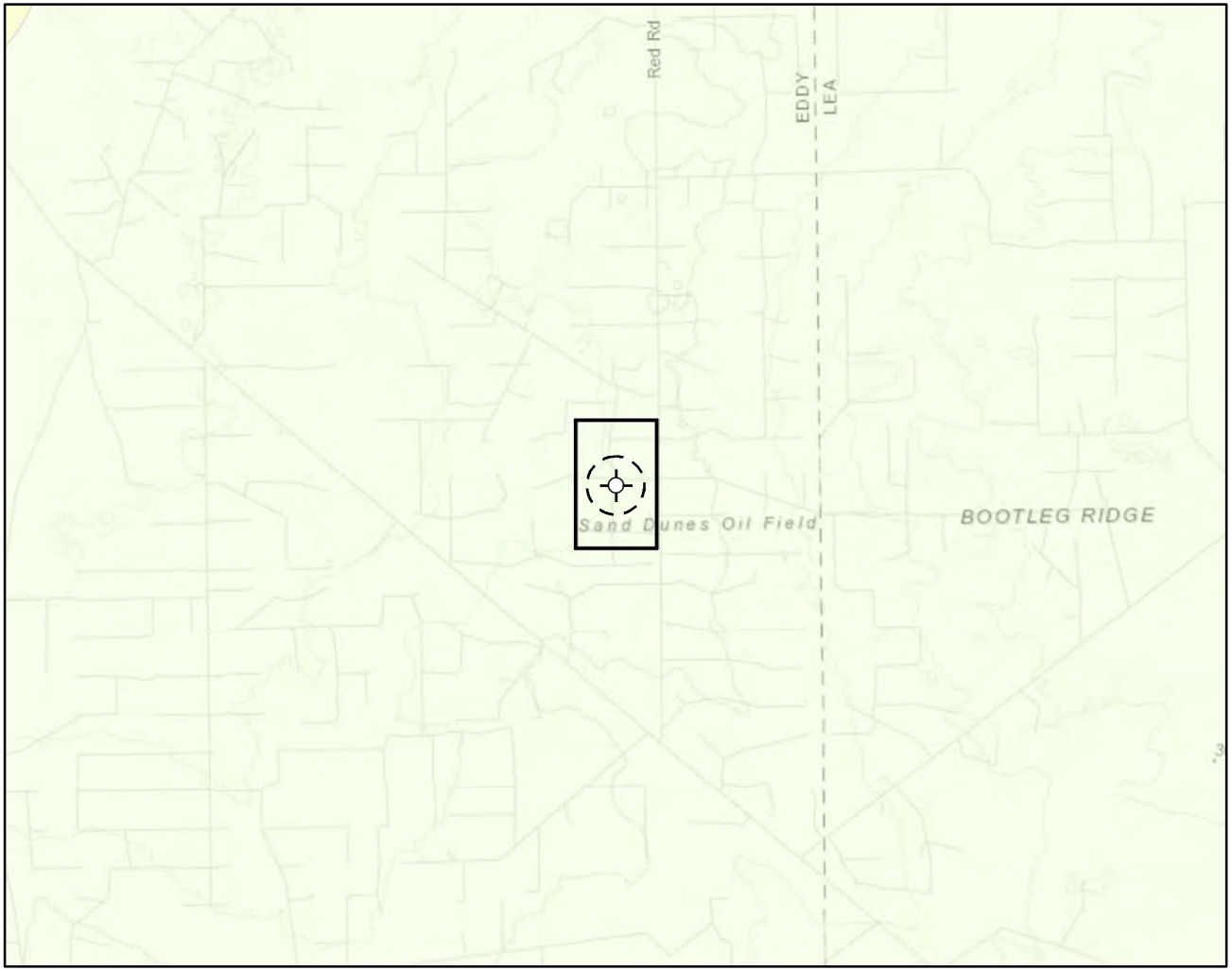
N

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

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/27/2020 at 5:38 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.



Karst Potential

- Critical
- High
- Medium
- Low

- Site Location
- Site Buffer (1,000 ft.)

Overview Map

0 0.25 0.5 1 mi

Detail Map

0 150 300 600 ft.

VERTEX

Map Center:
Lat/Long: 32.276262, -103.745571

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

N

Karst Potential
Todd 26G Federal #002 SWD

FIGURE:
X

devon

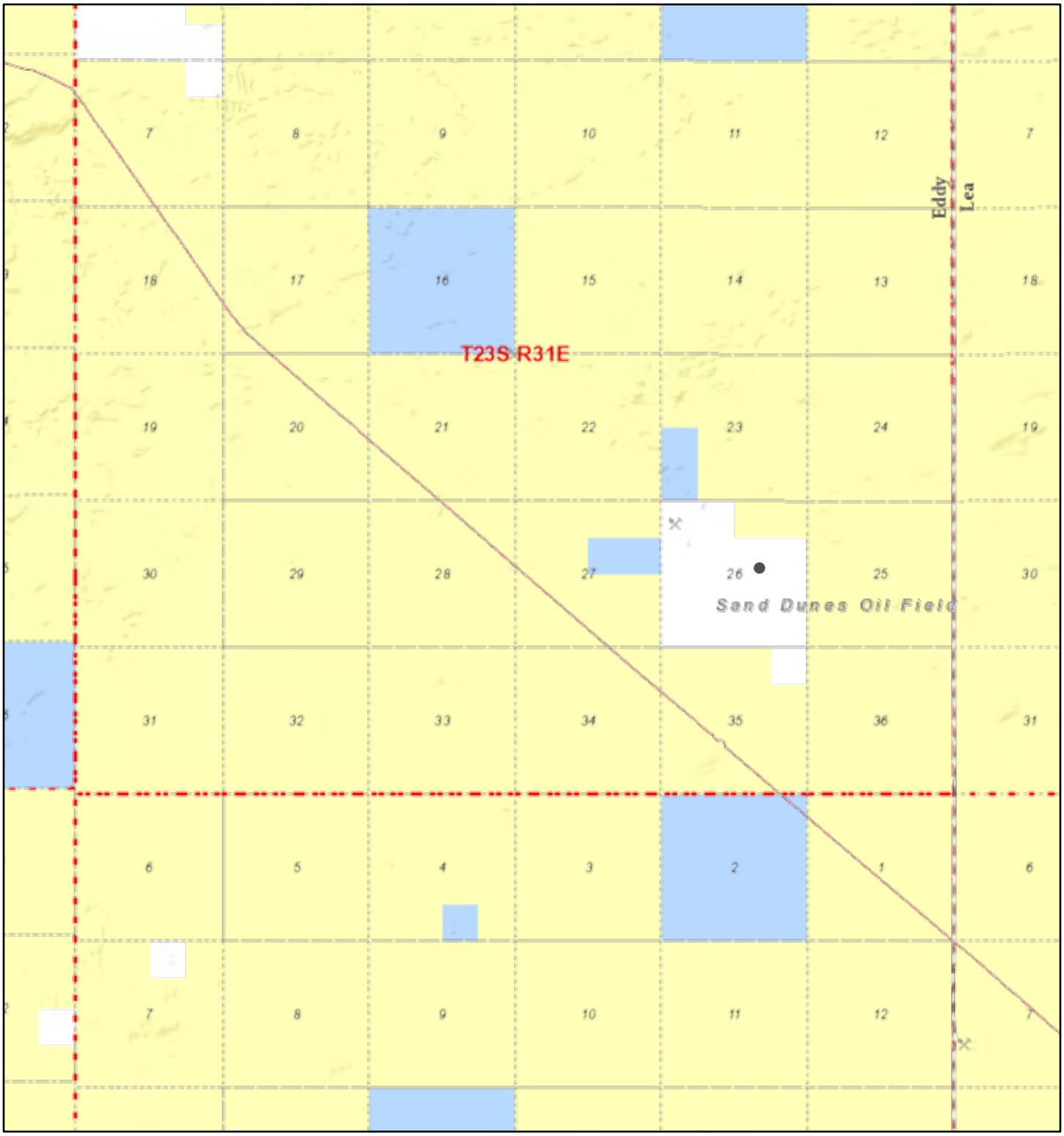
Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

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

VERSATILITY. EXPERTISE.

Document Path: \\vtx-s-fs01.corp.internal\shared\vps\04 - Geomatics\1-Projects_US PROJECTS\Devon Energy Corporation\20E-00141057 - Todd 26G Federal #002 SWD\Fig X Karst Potential (Todd 26G Federal 002 SWD).mxd

Active Mines in New Mexico



8/27/2020, 3:35:27 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

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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

Custom Soil Resource Report for Eddy Area, New Mexico

August 27, 2020

Preface

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

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

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

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

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

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

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Contents

How Soil Surveys Are Made

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

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

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

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

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

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

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

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

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

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

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

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

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

Soil Map

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

Custom Soil Resource Report
Soil Map

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

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

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

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

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
SN	Simona and Wink fine sandy loams, 0 to 3 percent slopes, eroded	7.9	100.0%
Totals for Area of Interest		**7.9**	**100.0%**

Map Unit Descriptions

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

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

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

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

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

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

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

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

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

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

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

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

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

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
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water capacity: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R042XC002NM - Shallow Sandy
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
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 content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water capacity: Low (about 6.0 inches)

Interpretive groups

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

Minor Components

Dune land

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

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USDA Natural Resources Conservation Service

Ecological site R042XC002NM
Shallow Sandy

Accessed: 01/29/2021

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

Associated sites

R042XC004NM	**Sandy** Sandy sites often occur in association or in a complex with Shallow Sandy Sites.

Similar sites

R042XC004NM	**Sandy** Sandy ecological sites are similar to Shallow Sandy sites in species composition and Transition pathways.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

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

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

Table 2. Representative physiographic features

Landforms	(1) Plain (2) Fan piedmont (3) Alluvial fan
Elevation	2,842–4,500 ft
Slope	1–9%
Aspect	Aspect is not a significant factor

Climatic features

The average annual precipitation ranges from 8 to 13 inches. Variations of 5 inches, more or less, are common. Over 80 percent of the precipitation falls from April through October. Most of the summer precipitation comes in the form of high intensity – short duration thunderstorms.
Temperatures are characterized by distinct seasonal changes and large annual and diurnal temperature changes. The average annual temperature is 61 degrees with extremes of 25 degrees below zero in the winter to 112 degrees in the summer.
The average frost-free season is from 207 to 220 days. The last killing frost is in late March or early April, and the first killing frost is in late October or early November.
Temperature and rainfall both favor warm season perennial plant growth. In years of abundant spring moisture, annual forbs and cool season grasses can make up an important component of the site. The vegetation of this site can take advantage of the moisture and the time it falls. Because of the soil profile, little moisture can be stored in the soil for any length of time. Moisture is readily available to the plants from the time it falls. Strong winds from the southwest blow from January through June which rapidly dries out the soil profile during a critical period for plant growth.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

Table 3. Representative climatic features

Frost-free period (average)	221 days
Freeze-free period (average)	240 days
Precipitation total (average)	13 in

Influencing water features

This site is not influenced from water from wetlands or streams.

Soil features

Soils are very shallow to shallow, less than 20 inches in depth. Surface and subsurface textures are gravelly loamy sand, gravelly fine sandy loam or fine sandy loam.

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

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

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

Characteristic soils are:
Simona
Jerag

Table 4. Representative soil features

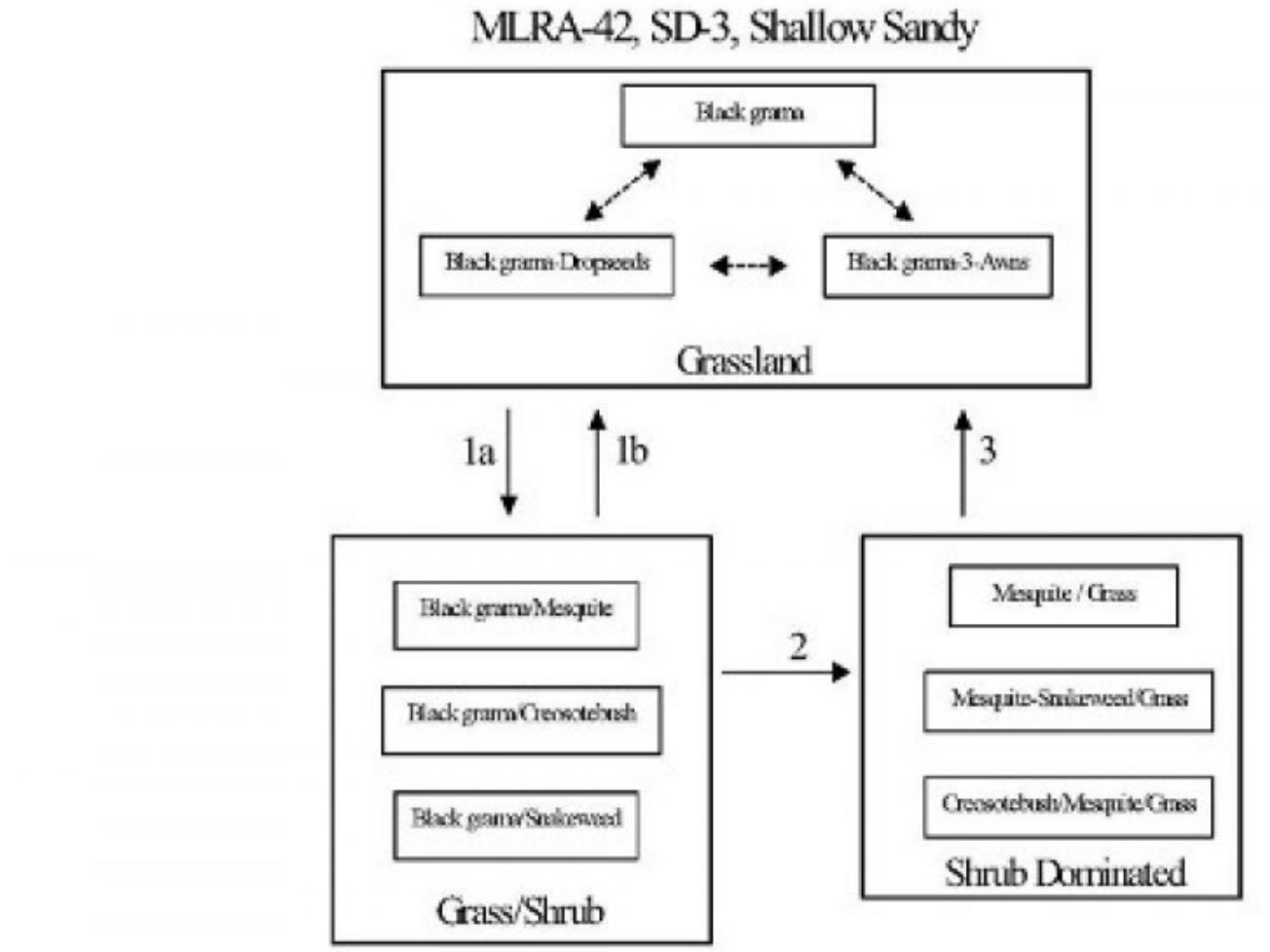
Surface texture	(1) Fine sandy loam (2) Loamy fine sand (3) Gravelly fine sandy loam
Family particle size	(1) Loamy
Drainage class	Well drained to moderately well drained
Permeability class	Moderately slow to moderate
Soil depth	7–24 in
Surface fragment cover <=3"	5–25%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	1–2 in
Calcium carbonate equivalent (0-40in)	5–15%
Electrical conductivity (0-40in)	0–4 mmhos/cm
Sodium adsorption ratio (0-40in)	0
Soil reaction (1:1 water) (0-40in)	7.4–8
Subsurface fragment volume <=3" (Depth not specified)	5–25%
Subsurface fragment volume >3" (Depth not specified)	0%

Ecological dynamics

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

State and transition model

Plant Communities and Transitional Pathways (diagram)



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

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

3. Brush control, range seeding, prescribed grazing.

Figure 4.

State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

Grassland: This site responds well to management and is resistant to state change, due to the shallow depth to petrocalcic horizon and sandy surface textures. The sandy surface textures allow rapid water infiltration and the petrocalcic horizon helps to keep water perched and available to shallow rooted grasses. Black grama is the dominant species in the historic plant community, averaging 50 to 60 percent of the total production for this site. Bush muhly, blue grama, and dropseeds are present as sub-dominants. Typically, yucca, javalinabush, range

ratany, prickly pear, and mesquite are sparsely dotted across the landscape. Leatherweed croton, cutleaf happlopappus, wooly groundsel, and threadleaf groundsel are common forbs. Continuous heavy grazing or extended periods of drought will cause a loss of grass cover characterized by a decrease in black grama, bush muhly, blue and sideoats grama, plains bristlegrass, and Arizona cottontop. Dropseeds and or threeawns may increase and become sub-dominant to black grama. Continued loss of grass cover in conjunction with dispersal of shrub seeds and fire suppression is believed to cause the transition to a state with increased amounts of shrubs (Grass/Shrub state).

Diagnosis: Black grama is the dominant grass species. Grass cover uniformly distributed. Shrubs are a minor component averaging only two to five percent canopy cover. Litter cover is high (40-50 percent of area), and litter movement is limited to smaller size class litter and short distances (<. 5m).

Other grasses that could appear on this site would include: six-weeks grama, fluffgrass, false-buffalograss, hairy grama, little bluestem, bristle panicum, cane bluestem, Indian ricegrass, tridens spp., and red lovegrass.

Other woody plants include: pricklypear, cholla, fourwing saltbush, catclaw mimosa, winterfat, American tarbush and mesquite.

Other forbs include: globemallow, verbena, desert holly, senna, plains blackfoot, trailing fleabane, fiddleneck, deerstongue, wooly Indianwheat, and locoweed.

Table 5. Annual production by plant type

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

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	30-35%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	40-50%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	15-25%

Figure 6. Plant community growth curve (percent production by month). NM2802, R042XC002NM-Shallow Sandy-HCPC. SD-3 Shallow Sandy - Warm season plant community.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	3	5	10	10	25	30	12	5	0	0

State 2

Grass/Shrub

Community 2.1
Grass/Shrub

Grass/Shrub: This state is characterized by the notable presence of shrubs, especially mesquite, broom snakeweed, and/or creosotebush, however grasses remain as the dominant species. Black grama is the dominant grass species. Threeawns and or dropseeds are sub-dominant. The susceptibility of the Shallow Sandy site to shrub encroachment may be higher when located adjacent to other sites with high densities of mesquite or creosotebush. Retrogression within this site is characterized by decreases in grass cover and increasing densities of shrubs.

Diagnosis: Black grama remains as the dominant grass species. Grass cover varies in response to the amount of shrub increase, ranging from uniform to patchy. Shrubs are found at increased densities relative to the grassland state, especially mesquite, creosotebush, or broom snakeweed.

Transition to Grass/Shrub (1a) Historically fire may have kept mesquite and other shrubs in check by completely killing some species and disrupting seed production cycles and suppressing the establishment of shrub seedlings in others. Fire suppression combined with seed dispersal by livestock and wildlife is believed to be the factors responsible for the establishment and increase in shrubs.1, 3 Loss of grass cover due to overgrazing, prolonged periods of drought, or their combination, reduces fire fuel loads and increases the susceptibility of the site to shrub establishment.

Key indicators of approach to transition:
Increase in the relative abundance of dropseeds and threeawns
Presence of shrub seedlings
Loss of organic matter—evidenced by an increase in physical soil crusts 8

Transition back to Grassland (1b) Brush control is necessary to initiate the transition back to the grassland state. If adequate fuel loads remain, possibly the reintroduction of fire as a management tool will assist in the transition back, however, mixed results have been observed concerning the effects of fire on black grama grasslands.6 Prescribed grazing will help ensure adequate rest following brush control and will assist in the establishment and maintenance of grass cover capable of sustaining fire.

State 3
Shrub Dominated

Community 3.1
Shrub Dominated

Shrub-Dominated: Across the range of soil types included in the Shallow Sandy site, mesquite is typically the dominant shrub, but it does occur as a co-dominant or sub-dominant species with creosotebush or broom snakeweed. Mesquite tends to dominate when the Shallow Sandy site occurs as part of a complex or in association with Sandy or Loamy Sand sites. Creosotebush tends to dominate on Shallow Sandy sites that occur as part of, or adjacent to Shallow Sites. Broom snakeweed increases in response to heavy grazing, but tends to cycle in and out depending on timing of rainfall. However, once the site is dominated by shrubs and snakeweed becomes well established, it tends to remain as a major component in the shrub dominated state.

Diagnosis: Mesquite, creosotebush, or snakeweed cover is high, exceeding that of grasses. Grass cover is patchy with large connected bare areas present. Black grama, threeawns, or dropseeds may be the dominant grass. Evidence of accelerated wind erosion in the form of pedestalling of plants, and soil deposition around shrub bases may be common.

Transition to Shrub-Dominated (2) Persistent loss of grass cover and the resulting increased competition between shrubs and remaining grasses for dwindling resources (especially soil moisture) may drive this transition.5 Additionally periods of increased winter precipitation may facilitate periodic episodes of shrub expansion and establishment. 4

Key indicators of approach to transition:
Increase in size and frequency of bare patches.
Loss of grass cover in shrub interspaces.
Increased signs of erosion, evidenced by pedestalling of plants, and soil and litter deposition on leeward side of plants. 7

Transition back to Grassland (3) Brush control is necessary to reduce competition from shrubs and reestablish grasses. Range seeding may be necessary if insufficient grasses remain, The benefits, and costs, will vary depending upon the degree of site degradation, and adequate precipitation following seeding.

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	**Warm Season**			413–495	
	black grama	BOER4	*Bouteloua eriopoda*	413–495	–
2	**Warm Season**			41–83	
	bush muhly	MUPO2	*Muhlenbergia porteri*	41–83	–
3	**Warm Season**			41–83	
	blue grama	BOGR2	*Bouteloua gracilis*	41–83	–
4	**Warm Season**			25–41	
	sideoats grama	BOCU	*Bouteloua curtipendula*	25–41	–
5	**Warm Season**			41–83	
	spike dropseed	SPCO4	*Sporobolus contractus*	41–83	–
	sand dropseed	SPCR	*Sporobolus cryptandrus*	41–83	–
	mesa dropseed	SPFL2	*Sporobolus flexuosus*	41–83	–
6	**Warm Season**			17–41	
	threeawn	ARIST	*Aristida*	17–41	–
7	**Warm Season**			41–83	
	Arizona cottontop	DICA8	*Digitaria californica*	41–83	–
	plains bristlegrass	SEVU2	*Setaria vulpiseta*	41–83	–
8	**Warm Season**			41–83	
	mat sandbur	CELO3	*Cenchrus longispinus*	41–83	–
	hooded windmill grass	CHCU2	*Chloris cucullata*	41–83	–
9	**Other Perennial Grasses**			25–41	
	Grass, perennial	2GP	*Grass, perennial*	25–41	–
Shrub/Vine					
10	**Shrub**			8–25	
	javelina bush	COER5	*Condalia ericoides*	8–25	–
11	**Shrub**			8–25	
	yucca	YUCCA	*Yucca*	8–25	–
12	**Shrub**			8–25	
	jointfir	EPHED	*Ephedra*	8–25	–
	littleleaf ratany	KRER	*Krameria erecta*	8–25	–
13	**Shrub**			8–25	

	featherplume	DAFO	*Dalea formosa*	8–25	–
14	**Shrub**			8–25	
	broom snakeweed	GUSA2	*Gutierrezia sarothrae*	8–25	–
15	**Other Shrubs**			25–41	
	Shrub (>.5m)	2SHRUB	*Shrub (>.5m)*	25–41	–
Forb					
16	**Forb**			17–41	
	leatherweed	CRPOP	*Croton pottsii var. pottsii*	17–41	–
	Goodding's tansyaster	MAPIG2	*Machaeranthera pinnatifida ssp. gooddingii var. gooddingii*	17–41	–
17	**Forb**			17–41	
	woolly groundsel	PACA15	*Packera cana*	17–41	–
	threadleaf ragwort	SEFLF	*Senecio flaccidus var. flaccidus*	17–41	–
18	**Forb**			8–25	
	whitest evening primrose	OEAL	*Oenothera albicaulis*	8–25	–
19	**Other Forbs**			8–25	
	Forb (herbaceous, not grass nor grass-like)	2FORB	*Forb (herbaceous, not grass nor grass-like)*	8–25	–

Animal community

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

Hydrological functions

The runoff curve numbers are determined by field investigations using hydraulic cover conditions and hydrologic soil groups.

Hydrologic Interpretations
Soil Series Hydrologic Group
Jarag D
Simona D

Recreational uses

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

Wood products

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

Other products

This site is suitable for grazing by all kinds and classes of livestock during all seasons of the year. Because of the sandy textures and shallow profile, this site will respond rapidly to management. As this site deteriorates, plants such as black grama, bush muhly, blue and sideoats grama, plains bristlegrass and Arizona cottontop, will decrease and be replaced by plants such as threeawns, mesquite, creosote bush, and broom snakeweed. This also causes a decrease in ground cover, leaving the soil to blow. This site responds best to a system of management that rotates the season of use.

Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month
Similarity Index Ac/AUM
100 - 76 2.5 – 3.5
75 – 51 3.2 – 4.6
50 – 26 4.5 – 7.5
25 – 0 7.6 +

Inventory data references

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

Other references

Literature References:

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

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

3. Humphrey, R.R. 1974. Fire in the deserts and desert grassland of North America. In: Kozlowski, T. T.; Ahlgren, C. E., eds. Fire and ecosystems. New York: Academic Press: 365-400.

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

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

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

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

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

Contributors

David Trujillo
Don Sylvester

Rangeland health reference sheet

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

Author(s)/participant(s)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

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

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

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

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

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

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

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

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

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

---

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

---

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

---

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

    Dominant:

    Sub-dominant:

    Other:

    Additional:

---

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

---

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

---

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

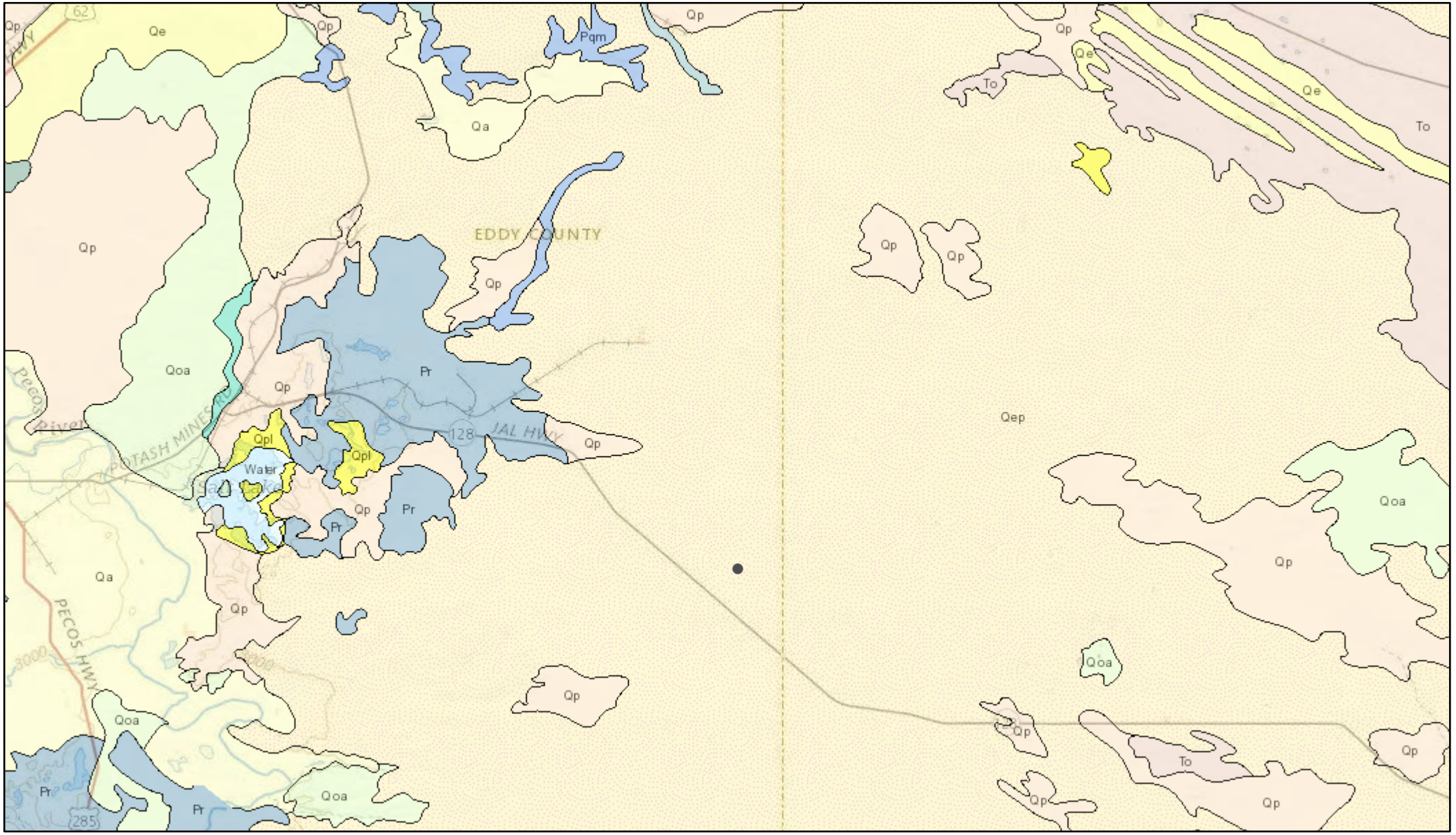
---

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

---

17. **Perennial plant reproductive capability:**

ArcGIS Web Map



8/27/2020, 3:47:04 PM

Lithologic Contacts

Contact, Exposed

Contact, Gradational

Nomenclature change

Map Boundary

1:288,895

0 2 4 8 mi

0 3.25 6.5 13 km

NMBGMR, 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.

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

ATTACHMENT 4

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	8/25/2020
Site Location Name:	Todd 26G Fed 2 SWD	Report Run Date:	8/26/2020 4:44 PM
Client Contact Name:	Amanda Davis	API #:	SWD
Client Contact Phone #:	(575) 748-0176		
Unique Project ID	-Todd 26G Fed 2 SWD	Project Owner:	Tom Bynum
Project Reference #	NAB1432353445	Project Manager:	Natalie Gordon

Summary of Times

Arrived at Site	8/25/2020 11:40 AM
Departed Site	8/25/2020 3:17 PM

Field Notes

10:35 Delineating historical spill (2011) to NMOCD requirements; 600 ppm chloride and 100 ppm TPH.

10:38 Elevated EC soil concentrations to north, east and west of gun barrel tank (point of release).

10:39 No containment is present around tanks. Pea gravel is present around tanks.

Next Steps & Recommendations

1 Submit characterization samples for lab analysis.

2 Develop a remediation work plan.

Daily Site Visit Report

Site Photos

Viewing Direction: West	**Viewing Direction**: South
	
Impacted area adjacent to gun barrel.	Gun barrel tank (point of release)
Viewing Direction: West	**Viewing Direction**: East
	
Impacted Area	Area adjacent to tanks

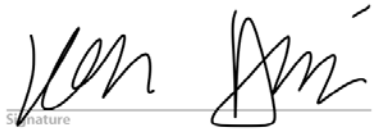
Daily Site Visit Report

Viewing Direction: North	**Viewing Direction**: South
	
Area adjacent to tanks	Impacted Area
Viewing Direction: East	**Viewing Direction**: South
	
Impacted Area	Sample area along access road

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Kevin Smith

Signature: 

VERTEX

Spill Response and Sampling

Client:	Devon Energy
Date:	8/25/2020
Site Name:	Todd 26 G Fed SWD #2
Site Location:	Eddy
Project Owner:	
Project Manager:	
Project #:	20E-00141-057

Initial Spill Information - Record on First Visit	
Spill Date:	
Spill Volume:	
Spill Cause:	
Spill Product:	
Recovered Spill Volume:	
Recovery Method:	

Sampling

		Field Screening			Data Collection (Check for Yes)			
Sample ID	Depth (ft)	VOC (PID)	PetroFlag TPH (ppm)	Quantab (High/Low) + or -	Lab Analysis	Picture	Trimble Coordinates	Marked on Site Sketch
SS/TP/BH - Year - Number Ex. BH18-01	Ex. '2ft	Ex. 400 ppm	200 ppm	~~Ex. High +~~ EC	Ex. Hydrocarbon Chloride			
SS20-01	0'			11,000				
				7,200				
				8,300				
* jarred ✓	0'	0	29	420				
SS20-02	0'			13,000				
				9,000				
* jar		0	50	470				
SS20-03				2,200				
*		0	39	190				
SS20-04		0	125	150				
SS20-05				6,800				
				3,300				
				9,300				
*		0	10	100				
BH20-01	0-6"	0	55	20,000				
*	1'	0	120	160				
BH20-02	0-6"	0	125	16,000				
	1'		115	390				
BH20-03	0-6"		140	12,300				
	1'		110	345				

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	11/4/2020
Site Location Name:	Todd 26G Fed 2 SWD	Report Run Date:	11/5/2020 12:56 AM
Client Contact Name:	Amanda Davis	API #:	SWD
Client Contact Phone #:	(575) 748-0176		
Unique Project ID	-Todd 26G Fed 2 SWD	Project Owner:	Tom Bynum
Project Reference #	NAB1432353445	Project Manager:	Natalie Gordon

Summary of Times

Arrived at Site	11/4/2020 9:00 AM
Departed Site	11/4/2020 4:00 PM

Field Notes

9:51 Starting excavation on northern side with a 0.25” scrape and guide with field screening. East side will consist of a 0.5” scrape due to ground being softer

13:47 Choosing random samples to run for tph across area of excavation

Next Steps & Recommendations

1 Send in samples for lab analysis

2 Closure report

3 Backfill

Daily Site Visit Report

Site Photos

Viewing Direction: East

0.25’ scrape

Viewing Direction: North

0.25’ scrape

Viewing Direction: North

0’ excavation in between 0.25 and 0.5

Viewing Direction: East

0.5’ excavation

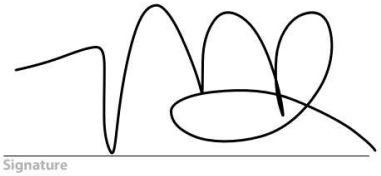
Daily Site Visit Report

Viewing Direction: North	**Viewing Direction**: East
	
0.5’ excavation	0.5’ excavation

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Monica Peppin

Signature: 

VERTEX

Spill Response and Sampling

Client:	Devon
Date:	1/14
Site Name:	Todd 26 G SWD 2
Site Location:	
Project Owner:	
Project Manager:	
Project #:	

Initial Spill Information - Record on First Visit	
Spill Date:	
Spill Volume:	
Spill Cause:	
Spill Product:	
Recovered Spill Volume:	
Recovery Method:	

Sampling

		Field Screening			Data Collection (Check for Yes)			
Sample ID	Depth (ft)	VOC (PID)	PetroFlag TPH (ppm)	Quantab (High/Low) + or -	Lab Analysis	Picture	Trimble Coordinates	Marked on Site Sketch
SS/TP/BH - Year - Number Ex. BH18-01	Ex. '2ft	Ex. 400 ppm	200 ppm	Ex. 'High +	Ex. Hydrocarbon Chloride			
11:00 BS 1	0.25			1.15/24.6				
11:10 2	0.25		411	2.28/23.4				
11:20 3	0.25			2.29/23.6				
11:30 4	0.25			2.68/23.5				
11:40 5				2.43/25.8				
11:50 6			293	4.47/25.3				
12:00 7				1.34/24.9				
12:10 8				3.43/24.6				
12:20 9				2.34/23.2				
12:30 10			758	6.35/24.8				
40 11				4.33/24.4				
50 12				5.47/24.3				
1:00 13			134	5.89/23.9				
10 14			220	2.68/21.0				
20 15				3.93/25.3				
30 16			214	5.32/24.9				
40 17				1.86/25.3				
50 18				4.08/24.8				
2:00 19	↓		242	6.36/24.7				
2:10 20	0.25		413	4.36/18.8				
2:20 21	0.25		534	3.49/20.3				
2:30 22	0			1.75/24.7				

6 trucks

VERTEX

Spill Response and Sampling

Client:	
Date:	
Site Name:	
Site Location:	
Project Owner:	
Project Manager:	
Project #:	

Initial Spill Information - Record on First Visit	
Spill Date:	
Spill Volume:	
Spill Cause:	
Spill Product:	
Recovered Spill Volume:	
Recovery Method:	

Sampling

			Field Screening			Data Collection (Check for Yes)			
	Sample ID	Depth (ft)	VOC (PID)	PetroFlag TPH (ppm)	Quantab (High/Low) + or -	Lab Analysis	Picture	Trimble Coordinates	Marked on Site Sketch
	SS/TP/BH - Year - Number Ex. BH18-01	Ex. '2ft	Ex. 400 ppm	200 ppm	Ex. 'High +	Ex. Hydrocarbon Chloride			
2:40	BS 23	0		322	0.51/20.4				
2:50	24	0			2.75/24.2				
3:00	25	0.5		230	2.23/24.0				
3:10	26	0.5			2.18/24.0				
3:20	27	0.5		217	3.12/23.2				
3:30	28	0.5			2.07/23.5				
3:40	29	0.5			1.69/23.5				
3:50	30	0.5			2.78/23.6				
	~~31~~				—				
11:05	WS 1	0.25			2.77/23.8				
11:15	2	0.25			2.92/24.4				
11:25	3	0.25			5.38/24.6				
11:35	4	0.25			2.79/22.2				
11:45	5	0.25			2.69/24.0				
11:55	6	0'			2.37/24.0				
12:05	7	0.5			2.25/24.2				
12:15	8	0.5			3.15/23.6				
12 25	9	0.5			4.50/22.3				
12 35	10	0.5			3.65/22.2				
12 45	11	0.5			1.92/22.4				
12:55	12	0'			3.13/22.0				

ATTACHMENT 5

Client Name: Devon Energy Production Company
Site Name: Todd 26 SWD #2
NM OCD Incident Tracking #: NKMW1105935618
Project #: 20E-00141-057
Lab Report: 2008E79

Table 2. Release Characterization Field Screening and Laboratory Data - Depth to Groundwater > 100 feet

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (Petro Flag)	Inorganics (Electroconductivity)	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
SS20-01	0	August 25, 2020	-	29	420	<0.023	<0.207	<4.6	<8.6	<43	<13.2	<56.2	360
SS20-02	0	August 25, 2020	-	50	470	<0.024	<0.216	<4.8	<9.4	<47	<14.2	<61.2	400
SS20-03	0	August 25, 2020	-	30	190	<0.024	<0.213	<4.7	<9.5	<47	<14.2	<61.2	230
SS20-04	0	August 25, 2020	-	125	150	<0.024	<0.215	<4.8	110	220	110	**330**	130
SS20-05	0	August 25, 2020	-	10	100	<0.024	<0.216	<4.8	<48	<240	<52.8	<292.8	<60
BH20-01	0	August 25, 2020	-	55	20,000	<0.024	<0.212	<4.7	<9.2	<46	<13.9	<59.9	**25,000**
BH20-01	0.5	August 25, 2020	-	120	160	<0.024	<0.220	<4.9	140	250	140	**390**	200
BH20-02	0	August 25, 2020	-	125	16,000	-	-	-	-	-	-	-	-
BH20-02	0.5	August 25, 2020	-	115	390	-	-	-	-	-	-	-	-
BH20-03	0	August 25, 2020	-	140	12,300	-	-	-	-	-	-	-	-
BH20-03	0.5	August 25, 2020	-	110	345	-	-	-	-	-	-	-	-

"-" indicates not analyzed/assessed
Bold and shaded indicates exceedance outside of NM OCD Closure Criteria

Client Name: Devon Energy
Site Name: Todd 26 SWD 2
NM OCD Incident Tracking Number: NKMW1105935618
Project #: 20E-00141-057
Lab Report: 2011369

Table 3. Confirmatory Sampling Laboratory Results - Depth to Groundwater >100 feet

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (Petro Flag)	Inorganics (Electrical Conductivity)	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BS20-01	0.25	November 4, 2020	-	-	1,405	<0.025	<0.221	<4.9	25	67	25	92	1,100
BS20-02	0.25	November 4, 2020	-	411	3,088	<0.024	<0.215	<4.8	11	<47	11	11	4,000
BS20-03	0.25	November 4, 2020	-	-	3,093	<0.024	<0.213	<4.7	12	<50	12	12	3,000
BS20-04	0.25	November 4, 2020	-	-	3,661	<0.024	<0.216	<4.8	18	<45	18	18	3,500
BS20-05	0.25	November 4, 2020	-	-	3,200	<0.024	<0.216	<4.8	39	85	39	124	2,800
BS20-06	0.25	November 4, 2020	-	293	6,123	<0.023	<0.21	<4.7	16	60	16	76	5,400
BS20-07	0.25	November 4, 2020	-	-	1,666	<0.024	<0.215	<4.8	<9.9	<49	<14.7	<63.7	1,200
BS20-08	0.25	November 4, 2020	-	-	4,695	<0.023	<0.208	<4.6	<9.1	<46	<13.7	<59.7	3,900
BS20-09	0.25	November 4, 2020	-	-	3,183	<0.024	<0.216	<4.8	<9.3	<47	<14.1	<61.1	2,400
BS20-10	0.25	November 4, 2020	-	758	8,901	<0.024	<0.217	<4.8	76	980	76	1,056	8,600
BS20-11	0.25	November 4, 2020	-	-	6,003	<0.023	<0.211	<4.7	100	630	100	730	6,800
BS20-12	0.25	November 4, 2020	-	-	7,653	<0.023	<0.211	<4.7	<9.7	<49	<14.4	<63.4	6,000
BS20-13	0.25	November 4, 2020	-	134	8,276	<0.024	<0.22	<4.9	<9.7	<49	<14.6	<63.6	8,000
BS20-14	0.25	November 4, 2020	-	220	3,769	<0.023	<0.207	<4.6	19	<49	19	19	4,000
BS20-15	0.25	November 4, 2020	-	-	5,387	<0.025	<0.221	<4.9	13	<48	13	13	5,200
BS20-16	0.25	November 4, 2020	-	214	7,410	<0.024	<0.215	<4.8	<9.7	<48	<14.5	<62.5	6,200
BS20-17	0.25	November 4, 2020	-	-	2399	<0.024	<0.22	<4.9	23	55	23	78	2,100
BS20-18	0.25	November 4, 2020	-	-	5625	<0.025	<0.225	<5.0	<9.7	<49	<14.7	<63.7	5,300
BS20-19	0.25	November 4, 2020	-	242	8,920	<0.024	<0.22	<4.9	<9.7	<48	<14.6	<62.6	8,200
BS20-20	0.25	November 4, 2020	-	413	6,289	<0.024	<0.219	<4.9	20	<50	20	20	6,500
BS20-21	0.25	November 4, 2020	-	534	4,968	<0.025	<0.221	<4.9	27	120	27	147	4,700
BS20-22	0	November 4, 2020	-	-	2,266	<0.025	<0.222	<4.9	<9.7	<49	<14.6	<63.6	2,400
BS20-23	0	November 4, 2020	-	322	663	<0.024	<0.219	<4.9	<9.9	<50	<14.8	<64.8	500
BS20-24	0	November 4, 2020	-	-	3,731	<0.024	<0.217	<4.8	<9.4	<47	<14.2	<61.2	3,600
BS20-25	0.5	November 4, 2020	-	230	2,989	<0.023	<0.207	<4.6	<9.8	<49	<14.4	<63.4	2,800
BS20-26	0.5	November 4, 2020	-	-	2,917	<0.023	<0.208	<4.6	11	<45	11	11	2,400
BS20-27	0.5	November 4, 2020	-	217	4,309	<0.024	<0.22	<4.9	<9.6	<48	<14.5	<62.5	4,300
BS20-28	0.5	November 4, 2020	-	-	2,780	<0.025	<0.221	<4.9	<8.5	<43	<13.4	<56.4	2,200
BS20-29	0.5	November 4, 2020	-	-	2,232	<0.024	<0.216	<4.8	<9.6	<48	<14.4	<62.4	2,800
BS20-30	0.5	November 4, 2020	-	-	3,801	<0.024	<0.212	<4.7	<9.6	<48	<14.3	<62.3	4,800
WS20-01	0-0.25	November 4, 2020	-	-	3,778	<0.023	<0.21	<4.7	12	<44	12	12	3,300
WS20-02	0-0.25	November 4, 2020	-	-	3,968	<0.024	<0.216	<4.8	<9.4	<47	<14.2	<61.2	3,700
WS20-03	0-0.25	November 4, 2020	-	-	7,510	<0.025	<0.221	<4.9	<10	<50	<14.9	<64.9	7,500
WS20-04	0-0.25	November 4, 2020	-	-	3,876	<0.024	<0.215	<4.8	10	<49	10	10	4,500
WS20-05	0-0.25	November 4, 2020	-	-	3,653	<0.024	<0.217	<4.8	<9.6	<48	<14.4	<62.4	4,000
WS20-06	0	November 4, 2020	-	-	3,192	<0.024	<0.216	<4.8	<9.6	<48	<14.4	<62.4	2,900
WS20-07	0-0.5	November 4, 2020	-	-	3,010	<0.025	<0.225	<5.0	<9.6	<48	<14.6	<62.6	3,300
WS20-08	0-0.5	November 4, 2020	-	-	4,335	<0.023	<0.211	<4.7	16	62	16	78	4,400
WS20-09	0-0.5	November 4, 2020	-	-	6,339	<0.023	<0.211	<4.7	<9.9	<50	<14.6	<64.6	6,100
WS20-10	0-0.5	November 4, 2020	-	-	5,117	<0.024	<0.216	<4.8	<9.6	<48	<14.4	<62.4	4,600
WS20-11	0-0.5	November 4, 2020	-	-	261	<0.023	<0.208	<4.6	<9.6	<48	<14.2	<62.2	2,300
WS20-12	0	November 4, 2020	-	-	4,375	<0.024	<0.215	<4.8	<8.9	<44	<13.7	<57.7	5,600

"-" - Not applicable/assessed

Bold and grey shaded indicates exceedance outside of NM OCD Closure Criteria
Bold and green shaded indicates a re-sample of areas previously exceeding NM OCD closure criteria

ATTACHMENT 6

Natalie Gordon

From: Dhugal Hanton <vertexresourcegroupusa@gmail.com>
Sent: Friday, October 30, 2020 3:20 PM
To: Natalie Gordon
Subject: Fwd: NKMW1105935618: Todd 26 SWD #2 - 48-hr Notification of Confirmatory Sampling

---------- Forwarded message ---------
From: **Dhugal Hanton** <vertexresourcegroupusa@gmail.com>
Date: Fri, Oct 30, 2020 at 3:20 PM
Subject: NKMW1105935618: Todd 26 SWD #2 - 48-hr Notification of Confirmatory Sampling
To: Enviro, OCD, EMNRD <OCD.Enviro@state.nm.us>, CFO_Spill, BLM_NM <blm_nm_cfo_spill@blm.gov>, Amos, James A <Jamos@blm.gov>
Cc: <tom.bynum@dvn.com>, <Lupe.Carrasco@dvn.com>, <amanda.davis@dvn.com>, <wesley.mathews@dvn.com>

All,

Please accept this email as 48-hr notification that Vertex Resource Services Inc. has scheduled remediation fieldwork and confirmatory sampling to be conducted at Todd 26 SWD for2 for the release that occurred on February 2, 2011. Incident tracking #: NKMW1105935618

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

On Wednesday, November 4, 2020 at approximately 8 a.m., Monica Peppin of Vertex will be onsite to guide excavation of contaminated soil. Starting around 2:00 p.m, as remediation activities are completed, Monica will 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 7

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

September 09, 2020

Amanda Davis

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

RE: Todd 266 Federal 002 SWD OrderNo.: 2008E79

Dear Amanda Davis:

Hall Environmental Analysis Laboratory received 7 sample(s) on 8/27/2020 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 **2008E79**
Date Reported: **9/9/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 266 Federal 002 SWD
Lab ID: 2008E79-001 **Matrix:** SOIL

Client Sample ID: SS20-01 0'
Collection Date: 8/25/2020 12:31:00 PM
Received Date: 8/27/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	8/28/2020 9:49:58 PM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	8/28/2020 9:49:58 PM
Surr: DNOP	29.8	30.4-154	S	%Rec	1	8/28/2020 9:49:58 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/29/2020 8:01:02 AM
Surr: BFB	95.7	75.3-105		%Rec	1	8/29/2020 8:01:02 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.023		mg/Kg	1	8/29/2020 8:01:02 AM
Toluene	ND	0.046		mg/Kg	1	8/29/2020 8:01:02 AM
Ethylbenzene	ND	0.046		mg/Kg	1	8/29/2020 8:01:02 AM
Xylenes, Total	ND	0.091		mg/Kg	1	8/29/2020 8:01:02 AM
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	8/29/2020 8:01:02 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	360	60		mg/Kg	20	8/31/2020 9:23:59 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 **2008E79**
Date Reported: **9/9/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 266 Federal 002 SWD
Lab ID: 2008E79-002 **Matrix:** SOIL

Client Sample ID: SS20-02 0'
Collection Date: 8/25/2020 12:51:00 PM
Received Date: 8/27/2020 8:00:00 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	8/28/2020 10:20:21 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/28/2020 10:20:21 PM
Surr: DNOP	28.6	30.4-154	S	%Rec	1	8/28/2020 10:20:21 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/29/2020 8:24:35 AM
Surr: BFB	96.8	75.3-105		%Rec	1	8/29/2020 8:24:35 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	8/29/2020 8:24:35 AM
Toluene	ND	0.048		mg/Kg	1	8/29/2020 8:24:35 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/29/2020 8:24:35 AM
Xylenes, Total	ND	0.096		mg/Kg	1	8/29/2020 8:24:35 AM
Surr: 4-Bromofluorobenzene	98.3	80-120		%Rec	1	8/29/2020 8:24:35 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	400	60		mg/Kg	20	8/31/2020 10:01:13 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 **2008E79**
Date Reported: **9/9/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: SS20-03 0'
Project: Todd 266 Federal 002 SWD
Collection Date: 8/25/2020 1:08:00 PM
Lab ID: 2008E79-003 **Matrix:** SOIL **Received Date:** 8/27/2020 8:00:00 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	8/28/2020 10:30:30 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/28/2020 10:30:30 PM
Surr: DNOP	14.9	30.4-154	S	%Rec	1	8/28/2020 10:30:30 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/29/2020 9:34:54 AM
Surr: BFB	100	75.3-105		%Rec	1	8/29/2020 9:34:54 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	8/29/2020 9:34:54 AM
Toluene	ND	0.047		mg/Kg	1	8/29/2020 9:34:54 AM
Ethylbenzene	ND	0.047		mg/Kg	1	8/29/2020 9:34:54 AM
Xylenes, Total	ND	0.095		mg/Kg	1	8/29/2020 9:34:54 AM
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	8/29/2020 9:34:54 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	230	60		mg/Kg	20	8/31/2020 10:13:38 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	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 **2008E79**
Date Reported: **9/9/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 266 Federal 002 SWD
Lab ID: 2008E79-004 **Matrix:** SOIL

Client Sample ID: SS20-04 0'
Collection Date: 8/25/2020 1:33:00 PM
Received Date: 8/27/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	110	8.4		mg/Kg	1	9/1/2020 1:08:11 PM
Motor Oil Range Organics (MRO)	220	42		mg/Kg	1	9/1/2020 1:08:11 PM
Surr: DNOP	81.3	30.4-154		%Rec	1	9/1/2020 1:08:11 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/29/2020 9:58:25 AM
Surr: BFB	95.0	75.3-105		%Rec	1	8/29/2020 9:58:25 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	8/29/2020 9:58:25 AM
Toluene	ND	0.048		mg/Kg	1	8/29/2020 9:58:25 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/29/2020 9:58:25 AM
Xylenes, Total	ND	0.095		mg/Kg	1	8/29/2020 9:58:25 AM
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	8/29/2020 9:58:25 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	130	60		mg/Kg	20	8/31/2020 10:26:03 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 **2008E79**
Date Reported: **9/9/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: SS20-05 0'
Project: Todd 266 Federal 002 SWD
Collection Date: 8/25/2020 1:59:00 PM
Lab ID: 2008E79-005 **Matrix:** SOIL
Received Date: 8/27/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	48		mg/Kg	5	9/4/2020 2:04:16 PM
Motor Oil Range Organics (MRO)	ND	240		mg/Kg	5	9/4/2020 2:04:16 PM
Surr: DNOP	83.3	30.4-154		%Rec	5	9/4/2020 2:04:16 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/29/2020 10:21:57 AM
Surr: BFB	98.1	75.3-105		%Rec	1	8/29/2020 10:21:57 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	8/29/2020 10:21:57 AM
Toluene	ND	0.048		mg/Kg	1	8/29/2020 10:21:57 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/29/2020 10:21:57 AM
Xylenes, Total	ND	0.096		mg/Kg	1	8/29/2020 10:21:57 AM
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	8/29/2020 10:21:57 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	8/31/2020 10:38:28 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 **2008E79**
Date Reported: **9/9/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 266 Federal 002 SWD
Lab ID: 2008E79-006 **Matrix:** SOIL

Client Sample ID: BH20-01 0-6'
Collection Date: 8/25/2020 2:13:00 PM
Received Date: 8/27/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	9/1/2020 2:45:01 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	9/1/2020 2:45:01 PM
Surr: DNOP	85.8	30.4-154		%Rec	1	9/1/2020 2:45:01 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/29/2020 10:45:25 AM
Surr: BFB	99.2	75.3-105		%Rec	1	8/29/2020 10:45:25 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	8/29/2020 10:45:25 AM
Toluene	ND	0.047		mg/Kg	1	8/29/2020 10:45:25 AM
Ethylbenzene	ND	0.047		mg/Kg	1	8/29/2020 10:45:25 AM
Xylenes, Total	ND	0.094		mg/Kg	1	8/29/2020 10:45:25 AM
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	8/29/2020 10:45:25 AM
EPA METHOD 300.0: ANIONS						Analyst: **CJS**
Chloride	25000	1500		mg/Kg	500	9/1/2020 5:38:43 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 **2008E79**
Date Reported: **9/9/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 266 Federal 002 SWD
Lab ID: 2008E79-007 **Matrix:** SOIL

Client Sample ID: BH20-01 1'
Collection Date: 8/25/2020 2:39:00 PM
Received Date: 8/27/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	140	43		mg/Kg	5	9/1/2020 3:09:15 PM
Motor Oil Range Organics (MRO)	250	220		mg/Kg	5	9/1/2020 3:09:15 PM
Surr: DNOP	70.5	30.4-154		%Rec	5	9/1/2020 3:09:15 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/29/2020 11:08:53 AM
Surr: BFB	96.3	75.3-105		%Rec	1	8/29/2020 11:08:53 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	8/29/2020 11:08:53 AM
Toluene	ND	0.049		mg/Kg	1	8/29/2020 11:08:53 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/29/2020 11:08:53 AM
Xylenes, Total	ND	0.098		mg/Kg	1	8/29/2020 11:08:53 AM
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	8/29/2020 11:08:53 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	200	60		mg/Kg	20	8/31/2020 11:03:18 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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2008E79**
09-Sep-20

Client: Devon Energy
Project: Todd 266 Federal 002 SWD

Sample ID: **MB-54828**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **54828**	RunNo: **71527**							
Prep Date: **8/31/2020**	Analysis Date: **8/31/2020**	SeqNo: **2498406**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-54828**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **54828**	RunNo: **71527**							
Prep Date: **8/31/2020**	Analysis Date: **8/31/2020**	SeqNo: **2498407**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.9	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#: **2008E79**
09-Sep-20

Client: Devon Energy
Project: Todd 266 Federal 002 SWD

Sample ID: **2008E79-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SS20-01 0'** Batch ID: **54745** RunNo: **71513**
Prep Date: **8/27/2020** Analysis Date: **8/28/2020** SeqNo: **2497479** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	21	9.6	48.22	5.045	33.4	47.4	136			S
Surr: DNOP	1.1		4.822		23.7	30.4	154			S

Sample ID: **LCS-54745** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **54745** RunNo: **71513**
Prep Date: **8/27/2020** Analysis Date: **8/28/2020** SeqNo: **2498055** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	105	70	130			
Surr: DNOP	2.0		5.000		39.7	30.4	154			

Sample ID: **MB-54745** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **54745** RunNo: **71513**
Prep Date: **8/27/2020** Analysis Date: **8/28/2020** SeqNo: **2498057** 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	5.2		10.00		51.5	30.4	154			

Sample ID: **2008E79-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SS20-01 0'** Batch ID: **54745** RunNo: **71513**
Prep Date: **8/27/2020** Analysis Date: **8/28/2020** SeqNo: **2498179** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	21	9.1	45.54	5.045	34.0	47.4	136	3.09	43.4	S
Surr: DNOP	0.78		4.554		17.0	30.4	154	0	0	S

Sample ID: **LCS-54840** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **54840** RunNo: **71526**
Prep Date: **9/1/2020** Analysis Date: **9/1/2020** SeqNo: **2498249** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		89.8	30.4	154			

Sample ID: **MB-54840** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **54840** RunNo: **71526**
Prep Date: **9/1/2020** Analysis Date: **9/1/2020** SeqNo: **2498250** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

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#: **2008E79**

09-Sep-20

Client: Devon Energy

Project: Todd 266 Federal 002 SWD

Sample ID: **MB-54840**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **54840**	RunNo: **71526**
Prep Date: **9/1/2020**	Analysis Date: **9/1/2020**	SeqNo: **2498250** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.8		10.00		98.2	30.4	154			

Sample ID: **LCS-54907**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **54907**	RunNo: **71526**
Prep Date: **9/2/2020**	Analysis Date: **9/4/2020**	SeqNo: **2502752** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.9		5.000		119	30.4	154			

Sample ID: **MB-54907**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **54907**	RunNo: **71526**
Prep Date: **9/2/2020**	Analysis Date: **9/4/2020**	SeqNo: **2502753** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	13		10.00		126	30.4	154			

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#: **2008E79**

09-Sep-20

Client: Devon Energy

Project: Todd 266 Federal 002 SWD

Sample ID: **mb-54738**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **54738**	RunNo: **71474**							
Prep Date: **8/27/2020**	Analysis Date: **8/29/2020**	SeqNo: **2495652**	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	990		1000		99.3	75.3	105			

Sample ID: **lcs-54738**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **54738**	RunNo: **71474**							
Prep Date: **8/27/2020**	Analysis Date: **8/29/2020**	SeqNo: **2495653**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	82.3	72.5	106			
Surr: BFB	1100		1000		107	75.3	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#: **2008E79**
09-Sep-20

Client: Devon Energy
Project: Todd 266 Federal 002 SWD

Sample ID: **mb-54738** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **54738** RunNo: **71474**
Prep Date: **8/27/2020** Analysis Date: **8/29/2020** SeqNo: **2495731** 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	1.0		1.000		104	80	120			

Sample ID: **LCS-54738** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **54738** RunNo: **71474**
Prep Date: **8/27/2020** Analysis Date: **8/29/2020** SeqNo: **2495732** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	93.6	80	120			
Toluene	0.94	0.050	1.000	0	93.8	80	120			
Ethylbenzene	0.94	0.050	1.000	0	94.0	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.9	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

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		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Devon Energy Work Order Number: 2008E79 RcptNo: 1

Received By: **Cheyenne Cason** 8/27/2020 8:00:00 AM

Completed By: **Juan Rojas** 8/27/2020 8:24:16 AM

Reviewed By: JR 8/27/20

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: JNC 8/27/20

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	1.0	Good				
2	3.1	Good				

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Client: Devon Energy

Mailing Address: on file

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 26G Federal #002 SWD

Project #: 20E-00141-057

Project Manager: Natalie Gordon

Sampler: Kevin Smith

On Ice: ☑ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): See Bmk (°C)

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2008E79	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)
8/25/20	12:31	Soil	SS20-01 0'	4oz jar	ICE	-001	X	X					X			
	12:51		SS20-02 0'			-002										
	1:08		SS20-03 0'			-003										
	1:33		SS20-04 0'			-004										
	1:59		SS20-05 0'			-005										
	2:13		BH20-01 0-6"			-006										
	2:39		BH20-01 1'			007										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
			Cummings		8/26/20	0900
Date: 8/26/20	Time: 1900	Relinquished by: Cummings	Received by: CM Cerm	Via:	Date: 8/27/20	Time: 0800

Remarks:

19±0=19 Send Report to Natalie Gordon

3.1±0=3.1 Bill Devon

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

November 13, 2020

Natalie Gordon

Devon Energy
6488 Seven Rivers Highway
Artesia, NM 88210
TEL: (505) 350-1336
FAX:

RE: Todd 26G SWD 2 OrderNo.: 2011369

Dear Natalie Gordon:

Hall Environmental Analysis Laboratory received 42 sample(s) on 11/6/2020 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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-001 **Matrix:** SOIL

Client Sample ID: BS20-01 0.25'
Collection Date: 11/4/2020 11:00:00 AM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	1100	60		mg/Kg	20	11/11/2020 12:30:25 PM	56357
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/8/2020 2:01:12 PM	56270
Surr: BFB	105	70-130		%Rec	1	11/8/2020 2:01:12 PM	56270
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	25	9.2		mg/Kg	1	11/9/2020 10:33:43 PM	56274
Motor Oil Range Organics (MRO)	67	46		mg/Kg	1	11/9/2020 10:33:43 PM	56274
Surr: DNOP	81.8	30.4-154		%Rec	1	11/9/2020 10:33:43 PM	56274
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.025		mg/Kg	1	11/8/2020 2:01:12 PM	56270
Toluene	ND	0.049		mg/Kg	1	11/8/2020 2:01:12 PM	56270
Ethylbenzene	ND	0.049		mg/Kg	1	11/8/2020 2:01:12 PM	56270
Xylenes, Total	ND	0.098		mg/Kg	1	11/8/2020 2:01:12 PM	56270
Surr: 1,2-Dichloroethane-d4	95.3	70-130		%Rec	1	11/8/2020 2:01:12 PM	56270
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	11/8/2020 2:01:12 PM	56270
Surr: Dibromofluoromethane	103	70-130		%Rec	1	11/8/2020 2:01:12 PM	56270
Surr: Toluene-d8	96.8	70-130		%Rec	1	11/8/2020 2:01:12 PM	56270

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-002 **Matrix:** SOIL

Client Sample ID: BS20-02 0.25'
Collection Date: 11/4/2020 11:10:00 AM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	4000	150		mg/Kg	50	11/12/2020 9:13:49 AM	56357
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/8/2020 2:28:39 PM	56270
Surr: BFB	105	70-130		%Rec	1	11/8/2020 2:28:39 PM	56270
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	11	9.5		mg/Kg	1	11/9/2020 6:18:27 AM	56274
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/9/2020 6:18:27 AM	56274
Surr: DNOP	71.4	30.4-154		%Rec	1	11/9/2020 6:18:27 AM	56274
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.024		mg/Kg	1	11/8/2020 2:28:39 PM	56270
Toluene	ND	0.048		mg/Kg	1	11/8/2020 2:28:39 PM	56270
Ethylbenzene	ND	0.048		mg/Kg	1	11/8/2020 2:28:39 PM	56270
Xylenes, Total	ND	0.095		mg/Kg	1	11/8/2020 2:28:39 PM	56270
Surr: 1,2-Dichloroethane-d4	94.8	70-130		%Rec	1	11/8/2020 2:28:39 PM	56270
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	11/8/2020 2:28:39 PM	56270
Surr: Dibromofluoromethane	99.7	70-130		%Rec	1	11/8/2020 2:28:39 PM	56270
Surr: Toluene-d8	97.5	70-130		%Rec	1	11/8/2020 2:28:39 PM	56270

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-003 **Matrix:** SOIL

Client Sample ID: BS20-03 0.25'
Collection Date: 11/4/2020 11:20:00 AM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	3000	150		mg/Kg	50	11/12/2020 9:26:13 AM	56357
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/8/2020 2:55:54 PM	56270
Surr: BFB	103	70-130		%Rec	1	11/8/2020 2:55:54 PM	56270
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	12	10		mg/Kg	1	11/9/2020 6:41:47 AM	56274
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/9/2020 6:41:47 AM	56274
Surr: DNOP	58.4	30.4-154		%Rec	1	11/9/2020 6:41:47 AM	56274
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.024		mg/Kg	1	11/8/2020 2:55:54 PM	56270
Toluene	ND	0.047		mg/Kg	1	11/8/2020 2:55:54 PM	56270
Ethylbenzene	ND	0.047		mg/Kg	1	11/8/2020 2:55:54 PM	56270
Xylenes, Total	ND	0.095		mg/Kg	1	11/8/2020 2:55:54 PM	56270
Surr: 1,2-Dichloroethane-d4	95.5	70-130		%Rec	1	11/8/2020 2:55:54 PM	56270
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	11/8/2020 2:55:54 PM	56270
Surr: Dibromofluoromethane	100	70-130		%Rec	1	11/8/2020 2:55:54 PM	56270
Surr: Toluene-d8	97.9	70-130		%Rec	1	11/8/2020 2:55:54 PM	56270

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-004 **Matrix:** SOIL

Client Sample ID: BS20-04 0.25'
Collection Date: 11/4/2020 11:30:00 AM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	3500	150		mg/Kg	50	11/12/2020 9:38:38 AM	56357
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/8/2020 3:23:13 PM	56270
Surr: BFB	104	70-130		%Rec	1	11/8/2020 3:23:13 PM	56270
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	18	9.1		mg/Kg	1	11/9/2020 7:28:39 AM	56274
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	11/9/2020 7:28:39 AM	56274
Surr: DNOP	76.3	30.4-154		%Rec	1	11/9/2020 7:28:39 AM	56274
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.024		mg/Kg	1	11/8/2020 3:23:13 PM	56270
Toluene	ND	0.048		mg/Kg	1	11/8/2020 3:23:13 PM	56270
Ethylbenzene	ND	0.048		mg/Kg	1	11/8/2020 3:23:13 PM	56270
Xylenes, Total	ND	0.096		mg/Kg	1	11/8/2020 3:23:13 PM	56270
Surr: 1,2-Dichloroethane-d4	93.1	70-130		%Rec	1	11/8/2020 3:23:13 PM	56270
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	11/8/2020 3:23:13 PM	56270
Surr: Dibromofluoromethane	99.5	70-130		%Rec	1	11/8/2020 3:23:13 PM	56270
Surr: Toluene-d8	98.2	70-130		%Rec	1	11/8/2020 3:23:13 PM	56270

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-005 **Matrix:** SOIL

Client Sample ID: BS20-05 0.25'
Collection Date: 11/4/2020 11:40:00 AM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	2800	150		mg/Kg	50	11/12/2020 9:51:02 AM	56357
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/8/2020 3:50:44 PM	56270
Surr: BFB	103	70-130		%Rec	1	11/8/2020 3:50:44 PM	56270
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	39	9.9		mg/Kg	1	11/10/2020 2:28:23 AM	56275
Motor Oil Range Organics (MRO)	85	50		mg/Kg	1	11/10/2020 2:28:23 AM	56275
Surr: DNOP	93.3	30.4-154		%Rec	1	11/10/2020 2:28:23 AM	56275
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.024		mg/Kg	1	11/8/2020 3:50:44 PM	56270
Toluene	ND	0.048		mg/Kg	1	11/8/2020 3:50:44 PM	56270
Ethylbenzene	ND	0.048		mg/Kg	1	11/8/2020 3:50:44 PM	56270
Xylenes, Total	ND	0.096		mg/Kg	1	11/8/2020 3:50:44 PM	56270
Surr: 1,2-Dichloroethane-d4	91.8	70-130		%Rec	1	11/8/2020 3:50:44 PM	56270
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	11/8/2020 3:50:44 PM	56270
Surr: Dibromofluoromethane	97.8	70-130		%Rec	1	11/8/2020 3:50:44 PM	56270
Surr: Toluene-d8	98.8	70-130		%Rec	1	11/8/2020 3:50:44 PM	56270

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-006 **Matrix:** SOIL

Client Sample ID: BS20-06 0.25'
Collection Date: 11/4/2020 11:50:00 AM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	5400	300		mg/Kg	100	11/12/2020 10:03:27 AM	56357
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/8/2020 4:18:05 PM	56270
Surr: BFB	106	70-130		%Rec	1	11/8/2020 4:18:05 PM	56270
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	16	9.0		mg/Kg	1	11/10/2020 3:38:47 AM	56275
Motor Oil Range Organics (MRO)	60	45		mg/Kg	1	11/10/2020 3:38:47 AM	56275
Surr: DNOP	84.2	30.4-154		%Rec	1	11/10/2020 3:38:47 AM	56275
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.023		mg/Kg	1	11/8/2020 4:18:05 PM	56270
Toluene	ND	0.047		mg/Kg	1	11/8/2020 4:18:05 PM	56270
Ethylbenzene	ND	0.047		mg/Kg	1	11/8/2020 4:18:05 PM	56270
Xylenes, Total	ND	0.093		mg/Kg	1	11/8/2020 4:18:05 PM	56270
Surr: 1,2-Dichloroethane-d4	98.4	70-130		%Rec	1	11/8/2020 4:18:05 PM	56270
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	11/8/2020 4:18:05 PM	56270
Surr: Dibromofluoromethane	102	70-130		%Rec	1	11/8/2020 4:18:05 PM	56270
Surr: Toluene-d8	94.9	70-130		%Rec	1	11/8/2020 4:18:05 PM	56270

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-007 **Matrix:** SOIL

Client Sample ID: BS20-07 0.25'
Collection Date: 11/4/2020 12:00:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	1200	60		mg/Kg	20	11/11/2020 2:34:31 PM	56357
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/8/2020 4:45:18 PM	56270
Surr: BFB	102	70-130		%Rec	1	11/8/2020 4:45:18 PM	56270
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/10/2020 4:02:20 AM	56275
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/10/2020 4:02:20 AM	56275
Surr: DNOP	88.0	30.4-154		%Rec	1	11/10/2020 4:02:20 AM	56275
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.024		mg/Kg	1	11/8/2020 4:45:18 PM	56270
Toluene	ND	0.048		mg/Kg	1	11/8/2020 4:45:18 PM	56270
Ethylbenzene	ND	0.048		mg/Kg	1	11/8/2020 4:45:18 PM	56270
Xylenes, Total	ND	0.095		mg/Kg	1	11/8/2020 4:45:18 PM	56270
Surr: 1,2-Dichloroethane-d4	93.0	70-130		%Rec	1	11/8/2020 4:45:18 PM	56270
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	11/8/2020 4:45:18 PM	56270
Surr: Dibromofluoromethane	99.2	70-130		%Rec	1	11/8/2020 4:45:18 PM	56270
Surr: Toluene-d8	96.8	70-130		%Rec	1	11/8/2020 4:45:18 PM	56270

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-008 **Matrix:** SOIL

Client Sample ID: BS20-08 0.25'
Collection Date: 11/4/2020 12:10:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	3900	150		mg/Kg	50	11/12/2020 10:15:52 AM	56357
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/8/2020 5:12:27 PM	56270
Surr: BFB	101	70-130		%Rec	1	11/8/2020 5:12:27 PM	56270
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	11/10/2020 4:25:50 AM	56275
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/10/2020 4:25:50 AM	56275
Surr: DNOP	79.6	30.4-154		%Rec	1	11/10/2020 4:25:50 AM	56275
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.023		mg/Kg	1	11/8/2020 5:12:27 PM	56270
Toluene	ND	0.046		mg/Kg	1	11/8/2020 5:12:27 PM	56270
Ethylbenzene	ND	0.046		mg/Kg	1	11/8/2020 5:12:27 PM	56270
Xylenes, Total	ND	0.093		mg/Kg	1	11/8/2020 5:12:27 PM	56270
Surr: 1,2-Dichloroethane-d4	90.7	70-130		%Rec	1	11/8/2020 5:12:27 PM	56270
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	11/8/2020 5:12:27 PM	56270
Surr: Dibromofluoromethane	95.6	70-130		%Rec	1	11/8/2020 5:12:27 PM	56270
Surr: Toluene-d8	95.3	70-130		%Rec	1	11/8/2020 5:12:27 PM	56270

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-009 **Matrix:** SOIL

Client Sample ID: BS20-09 0.25'
Collection Date: 11/4/2020 12:20:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	2400	150		mg/Kg	50	11/12/2020 10:28:16 AM	56357
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/8/2020 5:39:48 PM	56270
Surr: BFB	102	70-130		%Rec	1	11/8/2020 5:39:48 PM	56270
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	11/10/2020 4:49:24 AM	56275
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/10/2020 4:49:24 AM	56275
Surr: DNOP	90.1	30.4-154		%Rec	1	11/10/2020 4:49:24 AM	56275
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.024		mg/Kg	1	11/8/2020 5:39:48 PM	56270
Toluene	ND	0.048		mg/Kg	1	11/8/2020 5:39:48 PM	56270
Ethylbenzene	ND	0.048		mg/Kg	1	11/8/2020 5:39:48 PM	56270
Xylenes, Total	ND	0.096		mg/Kg	1	11/8/2020 5:39:48 PM	56270
Surr: 1,2-Dichloroethane-d4	94.0	70-130		%Rec	1	11/8/2020 5:39:48 PM	56270
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	11/8/2020 5:39:48 PM	56270
Surr: Dibromofluoromethane	100	70-130		%Rec	1	11/8/2020 5:39:48 PM	56270
Surr: Toluene-d8	95.4	70-130		%Rec	1	11/8/2020 5:39:48 PM	56270

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-010 **Matrix:** SOIL

Client Sample ID: BS20-10 0.25'
Collection Date: 11/4/2020 12:30:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	8600	300		mg/Kg	100	11/12/2020 10:40:41 AM	56357
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/8/2020 6:07:13 PM	56270
Surr: BFB	104	70-130		%Rec	1	11/8/2020 6:07:13 PM	56270
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	76	18		mg/Kg	2	11/10/2020 10:04:38 PM	56275
Motor Oil Range Organics (MRO)	980	88		mg/Kg	2	11/10/2020 10:04:38 PM	56275
Surr: DNOP	91.1	30.4-154		%Rec	2	11/10/2020 10:04:38 PM	56275
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.024		mg/Kg	1	11/8/2020 6:07:13 PM	56270
Toluene	ND	0.048		mg/Kg	1	11/8/2020 6:07:13 PM	56270
Ethylbenzene	ND	0.048		mg/Kg	1	11/8/2020 6:07:13 PM	56270
Xylenes, Total	ND	0.097		mg/Kg	1	11/8/2020 6:07:13 PM	56270
Surr: 1,2-Dichloroethane-d4	93.8	70-130		%Rec	1	11/8/2020 6:07:13 PM	56270
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	11/8/2020 6:07:13 PM	56270
Surr: Dibromofluoromethane	98.9	70-130		%Rec	1	11/8/2020 6:07:13 PM	56270
Surr: Toluene-d8	98.1	70-130		%Rec	1	11/8/2020 6:07:13 PM	56270

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-011 **Matrix:** SOIL

Client Sample ID: BS20-11 0.25'
Collection Date: 11/4/2020 12:40:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	6800	300		mg/Kg	100	11/12/2020 11:17:54 AM	56357
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/8/2020 6:34:39 PM	56270
Surr: BFB	101	70-130		%Rec	1	11/8/2020 6:34:39 PM	56270
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	100	87		mg/Kg	10	11/10/2020 5:36:31 AM	56275
Motor Oil Range Organics (MRO)	630	440		mg/Kg	10	11/10/2020 5:36:31 AM	56275
Surr: DNOP	0	30.4-154	S	%Rec	10	11/10/2020 5:36:31 AM	56275
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.023		mg/Kg	1	11/8/2020 6:34:39 PM	56270
Toluene	ND	0.047		mg/Kg	1	11/8/2020 6:34:39 PM	56270
Ethylbenzene	ND	0.047		mg/Kg	1	11/8/2020 6:34:39 PM	56270
Xylenes, Total	ND	0.094		mg/Kg	1	11/8/2020 6:34:39 PM	56270
Surr: 1,2-Dichloroethane-d4	97.8	70-130		%Rec	1	11/8/2020 6:34:39 PM	56270
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	11/8/2020 6:34:39 PM	56270
Surr: Dibromofluoromethane	101	70-130		%Rec	1	11/8/2020 6:34:39 PM	56270
Surr: Toluene-d8	96.2	70-130		%Rec	1	11/8/2020 6:34:39 PM	56270

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-012 **Matrix:** SOIL

Client Sample ID: BS20-12 0.25'
Collection Date: 11/4/2020 12:50:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	6000	300		mg/Kg	100	11/12/2020 11:30:19 AM	56362
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/8/2020 7:02:05 PM	56270
Surr: BFB	104	70-130		%Rec	1	11/8/2020 7:02:05 PM	56270
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/10/2020 6:00:11 AM	56275
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/10/2020 6:00:11 AM	56275
Surr: DNOP	88.4	30.4-154		%Rec	1	11/10/2020 6:00:11 AM	56275
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.023		mg/Kg	1	11/8/2020 7:02:05 PM	56270
Toluene	ND	0.047		mg/Kg	1	11/8/2020 7:02:05 PM	56270
Ethylbenzene	ND	0.047		mg/Kg	1	11/8/2020 7:02:05 PM	56270
Xylenes, Total	ND	0.094		mg/Kg	1	11/8/2020 7:02:05 PM	56270
Surr: 1,2-Dichloroethane-d4	93.5	70-130		%Rec	1	11/8/2020 7:02:05 PM	56270
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	11/8/2020 7:02:05 PM	56270
Surr: Dibromofluoromethane	97.6	70-130		%Rec	1	11/8/2020 7:02:05 PM	56270
Surr: Toluene-d8	94.3	70-130		%Rec	1	11/8/2020 7:02:05 PM	56270

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-013 **Matrix:** SOIL

Client Sample ID: BS20-13 0.25'
Collection Date: 11/4/2020 1:00:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	8000	300		mg/Kg	100	11/12/2020 11:42:44 AM	56362
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/8/2020 7:29:30 PM	56270
Surr: BFB	104	70-130		%Rec	1	11/8/2020 7:29:30 PM	56270
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/10/2020 6:23:48 AM	56275
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/10/2020 6:23:48 AM	56275
Surr: DNOP	82.0	30.4-154		%Rec	1	11/10/2020 6:23:48 AM	56275
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.024		mg/Kg	1	11/8/2020 7:29:30 PM	56270
Toluene	ND	0.049		mg/Kg	1	11/8/2020 7:29:30 PM	56270
Ethylbenzene	ND	0.049		mg/Kg	1	11/8/2020 7:29:30 PM	56270
Xylenes, Total	ND	0.098		mg/Kg	1	11/8/2020 7:29:30 PM	56270
Surr: 1,2-Dichloroethane-d4	92.6	70-130		%Rec	1	11/8/2020 7:29:30 PM	56270
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	11/8/2020 7:29:30 PM	56270
Surr: Dibromofluoromethane	98.9	70-130		%Rec	1	11/8/2020 7:29:30 PM	56270
Surr: Toluene-d8	97.0	70-130		%Rec	1	11/8/2020 7:29:30 PM	56270

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-014 **Matrix:** SOIL

Client Sample ID: BS20-14 0.25'
Collection Date: 11/4/2020 1:10:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	4000	150		mg/Kg	50	11/12/2020 11:55:08 AM	56362
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/8/2020 7:56:48 PM	56270
Surr: BFB	102	70-130		%Rec	1	11/8/2020 7:56:48 PM	56270
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	19	9.7		mg/Kg	1	11/10/2020 6:47:20 AM	56275
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/10/2020 6:47:20 AM	56275
Surr: DNOP	98.7	30.4-154		%Rec	1	11/10/2020 6:47:20 AM	56275
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.023		mg/Kg	1	11/8/2020 7:56:48 PM	56270
Toluene	ND	0.046		mg/Kg	1	11/8/2020 7:56:48 PM	56270
Ethylbenzene	ND	0.046		mg/Kg	1	11/8/2020 7:56:48 PM	56270
Xylenes, Total	ND	0.092		mg/Kg	1	11/8/2020 7:56:48 PM	56270
Surr: 1,2-Dichloroethane-d4	92.4	70-130		%Rec	1	11/8/2020 7:56:48 PM	56270
Surr: 4-Bromofluorobenzene	107	70-130		%Rec	1	11/8/2020 7:56:48 PM	56270
Surr: Dibromofluoromethane	94.7	70-130		%Rec	1	11/8/2020 7:56:48 PM	56270
Surr: Toluene-d8	94.3	70-130		%Rec	1	11/8/2020 7:56:48 PM	56270

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-015 **Matrix:** SOIL

Client Sample ID: BS20-15 0.25'
Collection Date: 11/4/2020 1:20:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	5200	300		mg/Kg	100	11/12/2020 12:07:33 PM	56362
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/8/2020 8:24:08 PM	56270
Surr: BFB	102	70-130		%Rec	1	11/8/2020 8:24:08 PM	56270
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	13	9.5		mg/Kg	1	11/10/2020 7:10:33 AM	56275
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/10/2020 7:10:33 AM	56275
Surr: DNOP	90.3	30.4-154		%Rec	1	11/10/2020 7:10:33 AM	56275
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.025		mg/Kg	1	11/8/2020 8:24:08 PM	56270
Toluene	ND	0.049		mg/Kg	1	11/8/2020 8:24:08 PM	56270
Ethylbenzene	ND	0.049		mg/Kg	1	11/8/2020 8:24:08 PM	56270
Xylenes, Total	ND	0.098		mg/Kg	1	11/8/2020 8:24:08 PM	56270
Surr: 1,2-Dichloroethane-d4	90.7	70-130		%Rec	1	11/8/2020 8:24:08 PM	56270
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	11/8/2020 8:24:08 PM	56270
Surr: Dibromofluoromethane	98.9	70-130		%Rec	1	11/8/2020 8:24:08 PM	56270
Surr: Toluene-d8	96.5	70-130		%Rec	1	11/8/2020 8:24:08 PM	56270

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-016 **Matrix:** SOIL

Client Sample ID: BS20-16 0.25'
Collection Date: 11/4/2020 1:30:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	6200	300		mg/Kg	100	11/12/2020 12:19:57 PM	56362
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/8/2020 8:51:32 PM	56270
Surr: BFB	101	70-130		%Rec	1	11/8/2020 8:51:32 PM	56270
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/10/2020 7:34:00 AM	56275
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/10/2020 7:34:00 AM	56275
Surr: DNOP	86.1	30.4-154		%Rec	1	11/10/2020 7:34:00 AM	56275
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.024		mg/Kg	1	11/8/2020 8:51:32 PM	56270
Toluene	ND	0.048		mg/Kg	1	11/8/2020 8:51:32 PM	56270
Ethylbenzene	ND	0.048		mg/Kg	1	11/8/2020 8:51:32 PM	56270
Xylenes, Total	ND	0.095		mg/Kg	1	11/8/2020 8:51:32 PM	56270
Surr: 1,2-Dichloroethane-d4	96.6	70-130		%Rec	1	11/8/2020 8:51:32 PM	56270
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	11/8/2020 8:51:32 PM	56270
Surr: Dibromofluoromethane	99.9	70-130		%Rec	1	11/8/2020 8:51:32 PM	56270
Surr: Toluene-d8	94.4	70-130		%Rec	1	11/8/2020 8:51:32 PM	56270

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-017 **Matrix:** SOIL

Client Sample ID: BS20-17 0.25'
Collection Date: 11/4/2020 1:40:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	2100	60		mg/Kg	20	11/11/2020 5:40:15 PM	56362
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/8/2020 9:18:54 PM	56270
Surr: BFB	101	70-130		%Rec	1	11/8/2020 9:18:54 PM	56270
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	23	9.8		mg/Kg	1	11/10/2020 7:57:21 AM	56275
Motor Oil Range Organics (MRO)	55	49		mg/Kg	1	11/10/2020 7:57:21 AM	56275
Surr: DNOP	94.8	30.4-154		%Rec	1	11/10/2020 7:57:21 AM	56275
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.024		mg/Kg	1	11/8/2020 9:18:54 PM	56270
Toluene	ND	0.049		mg/Kg	1	11/8/2020 9:18:54 PM	56270
Ethylbenzene	ND	0.049		mg/Kg	1	11/8/2020 9:18:54 PM	56270
Xylenes, Total	ND	0.098		mg/Kg	1	11/8/2020 9:18:54 PM	56270
Surr: 1,2-Dichloroethane-d4	91.4	70-130		%Rec	1	11/8/2020 9:18:54 PM	56270
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	11/8/2020 9:18:54 PM	56270
Surr: Dibromofluoromethane	97.7	70-130		%Rec	1	11/8/2020 9:18:54 PM	56270
Surr: Toluene-d8	93.0	70-130		%Rec	1	11/8/2020 9:18:54 PM	56270

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-018 **Matrix:** SOIL

Client Sample ID: BS20-18 0.25'
Collection Date: 11/4/2020 1:50:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	5300	300		mg/Kg	100	11/12/2020 12:32:22 PM	56362
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/9/2020 8:38:57 AM	56278
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/9/2020 8:38:57 AM	56278
Surr: DNOP	70.5	30.4-154		%Rec	1	11/9/2020 8:38:57 AM	56278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/9/2020 3:23:01 PM	56276
Surr: BFB	91.6	75.3-105		%Rec	1	11/9/2020 3:23:01 PM	56276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	11/9/2020 3:23:01 PM	56276
Toluene	ND	0.050		mg/Kg	1	11/9/2020 3:23:01 PM	56276
Ethylbenzene	ND	0.050		mg/Kg	1	11/9/2020 3:23:01 PM	56276
Xylenes, Total	ND	0.10		mg/Kg	1	11/9/2020 3:23:01 PM	56276
Surr: 4-Bromofluorobenzene	98.6	80-120		%Rec	1	11/9/2020 3:23:01 PM	56276

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-019 **Matrix:** SOIL

Client Sample ID: BS20-19 0.25'
Collection Date: 11/4/2020 2:00:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	8200	300		mg/Kg	100	11/12/2020 12:44:46 PM	56362
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	19	9.7		mg/Kg	1	11/9/2020 9:49:40 AM	56278
Motor Oil Range Organics (MRO)	51	48		mg/Kg	1	11/9/2020 9:49:40 AM	56278
Surr: DNOP	81.8	30.4-154		%Rec	1	11/9/2020 9:49:40 AM	56278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/9/2020 4:33:36 PM	56276
Surr: BFB	91.3	75.3-105		%Rec	1	11/9/2020 4:33:36 PM	56276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/9/2020 4:33:36 PM	56276
Toluene	ND	0.049		mg/Kg	1	11/9/2020 4:33:36 PM	56276
Ethylbenzene	ND	0.049		mg/Kg	1	11/9/2020 4:33:36 PM	56276
Xylenes, Total	ND	0.098		mg/Kg	1	11/9/2020 4:33:36 PM	56276
Surr: 4-Bromofluorobenzene	97.7	80-120		%Rec	1	11/9/2020 4:33:36 PM	56276

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-020 **Matrix:** SOIL

Client Sample ID: BS20-20 0.25'
Collection Date: 11/4/2020 2:10:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	6500	300		mg/Kg	100	11/12/2020 12:57:11 PM	56362
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	20	9.9		mg/Kg	1	11/9/2020 10:13:16 AM	56278
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/9/2020 10:13:16 AM	56278
Surr: DNOP	83.8	30.4-154		%Rec	1	11/9/2020 10:13:16 AM	56278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/9/2020 5:44:00 PM	56276
Surr: BFB	89.4	75.3-105		%Rec	1	11/9/2020 5:44:00 PM	56276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/9/2020 5:44:00 PM	56276
Toluene	ND	0.049		mg/Kg	1	11/9/2020 5:44:00 PM	56276
Ethylbenzene	ND	0.049		mg/Kg	1	11/9/2020 5:44:00 PM	56276
Xylenes, Total	ND	0.097		mg/Kg	1	11/9/2020 5:44:00 PM	56276
Surr: 4-Bromofluorobenzene	94.8	80-120		%Rec	1	11/9/2020 5:44:00 PM	56276

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-021 **Matrix:** SOIL

Client Sample ID: BS20-21 0.25'
Collection Date: 11/4/2020 2:20:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	4700	150		mg/Kg	50	11/12/2020 1:09:35 PM	56362
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	27	9.7		mg/Kg	1	11/9/2020 10:57:08 PM	56278
Motor Oil Range Organics (MRO)	120	48		mg/Kg	1	11/9/2020 10:57:08 PM	56278
Surr: DNOP	89.4	30.4-154		%Rec	1	11/9/2020 10:57:08 PM	56278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/9/2020 6:07:35 PM	56276
Surr: BFB	88.2	75.3-105		%Rec	1	11/9/2020 6:07:35 PM	56276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	11/9/2020 6:07:35 PM	56276
Toluene	ND	0.049		mg/Kg	1	11/9/2020 6:07:35 PM	56276
Ethylbenzene	ND	0.049		mg/Kg	1	11/9/2020 6:07:35 PM	56276
Xylenes, Total	ND	0.098		mg/Kg	1	11/9/2020 6:07:35 PM	56276
Surr: 4-Bromofluorobenzene	94.4	80-120		%Rec	1	11/9/2020 6:07:35 PM	56276

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-022 **Matrix:** SOIL

Client Sample ID: BS20-22 0'
Collection Date: 11/4/2020 2:30:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	2400	60		mg/Kg	20	11/11/2020 7:06:40 PM	56362
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/9/2020 11:00:35 AM	56278
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/9/2020 11:00:35 AM	56278
Surr: DNOP	75.5	30.4-154		%Rec	1	11/9/2020 11:00:35 AM	56278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/9/2020 6:31:04 PM	56276
Surr: BFB	90.4	75.3-105		%Rec	1	11/9/2020 6:31:04 PM	56276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	11/9/2020 6:31:04 PM	56276
Toluene	ND	0.049		mg/Kg	1	11/9/2020 6:31:04 PM	56276
Ethylbenzene	ND	0.049		mg/Kg	1	11/9/2020 6:31:04 PM	56276
Xylenes, Total	ND	0.099		mg/Kg	1	11/9/2020 6:31:04 PM	56276
Surr: 4-Bromofluorobenzene	96.3	80-120		%Rec	1	11/9/2020 6:31:04 PM	56276

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-023 **Matrix:** SOIL

Client Sample ID: BS20-23 0'
Collection Date: 11/4/2020 2:40:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	500	60		mg/Kg	20	11/11/2020 7:19:00 PM	56362
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/9/2020 11:24:18 AM	56278
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/9/2020 11:24:18 AM	56278
Surr: DNOP	82.8	30.4-154		%Rec	1	11/9/2020 11:24:18 AM	56278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/9/2020 6:54:39 PM	56276
Surr: BFB	92.8	75.3-105		%Rec	1	11/9/2020 6:54:39 PM	56276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/9/2020 6:54:39 PM	56276
Toluene	ND	0.049		mg/Kg	1	11/9/2020 6:54:39 PM	56276
Ethylbenzene	ND	0.049		mg/Kg	1	11/9/2020 6:54:39 PM	56276
Xylenes, Total	ND	0.097		mg/Kg	1	11/9/2020 6:54:39 PM	56276
Surr: 4-Bromofluorobenzene	99.0	80-120		%Rec	1	11/9/2020 6:54:39 PM	56276

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-024 **Matrix:** SOIL

Client Sample ID: BS20-24 0'
Collection Date: 11/4/2020 2:50:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	3600	150		mg/Kg	50	11/12/2020 1:46:49 PM	56362
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	11/9/2020 11:47:55 AM	56278
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/9/2020 11:47:55 AM	56278
Surr: DNOP	75.6	30.4-154		%Rec	1	11/9/2020 11:47:55 AM	56278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/9/2020 7:18:11 PM	56276
Surr: BFB	92.7	75.3-105		%Rec	1	11/9/2020 7:18:11 PM	56276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/9/2020 7:18:11 PM	56276
Toluene	ND	0.048		mg/Kg	1	11/9/2020 7:18:11 PM	56276
Ethylbenzene	ND	0.048		mg/Kg	1	11/9/2020 7:18:11 PM	56276
Xylenes, Total	ND	0.097		mg/Kg	1	11/9/2020 7:18:11 PM	56276
Surr: 4-Bromofluorobenzene	98.7	80-120		%Rec	1	11/9/2020 7:18:11 PM	56276

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-025 **Matrix:** SOIL

Client Sample ID: BS20-25 0.5'
Collection Date: 11/4/2020 3:00:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	2800	150		mg/Kg	50	11/12/2020 1:59:14 PM	56362
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/9/2020 12:11:29 PM	56278
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/9/2020 12:11:29 PM	56278
Surr: DNOP	87.0	30.4-154		%Rec	1	11/9/2020 12:11:29 PM	56278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/9/2020 7:41:31 PM	56276
Surr: BFB	91.7	75.3-105		%Rec	1	11/9/2020 7:41:31 PM	56276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	11/9/2020 7:41:31 PM	56276
Toluene	ND	0.046		mg/Kg	1	11/9/2020 7:41:31 PM	56276
Ethylbenzene	ND	0.046		mg/Kg	1	11/9/2020 7:41:31 PM	56276
Xylenes, Total	ND	0.092		mg/Kg	1	11/9/2020 7:41:31 PM	56276
Surr: 4-Bromofluorobenzene	97.9	80-120		%Rec	1	11/9/2020 7:41:31 PM	56276

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-026 **Matrix:** SOIL

Client Sample ID: BS20-26 0.5'
Collection Date: 11/4/2020 3:10:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	2400	150		mg/Kg	50	11/12/2020 2:11:38 PM	56362
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	11	9.0		mg/Kg	1	11/9/2020 12:35:03 PM	56278
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	11/9/2020 12:35:03 PM	56278
Surr: DNOP	90.9	30.4-154		%Rec	1	11/9/2020 12:35:03 PM	56278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/9/2020 8:04:58 PM	56276
Surr: BFB	90.6	75.3-105		%Rec	1	11/9/2020 8:04:58 PM	56276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	11/9/2020 8:04:58 PM	56276
Toluene	ND	0.046		mg/Kg	1	11/9/2020 8:04:58 PM	56276
Ethylbenzene	ND	0.046		mg/Kg	1	11/9/2020 8:04:58 PM	56276
Xylenes, Total	ND	0.093		mg/Kg	1	11/9/2020 8:04:58 PM	56276
Surr: 4-Bromofluorobenzene	96.9	80-120		%Rec	1	11/9/2020 8:04:58 PM	56276

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-027 **Matrix:** SOIL

Client Sample ID: BS20-27 0.5'
Collection Date: 11/4/2020 3:20:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	4300	150		mg/Kg	50	11/12/2020 2:24:03 PM	56362
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/9/2020 12:58:41 PM	56278
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/9/2020 12:58:41 PM	56278
Surr: DNOP	90.2	30.4-154		%Rec	1	11/9/2020 12:58:41 PM	56278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/9/2020 9:38:45 PM	56276
Surr: BFB	89.3	75.3-105		%Rec	1	11/9/2020 9:38:45 PM	56276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/9/2020 9:38:45 PM	56276
Toluene	ND	0.049		mg/Kg	1	11/9/2020 9:38:45 PM	56276
Ethylbenzene	ND	0.049		mg/Kg	1	11/9/2020 9:38:45 PM	56276
Xylenes, Total	ND	0.098		mg/Kg	1	11/9/2020 9:38:45 PM	56276
Surr: 4-Bromofluorobenzene	94.7	80-120		%Rec	1	11/9/2020 9:38:45 PM	56276

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-028 **Matrix:** SOIL

Client Sample ID: BS20-28 0.5'
Collection Date: 11/4/2020 3:30:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	2200	150		mg/Kg	50	11/12/2020 2:36:28 PM	56362
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	8.5		mg/Kg	1	11/10/2020 8:53:14 PM	56278
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	11/10/2020 8:53:14 PM	56278
Surr: DNOP	87.0	30.4-154		%Rec	1	11/10/2020 8:53:14 PM	56278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/9/2020 10:02:13 PM	56276
Surr: BFB	90.1	75.3-105		%Rec	1	11/9/2020 10:02:13 PM	56276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	11/9/2020 10:02:13 PM	56276
Toluene	ND	0.049		mg/Kg	1	11/9/2020 10:02:13 PM	56276
Ethylbenzene	ND	0.049		mg/Kg	1	11/9/2020 10:02:13 PM	56276
Xylenes, Total	ND	0.098		mg/Kg	1	11/9/2020 10:02:13 PM	56276
Surr: 4-Bromofluorobenzene	96.4	80-120		%Rec	1	11/9/2020 10:02:13 PM	56276

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-029 **Matrix:** SOIL

Client Sample ID: BS20-29 0.5'
Collection Date: 11/4/2020 3:40:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	2800	150		mg/Kg	50	11/12/2020 2:48:52 PM	56362
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/10/2020 9:17:04 PM	56278
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/10/2020 9:17:04 PM	56278
Surr: DNOP	89.5	30.4-154		%Rec	1	11/10/2020 9:17:04 PM	56278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/9/2020 10:25:37 PM	56276
Surr: BFB	89.6	75.3-105		%Rec	1	11/9/2020 10:25:37 PM	56276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/9/2020 10:25:37 PM	56276
Toluene	ND	0.048		mg/Kg	1	11/9/2020 10:25:37 PM	56276
Ethylbenzene	ND	0.048		mg/Kg	1	11/9/2020 10:25:37 PM	56276
Xylenes, Total	ND	0.096		mg/Kg	1	11/9/2020 10:25:37 PM	56276
Surr: 4-Bromofluorobenzene	95.4	80-120		%Rec	1	11/9/2020 10:25:37 PM	56276

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-030 **Matrix:** SOIL

Client Sample ID: BS20-30 0.5'
Collection Date: 11/4/2020 3:50:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	4800	150		mg/Kg	50	11/12/2020 3:01:16 PM	56362
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/10/2020 9:40:52 PM	56278
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/10/2020 9:40:52 PM	56278
Surr: DNOP	81.4	30.4-154		%Rec	1	11/10/2020 9:40:52 PM	56278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/9/2020 10:48:59 PM	56276
Surr: BFB	89.1	75.3-105		%Rec	1	11/9/2020 10:48:59 PM	56276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/9/2020 10:48:59 PM	56276
Toluene	ND	0.047		mg/Kg	1	11/9/2020 10:48:59 PM	56276
Ethylbenzene	ND	0.047		mg/Kg	1	11/9/2020 10:48:59 PM	56276
Xylenes, Total	ND	0.094		mg/Kg	1	11/9/2020 10:48:59 PM	56276
Surr: 4-Bromofluorobenzene	95.0	80-120		%Rec	1	11/9/2020 10:48:59 PM	56276

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-031 **Matrix:** SOIL

Client Sample ID: WS20-01 0-0.25'
Collection Date: 11/4/2020 11:05:00 AM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	3300	150		mg/Kg	50	11/12/2020 3:13:41 PM	56384
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	12	8.8		mg/Kg	1	11/9/2020 2:33:23 PM	56278
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	11/9/2020 2:33:23 PM	56278
Surr: DNOP	76.2	30.4-154		%Rec	1	11/9/2020 2:33:23 PM	56278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/9/2020 11:12:16 PM	56276
Surr: BFB	89.2	75.3-105		%Rec	1	11/9/2020 11:12:16 PM	56276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	11/9/2020 11:12:16 PM	56276
Toluene	ND	0.047		mg/Kg	1	11/9/2020 11:12:16 PM	56276
Ethylbenzene	ND	0.047		mg/Kg	1	11/9/2020 11:12:16 PM	56276
Xylenes, Total	ND	0.093		mg/Kg	1	11/9/2020 11:12:16 PM	56276
Surr: 4-Bromofluorobenzene	95.4	80-120		%Rec	1	11/9/2020 11:12:16 PM	56276

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-032 **Matrix:** SOIL

Client Sample ID: WS20-02 0-0.25'
Collection Date: 11/4/2020 11:15:00 AM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	3700	150		mg/Kg	50	11/12/2020 3:26:05 PM	56384
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	11/9/2020 2:56:59 PM	56278
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/9/2020 2:56:59 PM	56278
Surr: DNOP	82.0	30.4-154		%Rec	1	11/9/2020 2:56:59 PM	56278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/9/2020 11:35:38 PM	56276
Surr: BFB	89.2	75.3-105		%Rec	1	11/9/2020 11:35:38 PM	56276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/9/2020 11:35:38 PM	56276
Toluene	ND	0.048		mg/Kg	1	11/9/2020 11:35:38 PM	56276
Ethylbenzene	ND	0.048		mg/Kg	1	11/9/2020 11:35:38 PM	56276
Xylenes, Total	ND	0.096		mg/Kg	1	11/9/2020 11:35:38 PM	56276
Surr: 4-Bromofluorobenzene	96.0	80-120		%Rec	1	11/9/2020 11:35:38 PM	56276

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-033 **Matrix:** SOIL

Client Sample ID: WS20-03 0-0.25'
Collection Date: 11/4/2020 11:25:00 AM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	7500	300		mg/Kg	100	11/12/2020 3:38:30 PM	56384
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/9/2020 3:20:39 PM	56278
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/9/2020 3:20:39 PM	56278
Surr: DNOP	76.2	30.4-154		%Rec	1	11/9/2020 3:20:39 PM	56278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/9/2020 11:59:01 PM	56276
Surr: BFB	87.7	75.3-105		%Rec	1	11/9/2020 11:59:01 PM	56276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	11/9/2020 11:59:01 PM	56276
Toluene	ND	0.049		mg/Kg	1	11/9/2020 11:59:01 PM	56276
Ethylbenzene	ND	0.049		mg/Kg	1	11/9/2020 11:59:01 PM	56276
Xylenes, Total	ND	0.098		mg/Kg	1	11/9/2020 11:59:01 PM	56276
Surr: 4-Bromofluorobenzene	94.0	80-120		%Rec	1	11/9/2020 11:59:01 PM	56276

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-034 **Matrix:** SOIL

Client Sample ID: WS20-04 0-0.25'
Collection Date: 11/4/2020 11:35:00 AM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	4500	150		mg/Kg	50	11/12/2020 4:15:44 PM	56384
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	10	9.8		mg/Kg	1	11/9/2020 3:44:16 PM	56278
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/9/2020 3:44:16 PM	56278
Surr: DNOP	91.2	30.4-154		%Rec	1	11/9/2020 3:44:16 PM	56278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/10/2020 12:22:21 AM	56276
Surr: BFB	87.8	75.3-105		%Rec	1	11/10/2020 12:22:21 AM	56276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/10/2020 12:22:21 AM	56276
Toluene	ND	0.048		mg/Kg	1	11/10/2020 12:22:21 AM	56276
Ethylbenzene	ND	0.048		mg/Kg	1	11/10/2020 12:22:21 AM	56276
Xylenes, Total	ND	0.095		mg/Kg	1	11/10/2020 12:22:21 AM	56276
Surr: 4-Bromofluorobenzene	94.2	80-120		%Rec	1	11/10/2020 12:22:21 AM	56276

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-035 **Matrix:** SOIL

Client Sample ID: WS20-05 0-0.25'
Collection Date: 11/4/2020 11:45:00 AM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	4000	150		mg/Kg	50	11/12/2020 4:28:09 PM	56384
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/9/2020 4:07:54 PM	56278
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/9/2020 4:07:54 PM	56278
Surr: DNOP	85.0	30.4-154		%Rec	1	11/9/2020 4:07:54 PM	56278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/10/2020 12:45:36 AM	56276
Surr: BFB	89.8	75.3-105		%Rec	1	11/10/2020 12:45:36 AM	56276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/10/2020 12:45:36 AM	56276
Toluene	ND	0.048		mg/Kg	1	11/10/2020 12:45:36 AM	56276
Ethylbenzene	ND	0.048		mg/Kg	1	11/10/2020 12:45:36 AM	56276
Xylenes, Total	ND	0.097		mg/Kg	1	11/10/2020 12:45:36 AM	56276
Surr: 4-Bromofluorobenzene	96.9	80-120		%Rec	1	11/10/2020 12:45:36 AM	56276

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-036 **Matrix:** SOIL

Client Sample ID: WS20-06 0'
Collection Date: 11/4/2020 11:55:00 AM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	2900	150		mg/Kg	50	11/12/2020 4:40:33 PM	56384
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/9/2020 4:31:29 PM	56278
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/9/2020 4:31:29 PM	56278
Surr: DNOP	87.1	30.4-154		%Rec	1	11/9/2020 4:31:29 PM	56278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/10/2020 1:08:51 AM	56276
Surr: BFB	88.3	75.3-105		%Rec	1	11/10/2020 1:08:51 AM	56276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/10/2020 1:08:51 AM	56276
Toluene	ND	0.048		mg/Kg	1	11/10/2020 1:08:51 AM	56276
Ethylbenzene	ND	0.048		mg/Kg	1	11/10/2020 1:08:51 AM	56276
Xylenes, Total	ND	0.096		mg/Kg	1	11/10/2020 1:08:51 AM	56276
Surr: 4-Bromofluorobenzene	94.8	80-120		%Rec	1	11/10/2020 1:08:51 AM	56276

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-037 **Matrix:** SOIL

Client Sample ID: WS20-07 0-0.5'
Collection Date: 11/4/2020 12:05:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	3300	150		mg/Kg	50	11/12/2020 4:52:58 PM	56384
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/9/2020 4:55:02 PM	56278
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/9/2020 4:55:02 PM	56278
Surr: DNOP	97.3	30.4-154		%Rec	1	11/9/2020 4:55:02 PM	56278
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/10/2020 1:55:21 AM	56276
Surr: BFB	86.1	75.3-105		%Rec	1	11/10/2020 1:55:21 AM	56276
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	11/10/2020 1:55:21 AM	56276
Toluene	ND	0.050		mg/Kg	1	11/10/2020 1:55:21 AM	56276
Ethylbenzene	ND	0.050		mg/Kg	1	11/10/2020 1:55:21 AM	56276
Xylenes, Total	ND	0.10		mg/Kg	1	11/10/2020 1:55:21 AM	56276
Surr: 4-Bromofluorobenzene	93.6	80-120		%Rec	1	11/10/2020 1:55:21 AM	56276

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-038 **Matrix:** SOIL

Client Sample ID: WS20-08 0-0.5'
Collection Date: 11/4/2020 12:15:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	4400	150		mg/Kg	50	11/12/2020 5:05:22 PM	56384
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	16	9.4		mg/Kg	1	11/9/2020 11:19:28 AM	56280
Motor Oil Range Organics (MRO)	62	47		mg/Kg	1	11/9/2020 11:19:28 AM	56280
Surr: DNOP	92.4	30.4-154		%Rec	1	11/9/2020 11:19:28 AM	56280
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/10/2020 3:05:02 AM	56277
Surr: BFB	86.6	75.3-105		%Rec	1	11/10/2020 3:05:02 AM	56277
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	11/10/2020 3:05:02 AM	56277
Toluene	ND	0.047		mg/Kg	1	11/10/2020 3:05:02 AM	56277
Ethylbenzene	ND	0.047		mg/Kg	1	11/10/2020 3:05:02 AM	56277
Xylenes, Total	ND	0.094		mg/Kg	1	11/10/2020 3:05:02 AM	56277
Surr: 4-Bromofluorobenzene	93.3	80-120		%Rec	1	11/10/2020 3:05:02 AM	56277

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-039 **Matrix:** SOIL

Client Sample ID: WS20-09 0-0.5'
Collection Date: 11/4/2020 12:25:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	6100	300		mg/Kg	100	11/12/2020 5:17:47 PM	56384
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/9/2020 12:31:07 PM	56280
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/9/2020 12:31:07 PM	56280
Surr: DNOP	83.3	30.4-154		%Rec	1	11/9/2020 12:31:07 PM	56280
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/10/2020 4:14:40 AM	56277
Surr: BFB	85.0	75.3-105		%Rec	1	11/10/2020 4:14:40 AM	56277
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	11/10/2020 4:14:40 AM	56277
Toluene	ND	0.047		mg/Kg	1	11/10/2020 4:14:40 AM	56277
Ethylbenzene	ND	0.047		mg/Kg	1	11/10/2020 4:14:40 AM	56277
Xylenes, Total	ND	0.094		mg/Kg	1	11/10/2020 4:14:40 AM	56277
Surr: 4-Bromofluorobenzene	91.7	80-120		%Rec	1	11/10/2020 4:14:40 AM	56277

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-040 **Matrix:** SOIL

Client Sample ID: WS20-10 0-0.5'
Collection Date: 11/4/2020 12:35:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	4600	150		mg/Kg	50	11/12/2020 5:30:12 PM	56384
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/9/2020 12:55:10 PM	56280
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/9/2020 12:55:10 PM	56280
Surr: DNOP	97.3	30.4-154		%Rec	1	11/9/2020 12:55:10 PM	56280
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/10/2020 5:30:10 PM	56277
Surr: BFB	92.0	75.3-105		%Rec	1	11/10/2020 5:30:10 PM	56277
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/10/2020 5:30:10 PM	56277
Toluene	ND	0.048		mg/Kg	1	11/10/2020 5:30:10 PM	56277
Ethylbenzene	ND	0.048		mg/Kg	1	11/10/2020 5:30:10 PM	56277
Xylenes, Total	ND	0.096		mg/Kg	1	11/10/2020 5:30:10 PM	56277
Surr: 4-Bromofluorobenzene	97.7	80-120		%Rec	1	11/10/2020 5:30:10 PM	56277

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-041 **Matrix:** SOIL

Client Sample ID: WS20-11 0-0.5'
Collection Date: 11/4/2020 12:45:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	2300	150		mg/Kg	50	11/12/2020 5:42:37 PM	56384
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/9/2020 1:19:03 PM	56280
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/9/2020 1:19:03 PM	56280
Surr: DNOP	90.9	30.4-154		%Rec	1	11/9/2020 1:19:03 PM	56280
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/10/2020 5:53:53 PM	56277
Surr: BFB	95.5	75.3-105		%Rec	1	11/10/2020 5:53:53 PM	56277
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	11/10/2020 5:53:53 PM	56277
Toluene	ND	0.046		mg/Kg	1	11/10/2020 5:53:53 PM	56277
Ethylbenzene	ND	0.046		mg/Kg	1	11/10/2020 5:53:53 PM	56277
Xylenes, Total	ND	0.093		mg/Kg	1	11/10/2020 5:53:53 PM	56277
Surr: 4-Bromofluorobenzene	99.5	80-120		%Rec	1	11/10/2020 5:53:53 PM	56277

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 **2011369**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 26G SWD 2
Lab ID: 2011369-042 **Matrix:** SOIL

Client Sample ID: WS20-12 0'
Collection Date: 11/4/2020 12:55:00 PM
Received Date: 11/6/2020 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Chloride	5600	150		mg/Kg	50	11/12/2020 5:55:02 PM	56384
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	11/9/2020 1:43:07 PM	56280
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	11/9/2020 1:43:07 PM	56280
Surr: DNOP	69.3	30.4-154		%Rec	1	11/9/2020 1:43:07 PM	56280
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/10/2020 6:17:33 PM	56277
Surr: BFB	91.9	75.3-105		%Rec	1	11/10/2020 6:17:33 PM	56277
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/10/2020 6:17:33 PM	56277
Toluene	ND	0.048		mg/Kg	1	11/10/2020 6:17:33 PM	56277
Ethylbenzene	ND	0.048		mg/Kg	1	11/10/2020 6:17:33 PM	56277
Xylenes, Total	ND	0.095		mg/Kg	1	11/10/2020 6:17:33 PM	56277
Surr: 4-Bromofluorobenzene	96.9	80-120		%Rec	1	11/10/2020 6:17:33 PM	56277

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#: **2011369**

13-Nov-20

Client: Devon Energy

Project: Todd 26G SWD 2

Sample ID: **MB-56357** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **56357** RunNo: **73276**
Prep Date: **11/11/2020** Analysis Date: **11/11/2020** SeqNo: **2578987** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-56357** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **56357** RunNo: **73276**
Prep Date: **11/11/2020** Analysis Date: **11/11/2020** SeqNo: **2578988** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.4	90	110			

Sample ID: **MB-56384** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **56384** RunNo: **73276**
Prep Date: **11/11/2020** Analysis Date: **11/11/2020** SeqNo: **2579019** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-56384** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **56384** RunNo: **73276**
Prep Date: **11/11/2020** Analysis Date: **11/11/2020** SeqNo: **2579020** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.4	90	110			

Sample ID: **MB-56362** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **56362** RunNo: **73265**
Prep Date: **11/11/2020** Analysis Date: **11/11/2020** SeqNo: **2579284** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-56362** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **56362** RunNo: **73265**
Prep Date: **11/11/2020** Analysis Date: **11/11/2020** SeqNo: **2579285** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.5	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#: **2011369**
13-Nov-20

Client: Devon Energy
Project: Todd 26G SWD 2

Sample ID: **MB-56274**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **56274**	RunNo: **73202**
Prep Date: **11/7/2020**	Analysis Date: **11/8/2020**	SeqNo: **2575734** 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	8.7		10.00		86.9	30.4	154			

Sample ID: **LCS-56274**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **56274**	RunNo: **73202**
Prep Date: **11/7/2020**	Analysis Date: **11/8/2020**	SeqNo: **2575735** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.7	70	130			
Surr: DNOP	3.8		5.000		76.8	30.4	154			

Sample ID: **MB-56278**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **56278**	RunNo: **73202**
Prep Date: **11/7/2020**	Analysis Date: **11/9/2020**	SeqNo: **2575758** 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	8.0		10.00		80.1	30.4	154			

Sample ID: **LCS-56278**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **56278**	RunNo: **73202**
Prep Date: **11/7/2020**	Analysis Date: **11/9/2020**	SeqNo: **2575759** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	90.4	70	130			
Surr: DNOP	3.6		5.000		71.9	30.4	154			

Sample ID: **2011369-018AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BS20-18 0.25'**	Batch ID: **56278**	RunNo: **73202**
Prep Date: **11/7/2020**	Analysis Date: **11/9/2020**	SeqNo: **2575761** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	31	8.5	42.63	3.588	63.9	15	184			
Surr: DNOP	2.8		4.263		66.3	30.4	154			

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#: **2011369**
13-Nov-20

Client: Devon Energy
Project: Todd 26G SWD 2

Sample ID: **2011369-018AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BS20-18 0.25'** Batch ID: **56278** RunNo: **73202**
Prep Date: **11/7/2020** Analysis Date: **11/9/2020** SeqNo: **2575762** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	30	9.4	47.13	3.588	55.2	15	184	4.11	23.9	
Surr: DNOP	2.5		4.713		52.4	30.4	154	0	0	

Sample ID: **2011369-038AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **WS20-08 0-0.5'** Batch ID: **56280** RunNo: **73215**
Prep Date: **11/7/2020** Analysis Date: **11/9/2020** SeqNo: **2575843** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	9.8	48.83	16.29	80.8	15	184			
Surr: DNOP	4.5		4.883		91.8	30.4	154			

Sample ID: **2011369-038AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **WS20-08 0-0.5'** Batch ID: **56280** RunNo: **73215**
Prep Date: **11/7/2020** Analysis Date: **11/9/2020** SeqNo: **2575847** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	9.5	47.53	16.29	53.0	15	184	29.3	23.9	R
Surr: DNOP	3.9		4.753		82.6	30.4	154	0	0	

Sample ID: **LCS-56280** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **56280** RunNo: **73215**
Prep Date: **11/7/2020** Analysis Date: **11/9/2020** SeqNo: **2575881** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.1	70	130			
Surr: DNOP	3.5		5.000		70.9	30.4	154			

Sample ID: **MB-56280** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **56280** RunNo: **73215**
Prep Date: **11/7/2020** Analysis Date: **11/9/2020** SeqNo: **2575884** 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	9.3		10.00		92.7	30.4	154			

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#: **2011369**
13-Nov-20

Client: Devon Energy
Project: Todd 26G SWD 2

Sample ID: **MB-56275**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **56275**	RunNo: **73202**							
Prep Date: **11/7/2020**	Analysis Date: **11/10/2020**	SeqNo: **2576136**	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	9.1		10.00		90.9	30.4	154			

Sample ID: **LCS-56275**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **56275**	RunNo: **73202**							
Prep Date: **11/7/2020**	Analysis Date: **11/10/2020**	SeqNo: **2576137**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.2	70	130			
Surr: DNOP	4.8		5.000		95.4	30.4	154			

Sample ID: **2011369-005AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **BS20-05 0.25'**	Batch ID: **56275**	RunNo: **73202**							
Prep Date: **11/7/2020**	Analysis Date: **11/10/2020**	SeqNo: **2576139**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	71	9.6	47.80	39.13	66.3	15	184			
Surr: DNOP	4.1		4.780		86.4	30.4	154			

Sample ID: **2011369-005AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **BS20-05 0.25'**	Batch ID: **56275**	RunNo: **73202**							
Prep Date: **11/7/2020**	Analysis Date: **11/10/2020**	SeqNo: **2576140**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	70	9.5	47.30	39.13	65.1	15	184	1.30	23.9	
Surr: DNOP	4.0		4.730		84.3	30.4	154	0	0	

Sample ID: **LCS-56300**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **56300**	RunNo: **73215**							
Prep Date: **11/9/2020**	Analysis Date: **11/10/2020**	SeqNo: **2577615**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.6		5.000		71.9	30.4	154			

Sample ID: **MB-56300**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **56300**	RunNo: **73215**							
Prep Date: **11/9/2020**	Analysis Date: **11/10/2020**	SeqNo: **2577617**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

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#: **2011369**
13-Nov-20

Client: Devon Energy
Project: Todd 26G SWD 2

Sample ID: **MB-56300**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **56300**	RunNo: **73215**
Prep Date: **11/9/2020**	Analysis Date: **11/10/2020**	SeqNo: **2577617** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	7.9		10.00		79.4	30.4	154			

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#: **2011369**
13-Nov-20

Client: Devon Energy
Project: Todd 26G SWD 2

Sample ID: **mb-56276** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **56276** RunNo: **73220**
Prep Date: **11/7/2020** Analysis Date: **11/9/2020** SeqNo: **2575984** 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	910		1000		91.4	75.3	105			

Sample ID: **lcs-56276** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **56276** RunNo: **73220**
Prep Date: **11/7/2020** Analysis Date: **11/9/2020** SeqNo: **2575985** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	82.5	72.5	106			
Surr: BFB	1000		1000		102	75.3	105			

Sample ID: **2011369-018ams** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BS20-18 0.25'** Batch ID: **56276** RunNo: **73220**
Prep Date: **11/7/2020** Analysis Date: **11/9/2020** SeqNo: **2575987** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.9	24.65	0	82.7	61.3	114			
Surr: BFB	1000		986.2		104	75.3	105			

Sample ID: **2011369-018amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BS20-18 0.25'** Batch ID: **56276** RunNo: **73220**
Prep Date: **11/7/2020** Analysis Date: **11/9/2020** SeqNo: **2575988** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.8	24.06	0	85.9	61.3	114	1.36	20	
Surr: BFB	990		962.5		103	75.3	105	0	0	

Sample ID: **mb-56277** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **56277** RunNo: **73220**
Prep Date: **11/7/2020** Analysis Date: **11/10/2020** SeqNo: **2576008** 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	880		1000		88.4	75.3	105			

Sample ID: **lcs-56277** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **56277** RunNo: **73220**
Prep Date: **11/7/2020** Analysis Date: **11/10/2020** SeqNo: **2576009** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

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#: **2011369**
13-Nov-20

Client: Devon Energy
Project: Todd 26G SWD 2

Sample ID: **lcs-56277**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **56277**	RunNo: **73220**
Prep Date: **11/7/2020**	Analysis Date: **11/10/2020**	SeqNo: **2576009** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	5.0	25.00	0	75.2	72.5	106			
Surr: BFB	970		1000		96.7	75.3	105			

Sample ID: **2011369-038ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **WS20-08 0-0.5'**	Batch ID: **56277**	RunNo: **73220**
Prep Date: **11/7/2020**	Analysis Date: **11/10/2020**	SeqNo: **2576011** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	18	4.6	22.98	0	78.9	61.3	114			
Surr: BFB	890		919.1		97.3	75.3	105			

Sample ID: **2011369-038amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **WS20-08 0-0.5'**	Batch ID: **56277**	RunNo: **73220**
Prep Date: **11/7/2020**	Analysis Date: **11/10/2020**	SeqNo: **2576012** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	4.9	24.61	0	78.1	61.3	114	5.78	20	
Surr: BFB	950		984.3		96.5	75.3	105	0	0	

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#: **2011369**
13-Nov-20

Client: Devon Energy
Project: Todd 26G SWD 2

Sample ID: **mb-56276** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **56276** RunNo: **73220**
Prep Date: **11/7/2020** Analysis Date: **11/9/2020** SeqNo: **2576030** 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	0.97		1.000		97.3	80	120			

Sample ID: **LCS-56276** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **56276** RunNo: **73220**
Prep Date: **11/7/2020** Analysis Date: **11/9/2020** SeqNo: **2576031** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	87.5	80	120			
Toluene	0.91	0.050	1.000	0	90.9	80	120			
Ethylbenzene	0.90	0.050	1.000	0	89.9	80	120			
Xylenes, Total	2.7	0.10	3.000	0	91.0	80	120			
Surr: 4-Bromofluorobenzene	0.99		1.000		98.6	80	120			

Sample ID: **2011369-019ams** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BS20-19 0.25'** Batch ID: **56276** RunNo: **73220**
Prep Date: **11/7/2020** Analysis Date: **11/9/2020** SeqNo: **2576034** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	0.9872	0	94.9	76.3	120			
Toluene	0.96	0.049	0.9872	0.009980	96.3	78.5	120			
Ethylbenzene	0.97	0.049	0.9872	0	97.9	78.1	124			
Xylenes, Total	2.9	0.099	2.962	0	97.6	79.3	125			
Surr: 4-Bromofluorobenzene	1.0		0.9872		101	80	120			

Sample ID: **2011369-019amsd** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BS20-19 0.25'** Batch ID: **56276** RunNo: **73220**
Prep Date: **11/7/2020** Analysis Date: **11/9/2020** SeqNo: **2576035** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.81	0.024	0.9497	0	84.9	76.3	120	14.9	20	
Toluene	0.84	0.047	0.9497	0.009980	87.8	78.5	120	12.9	20	
Ethylbenzene	0.85	0.047	0.9497	0	89.9	78.1	124	12.4	20	
Xylenes, Total	2.6	0.095	2.849	0	89.7	79.3	125	12.3	20	
Surr: 4-Bromofluorobenzene	0.93		0.9497		98.4	80	120	0	0	

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#: **2011369**
13-Nov-20

Client: Devon Energy
Project: Todd 26G SWD 2

Sample ID: **mb-56277** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **56277** RunNo: **73220**
Prep Date: **11/7/2020** Analysis Date: **11/10/2020** SeqNo: **2576054** 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	0.95		1.000		94.8	80	120			

Sample ID: **LCS-56277** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **56277** RunNo: **73220**
Prep Date: **11/7/2020** Analysis Date: **11/10/2020** SeqNo: **2576055** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	93.4	80	120			
Toluene	0.98	0.050	1.000	0	98.0	80	120			
Ethylbenzene	0.97	0.050	1.000	0	97.3	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.8	80	120			
Surr: 4-Bromofluorobenzene	0.97		1.000		97.2	80	120			

Sample ID: **2011369-039ams** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **WS20-09 0-0.5'** Batch ID: **56277** RunNo: **73220**
Prep Date: **11/7/2020** Analysis Date: **11/10/2020** SeqNo: **2576058** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.024	0.9588	0	89.3	76.3	120			
Toluene	0.90	0.048	0.9588	0.01052	93.3	78.5	120			
Ethylbenzene	0.90	0.048	0.9588	0	94.1	78.1	124			
Xylenes, Total	2.7	0.096	2.876	0	93.9	79.3	125			
Surr: 4-Bromofluorobenzene	0.91		0.9588		94.9	80	120			

Sample ID: **2011369-039amsd** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **WS20-09 0-0.5'** Batch ID: **56277** RunNo: **73220**
Prep Date: **11/7/2020** Analysis Date: **11/10/2020** SeqNo: **2576059** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.024	0.9643	0	90.9	76.3	120	2.33	20	
Toluene	0.93	0.048	0.9643	0.01052	95.4	78.5	120	2.80	20	
Ethylbenzene	0.93	0.048	0.9643	0	96.7	78.1	124	3.30	20	
Xylenes, Total	2.8	0.096	2.893	0	96.1	79.3	125	2.80	20	
Surr: 4-Bromofluorobenzene	0.91		0.9643		94.4	80	120	0	0	

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#: **2011369**
13-Nov-20

Client: Devon Energy
Project: Todd 26G SWD 2

Sample ID: **mb-56270** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS** Batch ID: **56270** RunNo: **73196**
Prep Date: **11/6/2020** Analysis Date: **11/8/2020** SeqNo: **2574682** 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	0.48		0.5000		95.0	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		101	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.3	70	130			
Surr: Toluene-d8	0.47		0.5000		94.9	70	130			

Sample ID: **lcs-56270** SampType: **LCS4** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BatchQC** Batch ID: **56270** RunNo: **73196**
Prep Date: **11/6/2020** Analysis Date: **11/7/2020** SeqNo: **2574683** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	103	80	120			
Toluene	1.0	0.050	1.000	0	100	80	120			
Ethylbenzene	1.0	0.050	1.000	0	101	80	120			
Xylenes, Total	3.0	0.10	3.000	0	101	80	120			
Surr: 1,2-Dichloroethane-d4	0.48		0.5000		95.6	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		106	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		101	70	130			
Surr: Toluene-d8	0.47		0.5000		94.7	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#: **2011369**

13-Nov-20

Client: Devon Energy

Project: Todd 26G SWD 2

Sample ID: **mb-56270**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **56270**	RunNo: **73196**
Prep Date: **11/6/2020**	Analysis Date: **11/8/2020**	SeqNo: **2574722** 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	510		500.0		102	70	130			

Sample ID: **lcs-56270**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **56270**	RunNo: **73196**
Prep Date: **11/6/2020**	Analysis Date: **11/7/2020**	SeqNo: **2574723** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	84.4	70	130			
Surr: BFB	510		500.0		103	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: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **Devon Energy** Work Order Number: **2011369** RcptNo: 1

Received By: **Isaiah Ortiz** **11/5/2020** I-04

Completed By: **Isaiah Ortiz** **11/6/2020 8:13:37 AM** I-04

Reviewed By: ENM 11/6/20

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 ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
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 ☐	Checked by: JR 11/6/20

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	1.8	Good	Not Present			
2	3.1	Good	Not Present			

Chain-of-Custody Record

Client: Devon Energy

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
☑ Standard ☐ Rush

Project Name: Todd 26 G SWD 2

Project #: 20E-00141

Project Manager: Natalie Gordon

Sampler: MJP

On Ice: ☑ Yes ☐ No

# of Coolers: 2 1.8°C ± 0

Cooler Temp(including CF): 3.1°C ± 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. 2011369	(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)
11/4	11:00	Soil	BS20-01 0.25'	4 oz	ice	001	✓	✓					✓			
↑	11:10		BS20-02 0.25'			002										
	11:20		BS20-03 0.25'			003										
	11:30		BS20-04 0.25'			004										
	11:40		BS20-05 0.25'			005										
	11:50		BS20-06 0.25'			006										
	12:00		BS20-07 0.25'			007										
	12:10		BS20-08 0.25'			008										
	12:20		BS20-09 0.25'			009										
	12:30		BS20-10 0.25'			010										
	12:40		BS20-11 0.25			011										
↓	12:50	↓	BS20-12 0.25'	↓	↓	012	↓	↓					↓			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
11/5/20	850				11/5/20	850
11/5/20	1900				11/6/20	0705

Remarks: Direct bill CC: Natalie
Devon W/O # 20887297

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.

Chain-of-Custody Record

Client: Devon Energy

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
☑ Standard ☐ Rush

Project Name: Todd 26 G SWD 2

Project #: 20E-00141

Project Manager: Natalie Gordon

Sampler: MJP

On Ice: ☑ Yes ☐ No

# of Coolers: 1 3.1°C ±0

Cooler Temp(including CF): 1.8°C ±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. 2011369	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)
11/4	1:00	Soil	BS20-13 0.25	4oz	ice	013	✓	✓					✓			
	1:10		BS20-14 0.25			014										
	1:20		BS20-15 0.25			015										
	1:30		BS20-16 0.25			016										
	1:40		BS20-17 0.25			017										
	1:50		BS20-18 0.25			018										
	2:00		BS20-19 0.25'			019										
	2:10		BS20-20 0.25'			020										
	2:20		BS20-21 0.25'			021										
	2:30		BS20-22 0			022										
	2:40		BS20-23 0			023										
	2:50		BS20-24 0			024										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
11/5/20	0850				11/5/20	0850
11/5/20	1900			courier	11/6/20	0705

Remarks: Direct bill Devon cc: Natalie w/o #209887297

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.

Chain-of-Custody Record

Client: Devon Energy

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
☑ Standard ☐ Rush

Project Name: Todd 26G SWD 2

Project #: 20E-00141

Project Manager: Natalie Gordon

Sampler: MJP

On Ice: ☑ Yes ☐ No

# of Coolers: 2 3.1°C +0

Cooler Temp(including CF): 1.8°C +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. 2011369	(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)
11/4	3:00	Soil	BS20-25 0.5	4oz	ice	025	✓	✓					✓			
	3:10		BS20-26 0.5			026										
	3:20		BS20-27 0.5			027										
	3:30		BS20-28 0.5			028										
	3:40		BS20-29 0.5			029										
	3:50		BS20-30 0.5			030										
	11:05		WS20-01 0-0.25			031										
	11:15		WS20-02 0-0.25			032										
	11:25		WS20-03 0-0.25			033										
	11:35		WS20-04 0-0.25			034										
	11:45		WS20-05 0-0.25			035										
	11:55		WS20-06 0'			036										

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
11/5/20	850				11/5/20	850
11/5/20	1900	C Cummings			11/6/20	0705

Remarks: Direct bill Devon CC: Natalie
W/O # 20887297

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.

Chain-of-Custody Record

Client: Devon Energy

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
☒ Standard ☐ Rush

Project Name: Todd 26 G SWD 2

Project #: 20E-00141

Project Manager: Natalie Gordon

Sampler: MJP

On Ice: ☒ Yes ☐ No

# of Coolers: 2 1.8 ± 0

Cooler Temp (including CF): 3.1 ± 0 (°C)

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Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2011369	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)
11/4	12:05	Soil	WS20-07 0-0.5	4oz	Ice	037	✓	✓					✓			
	12:15		WS20-08 0-0.5			038										
	12:25		WS20-09 0-0.5			039										
	12:35		WS20-10 0-0.5			040										
	12:45		WS20-11 0-0.5			041										
	12:55		WS20-12 0'			042										

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
11/5/20	0850		Cummins		11/5/20	0850
11/5/20	1900	Cummins		Courier	11/6/20	0705

Remarks: Direct bill Devon CC: Natalie
W/O # 20887297

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1625 N. French Dr., Hobbs, NM 88240
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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 25263

CONDITIONS

Operator: Pima Environmental Services, LLC 5614 N Lovington Hwy Hobbs, NM 88240	OGRID: 329999
	Action Number: 25263
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	None	1/26/2023