DEVON ENERGY
Todd 22 Federal #2 Battery

Work Plan

U/L B, Section 22, T23S, R31E
Eddy County, New Mexico

2RP-5341

February 4, 2020

Prepared for:

Devon Energy
6488 Seven Rivers Hwy
Artesia, NM 88210

By:

Safety & Environmental Solutions, Inc.
703 East Clinton
Hobbs, New Mexico 88240
(575) 397-0510

Table of Contents

I. Company Contacts

Representative	Company	Telephone	E-mail
Tom Bynum	Devon Energy	580-748-1613	Tom.Bynum@dvn.com
Bob Allen	SESI	575-397-0510	ballen@sesi-nm.com

II. Background

Safety and Environmental Solutions, Inc., hereinafter referred to as (SESI) was contracted by Devon Energy to assess a spill at the Todd 22 Federal #2 Battery. This site is situated in U/L B, Section 22, Township 23S and Range 31E, in Eddy County New Mexico. There are 4 other spills associated with this location that have been cleaned and will be closed once this spill has been remediated.

According to the C-141, a 2 foot water line from the heater developed an 1 inch hole due to corrosion which caused 19 bbls of produced water to leak on location.

II. Surface and Ground Water

According to the NMOCD Oil and Gas Map, there is no surface water within 3,000 feet of this location and spill area. Based on the trend map and the USGS web interface, depth to groundwater in this area is over 100 feet.

IV. Characterization

The site has been fully delineated according to the NMOCD NMAC 19.15.29 published guidelines. At 1 foot bgs, all BTEX are non-detectable. All chloride results were below the required 20,000 ppm at surface and at 1 foot. And, although TPH levels were above 2,500 ppm at the surface, they were well below the standard at 1 foot.

V. Work Performed

On May 20, 2019 SESI personnel gathered samples at four different positions on location at both the surface and at 1 foot bgs. The samples were field tested for TPH and Chloride concentrations then properly packaged, preserved, and transported to Cardinal Laboratories. The samples were tested for BTEX using method BTEX 8021B, for Chlorides using method SM4500Cl-B, and for TPH using method TPH 8015M. The results of the tests are captured in the table below:

Devon Energy Todd 22 Federal #2 Battery Soil Sample Results: Cardinal Laboratories 5/20/19									
SAMPLE ID	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	Chlorides	TPH GRO	TPH DRO	EXT DRO
AH1 @ Surface	**0.283**	**7.08**	**8.4**	**34.4**	**50.2**	**1200**	**1930**	**17800**	**3840**
AH1 @ 1'	<0.050	<0.050	<0.050	<0.150	<0.300	**112**	<10.0	**106**	<10.0
AH2 @ Surface	<0.200	**3.05**	**5.98**	**24.1**	**33.2**	**1340**	**1130**	**18800**	**3780**
AH2 @ 1'	<0.050	<0.050	<0.050	<0.150	<0.300	**96**	<10.0	**111**	**13.1**
AH3 @ Surface	**0.652**	**6.44**	**5.4**	**20.8**	**33.3**	**1330**	**1520**	**11200**	**1730**
AH3 @ 1'	<0.050	<0.050	**0.051**	**0.233**	<0.300	**224**	<10.0	**119**	<10.0
AH4 @ Surface	<0.200	**3.75**	**4.35**	**15.2**	**23.3**	**80**	**623**	**14700**	**2550**
AH4 @ 1'	<0.050	<0.050	<0.050	<0.150	<0.300	**192**	<10.0	**150**	<10.0

VI. Action Plan

Based on the results of the lab analysis, depth to groundwater, and the additional supplemental information provided in this report, SESI recommends feasible hand removal of the contaminated material to a depth of one foot. Approximately 300 ft3 of material will be removed and disposed in a NMOCD approved facility. Bottom and Sidewall confirmation samples will be obtained and sent to a lab to verify that remediation efforts were successful. Once the lab results verify that removal of the contaminated material is received and closure requirements have been met, the excavated area will be backfilled with clean soil. SESI respectfully submits this work plan and requests approval by both NMCOD and the BLM. Upon approval, remediation efforts will be conducted within 90 days.

VII. Supplemental and Supporting Documentation

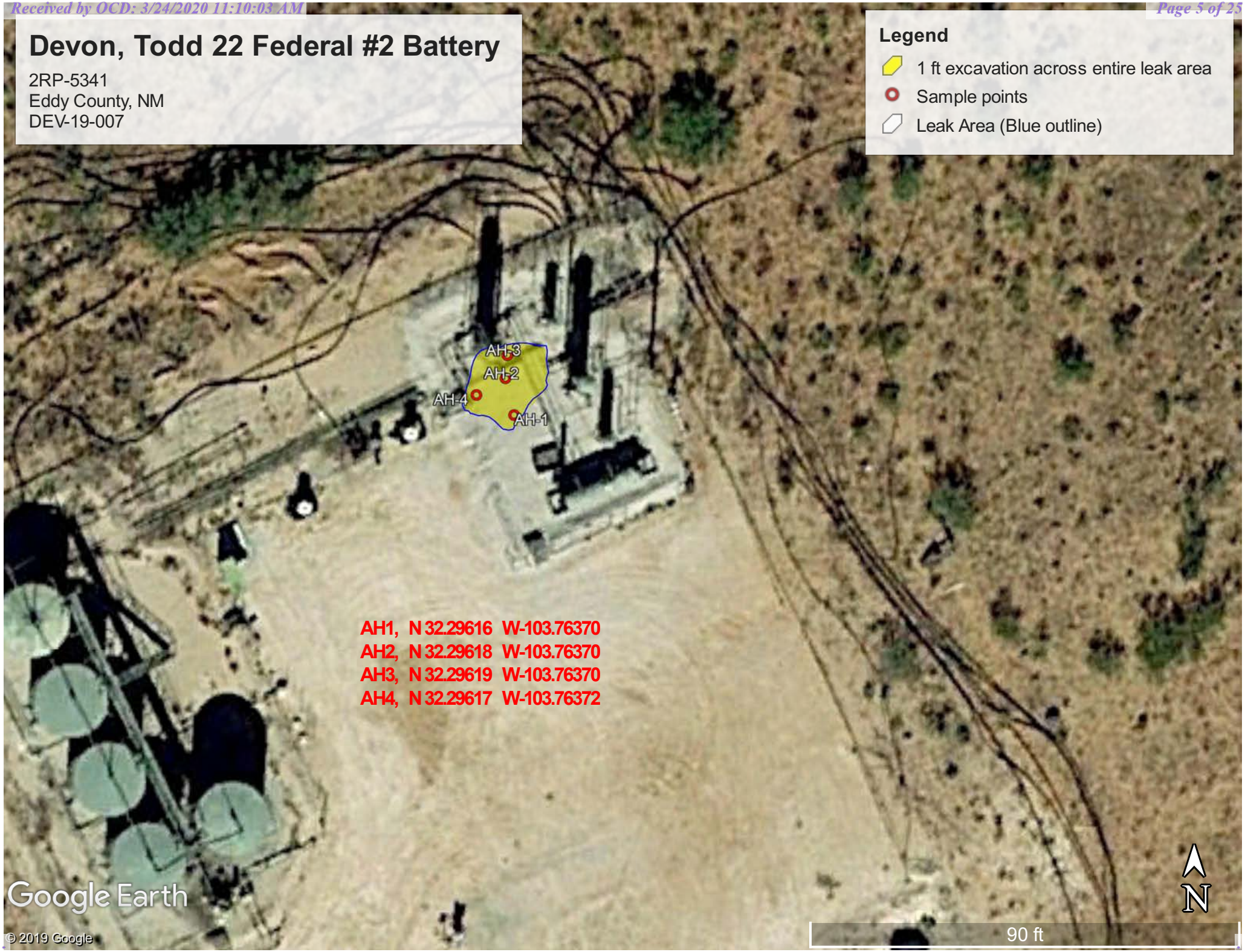
Evidence Document 1: Map of leak area, sample point GPS, and excavation proposal
Evidence Document 2: Groundwater data including trend map and USGS information
Evidence Document 3: NMOCD Oil and Gas Topo map detailing area water features
Evidence Document 4: BLM Cave Karst map showing location in low potential area
Evidence Document 5: FEMA demonstrating minimal flood hazards for this area
Evidence Document 6: Lab analysis from Cardinal Laboratories

Devon, Todd 22 Federal #2 Battery

2RP-5341
Eddy County, NM
DEV-19-007

Legend

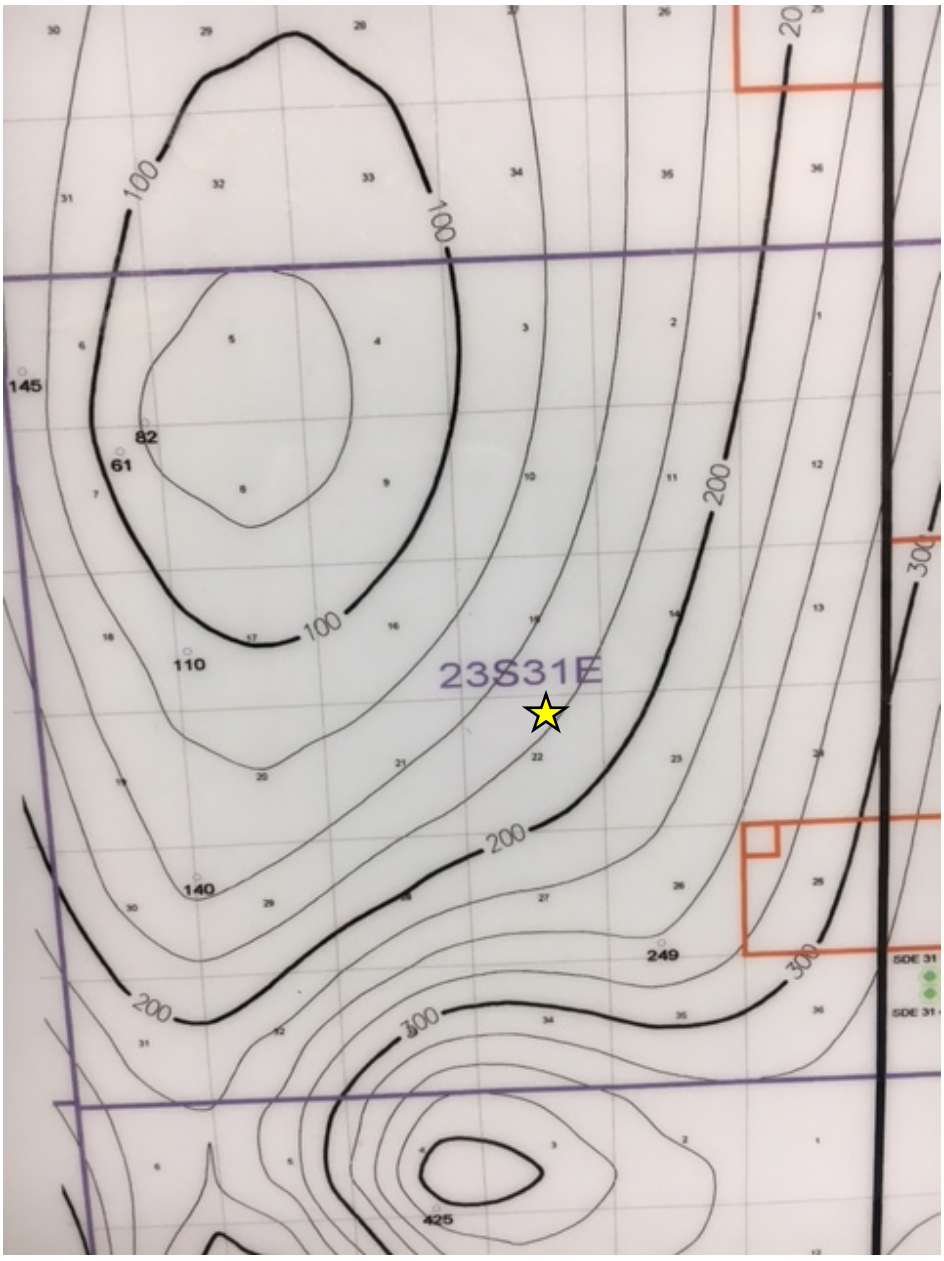
- 1 ft excavation across entire leak area
- Sample points
- Leak Area (Blue outline)



Devon, Todd 22 Federal #2 Battery

U/L B, Section 22, T23S, R31E

Groundwater: 175’



Click to hideNews Bulletins

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

Groundwater levels for New Mexico

Click to hide state-specific text

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 321609103445901

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

USGS 321609103445901 23S.31E.26.34411

Eddy County, New Mexico
Latitude 32°16'11.9", Longitude 103°45'01.2" NAD83
Land-surface elevation 3,451.00 feet above NGVD29
The depth of the well is 365 feet below land surface.
This well is completed in the Dewey Lake Redbeds (312DYLK) local aquifer.

Output formats

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

Date	Time	? Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Water-level accuracy	? Status	? Method of measurement	? Measuring agency	? Source of measurement
1959-02-04		D	256.87			2	P	U		
1972-09-20		D	250.47			2		U		
1988-03-17		D	249.02			2		S		
2013-01-16	17:00 MST	m	101.55			2	P	S	USGS	
2013-02-14	08:00 MST	m					P	S	USGS	

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level date-time accuracy	m	Date is accurate to the Minute
Water-level accuracy		Not determined
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status		The reported water-level measurement represents a static level
Status	P	Site was being pumped.
Method of measurement	S	Steel-tape measurement.

Section	Code	Description
Method of measurement	U	Unknown method.
Measuring agency		Not determined
Measuring agency	USGS	U.S. Geological Survey
Source of measurement	R	Reported by person other than the owner, driller, or another government agency.
Source of measurement	S	Measured by personnel of reporting agency.
Source of measurement	U	Source is unknown.
Water-level approval status	A	Approved for publication -- Processing and review completed.
Water-level approval status	P	Provisional data subject to revision.

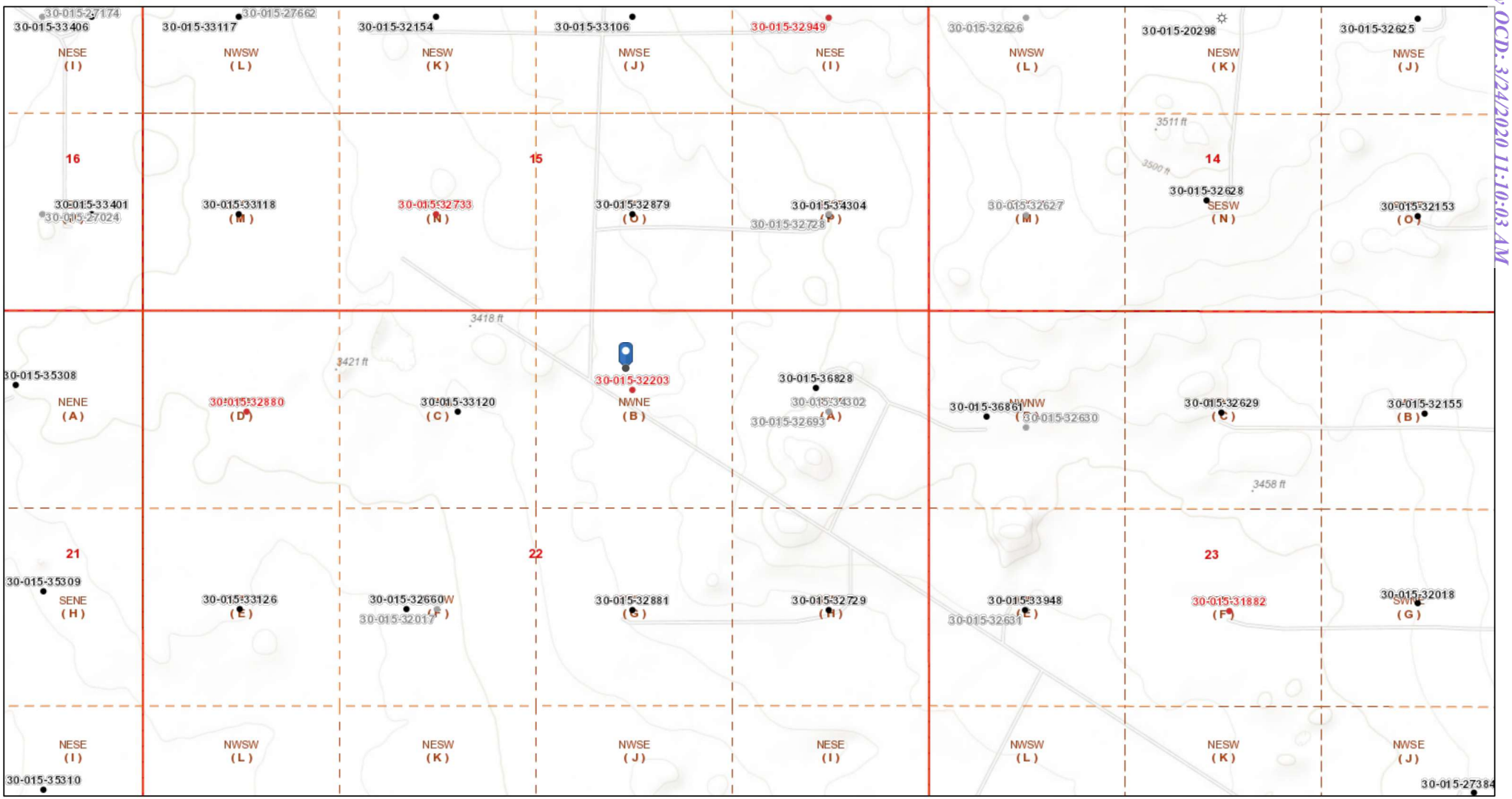
Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Accessibility Plug-Ins FOIA Privacy Policies and Notices

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

Page Contact Information: New Mexico Water Data Maintainer
Page Last Modified: 2020-02-04 10:22:28 EST
0.24 0.2 nadww01

Devon, Todd 22 Federal #2 Battery



2/4/2020, 8:33:02 AM

1:9,028

0 0.07 0.15 0.3 mi

0 0.15 0.3 0.6 km

Wells - Large Scale
- undefined
- Miscellaneous
- CO2, Active
- CO2, Cancelled
- CO2, New
- CO2, Plugged
- CO2, Temporarily Abandoned
- Gas, Active
- Gas, Cancelled
- Gas, New
- Gas, Plugged
- Gas, Temporarily Abandoned
- Injection, Active
- Injection, Cancelled
- Injection, New
- Injection, Plugged
- Injection, Temporarily Abandoned
- Oil, Active
- Oil, Cancelled
- Oil, New
- Oil, Plugged
- Oil, Temporarily Abandoned
- Salt Water Injection, Active
- Salt Water Injection, Cancelled
- Salt Water Injection, New
- Salt Water Injection, Plugged
- Salt Water Injection, Temporarily Abandoned
- Water, Active
- Water, Cancelled
- Water, New

Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department., Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI,

New Mexico Oil Conservation Division

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

Devon, Todd 22 Federal #2 Battery

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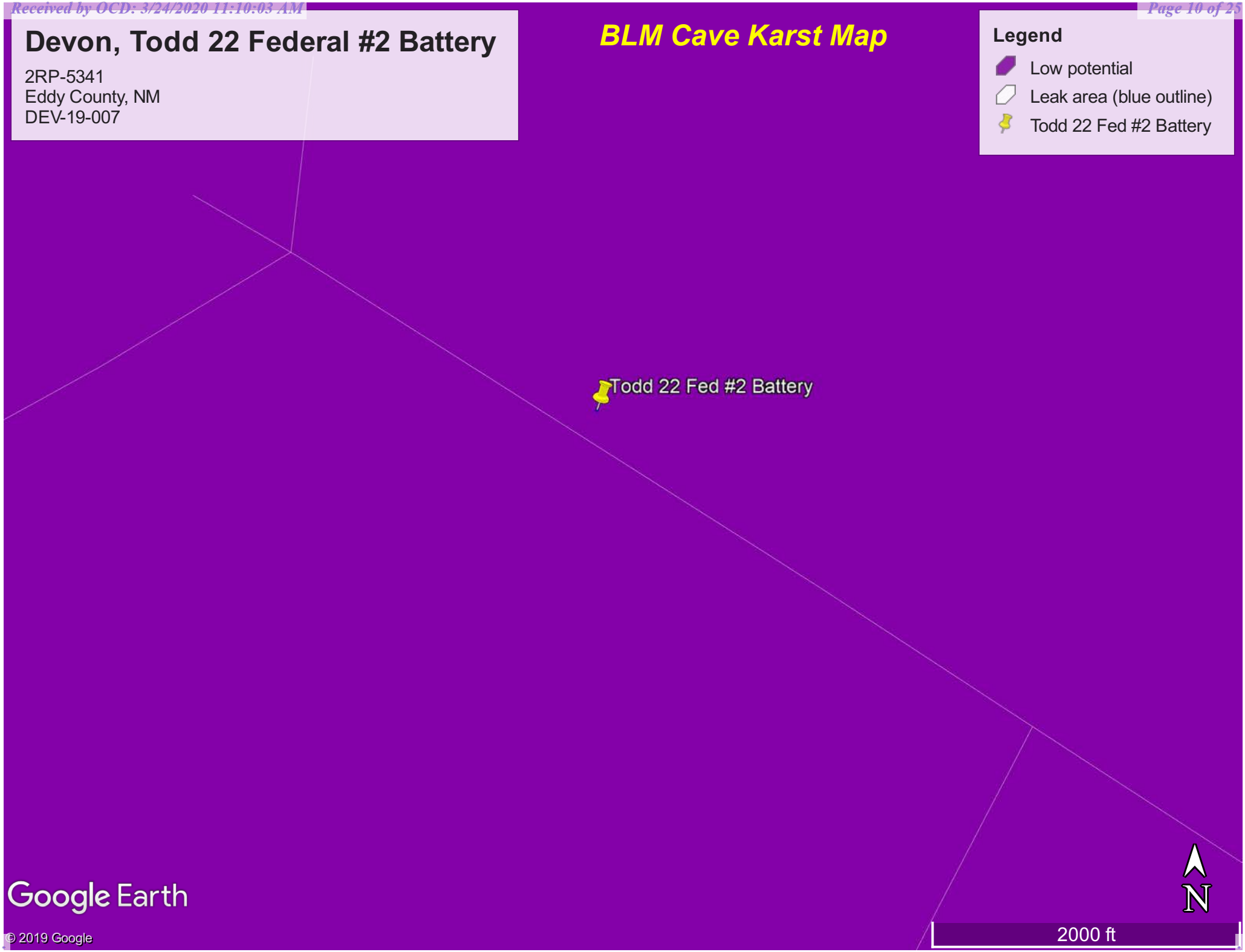
DEV-19-007

BLM Cave Karst Map

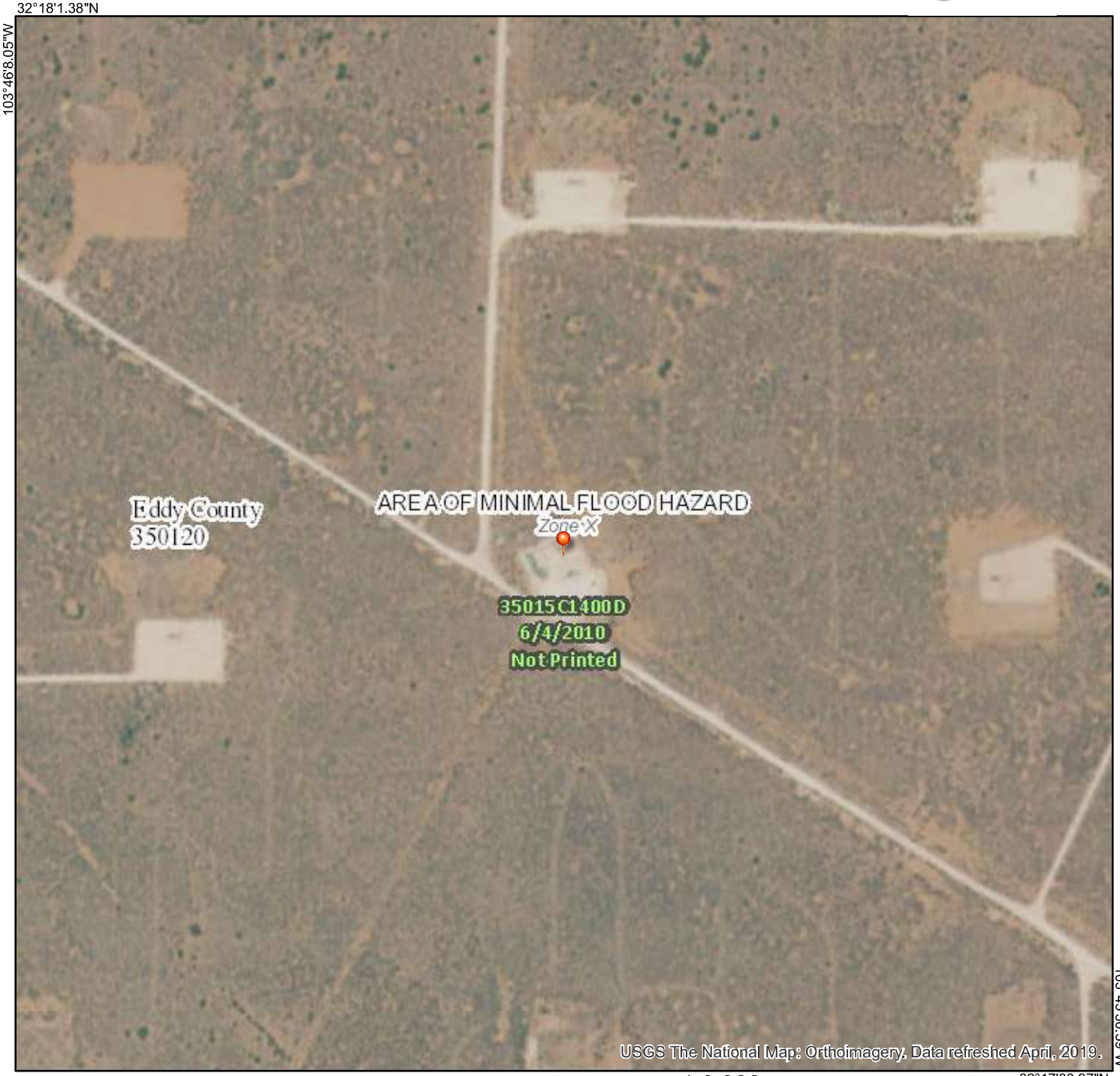
Legend

- Low potential
- Leak area (blue outline)
- Todd 22 Fed #2 Battery



National Flood Hazard Layer FIRMette

FEMA



Legend

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

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

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, A of 1% annual chance flood with avera depth less than one foot or with drain areas of less than one square mile Zo
- 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

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
- 513 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 2/4/2020 at 10:41:55 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.

CARDINAL Laboratories

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

May 29, 2019

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: TODD 22 B FED #2

Enclosed are the results of analyses for samples received by the laboratory on 05/21/19 10:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	05/21/2019	Sampling Date:	05/20/2019
Reported:	05/29/2019	Sampling Type:	Soil
Project Name:	TODD 22 B FED #2	Sampling Condition:	Cool & Intact
Project Number:	DEV - 19 - 007 / 2 RP - 5341	Sample Received By:	Tamara Oldaker
Project Location:	DEVON		

Sample ID: AH - 1 SURFACE (H901819-01)

BTEX 8021B mg/kg Analyzed By: ms S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**0.283**	0.200	05/28/2019	ND	1.99	99.4	2.00	3.36	
Toluene*	**7.08**	0.200	05/28/2019	ND	2.14	107	2.00	3.40	
Ethylbenzene*	**8.40**	0.200	05/28/2019	ND	2.04	102	2.00	2.10	
Total Xylenes*	**34.4**	0.600	05/28/2019	ND	6.13	102	6.00	1.39	
Total BTEX	**50.2**	1.20	05/28/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *155 %* *73.3-129*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1200**	16.0	05/29/2019	ND	400	100	400	0.00	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**1930**	100	05/23/2019	ND	186	93.0	200	3.77	
DRO >C10-C28*	**17800**	100	05/23/2019	ND	253	127	200	1.13	
EXT DRO >C28-C36	**3840**	100	05/23/2019	ND					

Surrogate: 1-Chlorooctane *270 %* *41-142*

Surrogate: 1-Chlorooctadecane *543 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	05/21/2019	Sampling Date:	05/20/2019
Reported:	05/29/2019	Sampling Type:	Soil
Project Name:	TODD 22 B FED #2	Sampling Condition:	Cool & Intact
Project Number:	DEV - 19 - 007 / 2 RP - 5341	Sample Received By:	Tamara Oldaker
Project Location:	DEVON		

Sample ID: AH - 1 1' (H901819-02)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/25/2019	ND	1.99	99.4	2.00	3.36	
Toluene*	<0.050	0.050	05/25/2019	ND	2.14	107	2.00	3.40	
Ethylbenzene*	<0.050	0.050	05/25/2019	ND	2.04	102	2.00	2.10	
Total Xylenes*	<0.150	0.150	05/25/2019	ND	6.13	102	6.00	1.39	
Total BTEX	<0.300	0.300	05/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *95.1 %* *73.3-129*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**112**	16.0	05/29/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/23/2019	ND	192	96.2	200	0.220	
DRO >C10-C28*	**106**	10.0	05/23/2019	ND	197	98.6	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	05/23/2019	ND					

Surrogate: 1-Chlorooctane *92.3 %* *41-142*

Surrogate: 1-Chlorooctadecane *107 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	05/21/2019	Sampling Date:	05/20/2019
Reported:	05/29/2019	Sampling Type:	Soil
Project Name:	TODD 22 B FED #2	Sampling Condition:	Cool & Intact
Project Number:	DEV - 19 - 007 / 2 RP - 5341	Sample Received By:	Tamara Oldaker
Project Location:	DEVON		

Sample ID: AH - 2 SURFACE (H901819-03)

BTEX 8021B mg/kg Analyzed By: ms S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	05/28/2019	ND	1.99	99.4	2.00	3.36	
Toluene*	**3.05**	0.200	05/28/2019	ND	2.14	107	2.00	3.40	
Ethylbenzene*	**5.98**	0.200	05/28/2019	ND	2.04	102	2.00	2.10	
Total Xylenes*	**24.1**	0.600	05/28/2019	ND	6.13	102	6.00	1.39	
Total BTEX	**33.2**	1.20	05/28/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *148 %* *73.3-129*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1340**	16.0	05/29/2019	ND	400	100	400	0.00	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**1130**	100	05/23/2019	ND	192	96.2	200	0.220	
DRO >C10-C28*	**18800**	100	05/23/2019	ND	197	98.6	200	1.17	
EXT DRO >C28-C36	**3780**	100	05/23/2019	ND					

Surrogate: 1-Chlorooctane *224 %* *41-142*

Surrogate: 1-Chlorooctadecane *675 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	05/21/2019	Sampling Date:	05/20/2019
Reported:	05/29/2019	Sampling Type:	Soil
Project Name:	TODD 22 B FED #2	Sampling Condition:	Cool & Intact
Project Number:	DEV - 19 - 007 / 2 RP - 5341	Sample Received By:	Tamara Oldaker
Project Location:	DEVON		

Sample ID: AH - 2 1' (H901819-04)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/25/2019	ND	1.99	99.4	2.00	3.36	
Toluene*	<0.050	0.050	05/25/2019	ND	2.14	107	2.00	3.40	
Ethylbenzene*	<0.050	0.050	05/25/2019	ND	2.04	102	2.00	2.10	
Total Xylenes*	<0.150	0.150	05/25/2019	ND	6.13	102	6.00	1.39	
Total BTEX	<0.300	0.300	05/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *94.8 %* *73.3-129*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	05/29/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/23/2019	ND	192	96.2	200	0.220	
DRO >C10-C28*	**111**	10.0	05/23/2019	ND	197	98.6	200	1.17	
EXT DRO >C28-C36	**13.1**	10.0	05/23/2019	ND					

Surrogate: 1-Chlorooctane *86.6 %* *41-142*

Surrogate: 1-Chlorooctadecane *103 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

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703 East Clinton
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Fax To: (575) 393-4388

Received:	05/21/2019	Sampling Date:	05/20/2019
Reported:	05/29/2019	Sampling Type:	Soil
Project Name:	TODD 22 B FED #2	Sampling Condition:	Cool & Intact
Project Number:	DEV - 19 - 007 / 2 RP - 5341	Sample Received By:	Tamara Oldaker
Project Location:	DEVON		

Sample ID: AH - 3 SURFACE (H901819-05)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**0.652**	0.050	05/25/2019	ND	1.99	99.4	2.00	3.36	
Toluene*	**6.44**	0.050	05/25/2019	ND	2.14	107	2.00	3.40	
Ethylbenzene*	**5.40**	0.050	05/25/2019	ND	2.04	102	2.00	2.10	
Total Xylenes*	**20.8**	0.150	05/25/2019	ND	6.13	102	6.00	1.39	
Total BTEX	**33.3**	0.300	05/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *96.2 %* *73.3-129*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1330**	16.0	05/29/2019	ND	400	100	400	0.00	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**1520**	100	05/23/2019	ND	192	96.2	200	0.220	
DRO >C10-C28*	**11200**	100	05/23/2019	ND	197	98.6	200	1.17	
EXT DRO >C28-C36	**1730**	100	05/23/2019	ND					

Surrogate: 1-Chlorooctane *220 %* *41-142*

Surrogate: 1-Chlorooctadecane *447 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	05/21/2019	Sampling Date:	05/20/2019
Reported:	05/29/2019	Sampling Type:	Soil
Project Name:	TODD 22 B FED #2	Sampling Condition:	Cool & Intact
Project Number:	DEV - 19 - 007 / 2 RP - 5341	Sample Received By:	Tamara Oldaker
Project Location:	DEVON		

Sample ID: AH - 3 1' (H901819-06)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/25/2019	ND	1.99	99.4	2.00	3.36	
Toluene*	<0.050	0.050	05/25/2019	ND	2.14	107	2.00	3.40	
Ethylbenzene*	**0.051**	0.050	05/25/2019	ND	2.04	102	2.00	2.10	
Total Xylenes*	**0.233**	0.150	05/25/2019	ND	6.13	102	6.00	1.39	
Total BTEX	<0.300	0.300	05/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.4 %* *73.3-129*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**224**	16.0	05/29/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/23/2019	ND	192	96.2	200	0.220	
DRO >C10-C28*	**119**	10.0	05/23/2019	ND	197	98.6	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	05/23/2019	ND					

Surrogate: 1-Chlorooctane *76.8 %* *41-142*

Surrogate: 1-Chlorooctadecane *83.4 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	05/21/2019	Sampling Date:	05/20/2019
Reported:	05/29/2019	Sampling Type:	Soil
Project Name:	TODD 22 B FED #2	Sampling Condition:	Cool & Intact
Project Number:	DEV - 19 - 007 / 2 RP - 5341	Sample Received By:	Tamara Oldaker
Project Location:	DEVON		

Sample ID: AH - 4 SURFACE (H901819-07)

BTEX 8021B mg/kg Analyzed By: ms S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	05/29/2019	ND	1.90	94.8	2.00	2.24	
Toluene*	**3.75**	0.200	05/29/2019	ND	2.06	103	2.00	1.93	
Ethylbenzene*	**4.35**	0.200	05/29/2019	ND	1.98	98.9	2.00	0.752	
Total Xylenes*	**15.2**	0.600	05/29/2019	ND	6.06	101	6.00	0.0359	
Total BTEX	**23.3**	1.20	05/29/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID	*155 %*	*73.3-129*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	05/29/2019	ND	400	100	400	0.00	

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**623**	100	05/23/2019	ND	192	96.2	200	0.220	
DRO >C10-C28*	**14700**	100	05/23/2019	ND	197	98.6	200	1.17	
EXT DRO >C28-C36	**2550**	100	05/23/2019	ND					

Surrogate: 1-Chlorooctane	*192 %*	*41-142*
Surrogate: 1-Chlorooctadecane	*539 %*	*37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	05/21/2019	Sampling Date:	05/20/2019
Reported:	05/29/2019	Sampling Type:	Soil
Project Name:	TODD 22 B FED #2	Sampling Condition:	Cool & Intact
Project Number:	DEV - 19 - 007 / 2 RP - 5341	Sample Received By:	Tamara Oldaker
Project Location:	DEVON		

Sample ID: AH - 4 1' (H901819-08)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	05/29/2019	ND	1.90	94.8	2.00	2.24	
Toluene*	<0.050	0.050	05/29/2019	ND	2.06	103	2.00	1.93	
Ethylbenzene*	<0.050	0.050	05/29/2019	ND	1.98	98.9	2.00	0.752	
Total Xylenes*	<0.150	0.150	05/29/2019	ND	6.06	101	6.00	0.0359	
Total BTEX	<0.300	0.300	05/29/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *92.1 %* *73.3-129*

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**192**	16.0	05/29/2019	ND	400	100	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/23/2019	ND	192	96.2	200	0.220	
DRO >C10-C28*	**150**	10.0	05/23/2019	ND	197	98.6	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	05/23/2019	ND					

Surrogate: 1-Chlorooctane *86.6 %* *41-142*

Surrogate: 1-Chlorooctadecane *96.5 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Chain-of-Custody Record

Client: Safety + Environmental Solution

Mailing Address: 703 E. Clinton Hobbs NM 88240

Phone #: 575-397-0510

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 Day Rush
☐ Standard ☐ Rush

Project Name: Devon TODD 22B Fed #2

Project #: DEV-19-007 2RP-5344

Project Manager: Allen, Bob

Sampler: Son Jerry

On Ice: ☐ Yes ☐ No

# of Coolers:

Cooler Temp(including CF):

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

H901819

	Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type Ice	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Chloride					
1	05/20	1200	S	AH-1 Surface	1	Neat		X	X	X (scribbled out)								X					
2		1220	S	AH-1 1ft	1																		
3		1230	S	AH-2 Surface	1																		
4		1245	S	AH-2 1ft	1																		
5		1300	S	AH-3 Surface	1																		
6		1310	S	AH-3 1ft	1																		
7		1325	S	AH-4 Surface	1																		
8		1345	S	AH-4 1ft	1			X	X									X					

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
5/21	800	Son Jerry	Tamara Oldaker		5-21-19	10:10
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks:

5.0°C #97 tc.

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.

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

Printed Name: _____ Title: _____

Signature: Tom Bynum Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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: _____ Title: _____

Signature: Tom Bynum Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____