VERTEX

November 13, 2020 Vertex Project #: 20E-00141-049

Spill Closure Report: Tomcat 15 Federal 3-2
Unit D, Section 15, Township 23 South, Range 32 East
County: Lea
API: 30-025-35524
Incident Tracking Number: NJXK1604649303

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

New Mexico Oil Conservation Division – District 1 – Hobbs
1625 North French Drive
Hobbs, New Mexico 88240

Devon Energy Production Company (Devon) retained Vertex Resource Services Inc. (Vertex) to conduct a spill assessment and remediation for a produced water release that occurred on February 12, 2016, at Tomcat 15 Federal 3-2, API 30-025-35524 (hereafter referred to as "Tomcat 15"). Devon provided notification of the spill to New Mexico Oil Conservation Division (NM OCD) District 1 and the Bureau of Land Management (BLM), who owns the property, via submission of an initial C-141 Release Notification on February 15, 2016 (Attachment 1). The NM OCD incident tracking number assigned to this incident is NJXK1604649303.

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 12, 2016, a release occurred at Devon's Tomcat 15 site when a bull pushed into the fencing around the wellhead and broke a 1" nipple. This incident resulted in the release of approximately 5 barrels (bbls) of produced water onto the wellpad. Upon discovery of the release, the well was shut in and the nipple was replaced. A hydrovac truck was dispatched to the site to recover free liquids. Approximately 1 bbl of produced water was recovered from the spill area and removed for disposal off-site. The release remained entirely on-pad; no produced water was released into undisturbed areas or waterways.

Site Characterization

The release at Tomcat 15 occurred on federally-owned land, N 32.3100281, W 103.6689453, approximately 25 miles east of Loving, New Mexico. The legal description for the site is Unit D, Section 15, Township 23 South, Range 32 East, Lea County, New Mexico. This location is within the Permian Basin in southeast New Mexico and has historically been used for oil and gas exploration and production, and rangeland. An aerial photograph and site schematic are included

in Attachment 2.

Tomcat 15 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. The following sections specifically describe the area around the wellpad.

The surrounding landscape is associated with southwestern plains generally found at elevations of 3,000 to 3,900 feet above sea level and is classified as farmland of statewide importance. The climate is semi-arid, with average annual precipitation ranging between 10 and 12 inches. Historically, the plant community has been dominated by black grama, dropseeds and bluestems, with scattered shinnery oak and sand sage. Perennial and annual forb abundance and distribution are dependent on precipitation. Litter and, to a lesser extent, bare ground make up a significant portion of the ground cover, while grasses compose the remainder (United States Department of Agriculture, Natural Resources Conservation Service, 2020). Limited to no vegetation is allowed to grow on the compacted production wellpad.

The *Geological Map of New Mexico* indicates the surface geology at Tomcat 15 is comprised primarily of Qep – interlaid eolian sands and piedmont-slope deposits from the Holocene to middle Pleistocene ages (New Mexico Bureau of Geology and Mineral Resources, 2020). The National Resources Conservation Service Web Soil Survey characterizes the soil at the site as Pyote loamy fine sand, which is comprised of loamy fine sand over deep layers of fine sandy loam. It tends to be well-drained with negligible runoff and low available moisture levels in the soil profile (United States Department of Agriculture, Natural Resources Conservation Service, 2020). There is low potential for karst geology to be present near Tomcat 15 (United States Department of the Interior, Bureau of Land Management, 2020).

There is no surface water located at on-site. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is an intermittent stream located approximately 4.8 miles east of the site (United States Fish and Wildlife Service, 2020). At Tomcat 15, there are no continuously flowing watercourses or significant watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

The nearest active well to the site is a United States Geological Survey well from 2013, located approximately 1.6 miles due north of the site, with a depth to groundwater of 490 feet below ground surface (bgs; United States Department of the Interior, United States Geological Survey, 2020). Documentation pertaining to site characterization and depth to groundwater determination is included in Attachment 3.

Closure Criteria Determination

Using site characterization information, a closure criteria determination worksheet (Attachment 3) was completed to determine if the release is 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 Tomcat 15 is not subject to the requirements of Paragraph (4) of Subsection C of 19.15.29.12 NMAC. As the nearest groundwater well is further than 0.5 miles from the release site, the depth to groundwater at Tomcat 15 cannot be accurately determined. The closure criteria for the site are determined to be associated with the following constituent concentration limits.

Table 1. Closure Criteria for Soils Impacted by a Release		
Depth to Groundwater	**Constituent**	**Limit**
<50 feet	Chloride	600 mg/kg
	TPH[1] (GRO + DRO + MRO)	100 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, ethyl benzene and xylenes (BTEX)

Remedial Actions

Initial Remedial Actions

An initial spill inspection, completed on April 3, 2020, identified and mapped the boundaries of the release using an electroconductivity meter to approximate the levels of chloride in the soil. The release area was determined to be approximately 35 feet wide by 30 feet long; the total affected area was determined to be approximately 1,060 square feet (Attachment 2 – Figure 1). Initial field screening and site characterization activities determined that the site met closure criteria, based on an initial depth to groundwater determination of greater than 100 feet bgs, and, as no excavation or remediation was needed, confirmatory sampling could be conducted. The Daily Field Report (DFR) associated with the initial spill inspection is included as Attachment 4.

On May 13, 2020, Vertex provided 48-hour notification of confirmation sampling to NM OCD District 1 and the BLM, as required by Subparagraph (a) of Paragraph (1) of Subsection D 19.15.29.12 NMAC (Attachment 5). On May 15, 2020, five confirmatory samples (BS20-01 to BS20-05) were collected from within the footprint of the release area such that each five-point 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 (NELAP)-approved laboratory for chemical analysis.

Laboratory analyses included Method 300.0 for chlorides, Method 8021B for volatile organics, including BTEX, and EPA Method 8015 for TPH, including MRO, DRO and GRO. Confirmatory sample analytical data are summarized in Table 2 (Attachment 6). The laboratory data report and chain of custody form 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 the five-point composite samples. The confirmation sampling locations are presented on Figure 1 (Attachment 2).

Modification of Closure Criteria

Following the initial confirmatory sampling, additional depth to groundwater research was completed on Tomcat 15 and it was determined that, because the nearest groundwater well was farther from the release site than the recommended 0.5 miles, additional remediation would be needed to meet the most stringent closure criteria, as shown

in Table 1.

On August 31, 2020, Vertex again provided 48-hour notification of confirmation sampling to NM OCD District 1 and the BLM (Attachment 5), and on September 2, 2020, Vertex was on-site to guide excavation of contaminated soil to depths of approximately 1 foot bgs. Following remediation, five confirmatory samples (BS20-01 to BS20-05) were collected from the base of the excavation at the same approximate locations where the initial confirmatory samples were collected. Additionally, side wall samples were collected to show that the horizontal extents of the release had been properly identified. The final confirmatory samples were collected such that each five-point 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. The composite samples were placed into laboratory-provided containers, preserved on ice, and submitted to a NELAP-approved laboratory for chemical analysis.

Laboratory analyses included Method 300.0 for chlorides, Method 8021B for volatile organics, including BTEX, and EPA Method 8015 for TPH, including MRO, DRO and GRO. The second round of confirmatory sample analytical data are summarized in Table 2 with the original confirmatory sampling analytical data (Attachment 6). Laboratory data reports and chain of custody forms are included in Attachment 7.

The side wall confirmatory samples are presented with the original five confirmatory samples on Figure 1 (Attachment 2).

Closure Request

Vertex recommends no additional remediation action to address the release at Tomcat 15. Laboratory analyses for the final confirmatory samples showed constituent of concern concentration levels below NM OCD Closure Criteria for areas where depth to groundwater is less than 50 feet bgs as shown in Table 1. There are no anticipated risks to human, ecological or hydrological receptors associated with the release site.

Vertex requests that this incident (NJXK1604649303) 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 12, 2016, release at Tomcat 15.

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

References

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

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

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

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

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

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

Limitations

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

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

ATTACHMENT 1

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

State of New Mexico
Energy Minerals and Natural Resources

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

Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Devon Energy Production Company	**Contact** Ruben Garcia Assistant Production Foreman
Address 6488 Seven Rivers Hwy Artesia, NM 88210	**Telephone No.** 575-748-5209
Facility Name Tomcat 15 Fed 3-2	**Facility Type** Injection SWD

Surface Owner Federal	**Mineral Owner** Federal	**API No** 30-025-35524

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	15	23S	32E	660	North	660	West	Lea

Latitude: N 32’31’00.80” **Longitude:** W -103’66’89.38”

NATURE OF RELEASE

Type of Release Produced Water	**Volume of Release** 5 bbls	**Volume Recovered** 1 bbl
Source of Release 1” nipple	**Date and Hour of Occurrence** 2/12/16 @ 10:00 am	**Date and Hour of Discovery** 2/12/16 210:00am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	**If YES, To Whom?** Kellie Jones @ OCD Jim Amos @ BLM	
By Whom? Ruben Garcia Assistant Production Foreman	**Date and Hour** 2/12/16 @ 2:25 pm 2/12/16 @ 2:20 pm	
Was a Watercourse Reached? ☐ Yes ☒ No	**If YES, Volume Impacting the Watercourse** N/A	

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*
Bull pushed bull pin into the wellhead and broke a 1” nipple causing 5 bbls produced water to release. Well was shut in to prevent further release. Nipple was replaced and well was put back to production.

Describe Area Affected and Cleanup Action Taken.*
5 bbls produced water was released on the North, South and West side of the wellhead on the facility. 1 bbl produced water was recovered via vacuum truck. The spill was approximately 4’x15’ on the West side, 6’x20’ on the South side, and 4’x10’ on the North side of the wellhead. All fluid remained on the pad on location. Environmental agency to be contacted for remediation.

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: Corina Moya

Printed Name: Corina Moya

Title: **Field Admin Support**

E-mail Address: **corina.moya@dvn.com**

Date: 2/15/2016 Phone: **575.746.5559**

OIL CONSERVATION DIVISION

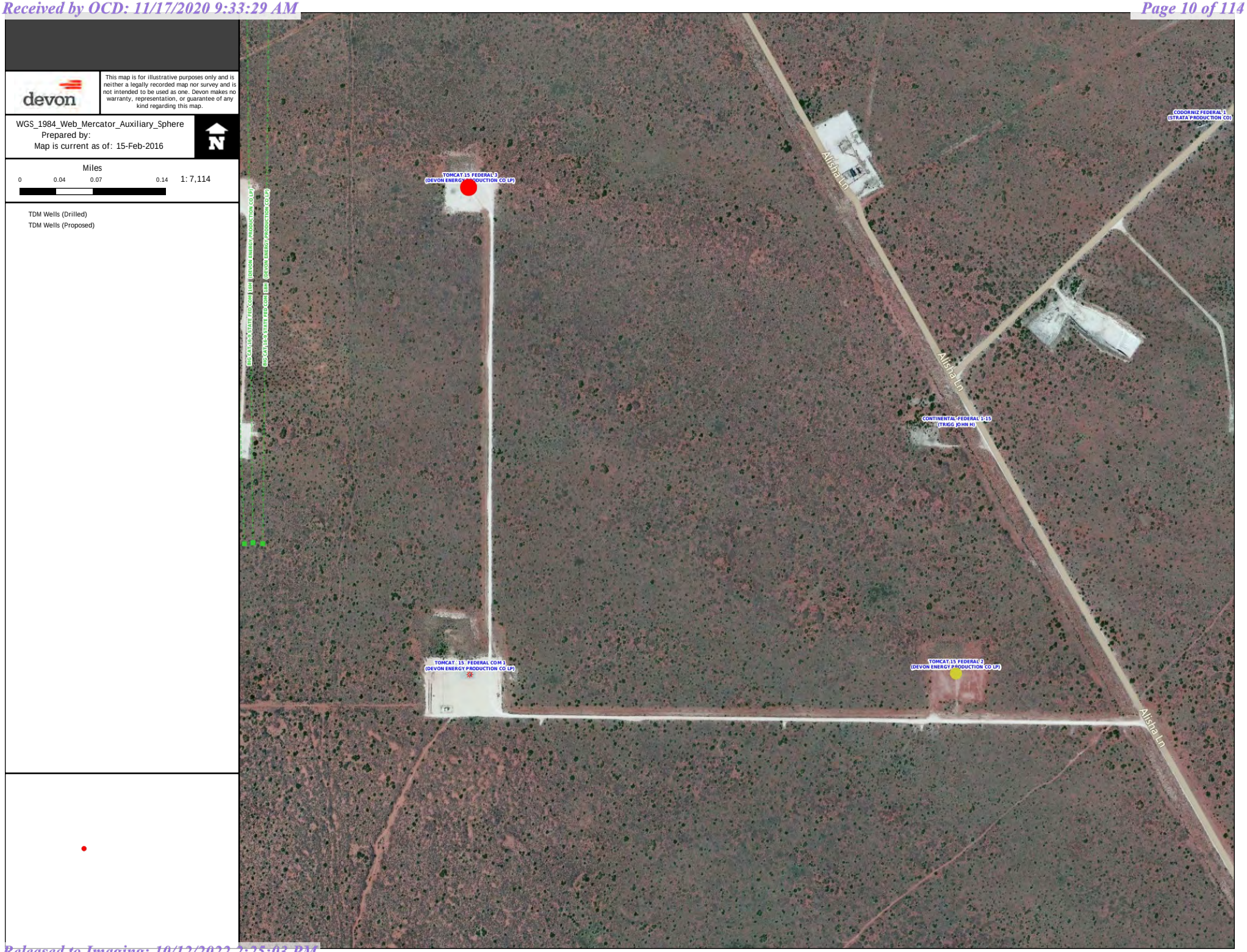
Approved by Environmental Specialist:

Approval Date: 02/15/2016 Expiration Date: 04/15/2016

Conditions of Approval:
Discrete site samples only. Delineate and remediate per NMOCD guidelines. Ensure BLM concurrence/approval.

Attached ☐
1RP 4182
pJXK1604649303
pJXK1604649401

* Attach Additional Sheets If Necessary


devon
This map is for illustrative purposes only and is neither a legally recorded map nor survey and is not intended to be used as one. Devon makes no warranty, representation, or guarantee of any kind regarding this map.
WGS_1984_Web_Mercator_Auxiliary_Sphere
Prepared by:
Map is current as of: 15-Feb-2016
N
Miles
0 0.04 0.07 0.14
1: 7,114
TDM Wells (Drilled)
TDM Wells (Proposed)
TOMCAT 15 FEDERAL 3
(DEVON ENERGY PRODUCTION CO LP)
TOMCAT 15 FEDERAL COM 1
(DEVON ENERGY PRODUCTION CO LP)
TOMCAT 15 FEDERAL 2
(DEVON ENERGY PRODUCTION CO LP)
CONTINENTAL FEDERAL 1-15
(TRIGG JOHN H)
CODORNIZ FEDERAL 1
(STRATA PRODUCTION CO)
Alisha Ln
Alisha Ln
Alisha Ln
BIG CATTLE STATE FED COM 1H (DEVON ENERGY PRODUCTION CO LP)
BIG CATTLE STATE FED COM 2H (DEVON ENERGY PRODUCTION CO LP)

Form C-141
Page 3

State of New Mexico
Oil Conservation Division

Incident ID	NJXK1604649303
District RP	1RP-4182
Facility ID	
Application ID	pJXK1604649401

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?	< 50 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

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

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Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NJXK1604649303
District RP	1RP-4182
Facility ID	
Application ID	pJXK1604649401

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: Tom Bynum Title: EHS Consultant

Signature: Tom Bynum Date: 11/14/2020

email: tom.bynum@dvn.com Telephone: 575-748-2663

OCD Only

Received by: _____ Date: _____

Form C-141
Page 6

State of New Mexico
Oil Conservation Division

Incident ID	NJXK1604649303
District RP	1RP-4182
Facility ID	
Application ID	pJXK1604649401

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: Tom Bynum Title: EHS Consultant

Signature: Tom Bynum Date: 11/14/2020

email: tom.bynum@dvn.com Telephone: 575-748-2663

OCD Only

Received by: _____ Date: _____

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

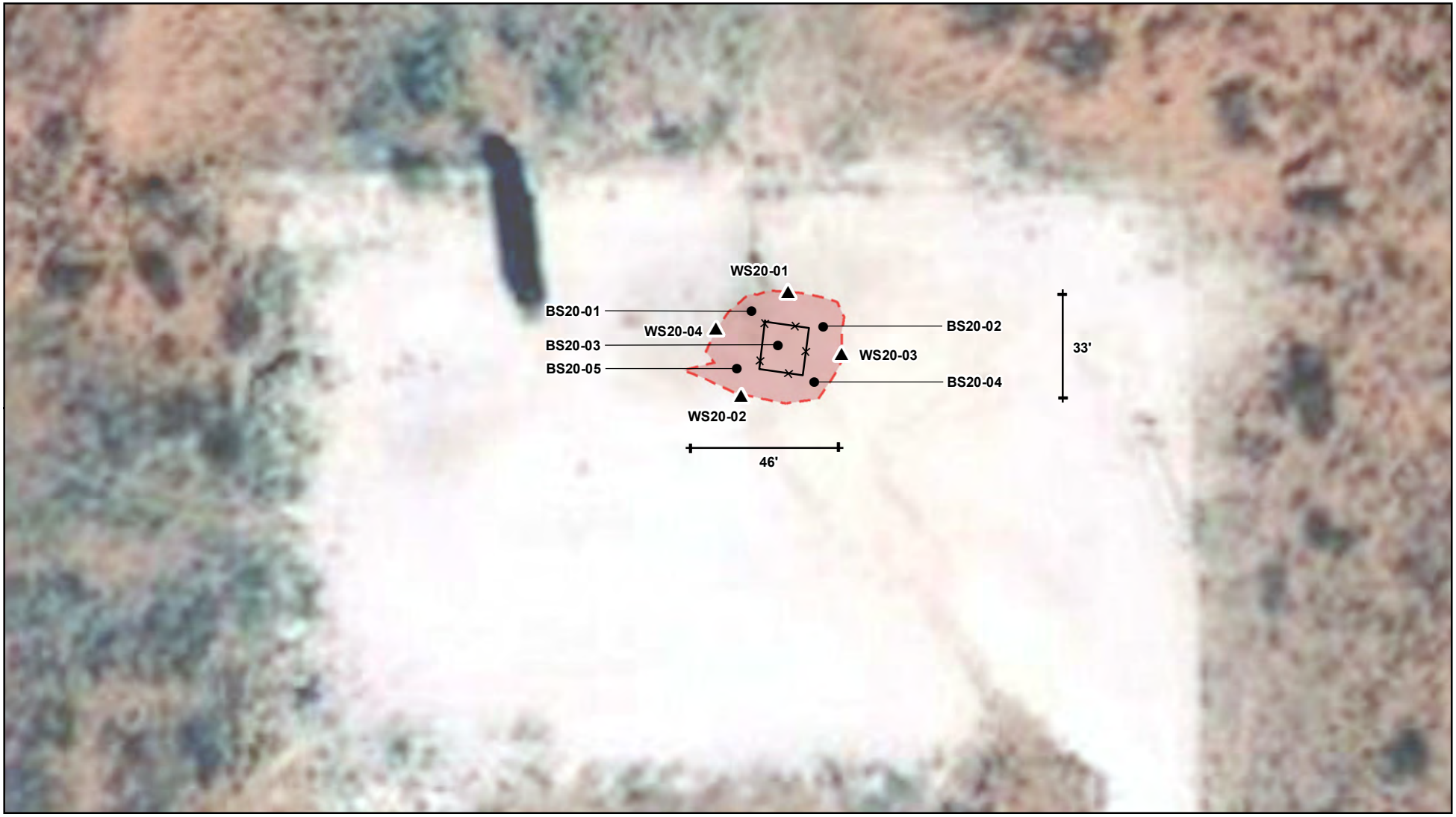
Closure Approved by: Brittany Hall Date: 10/12/2022

Printed Name: Brittany Hall Title: Environmental Specialist

chevron

devon

ATTACHMENT 2



● Base Sample
▲ Wall Sample
Fence
Spill (~1,060 sq. ft.)

VERTEX

0 10 20 40 ft

Map Center:
Lat/Long: 32.310044, -103.668975

NAD 1983 UTM Zone 13N
Date: Nov 03/20

N

Confirmatory Schematic
Tomcat 15 Fed 3H

FIGURE:
1

devon

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

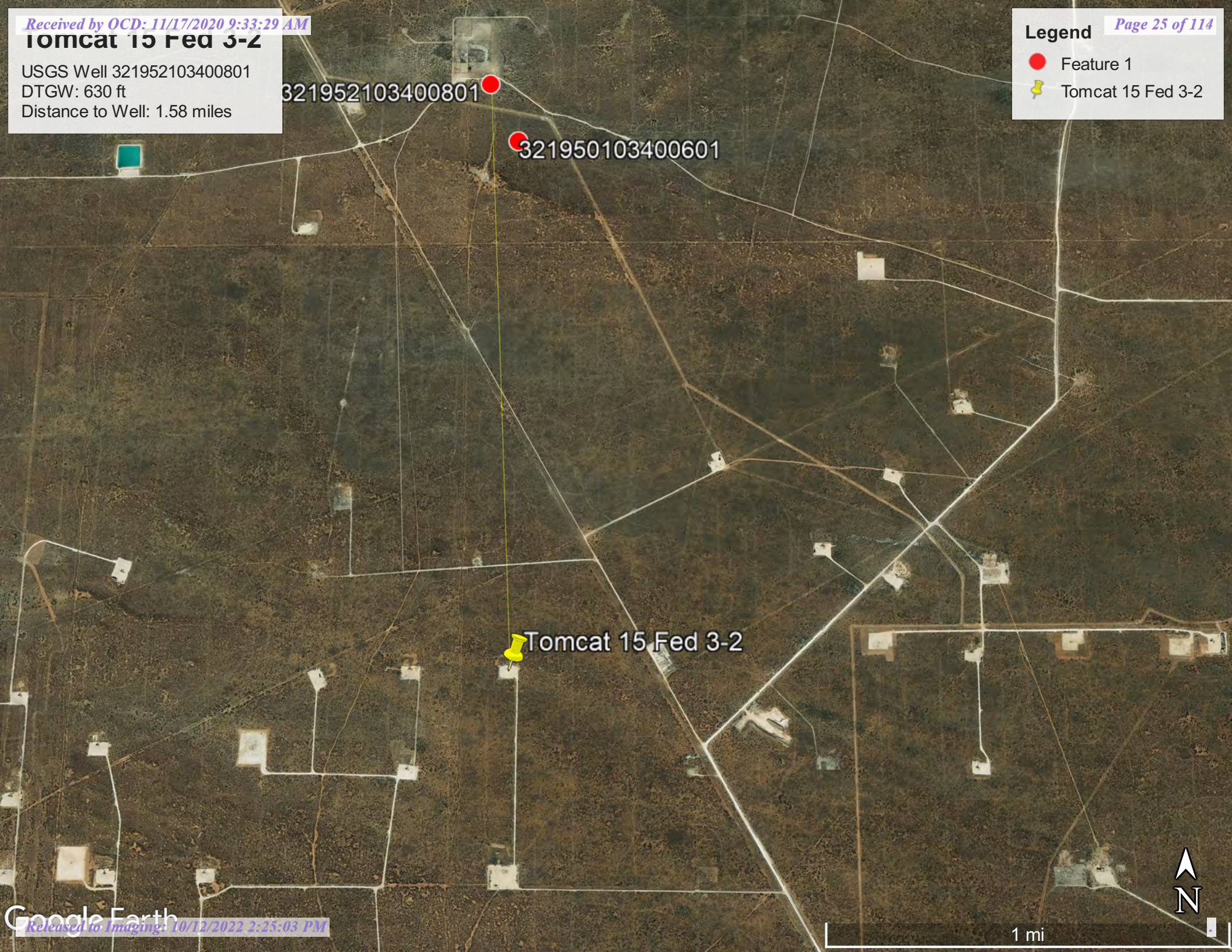
Note: Imagery from ESRI, 2019.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\Devon Energy Corporation\20E-00141\049 - Tomcat 15 Fed 3H\Fig 1 Confirmatory Schematic Tomcat 15 Fed 3H v2.mxd

ATTACHMENT 3

Closure Criteria Determination Worksheet			
Site Name: Tomcat 15 State 3			
Spill Coordinates:		**X: 32.31000**	**Y: -103.66890**
Site Specific Conditions		**Value**	**Unit**
1	Depth to Groundwater	**< 50**	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	25,125	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	8,850	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	30,388	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**	12,450	feet
	ii) Within 1000 feet of any fresh water well or spring		feet
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)
7	Within 300 feet of a wetland	46,650	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	Low	Critical High Medium Low
10	Within a 100-year Floodplain	No	year
NMAC 19.15.29.12 E (Table 1) Closure Criteria		>100'	<50' 51-100' >100'



National Flood Hazard Layer FIRMette

FEMA

Legend

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

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

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

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

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

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

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

N

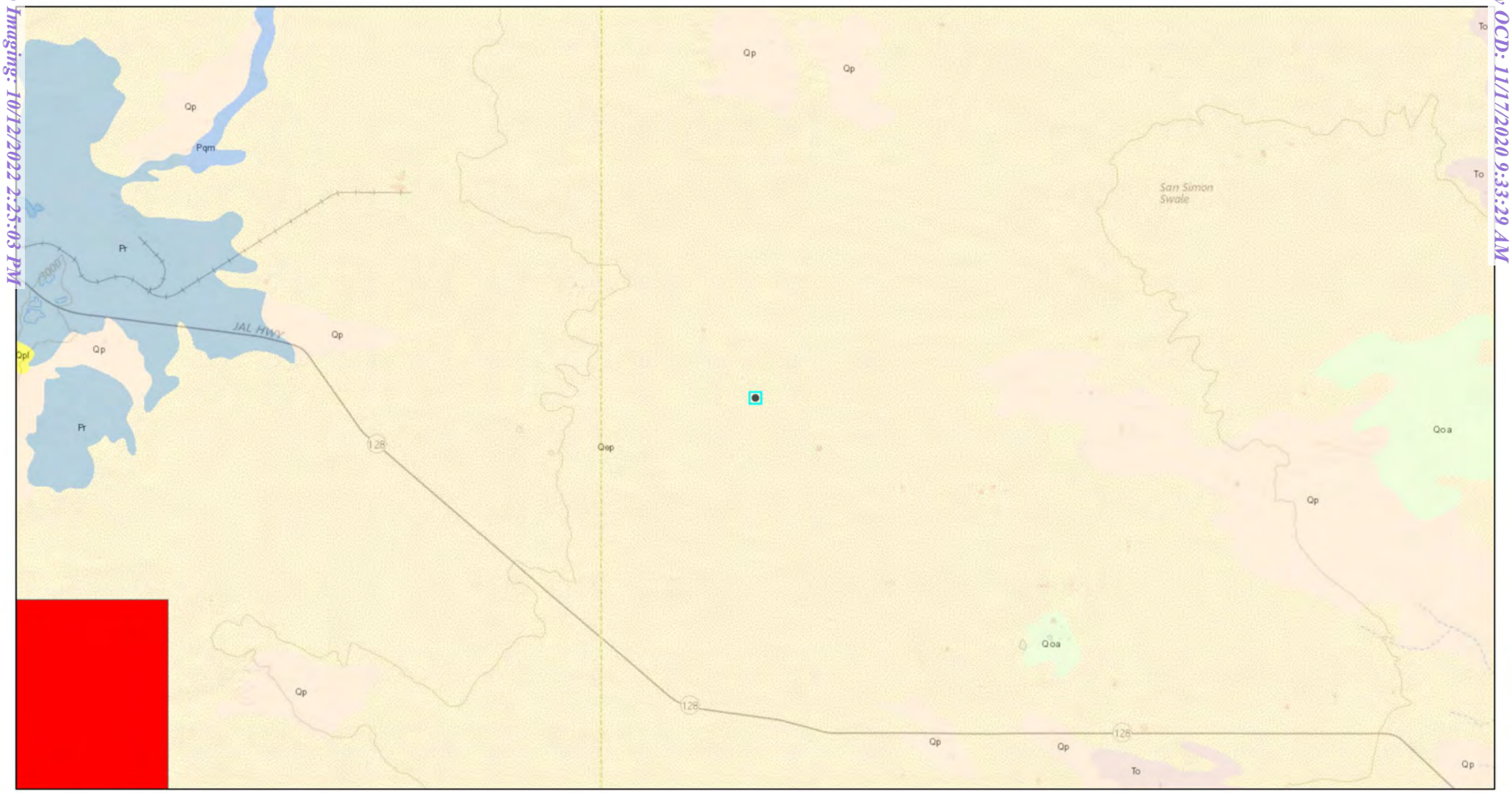
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/30/2020 at 10:05:35 AM 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.

Tomcat 15 Fed 3-2 Geology Qep



5/28/2020, 6:14:30 PM

1:144,448

0 1.5 3 6 mi

0 2.5 5 10 km

Faults

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

Dikes

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

STATEMAP (1993 to Present) [Publications]

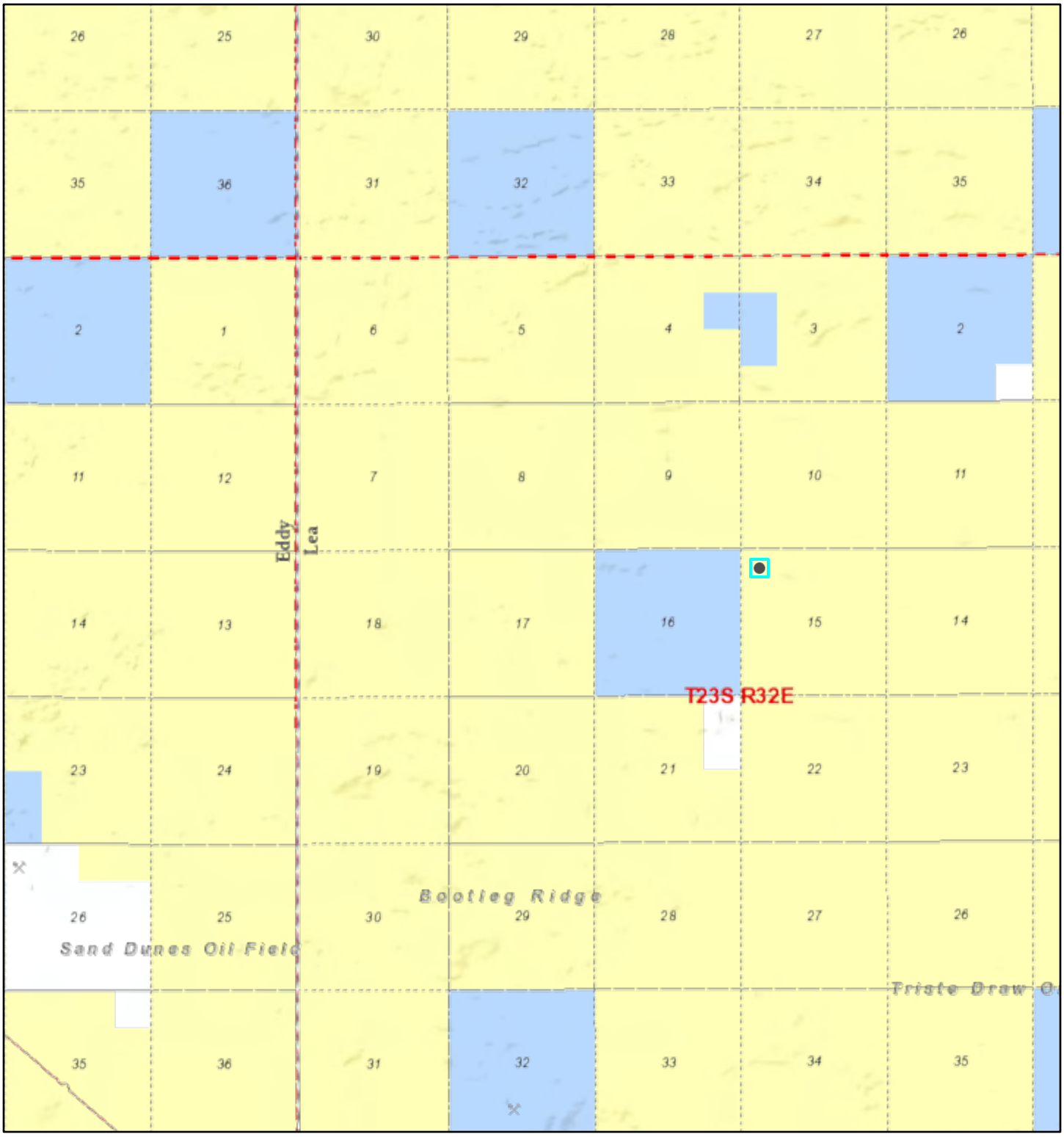
- Mapping in Complete
- Mapping in Progress

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

Web AppBuilder for ArcGIS

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

Active Mines near Tomcat 15 Fed 3



3/30/2020, 8:19:33 AM

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

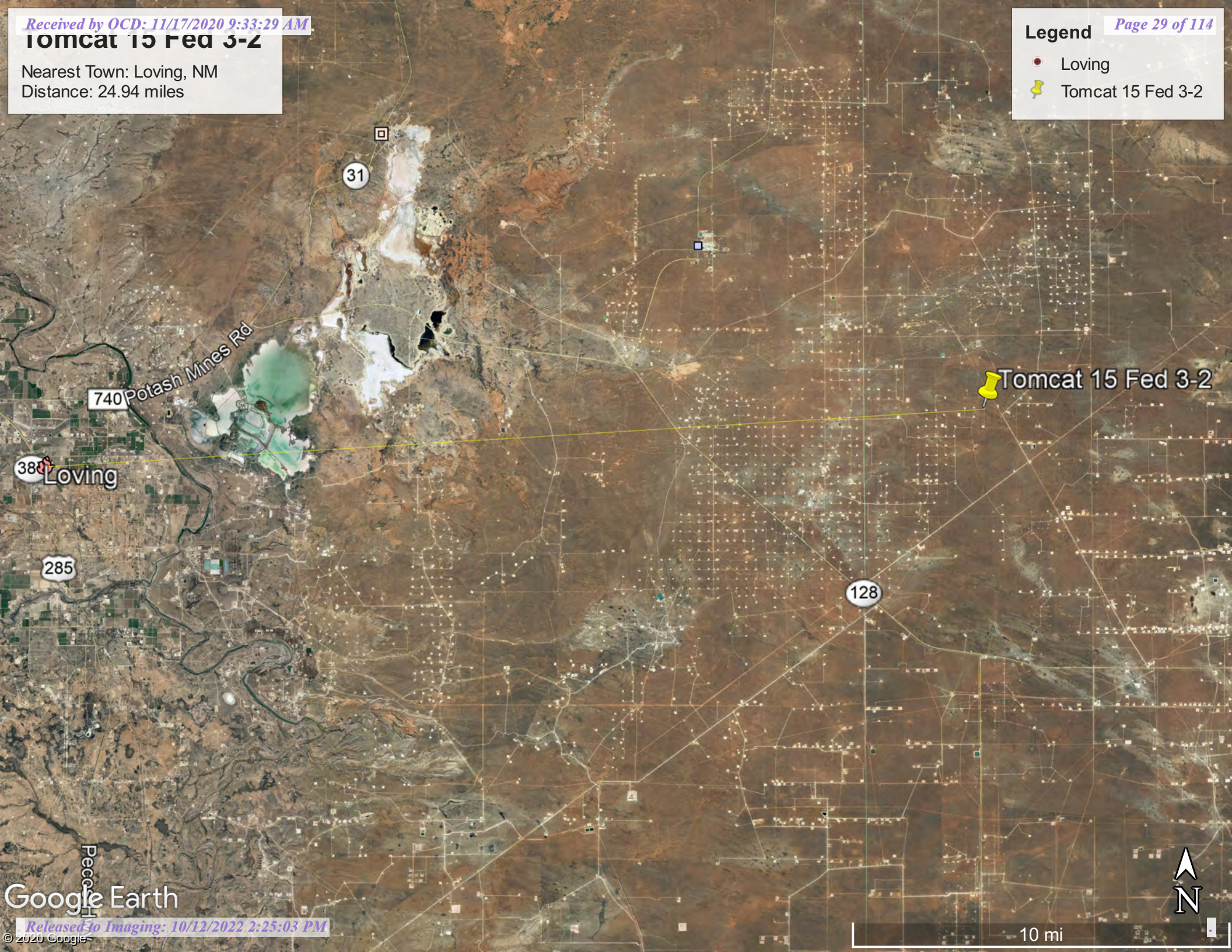
New Mexico Energy, Minerals and Natural Resources Department (http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=1b5e577974664d689b47790897ca2795)

Tomcat 15 Fed 3-2

Nearest Town: Loving, NM
Distance: 24.94 miles

Legend

- Loving
- Tomcat 15 Fed 3-2



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 03851 POD1	3	3	4	20	23S	32E	622880	3572660

Driller License: 1723 **Driller Company:** SBQ2, LLC DBA STEWART BROTHERS DRILLING CO.

Driller Name:

Drill Start Date:	08/19/2015	**Drill Finish Date:**	10/02/2015	**Plug Date:**	
Log File Date:	11/10/2015	**PCW Rcv Date:**		**Source:**	Artesian
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	3 GPM
Casing Size:	5.00	**Depth Well:**	1392 feet	**Depth Water:**	713 feet

Water Bearing Stratifications:	Top	Bottom	Description
	1354	1380	Limestone/Dolomite/Chalk

Casing Perforations:	Top	Bottom
	1354	1383

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(acre ft per annum)

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

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q q q 6416	4	Sec	Tws	Rng	X	Y	Distance
C 02520	C	PRO	0	PENWELL ENERGY	LE	C 02520					1	4	15	23S	32E	626122	3574791*	1129
C 02216	CUB	PLS	11.3	BRININSTOOL XL RANCH LLC	LE	C 02216					2	2	4	21	23S	32E	625035	3573261*	2331
C 02349	CUB	STK	3	CHARLES F. JAMES	ED	C 02349					2	3	03	23S	32E	625678	3578004*	2456
C 02445	C	STK	3	BUREAU OF LAND MANAGEMENT	LE	C 02445					3	3	3	13	23S	32E	628437	3574327*	3367
C 03851	CUB	MON	0	US DEPARTMENT OF ENERGY	LE	C 03851 POD1		NON		Artesian	3	3	4	20	23S	32E	622879	3572660	3795

Record Count: 5

UTMNAD83 Radius Search (in meters):

Easting (X): 625309.51 **Northing (Y):** 3575575.8 **Radius:** 5000

Sorted by: Distance

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

U.S. Fish and Wildlife Service
National Wetlands Inventory

Tomcat 15 Fed 3: Pond 8,850 ft

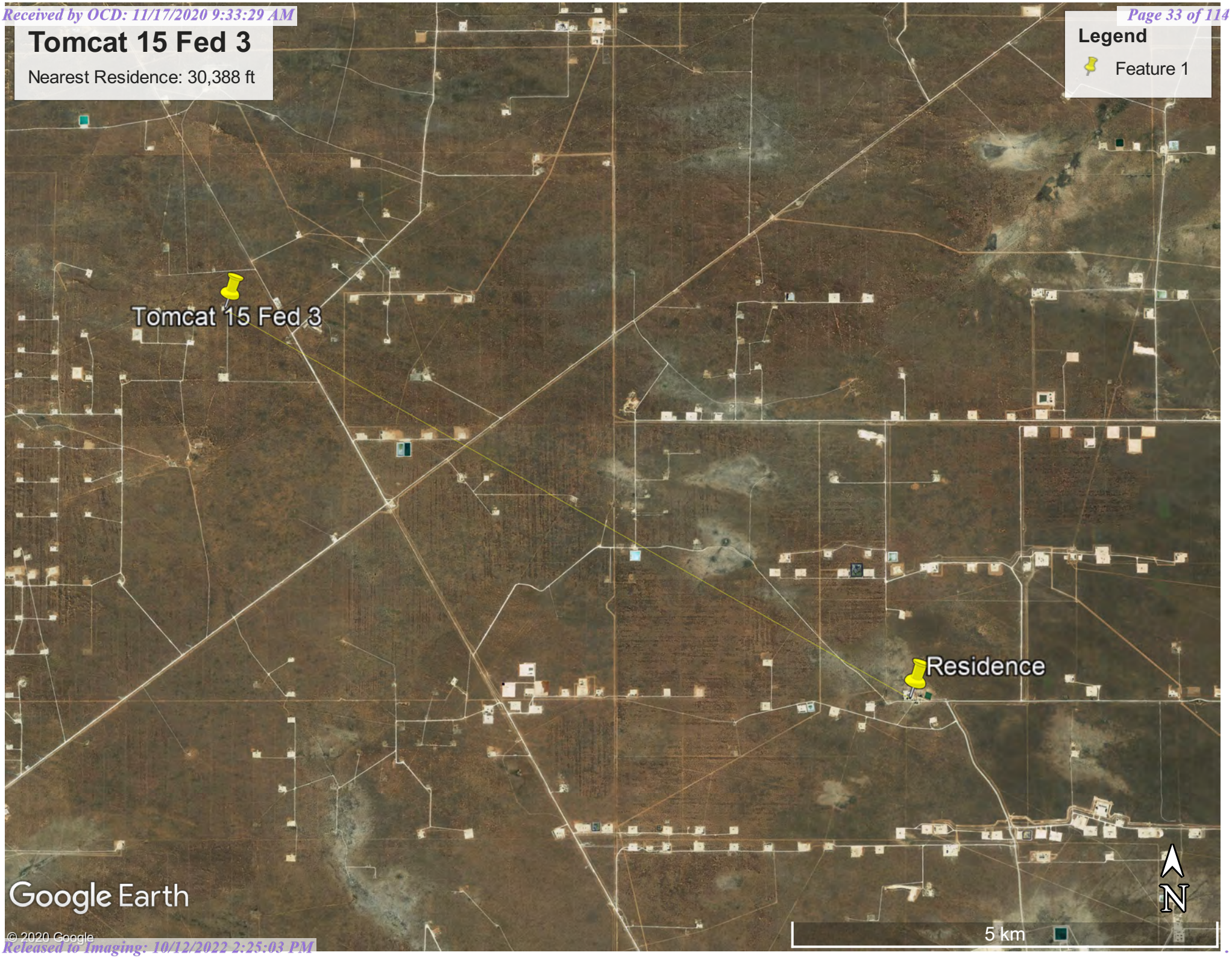
March 30, 2020

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


Tomcat 15 Fed 3
Nearest Residence: 30,388 ft
Legend
Feature 1
Tomcat 15 Fed 3
Residence
Google Earth
© 2020 Google
5 km
N

Soil Map—Lea County, New Mexico
(Todd 15 Fed 3)

Map Scale: 1:500 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 5 10 20 30

Feet
0 20 40 80 120

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

Soil Map—Lea County, New Mexico
(Todd 15 Fed 3)

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

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

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

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

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PT	Pyote loamy fine sand	1.3	100.0%
Totals for Area of Interest		**1.3**	**100.0%**

Lea County, New Mexico

PT—Pyote loamy fine sand

Map Unit Setting

National map unit symbol: dmqp
Elevation: 3,000 to 3,900 feet
Mean annual precipitation: 10 to 12 inches
Mean annual air temperature: 60 to 62 degrees F
Frost-free period: 190 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Pyote and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pyote

Setting

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

Typical profile

A - 0 to 25 inches: loamy fine sand
Bt - 25 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A
Ecological site: Loamy Sand (R042XC003NM)
Hydric soil rating: No

Minor Components

Maljamar
Percent of map unit: 8 percent
Ecological site: Loamy Sand (R042XC003NM)
Hydric soil rating: No

Palomas
Percent of map unit: 7 percent
Ecological site: Loamy Sand (R042XC003NM)
Hydric soil rating: No

Data Source Information

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

USGS Home
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National Water Information System: Web Interface

USGS Water Resources

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

Click to hideNews Bulletins

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

USGS 321732103401701 23S.32E.21.223444

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

Well Site

DESCRIPTION:
Latitude 32°17'32", Longitude 103°40'17" NAD27
Lea County, New Mexico , Hydrologic Unit 13060011
Well depth: 550 feet
Land surface altitude: 3,682 feet above NAVD88.
Well completed in "Santa Rosa Sandstone" (231SNRS) local aquifer

AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
Field groundwater-level measurements	1972-09-21	1976-12-07	2
Revisions	Unavailable (site:0) (timeseries:0)		

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

---

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

Title: NWIS Site Information for USA: Site Inventory
URL: https://waterdata.usgs.gov/nwis/inventory?agency_code=USGS&site_no=321732103401701

Page Contact Information: New Mexico Water Data Support Team
Page Last Modified: 2020-05-28 20:23:19 EDT
0.32 0.3 caww01

National Water Information System: Web Interface

USGS Water Resources

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

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- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

- 321952103400801

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

USGS 321952103400801 23S.32E.03.311114

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

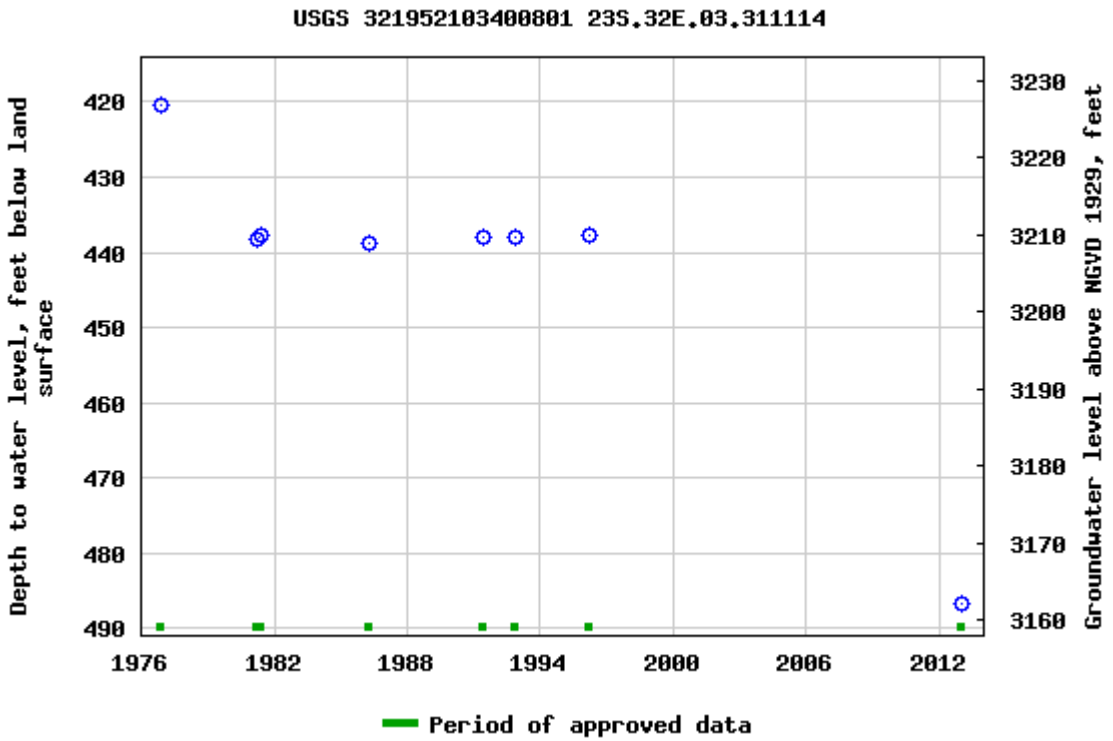
Lea County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°19'59.2", Longitude 103°40'12.6" NAD83
Land-surface elevation 3,648.00 feet above NGVD29
The depth of the well is 630 feet below land surface.
This well is completed in the Santa Rosa Sandstone (231SNRS) local aquifer.

Output formats

Table of data
Tab-separated data

Graph of data

Reselect period



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

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

Accessibility FOIA Privacy Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey
Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2020-10-21 19:08:06 EDT
0.61 0.52 nadww02

USGS Home
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Search USGS

National Water Information System: Web Interface

USGS Water Resources

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

Click to hideNews Bulletins

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

USGS 321952103400801 23S.32E.03.311114

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

Well Site

DESCRIPTION:
Latitude 32°19'59.2", Longitude 103°40'12.6" NAD83
Lea County, New Mexico , Hydrologic Unit 13060011
Well depth: 630 feet
Land surface altitude: 3,648.00 feet above NGVD29.
Well completed in "Santa Rosa Sandstone" (231SNRS) local aquifer

AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
Field groundwater-level measurements	1976-12-09	2013-01-16	8
Revisions	Unavailable (site:0) (timeseries:0)		

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

---

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

Title: NWIS Site Information for USA: Site Inventory
URL: https://waterdata.usgs.gov/nwis/inventory?agency_code=USGS&site_no=321952103400801

Page Contact Information: New Mexico Water Data Support Team
Page Last Modified: 2020-05-28 20:24:10 EDT
0.37 0.33 caww01

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

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

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

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

POD Number	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 02216	CUB	LE	2	2	4	21	23S	32E	625035	3573261*	2331	585	400	185
C 02349	CUB	ED		2	3	03	23S	32E	625678	3578004*	2456	525		
C 03851 POD1	CUB	LE	3	3	4	20	23S	32E	622880	3572660	3795	1392	713	679

Average Depth to Water: **556 feet**

Minimum Depth: **400 feet**

Maximum Depth: **713 feet**

Record Count: 3

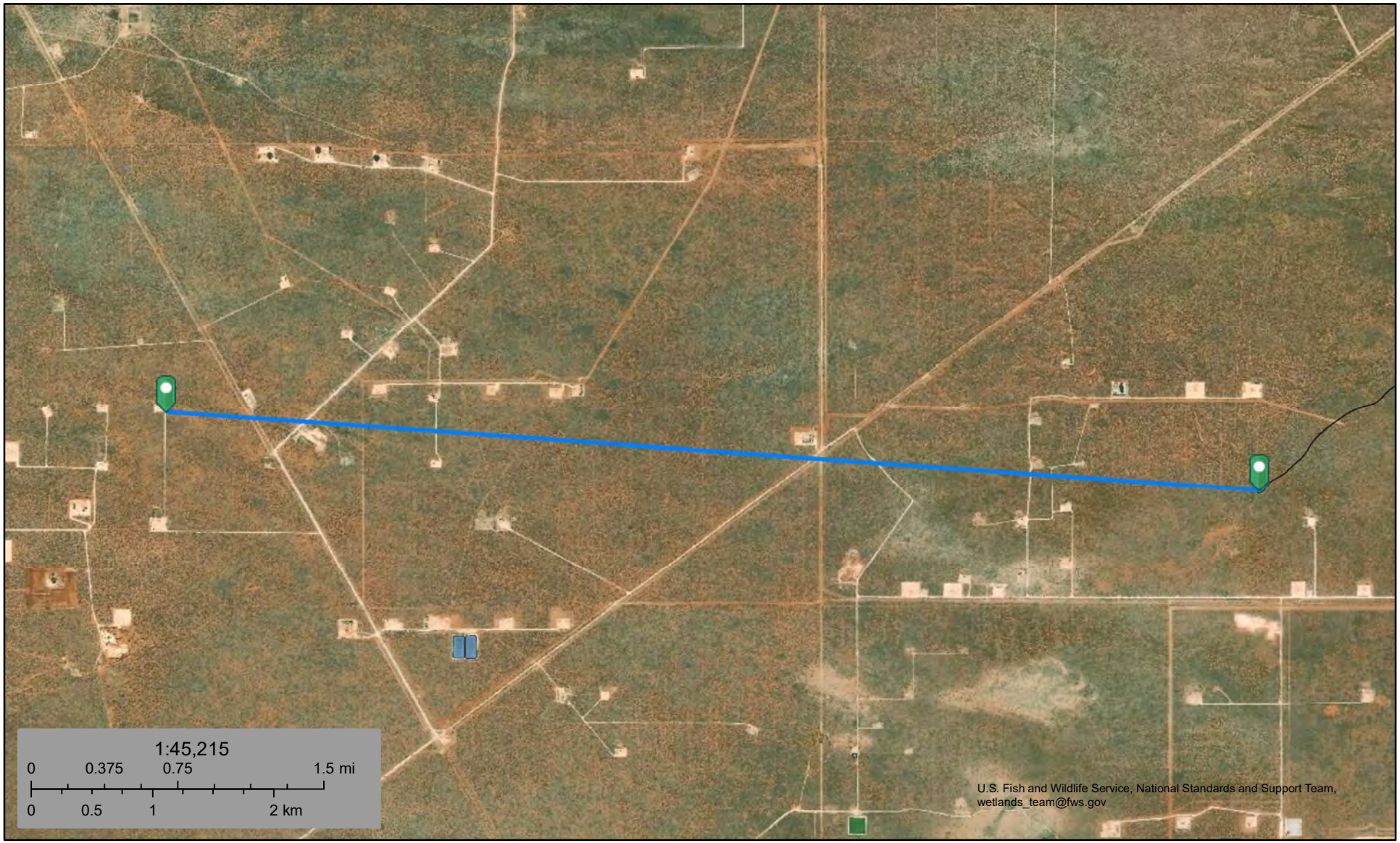
UTMNAD83 Radius Search (in meters):

Easting (X): 625309.51 **Northing (Y):** 3575575.8 **Radius:** 5000

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

U.S. Fish and Wildlife Service
National Wetlands Inventory

Tomcat 15 Fed 3: Flowing Water 25,125 ft



March 30, 2020

Wetlands

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

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

New Mexico Office of the State Engineer

Wells with Well Log Information

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

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

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(in feet)

POD Number	POD Sub-basin Code	County	Source	q 6416	q 3	q 4	Sec	Tws	Rng	X	Y	Distance	Start Date	Finish Date	Log File Date	Depth Well	Depth Water	Driller	License Number
C 03851 POD1	CUB	LE	Artesian	3	3	4	20	23S	32E	622880	3572660	3795	08/19/2015	10/02/2015	11/10/2015	1392	713	STEWART, RANDAL P.	1723

Record Count: 1

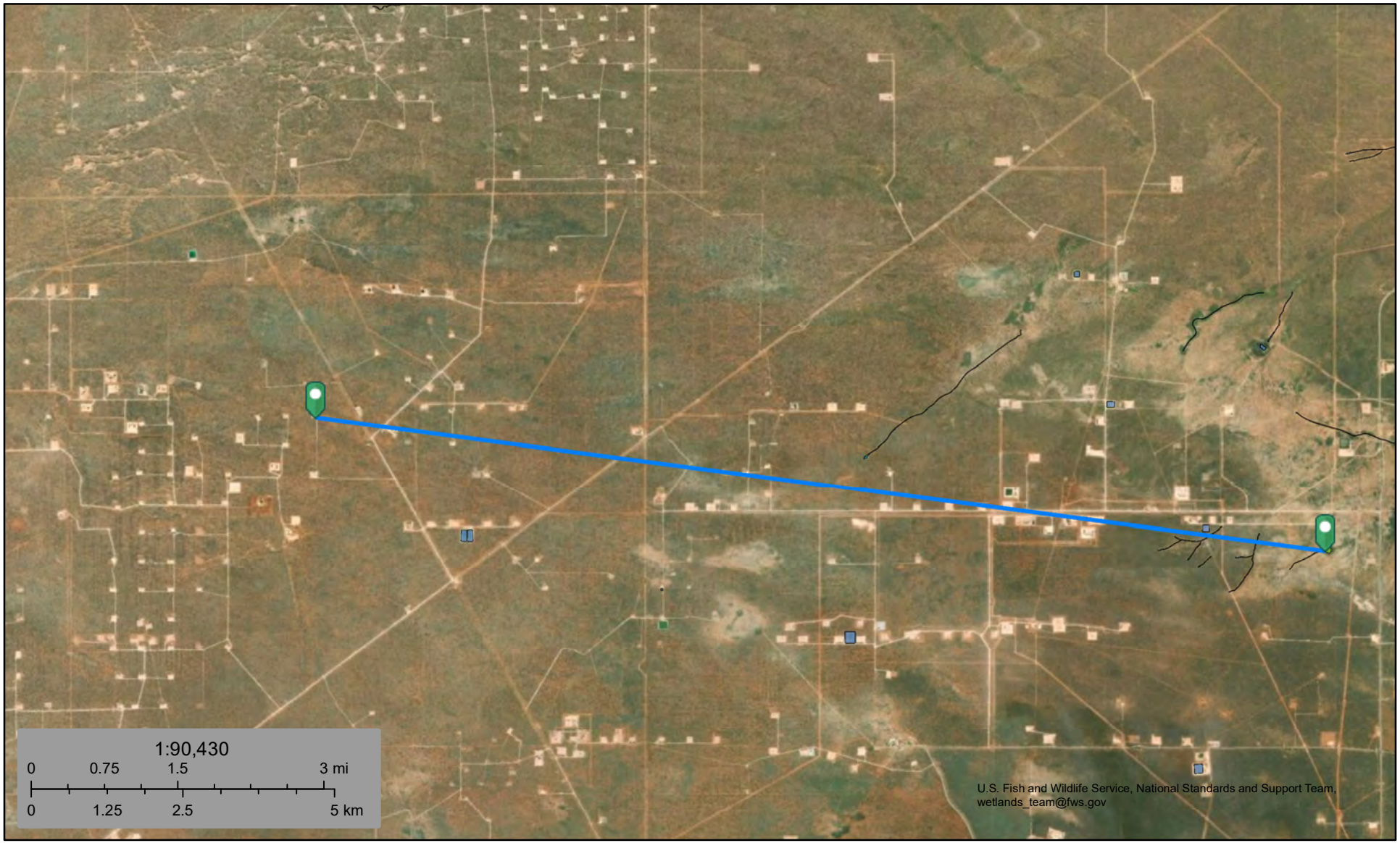
UTMNAD83 Radius Search (in meters):

Easting (X): 625309.51 **Northing (Y):** 3575575.8 **Radius:** 5000

U.S. Fish and Wildlife Service

National Wetlands Inventory

Tomcat 15 Fed 3: Wetland 46,650 ft



March 30, 2020

Wetlands

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

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

ATTACHMENT 4

Daily Site Visit Report

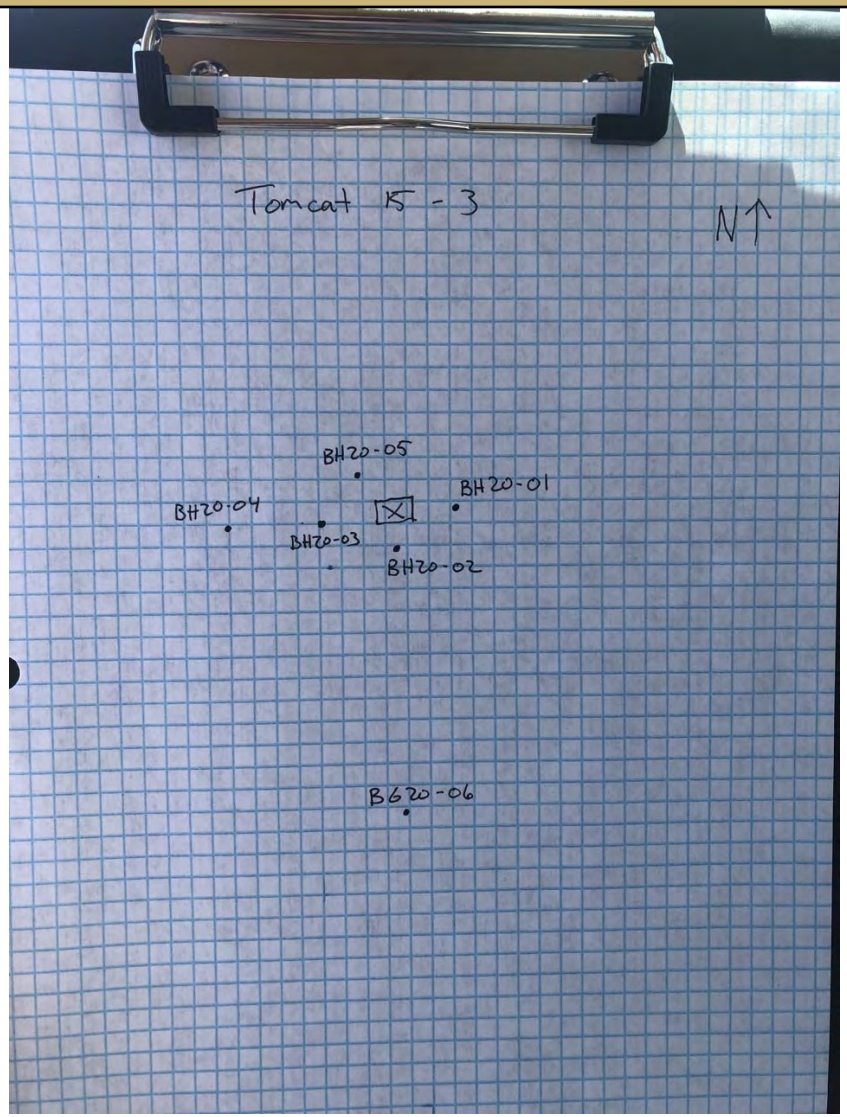
Client:	Devon Energy Corporation	Inspection Date:	4/3/2020
Site Location Name:	Tomcat 15 Fed3-2	Report Run Date:	4/17/2020 10:50 PM
Project Owner:	Amanda Davis	File (Project) #:	20E-00141
Project Manager:	Natalie Gordon	API #:	30-025-35524
Client Contact Name:	Amanda Davis	Reference	Spill 1RP-4182
Client Contact Phone #:	(575) 748-0176		

Summary of Times	
Left Office	4/3/2020 9:30 AM
Arrived at Site	4/3/2020 11:00 AM
Departed Site	4/3/2020 1:26 PM
Returned to Office	4/3/2020 2:59 PM

Daily Site Visit Report

VERTEX

Site Sketch



Daily Site Visit Report

Summary of Daily Operations

11:05 Fill out arrival and safety forms
Conduct characterization/delineation
Field screen
Record data
Demobilize

Next Steps & Recommendations

1 Confirmation samples

Sampling

Background20-06

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.	0 ppm			62 ppm		✓	32.30957667, -103.66919381	Yes
0.5 ft.	0 ppm			57 ppm		✓	32.30957667, -103.66919381	Yes

BH20-01

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.	0 ppm			2248 ppm		✓	32.31006317, -103.66880869	Yes

Daily Site Visit Report

0.5 ft.	0 ppm			129 ppm		✓	32.31006317, -103.66880869	Yes

BH20-02

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.	0 ppm			3114 ppm		✓	32.31004238, -103.66896201	Yes
0.5 ft.	0 ppm			1177 ppm		✓	32.31004238, -103.66896201	Yes

BH20-03

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.	0 ppm			612 ppm		✓	32.31006170, -103.66905170	Yes
0.5 ft.	0 ppm			91 ppm		✓	32.31006170, -103.66905170	Yes

BH20-04

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.	0 ppm			486 ppm		✓	32.31003552, -103.66912844	Yes

Daily Site Visit Report

	0.5 ft.	0 ppm			100 ppm		✓	32.31003552, -103.66912844	Yes

BH20-05

Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
0 ft.	0 ppm			725 ppm		✓	32.31014056, -103.66896832	Yes
0.5 ft.	0 ppm			112 ppm		✓	32.31014056, -103.66896832	Yes

Daily Site Visit Report

Site Photos

Viewing Direction: North

Site photo

Daily Site Visit Report

Depth Sample Photos

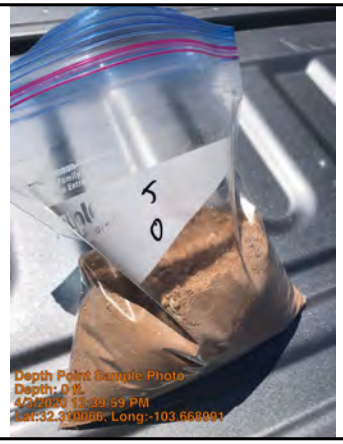
Sample Point ID: BH20-01	**Sample Point ID**: BH20-01
	
Depth: 0 ft.	**Depth:** 0.5 ft.
Sample Point ID: BH20-02	**Sample Point ID**: BH20-02
	
Depth: 0 ft.	**Depth:** 0.5 ft.

Daily Site Visit Report

Sample Point ID: BH20-03	**Sample Point ID**: BH20-03
	
Depth: 0 ft.	**Depth:** 0.5 ft.

Sample Point ID: BH20-04	**Sample Point ID**: BH20-04
	
Depth: 0 ft.	**Depth:** 0.5 ft.

Daily Site Visit Report

Sample Point ID: BH20-05	**Sample Point ID**: BH20-05
	
Depth: 0 ft.	**Depth:** 0.5 ft.
Sample Point ID: Background20-06	**Sample Point ID**: Background20-06
	
Depth: 0 ft.	**Depth:** 0.5 ft.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Jason Crabtree

Signature: 

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	9/2/2020
Site Location Name:	Tomcat 15 Fed3-2	Report Run Date:	9/4/2020 4:14 PM
Client Contact Name:	Amanda Davis	API #:	30-025-35524
Client Contact Phone #:	(575) 748-0176		
Unique Project ID	-Tomcat 15 Fed3-2	Project Owner:	Amanda Davis
Project Reference #	Spill 1RP-4182	Project Manager:	Natalie Gordon

Summary of Times

Arrived at Site	9/2/2020 8:35 AM
Departed Site	9/2/2020 2:31 PM

Field Notes

11:15 Complete additional excavation of areas which exceeded NM OCD criteria from the first sampling event.

11:16 Excavation of exceeded will be completed to one foot below ground surface. CCI Services will be conducting excavation.

Next Steps & Recommendations

1 Submit confirmation samples for lab analysis and await results.

2 Complete closure report if samples are below NM OCD criteria. If not complete additional remediation.

Daily Site Visit Report

Site Photos

Viewing Direction: North	**Viewing Direction**: Northwest
	
Remediation in progress	Completed Excavation
Viewing Direction: West	**Viewing Direction**: Southwest
	
Final excavation	Final excavation

Daily Site Visit Report

Viewing Direction: East	**Viewing Direction**: Northeast
	
Final excavation	Final excavation

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Kevin Smith

Signature: 
Signature

VERTEX

Spill Response and Sampling

Client:	Devon Energy
Date:	9/2/20
Site Name:	Tomcat 15 Fed #003
Site Location:	
Project Owner:	
Project Manager:	
Project #:	20E-00141-049

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			
BS20-01	1'		45	130				
BS20-02	↓		74	196				
BS20-03			61	215				
BS20-04			50	160				
BS20-05	↓		47	110				

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	11/3/2020
Site Location Name:	Tomcat 15 Fed3-2	Report Run Date:	11/3/2020 8:30 PM
Client Contact Name:	Amanda Davis	API #:	30-025-35524
Client Contact Phone #:	(575) 748-0176		
Unique Project ID	-Tomcat 15 Fed3-2	Project Owner:	Amanda Davis
Project Reference #	Spill 1RP-4182	Project Manager:	Natalie Gordon

Summary of Times

Arrived at Site	11/3/2020 10:01 AM
Departed Site	11/3/2020 12:13 PM

Field Notes

13:26 Collect two sidewall confirmation samples to show that four sides of excavation sidewalks meet NMOCD criteria.

Next Steps & Recommendations

1 Submit samples for laboratory analysis and revise confirmation sample schematic.

2 Complete closure report.

Daily Site Visit Report

Site Photos

Viewing Direction: North	**Viewing Direction**: West
	
Sampling Area	Sampling Area

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Kevin Smith

Signature: 

Spill Response and Sampling

VERTEX

Client:	Devon
Date:	11/04/2020
Site Name:	Tomcat 15 Fed 3
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			
WS20-03			10	0.06/15'				
WS20-04			8	0.05/13.7'				

ATTACHMENT 5

Natalie Gordon

From: Dhugal Hanton <vertexresourcegroupusa@gmail.com>
Sent: Friday, October 30, 2020 4:24 PM
To: Natalie Gordon
Subject: Fwd: NJXK1604649303: Tomcat 15 Fed 3 - 48-hour Notification of Confirmation Sampling

---------- Forwarded message ---------
From: **Dhugal Hanton** <vertexresourcegroupusa@gmail.com>
Date: Fri, Oct 30, 2020 at 4:23 PM
Subject: Re: NJXK1604649303: Tomcat 15 Fed 3 - 48-hour Notification of Confirmation Sampling
To: Enviro, OCD, EMNRD <OCD.Enviro@state.nm.us>, CFO_Spill, BLM_NM <blm_nm_cfo_spill@blm.gov>, Kelsey <KWade@blm.gov>, Amos, James A <Jamos@blm.gov>, <wesley.mathews@dvn.com>, <Lupe.Carrasco@dvn.com>, <amanda.davis@dvn.com>, <tom.bynum@dvn.com>

All,

Please accept this email as 48-hr notification that Vertex Resource Services has scheduled additional confirmatory sampling to be conducted at Tomcat 15 Fed 3 for the produced water release that occurred on February 12, 2016, incident tracking # nJXK1604649303.

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

On Tuesday, November 3, 2020 at approximately 10:00 a.m., Kevin Smith of Vertex will be onsite to conduct additional confirmatory sampling of the sidewalls. He can be reached at 575-988-0871. If you need directions to the site, please do not hesitate to contact him. If you have any questions or concerns regarding this notification, please give me a call at 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

On Mon, Aug 31, 2020 at 12:15 PM Dhugal Hanton <vertexresourcegroupusa@gmail.com> wrote:

All,

Please accept this email as 48-hr notification that Vertex Resource Services has scheduled confirmatory sampling to be conducted at Tomcat 15 Fed 3 for the produced water release that occurred on February 12, 2016, incident tracking # nJXK1604649303.

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

On Wednesday, September 2, 2020 at approximately 8:00 a.m., Kevin Smith of Vertex will be onsite using field screening methods to guide remediation activities. This work is expected to last one day. Kevin will conduct final confirmatory sampling as the remediation activities finish up, beginning in the afternoon around 1:00pm. He can be reached at 575-988-0871 . If you need directions to the site, please do not hesitate to contact him. If you have any questions or concerns regarding this notification, please give me a call at 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

Natalie Gordon

From: Dhugal Hanton <vertexresourcegroupusa@gmail.com>
Sent: Monday, August 31, 2020 12:16 PM
To: Natalie Gordon
Subject: Fwd: NJXK1604649303: Tomcat 15 Fed 3 - 48-hour Notification of Confirmation Sampling

---------- Forwarded message ---------
From: **Dhugal Hanton** <vertexresourcegroupusa@gmail.com>
Date: Mon, Aug 31, 2020 at 12:15 PM
Subject: NJXK1604649303: Tomcat 15 Fed 3 - 48-hour Notification of Confirmation Sampling
To: <OCD.Enviro@state.nm.us>, CFO_Spill, BLM_NM <blm_nm_cfo_spill@blm.gov>, Kelsey <KWade@blm.gov>, Amos, James A <Jamos@blm.gov>, <wesley.mathews@dvn.com>, <Lupe.Carrasco@dvn.com>, <amanda.davis@dvn.com>, <tom.bynum@dvn.com>

All,

Please accept this email as 48-hr notification that Vertex Resource Services has scheduled confirmatory sampling to be conducted at Tomcat 15 Fed 3 for the produced water release that occurred on February 12, 2016, incident tracking # nJXK1604649303.

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

On Wednesday, September 2, 2020 at approximately 8:00 a.m., Kevin Smith of Vertex will be onsite using field screening methods to guide remediation activities. This work is expected to last one day. Kevin will conduct final confirmatory sampling as the remediation activities finish up, beginning in the afternoon around 1:00pm. He can be reached at 575-988-0871 . If you need directions to the site, please do not hesitate to contact him. If you have any questions or concerns regarding this notification, please give me a call at 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

Natalie Gordon

From: Dhugal Hanton <vertexresourcegroupusa@gmail.com>
Sent: Wednesday, May 13, 2020 11:40 AM
To: Natalie Gordon
Subject: Fwd: nJXK1604649303: Tomcat 15 Fed 3-2 - 48-hr Notification of Confirmatory Sampling

---------- Forwarded message ---------
From: **Dhugal Hanton** <vertexresourcegroupusa@gmail.com>
Date: Wed, May 13, 2020 at 11:39 AM
Subject: nJXK1604649303: Tomcat 15 Fed 3-2 - 48-hr Notification of Confirmatory Sampling
To: Bratcher, Mike, EMNRD <Mike.Bratcher@state.nm.us>, EMNRD-OCD-District1spills <emnrd-ocd-district1spills@state.nm.us>, Amos, James A <Jamos@blm.gov>, Kelsey <KWade@blm.gov>

All,

Please accept this email as 48-hr notification that Vertex Resource Services has scheduled confirmatory sampling to be conducted at Tomcat 15 Fed 3-2 for incident number nJXK1604649303, DOR: 02/12/2016

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

On Friday, May 15, 2020 at approximately 12:00 p.m., Kevin Smith of Vertex will be onsite to conduct confirmatory sampling for the above referenced releases. He can be reached at 575-988-0871. If you need directions to the site, please do not hesitate to contact him. If you have any questions or concerns regarding this notification, please give me a call at 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 6

Client Name: Devon Energy Production Company
Site Name: Tomcat 15 Fed 3
NM OCD Incident Tracking Numbers: NJXK1604649303
Project #: 20E-00141-049
Lab Report: 2005802; 2009310; 2011387

Table 2. Confirmatory Sampling Laboratory Results - Depth to Groundwater < 50 feet

Sample Description			Petroleum Hydrocarbons							Inorganic
			Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BS20-01	0-0.5	May 15, 2020	<0.024	<0.213	<4.7	8	50	8	58	73
BS20-01	1	September 2, 2020	<0.024	<0.096	<4.8	<8.8	<44	<13.6	<57.6	180
BS20-02	0-0.5	May 15, 2020	<0.025	<0.224	<5.0	63	100	63	**163**	350
BS20-02	1	September 2, 2020	<0.023	<0.093	<4.7	<9.1	<45	<13.8	<58.8	250
BS20-03	0-0.5	May 15, 2020	<0.024	<0.215	<4.8	48	79	48	**127**	96
BS20-03	1	September 2, 2020	<0.024	<0.095	<4.7	<9.8	<49	<14.5	<63.5	190
BS20-04	0-0.5	May 15, 2020	<0.025	<0.225	<5.0	<8.6	<43	<13.6	<56.6	**1,000**
BS20-04	1	September 2, 2020	<0.024	<0.097	<4.8	<9.6	<48	<14.4	<62.4	<60
BS20-05	0-0.5	May 15, 2020	<0.023	<0.208	<4.6	22	77	22	99	92
BS20-05	1	September 2, 2020	<0.025	<0.098	<5.0	<9.5	<48	<14.5	<62.5	<60
WS20-01	0-1	September 2, 2020	<0.025	<0.097	<4.9	<8.4	<42	<13.3	<55.3	430
WS20-02	0-1	September 2, 2020	<0.024	<0.1	<4.8	<9.9	<49	<14.7	<63.7	280
WS20-03	0-1	November 3, 2020	<0.025	<0.222	<4.9	<9.2	<46	<14.1	<60.1	<60
WS20-04	0-1	November 3, 2020	<0.025	<0.225	<5.0	<9.6	<48	<14.6	<62.6	<60

"-" - Not applicable/assessed

Bold and grey shaded indicates exceedance outside of NM OCD Closure Criteria

Bold and green shaded indicates re-collection of sample previously in exceedance of NM OCD Closure Criteria

ATTACHMENT 7

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

May 26, 2020

Natalie Gordon

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

RE: Tomcat 15 Fed 3 OrderNo.: 2005802

Dear Natalie Gordon:

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

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2005802**
Date Reported: **5/26/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Tomcat 15 Fed 3
Lab ID: 2005802-001 **Matrix:** SOIL

Client Sample ID: BS20-01 0-6"
Collection Date: 5/15/2020 12:55:00 PM
Received Date: 5/19/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	73	59		mg/Kg	20	5/23/2020 6:19:40 PM	52667
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/21/2020 4:18:27 PM	52577
Surr: BFB	100	70-130		%Rec	1	5/21/2020 4:18:27 PM	52577
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	8.0	7.8		mg/Kg	1	5/23/2020 1:17:15 PM	52590
Motor Oil Range Organics (MRO)	50	39		mg/Kg	1	5/23/2020 1:17:15 PM	52590
Surr: DNOP	82.3	55.1-146		%Rec	1	5/23/2020 1:17:15 PM	52590
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.024		mg/Kg	1	5/21/2020 4:18:27 PM	52577
Toluene	ND	0.047		mg/Kg	1	5/21/2020 4:18:27 PM	52577
Ethylbenzene	ND	0.047		mg/Kg	1	5/21/2020 4:18:27 PM	52577
Xylenes, Total	ND	0.095		mg/Kg	1	5/21/2020 4:18:27 PM	52577
Surr: 1,2-Dichloroethane-d4	92.8	70-130		%Rec	1	5/21/2020 4:18:27 PM	52577
Surr: 4-Bromofluorobenzene	97.4	70-130		%Rec	1	5/21/2020 4:18:27 PM	52577
Surr: Dibromofluoromethane	93.7	70-130		%Rec	1	5/21/2020 4:18:27 PM	52577
Surr: Toluene-d8	100	70-130		%Rec	1	5/21/2020 4:18:27 PM	52577

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 **2005802**
Date Reported: **5/26/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Tomcat 15 Fed 3
Lab ID: 2005802-002 **Matrix:** SOIL

Client Sample ID: BS20-02 0-6"
Collection Date: 5/15/2020 1:01:00 PM
Received Date: 5/19/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	350	60		mg/Kg	20	5/23/2020 6:56:55 PM	52667
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/21/2020 4:48:29 PM	52577
Surr: BFB	102	70-130		%Rec	1	5/21/2020 4:48:29 PM	52577
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	63	8.2		mg/Kg	1	5/23/2020 1:41:30 PM	52590
Motor Oil Range Organics (MRO)	100	41		mg/Kg	1	5/23/2020 1:41:30 PM	52590
Surr: DNOP	104	55.1-146		%Rec	1	5/23/2020 1:41:30 PM	52590
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.025		mg/Kg	1	5/21/2020 4:48:29 PM	52577
Toluene	ND	0.050		mg/Kg	1	5/21/2020 4:48:29 PM	52577
Ethylbenzene	ND	0.050		mg/Kg	1	5/21/2020 4:48:29 PM	52577
Xylenes, Total	ND	0.099		mg/Kg	1	5/21/2020 4:48:29 PM	52577
Surr: 1,2-Dichloroethane-d4	92.6	70-130		%Rec	1	5/21/2020 4:48:29 PM	52577
Surr: 4-Bromofluorobenzene	92.6	70-130		%Rec	1	5/21/2020 4:48:29 PM	52577
Surr: Dibromofluoromethane	95.7	70-130		%Rec	1	5/21/2020 4:48:29 PM	52577
Surr: Toluene-d8	101	70-130		%Rec	1	5/21/2020 4:48:29 PM	52577

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 **2005802**
Date Reported: **5/26/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Tomcat 15 Fed 3
Lab ID: 2005802-003 **Matrix:** SOIL

Client Sample ID: BS20-03 0-6"
Collection Date: 5/15/2020 1:08:00 PM
Received Date: 5/19/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	96	61		mg/Kg	20	5/23/2020 7:09:20 PM	52667
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/21/2020 6:16:23 PM	52577
Surr: BFB	101	70-130		%Rec	1	5/21/2020 6:16:23 PM	52577
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	48	8.5		mg/Kg	1	5/23/2020 2:05:44 PM	52590
Motor Oil Range Organics (MRO)	79	42		mg/Kg	1	5/23/2020 2:05:44 PM	52590
Surr: DNOP	115	55.1-146		%Rec	1	5/23/2020 2:05:44 PM	52590
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.024		mg/Kg	1	5/21/2020 6:16:23 PM	52577
Toluene	ND	0.048		mg/Kg	1	5/21/2020 6:16:23 PM	52577
Ethylbenzene	ND	0.048		mg/Kg	1	5/21/2020 6:16:23 PM	52577
Xylenes, Total	ND	0.095		mg/Kg	1	5/21/2020 6:16:23 PM	52577
Surr: 1,2-Dichloroethane-d4	93.9	70-130		%Rec	1	5/21/2020 6:16:23 PM	52577
Surr: 4-Bromofluorobenzene	95.1	70-130		%Rec	1	5/21/2020 6:16:23 PM	52577
Surr: Dibromofluoromethane	96.8	70-130		%Rec	1	5/21/2020 6:16:23 PM	52577
Surr: Toluene-d8	102	70-130		%Rec	1	5/21/2020 6:16:23 PM	52577

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 **2005802**
Date Reported: **5/26/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Tomcat 15 Fed 3
Lab ID: 2005802-004 **Matrix:** SOIL

Client Sample ID: BS20-04 0-6"
Collection Date: 5/15/2020 1:14:00 PM
Received Date: 5/19/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	1000	60		mg/Kg	20	5/23/2020 7:21:45 PM	52667
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/21/2020 6:45:35 PM	52577
Surr: BFB	102	70-130		%Rec	1	5/21/2020 6:45:35 PM	52577
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	5/23/2020 2:30:07 PM	52590
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	5/23/2020 2:30:07 PM	52590
Surr: DNOP	69.4	55.1-146		%Rec	1	5/23/2020 2:30:07 PM	52590
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.025		mg/Kg	1	5/21/2020 6:45:35 PM	52577
Toluene	ND	0.050		mg/Kg	1	5/21/2020 6:45:35 PM	52577
Ethylbenzene	ND	0.050		mg/Kg	1	5/21/2020 6:45:35 PM	52577
Xylenes, Total	ND	0.10		mg/Kg	1	5/21/2020 6:45:35 PM	52577
Surr: 1,2-Dichloroethane-d4	95.8	70-130		%Rec	1	5/21/2020 6:45:35 PM	52577
Surr: 4-Bromofluorobenzene	95.4	70-130		%Rec	1	5/21/2020 6:45:35 PM	52577
Surr: Dibromofluoromethane	94.2	70-130		%Rec	1	5/21/2020 6:45:35 PM	52577
Surr: Toluene-d8	101	70-130		%Rec	1	5/21/2020 6:45:35 PM	52577

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 **2005802**
Date Reported: **5/26/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Tomcat 15 Fed 3
Lab ID: 2005802-005 **Matrix:** SOIL

Client Sample ID: BS20-05 0-6"
Collection Date: 5/15/2020 1:21:00 PM
Received Date: 5/19/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	92	60		mg/Kg	20	5/23/2020 7:34:09 PM	52667
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **DJF**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	5/21/2020 7:14:53 PM	52577
Surr: BFB	99.7	70-130		%Rec	1	5/21/2020 7:14:53 PM	52577
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	22	8.0		mg/Kg	1	5/23/2020 2:54:18 PM	52590
Motor Oil Range Organics (MRO)	77	40		mg/Kg	1	5/23/2020 2:54:18 PM	52590
Surr: DNOP	112	55.1-146		%Rec	1	5/23/2020 2:54:18 PM	52590
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **DJF**	
Benzene	ND	0.023		mg/Kg	1	5/21/2020 7:14:53 PM	52577
Toluene	ND	0.046		mg/Kg	1	5/21/2020 7:14:53 PM	52577
Ethylbenzene	ND	0.046		mg/Kg	1	5/21/2020 7:14:53 PM	52577
Xylenes, Total	ND	0.093		mg/Kg	1	5/21/2020 7:14:53 PM	52577
Surr: 1,2-Dichloroethane-d4	94.9	70-130		%Rec	1	5/21/2020 7:14:53 PM	52577
Surr: 4-Bromofluorobenzene	92.4	70-130		%Rec	1	5/21/2020 7:14:53 PM	52577
Surr: Dibromofluoromethane	96.2	70-130		%Rec	1	5/21/2020 7:14:53 PM	52577
Surr: Toluene-d8	103	70-130		%Rec	1	5/21/2020 7:14:53 PM	52577

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#: **2005802**

26-May-20

Client: Devon Energy

Project: Tomcat 15 Fed 3

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

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2005802**

26-May-20

Client: Devon Energy

Project: Tomcat 15 Fed 3

Sample ID: **LCS-52590** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **52590** RunNo: **69011**

Prep Date: **5/20/2020** Analysis Date: **5/21/2020** SeqNo: **2392468** 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	94.9	70	130			
Surr: DNOP	3.0		5.000		60.1	55.1	146			

Sample ID: **MB-52590** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **52590** RunNo: **69011**

Prep Date: **5/20/2020** Analysis Date: **5/21/2020** SeqNo: **2392474** 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	7.1		10.00		71.4	55.1	146			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2005802**

26-May-20

Client: Devon Energy

Project: Tomcat 15 Fed 3

Sample ID: **mb-52577** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles Short List**

Client ID: **PBS** Batch ID: **52577** RunNo: **69081**

Prep Date: **5/19/2020** Analysis Date: **5/21/2020** SeqNo: **2392357** Units: **mg/Kg**

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

Sample ID: **LCS-52577** SampType: **LCS4** TestCode: **EPA Method 8260B: Volatiles Short List**

Client ID: **BatchQC** Batch ID: **52577** RunNo: **69081**

Prep Date: **5/19/2020** Analysis Date: **5/21/2020** SeqNo: **2392358** Units: **mg/Kg**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2005802**

26-May-20

Client: Devon Energy

Project: Tomcat 15 Fed 3

Sample ID: **mb-52577** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Gasoline Range**

Client ID: **PBS** Batch ID: **52577** RunNo: **69081**

Prep Date: **5/19/2020** Analysis Date: **5/21/2020** SeqNo: **2392372** Units: **mg/Kg**

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

Sample ID: **LCS-52577** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**

Client ID: **LCSS** Batch ID: **52577** RunNo: **69081**

Prep Date: **5/19/2020** Analysis Date: **5/21/2020** SeqNo: **2392377** Units: **mg/Kg**

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

Sample ID: **2005802-002ams** SampType: **MS** TestCode: **EPA Method 8015D Mod: Gasoline Range**

Client ID: **BS20-02 0-6"** Batch ID: **52577** RunNo: **69081**

Prep Date: **5/19/2020** Analysis Date: **5/21/2020** SeqNo: **2392390** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.9	24.30	0	102	70	130			
Surr: BFB	490		485.9		102	70	130			

Sample ID: **2005802-002amsd** SampType: **MSD** TestCode: **EPA Method 8015D Mod: Gasoline Range**

Client ID: **BS20-02 0-6"** Batch ID: **52577** RunNo: **69081**

Prep Date: **5/19/2020** Analysis Date: **5/21/2020** SeqNo: **2392391** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.8	24.22	0	100	70	130	1.95	20	
Surr: BFB	500		484.5		103	70	130	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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: DEVON ENERGY Work Order Number: 2005802 RcptNo: 1

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

Completed By: Isaiah Ortiz 5/19/2020 9:45:55 AM I_Ox

Reviewed By: DAD 5/19/20

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: EM 5/19/20

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Not Present			

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 TAT
☒ Standard ☐ Rush

Project Name: Tomcat 15 Fed 3

Project #: 20848467

Project Manager: Natalie Gordon

Sampler: Kevin Smith

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 1.1 (1.1) 10.4 (°C)

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2005807
5/18/20	12:55pm	Soil	BS20-01 0-6"	4oz jar	ICE	-001
	1:01pm		BS20-02 0-6"			-002
	1:08pm		BS20-03 0-6"			-003
	1:14pm		BS20-04 0-6"			-004
	1:24pm		BS20-05 0-6"			-005

Analysis Request

(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)						
X	X					X									

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
5/18/20	0930	Kevin Smith			5/18/20	0930
5/18/20	1910		Ian Courier		5/19/20	0930

Remarks: COPY Natalie Gordon
Direct bill Devon Energy

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

September 15, 2020

Natalie Gordon

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

RE: Tomcat 15 Fed 3 OrderNo.: 2009310

Dear Natalie Gordon:

Hall Environmental Analysis Laboratory received 7 sample(s) on 9/4/2020 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 **2009310**
Date Reported: **9/15/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Tomcat 15 Fed 3
Lab ID: 2009310-001 **Matrix:** SOIL

Client Sample ID: BS20-01 1'
Collection Date: 9/2/2020 2:05:00 PM
Received Date: 9/4/2020 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	8.8		mg/Kg	1	9/9/2020 6:53:54 AM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	9/9/2020 6:53:54 AM
Surr: DNOP	101	30.4-154		%Rec	1	9/9/2020 6:53:54 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	9/9/2020 6:38:10 PM
Surr: BFB	96.1	75.3-105		%Rec	1	9/9/2020 6:38:10 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	9/9/2020 6:38:10 PM
Toluene	ND	0.048		mg/Kg	1	9/9/2020 6:38:10 PM
Ethylbenzene	ND	0.048		mg/Kg	1	9/9/2020 6:38:10 PM
Xylenes, Total	ND	0.096		mg/Kg	1	9/9/2020 6:38:10 PM
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	9/9/2020 6:38:10 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	180	60		mg/Kg	20	9/12/2020 12:00:06 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 **2009310**
Date Reported: **9/15/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Tomcat 15 Fed 3
Lab ID: 2009310-002 **Matrix:** SOIL

Client Sample ID: BS20-02 1'
Collection Date: 9/2/2020 2:10:00 PM
Received Date: 9/4/2020 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	9.1		mg/Kg	1	9/9/2020 7:17:34 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	9/9/2020 7:17:34 AM
Surr: DNOP	98.6	30.4-154		%Rec	1	9/9/2020 7:17:34 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	9/9/2020 7:01:44 PM
Surr: BFB	95.5	75.3-105		%Rec	1	9/9/2020 7:01:44 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.023		mg/Kg	1	9/9/2020 7:01:44 PM
Toluene	ND	0.047		mg/Kg	1	9/9/2020 7:01:44 PM
Ethylbenzene	ND	0.047		mg/Kg	1	9/9/2020 7:01:44 PM
Xylenes, Total	ND	0.093		mg/Kg	1	9/9/2020 7:01:44 PM
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	9/9/2020 7:01:44 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	250	60		mg/Kg	20	9/12/2020 1:02:08 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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 **2009310**
Date Reported: **9/15/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Tomcat 15 Fed 3
Lab ID: 2009310-003 **Matrix:** SOIL

Client Sample ID: BS20-03 1'
Collection Date: 9/2/2020 2:15:00 PM
Received Date: 9/4/2020 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	9.8		mg/Kg	1	9/9/2020 7:41:13 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/9/2020 7:41:13 AM
Surr: DNOP	98.9	30.4-154		%Rec	1	9/9/2020 7:41:13 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	9/9/2020 8:12:34 PM
Surr: BFB	95.2	75.3-105		%Rec	1	9/9/2020 8:12:34 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	9/9/2020 8:12:34 PM
Toluene	ND	0.047		mg/Kg	1	9/9/2020 8:12:34 PM
Ethylbenzene	ND	0.047		mg/Kg	1	9/9/2020 8:12:34 PM
Xylenes, Total	ND	0.095		mg/Kg	1	9/9/2020 8:12:34 PM
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	9/9/2020 8:12:34 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	190	60		mg/Kg	20	9/12/2020 1:14:32 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2009310**
Date Reported: **9/15/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Tomcat 15 Fed 3
Lab ID: 2009310-004 **Matrix:** SOIL

Client Sample ID: BS20-04 1'
Collection Date: 9/2/2020 2:20:00 PM
Received Date: 9/4/2020 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	9.6		mg/Kg	1	9/9/2020 8:04:36 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	9/9/2020 8:04:36 AM
Surr: DNOP	95.8	30.4-154		%Rec	1	9/9/2020 8:04:36 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	9/9/2020 8:36:02 PM
Surr: BFB	94.1	75.3-105		%Rec	1	9/9/2020 8:36:02 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	9/9/2020 8:36:02 PM
Toluene	ND	0.048		mg/Kg	1	9/9/2020 8:36:02 PM
Ethylbenzene	ND	0.048		mg/Kg	1	9/9/2020 8:36:02 PM
Xylenes, Total	ND	0.097		mg/Kg	1	9/9/2020 8:36:02 PM
Surr: 4-Bromofluorobenzene	98.6	80-120		%Rec	1	9/9/2020 8:36:02 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	9/12/2020 1:26:56 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2009310**
Date Reported: **9/15/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Tomcat 15 Fed 3
Lab ID: 2009310-005 **Matrix:** SOIL

Client Sample ID: WS20-01 0-1'
Collection Date: 9/2/2020 2:25:00 PM
Received Date: 9/4/2020 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	8.4		mg/Kg	1	9/8/2020 1:18:23 PM
Motor Oil Range Organics (MRO)	ND	42		mg/Kg	1	9/8/2020 1:18:23 PM
Surr: DNOP	102	30.4-154		%Rec	1	9/8/2020 1:18:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/9/2020 9:46:34 PM
Surr: BFB	92.7	75.3-105		%Rec	1	9/9/2020 9:46:34 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	9/9/2020 9:46:34 PM
Toluene	ND	0.049		mg/Kg	1	9/9/2020 9:46:34 PM
Ethylbenzene	ND	0.049		mg/Kg	1	9/9/2020 9:46:34 PM
Xylenes, Total	ND	0.098		mg/Kg	1	9/9/2020 9:46:34 PM
Surr: 4-Bromofluorobenzene	97.8	80-120		%Rec	1	9/9/2020 9:46:34 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	9/12/2020 1:39:21 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2009310**
Date Reported: **9/15/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Tomcat 15 Fed 3
Lab ID: 2009310-006 **Matrix:** SOIL

Client Sample ID: WS20-02 0-1'
Collection Date: 9/2/2020 2:30:00 PM
Received Date: 9/4/2020 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)	27	9.9		mg/Kg	1	9/8/2020 2:32:14 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/8/2020 2:32:14 PM
Surr: DNOP	103	30.4-154		%Rec	1	9/8/2020 2:32:14 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	9/9/2020 10:57:00 PM
Surr: BFB	94.0	75.3-105		%Rec	1	9/9/2020 10:57:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	9/9/2020 10:57:00 PM
Toluene	ND	0.048		mg/Kg	1	9/9/2020 10:57:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	9/9/2020 10:57:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	9/9/2020 10:57:00 PM
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	9/9/2020 10:57:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	430	60		mg/Kg	20	9/12/2020 1:51:46 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2009310**
Date Reported: **9/15/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Tomcat 15 Fed 3
Lab ID: 2009310-007 **Matrix:** SOIL

Client Sample ID: BS20-05 1'
Collection Date: 9/2/2020 2:35:00 PM
Received Date: 9/4/2020 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	9/8/2020 2:56:11 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	9/8/2020 2:56:11 PM
Surr: DNOP	101	30.4-154		%Rec	1	9/8/2020 2:56:11 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	9/10/2020 12:07:28 AM
Surr: BFB	93.4	75.3-105		%Rec	1	9/10/2020 12:07:28 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	9/10/2020 12:07:28 AM
Toluene	ND	0.050		mg/Kg	1	9/10/2020 12:07:28 AM
Ethylbenzene	ND	0.050		mg/Kg	1	9/10/2020 12:07:28 AM
Xylenes, Total	ND	0.10		mg/Kg	1	9/10/2020 12:07:28 AM
Surr: 4-Bromofluorobenzene	98.2	80-120		%Rec	1	9/10/2020 12:07:28 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	280	60		mg/Kg	20	9/12/2020 2:04:10 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#: **2009310**

15-Sep-20

Client: Devon Energy

Project: Tomcat 15 Fed 3

Sample ID: **MB-55114**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **55114**	RunNo: **71818**							
Prep Date: **9/11/2020**	Analysis Date: **9/12/2020**	SeqNo: **2513250**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-55114**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **55114**	RunNo: **71818**							
Prep Date: **9/11/2020**	Analysis Date: **9/12/2020**	SeqNo: **2513251**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.8	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#: **2009310**
15-Sep-20

Client: Devon Energy
Project: Tomcat 15 Fed 3

Sample ID: **MB-54981**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **54981**	RunNo: **71691**
Prep Date: **9/5/2020**	Analysis Date: **9/8/2020**	SeqNo: **2507305** 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	11		10.00		110	30.4	154			

Sample ID: **LCS-54981**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **54981**	RunNo: **71691**
Prep Date: **9/5/2020**	Analysis Date: **9/8/2020**	SeqNo: **2507306** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	99.1	70	130			
Surr: DNOP	5.2		5.000		105	30.4	154			

Sample ID: **2009310-005AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **WS20-01 0-1'**	Batch ID: **54981**	RunNo: **71691**
Prep Date: **9/5/2020**	Analysis Date: **9/8/2020**	SeqNo: **2507308** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	8.9	44.33	0	95.1	47.4	136			
Surr: DNOP	4.4		4.433		100	30.4	154			

Sample ID: **2009310-005AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **WS20-01 0-1'**	Batch ID: **54981**	RunNo: **71691**
Prep Date: **9/5/2020**	Analysis Date: **9/8/2020**	SeqNo: **2507310** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.2	46.17	0	93.4	47.4	136	2.25	43.4	
Surr: DNOP	4.5		4.617		96.7	30.4	154	0	0	

Sample ID: **MB-54972**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **54972**	RunNo: **71691**
Prep Date: **9/5/2020**	Analysis Date: **9/8/2020**	SeqNo: **2507329** 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	9.4		10.00		94.5	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#: **2009310**

15-Sep-20

Client: Devon Energy

Project: Tomcat 15 Fed 3

Sample ID: **LCS-54972**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **54972**	RunNo: **71691**
Prep Date: **9/5/2020**	Analysis Date: **9/8/2020**	SeqNo: **2507330** 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	92.5	70	130			
Surr: DNOP	4.6		5.000		92.1	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#: **2009310**

15-Sep-20

Client: Devon Energy
Project: Tomcat 15 Fed 3

Sample ID: **mb-54967**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **54967**	RunNo: **71708**
Prep Date: **9/4/2020**	Analysis Date: **9/9/2020**	SeqNo: **2508112** 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	950		1000		94.7	75.3	105			

Sample ID: **lcs-54967**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **54967**	RunNo: **71708**
Prep Date: **9/4/2020**	Analysis Date: **9/9/2020**	SeqNo: **2508113** 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	82.1	72.5	106			
Surr: BFB	1000		1000		104	75.3	105			

Sample ID: **mb-54978**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **54978**	RunNo: **71708**
Prep Date: **9/5/2020**	Analysis Date: **9/10/2020**	SeqNo: **2508136** 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	930		1000		93.0	75.3	105			

Sample ID: **lcs-54978**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **54978**	RunNo: **71708**
Prep Date: **9/5/2020**	Analysis Date: **9/9/2020**	SeqNo: **2508137** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	79.3	72.5	106			
Surr: BFB	1000		1000		102	75.3	105			

Sample ID: **2009310-006ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **WS20-02 0-1'**	Batch ID: **54978**	RunNo: **71708**
Prep Date: **9/5/2020**	Analysis Date: **9/9/2020**	SeqNo: **2508140** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	4.9	24.46	0	78.2	61.3	114			
Surr: BFB	1000		978.5		103	75.3	105			

Sample ID: **2009310-006amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **WS20-02 0-1'**	Batch ID: **54978**	RunNo: **71708**
Prep Date: **9/5/2020**	Analysis Date: **9/9/2020**	SeqNo: **2508141** Units: **mg/Kg**

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#: **2009310**
15-Sep-20

Client: Devon Energy
Project: Tomcat 15 Fed 3

Sample ID: **2009310-006amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **WS20-02 0-1'** Batch ID: **54978** RunNo: **71708**
Prep Date: **9/5/2020** Analysis Date: **9/9/2020** SeqNo: **2508141** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	4.8	23.97	0	80.0	61.3	114	0.292	20	
Surr: BFB	990		958.8		103	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#: **2009310**

15-Sep-20

Client: Devon Energy

Project: Tomcat 15 Fed 3

Sample ID: **mb-54967**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **54967**	RunNo: **71708**
Prep Date: **9/4/2020**	Analysis Date: **9/9/2020**	SeqNo: **2508158** 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	0.99		1.000		98.8	80	120			

Sample ID: **LCS-54967**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **54967**	RunNo: **71708**
Prep Date: **9/4/2020**	Analysis Date: **9/9/2020**	SeqNo: **2508159** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.025	1.000	0	87.1	80	120			
Toluene	0.88	0.050	1.000	0	87.5	80	120			
Ethylbenzene	0.89	0.050	1.000	0	88.8	80	120			
Xylenes, Total	2.7	0.10	3.000	0	88.9	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID: **mb-54978**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **54978**	RunNo: **71708**
Prep Date: **9/5/2020**	Analysis Date: **9/10/2020**	SeqNo: **2508182** 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	0.99		1.000		98.9	80	120			

Sample ID: **LCS-54978**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **54978**	RunNo: **71708**
Prep Date: **9/5/2020**	Analysis Date: **9/9/2020**	SeqNo: **2508183** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	89.9	80	120			
Toluene	0.92	0.050	1.000	0	91.5	80	120			
Ethylbenzene	0.92	0.050	1.000	0	91.8	80	120			
Xylenes, Total	2.8	0.10	3.000	0	92.2	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2009310**

15-Sep-20

Client: Devon Energy

Project: Tomcat 15 Fed 3

Sample ID: **2009310-005ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **WS20-01 0-1'**	Batch ID: **54978**	RunNo: **71708**
Prep Date: **9/5/2020**	Analysis Date: **9/9/2020**	SeqNo: **2508185** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	0.9881	0	85.5	76.3	120			
Toluene	0.86	0.049	0.9881	0	87.1	78.5	120			
Ethylbenzene	0.86	0.049	0.9881	0	87.3	78.1	124			
Xylenes, Total	2.6	0.099	2.964	0	88.1	79.3	125			
Surr: 4-Bromofluorobenzene	0.98		0.9881		98.8	80	120			

Sample ID: **2009310-005amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **WS20-01 0-1'**	Batch ID: **54978**	RunNo: **71708**
Prep Date: **9/5/2020**	Analysis Date: **9/9/2020**	SeqNo: **2508186** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.024	0.9569	0	89.7	76.3	120	1.55	20	
Toluene	0.86	0.048	0.9569	0	89.9	78.5	120	0.0214	20	
Ethylbenzene	0.87	0.048	0.9569	0	90.6	78.1	124	0.513	20	
Xylenes, Total	2.6	0.096	2.871	0	91.9	79.3	125	1.02	20	
Surr: 4-Bromofluorobenzene	0.98		0.9569		102	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

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: 2009310 RcptNo: 1

Received By: **Cheyenne Cason** 9/4/2020 8:00:00 AM
Completed By: **Juan Rojas** 9/4/2020 9:08:38 AM
Reviewed By: 9/4/20

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: EM 9/4/20

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	3.2	Good				
2	3.8	Good				

Chain-of-Custody Record

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 Turnaround
☒ Standard ☐ Rush

Project Name: Tomcat 15 Fed 3

Project #: 20848467

Project Manager: Natalie Gordon

Sampler: Kevin Smith

On Ice: ☒ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): See Rmrk (°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. 2009310	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)
9/2/20	2:05	Soil	BS20-01 1'	~~402~~ jar	ice	~~-001~~ ~~2009310~~	X	X					X			
	2:10		BS20-02 1'			-002										
	2:15		BS20-03 1'			-003										
	2:20		BS20-04 1'			-004										
	2:25		WS20-01 0-1'			-005										
	2:30		WS20-02 0-1			-006										
	2:35		BS20-05 1'			-007										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
			G Cummings		9/3/20	1130
9/3/20	1900	G Cumming	CNC	Courier	9/4/20	0800

Remarks:
3.4 - 0.2 = 3.2
4.0 - 0.2 = ~~3.8~~ 3.8
Send report to Natalie Gordon
Bill Devon

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

November 13, 2020

Natalie Gordon

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

RE: Tomcat 15 Fed 3 OrderNo.: 2011387

Dear Natalie Gordon:

Hall Environmental Analysis Laboratory received 2 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 **2011387**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Tomcat 15 Fed 3
Lab ID: 2011387-001 **Matrix:** SOIL

Client Sample ID: WS20-03 0-1'
Collection Date: 11/3/2020 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	ND	60		mg/Kg	20	11/12/2020 5:53:53 PM	56400
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	11/11/2020 5:39:17 PM	56302
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/11/2020 5:39:17 PM	56302
Surr: DNOP	18.4	30.4-154	S	%Rec	1	11/11/2020 5:39:17 PM	56302
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/11/2020 1:08:29 PM	56283
Surr: BFB	93.5	75.3-105		%Rec	1	11/11/2020 1:08:29 PM	56283
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	11/11/2020 1:08:29 PM	56283
Toluene	ND	0.049		mg/Kg	1	11/11/2020 1:08:29 PM	56283
Ethylbenzene	ND	0.049		mg/Kg	1	11/11/2020 1:08:29 PM	56283
Xylenes, Total	ND	0.099		mg/Kg	1	11/11/2020 1:08:29 PM	56283
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	11/11/2020 1:08:29 PM	56283

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 **2011387**
Date Reported: **11/13/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Tomcat 15 Fed 3
Lab ID: 2011387-002 **Matrix:** SOIL

Client Sample ID: WS20-04 0-1'
Collection Date: 11/3/2020 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	ND	60		mg/Kg	20	11/12/2020 6:31:08 PM	56400
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/11/2020 6:03:11 PM	56302
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/11/2020 6:03:11 PM	56302
Surr: DNOP	20.3	30.4-154	S	%Rec	1	11/11/2020 6:03:11 PM	56302
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/11/2020 1:32:01 PM	56283
Surr: BFB	95.1	75.3-105		%Rec	1	11/11/2020 1:32:01 PM	56283
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	11/11/2020 1:32:01 PM	56283
Toluene	ND	0.050		mg/Kg	1	11/11/2020 1:32:01 PM	56283
Ethylbenzene	ND	0.050		mg/Kg	1	11/11/2020 1:32:01 PM	56283
Xylenes, Total	ND	0.10		mg/Kg	1	11/11/2020 1:32:01 PM	56283
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	11/11/2020 1:32:01 PM	56283

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#: **2011387**

13-Nov-20

Client: Devon Energy

Project: Tomcat 15 Fed 3

Sample ID: **MB-56400**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **56400**	RunNo: **73331**							
Prep Date: **11/12/2020**	Analysis Date: **11/12/2020**	SeqNo: **2581085**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-56400**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **56400**	RunNo: **73331**							
Prep Date: **11/12/2020**	Analysis Date: **11/12/2020**	SeqNo: **2581086**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.8	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#: **2011387**

13-Nov-20

Client: Devon Energy

Project: Tomcat 15 Fed 3

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: **LCS-56302** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **56302** RunNo: **73215**

Prep Date: **11/9/2020** Analysis Date: **11/11/2020** SeqNo: **2577616** 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	92.2	70	130			
Surr: DNOP	2.7		5.000		54.8	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
Surr: DNOP	7.9		10.00		79.4	30.4	154			

Sample ID: **MB-56302** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **56302** RunNo: **73215**

Prep Date: **11/9/2020** Analysis Date: **11/11/2020** SeqNo: **2577618** 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	7.0		10.00		69.9	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#: **2011387**

13-Nov-20

Client: Devon Energy

Project: Tomcat 15 Fed 3

Sample ID: **mb-56283**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **56283**	RunNo: **73283**
Prep Date: **11/7/2020**	Analysis Date: **11/11/2020**	SeqNo: **2578642** 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	930		1000		92.6	75.3	105			

Sample ID: **lcs-56283**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **56283**	RunNo: **73283**
Prep Date: **11/7/2020**	Analysis Date: **11/11/2020**	SeqNo: **2578643** 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	83.8	72.5	106			
Surr: BFB	1000		1000		101	75.3	105			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2011387**

13-Nov-20

Client: Devon Energy

Project: Tomcat 15 Fed 3

Sample ID: **mb-56283** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **56283** RunNo: **73283**

Prep Date: **11/7/2020** Analysis Date: **11/11/2020** SeqNo: **2578689** 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	0.98		1.000		98.3	80	120			

Sample ID: **LCS-56283** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **56283** RunNo: **73283**

Prep Date: **11/7/2020** Analysis Date: **11/11/2020** SeqNo: **2578690** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	90.0	80	120			
Toluene	0.95	0.050	1.000	0	94.8	80	120			
Ethylbenzene	0.93	0.050	1.000	0	93.2	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.4	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **Devon Energy** Work Order Number: **2011387** RcptNo: **1**

Received By: **Isaiah Ortiz** **11/6/2020 7:05:00 AM** I_OL

Completed By: **Isaiah Ortiz** **11/6/2020 8:50:50 AM** I_OL

Reviewed By: JR 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 ☐	
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: SGL 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	3.1	Good	Not Present			
2	1.8	Good	Not Present			

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

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 TAT

☒ Standard ☐ Rush

Project Name: Tomcat 15 Fed 3

Project #: 208 48467

Project Manager: Natalie Gordon

Sampler: Kevin Smith

On Ice: ☒ Yes ☐ No

# of Coolers: 2 3.1°C ± 0

Cooler Temp(including CF): 1.8°C ± 0 (°C)

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2011387	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)
11/03/20	11:45	Soil	WS20-03 0-1'	4 oz jar	ICE	001	X	X					X			
X	11:55	X	WS20-04 0-1'	X	X	002	X	X					X			

Date: 11-4 Time: 0850 Relinquished by:

Received by: Via: Date: 11/5/20 Time: 850

Date: 11/5/20 Time: 1900 Relinquished by:

Received by: Via: Date: 11/6/20 Time: 0705

Remarks: Send report to Natalie Gordon
Bill Devon

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

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

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

CONDITIONS

Action 11226

CONDITIONS

Operator:	OGRID:
DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	6137
	Action Number: 11226
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bhall	None	10/12/2022