



PO Box 1120  
Carlsbad, New Mexico 88221  
Phone (575) 236-6600

February 13, 2020

NMOCD District 2  
Mr. Robert Hamlet  
811 S. First Street  
Artesia, New Mexico 88210

Dear Mr. Hamlet:

M&M Excavating, Inc. (MMX) has prepared this Closure Report for Devon Energy Production Company that describes the delineation and remediation of two releases of liquid at the Cotton Draw 10 Federal Com #002H site (2RP-4604 & 2RP-5481). The site is in Unit A, Section 10, Township 25S, Range 31E, Latitude 32.15150, Longitude -103.75878, Eddy County, New Mexico, on Federal land. Figure 1 provides the vicinity and site location on an USGS 7.5-minute quadrangle map.

### Site Information and Closure Criteria

The Cotton Draw 10 Federal Com #002H is located approximately thirty-three (33) miles southeast of Carlsbad, New Mexico at an elevation of approximately 3,432 feet above mean sea level (amsl).

Based upon well water data. (Appendix B), depth to groundwater in the area is estimated to be between 370 and 450 feet below grade surface (bgs). There are no known water wells within ½ mile of the location, according to the New Mexico Office of the State Engineer (NMOSE) and United State Geological Survey (USGS). The nearest significant watercourse is a Freshwater Emergent Wetland located approximately 3,500 feet to the south.

The sites applicable NMOCD Closure Criteria is for groundwater greater than 100 feet bgs. MMX is requesting deferral of this location as per 19.15.29.12.B.(2).

Table 2 demonstrates the Closure Criteria applicable to this location. Pertinent well data is attached in Appendix B.

Release Information and Closure Criteria			
Name	Cotton Draw 10 Federal Com #002H		
API Number	30-015-39230		
Incident Number	2RP-4604 & 2RP-5481		
Source of Release	Produced Water Tank Overflow		
Released Material	2RP-4604: PW 2RP-5481: PW & CO	Released Volume	2RP-4604: 181 bbls 2RP-5481: 2 bbls CO & 17 bbls PW
Recovered Volume	2RP-4604: 180 bbls 2RP-5481: 2 bbls CO & 16 bbls	Net Release	2RP-4604: 1 bbls PW 2RP-5481: 1 bbls PW
NMOCD Closure Criteria	>100 feet to groundwater		

### **Release Information**

**2RP-4604:** On January 21, 2018, the produced water tank ran over resulting in an approximate release of 181 bbls of produced water into the lined SPCC secondary containment ring with less than a barrel of overspray onto the pad. A vacuum truck was dispatched and recovered all the fluids in the lined secondary containment and the tanks were cleaned. A liner inspection was conducted by Devon Energy field staff with no failures in the liner found. Figures 1 and 2 illustrate the vicinity and site location. Figure 3 illustrates the release location. The C-141 form is included in Appendix A.

**2RP-5481:** On May 2<sup>nd</sup>, 2019 the produced water tank ran over again resulting in the release of approximately 2 bbls of crude oil and 17 bbls of produced water. Again, the majority of the fluid was released into the lined containment and recovered. The area of overspray overlapped the January 2018 release. The C-141 form is included in Appendix A.

### **Release Characterization and Remediation Activities**

On September 30, 2019, MMX personnel arrived on site in response to the releases associated with Cotton Draw 10 Federal Com #002H. MMX collected initial soil samples around the release site and conducted a liner integrity inspection within the containment. No failures were observed in the liner. Photos of the liner inspection are included in Appendix D.

A total of two (2) sample locations (L1-L2), were investigated with samples collected at three depths (surface, 0.5 and two feet). The samples were collected for laboratory analysis for total chloride using EPA Method 300.0; benzene, toluene, ethylbenzene and total xylenes (BTEX) using EPA Method 8021B; and motor, diesel and gasoline range organics (MRO, DRO, and GRO) by EPA Method 8015D. Samples were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Cardinal Laboratories in Hobbs, New Mexico (Appendix C).

Figure 3 shows the extent of the release area and sample locations. Results indicate that hydrocarbon contamination exceed closure criteria on the surface around sample location L1. MMX proceeded to excavate the identified impacted area to approximately six inches, a photo of which included in Appendix D.

On November 29, 2019, MMX collected five-point composite, confirmation samples of the walls (SW1 & SW2) and base (BH1 & BH2) of the excavation. A total of four (4) samples were collected for laboratory analysis using the methods listed above. Samples were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Laboratories in Albuquerque, New Mexico.

Contaminated soils were removed and replaced with clean backfill material to return the surface to previous contours. The contaminated soil was transported and disposed of at an NMOCD permitted disposal facility. Georeferenced photos are included in Appendix D.

On behalf of Devon Energy, MMX requests closure for the releases associated with 2RP-4604 and 2RP-5481.

Submitted by:  
M&M Excavating, Inc.

*Parker Kimbley*  
Parker Kimbley

## **ATTACHMENTS:**

### **Figures:**

Figure 1: Vicinity and Well Head Protection Map

Figure 2: Surface Water Radius Map

Figure 3: Site and Sample Location Map

### **Tables:**

Table 2: NMOCD Closure Criteria Justification

Table 3: Summary of Sample Results

### **Appendices:**

Appendix A: C141 Forms

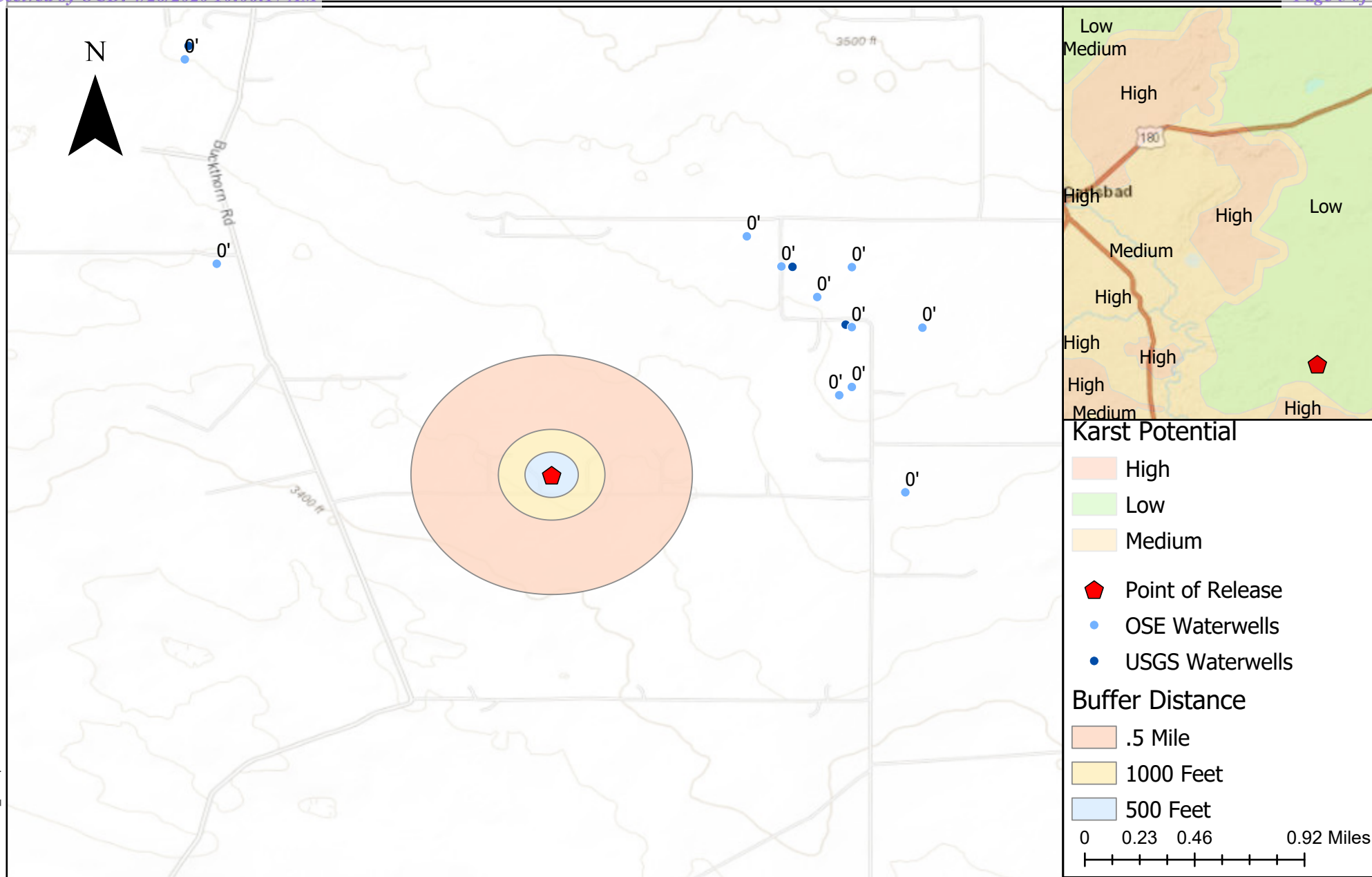
Appendix B: Water Well Data

Appendix C: Laboratory Analytical Reports

Appendix D: Liner Inspection & Excavation Photo Logs

## Figures





Regional Vicinity & Wellhead Protection Map  
 Cotton Draw 10 Federal Com #002H - Devon Energy  
 Sec 10 T25S R31E Eddy County, New Mexico

Figure 1

Revisions

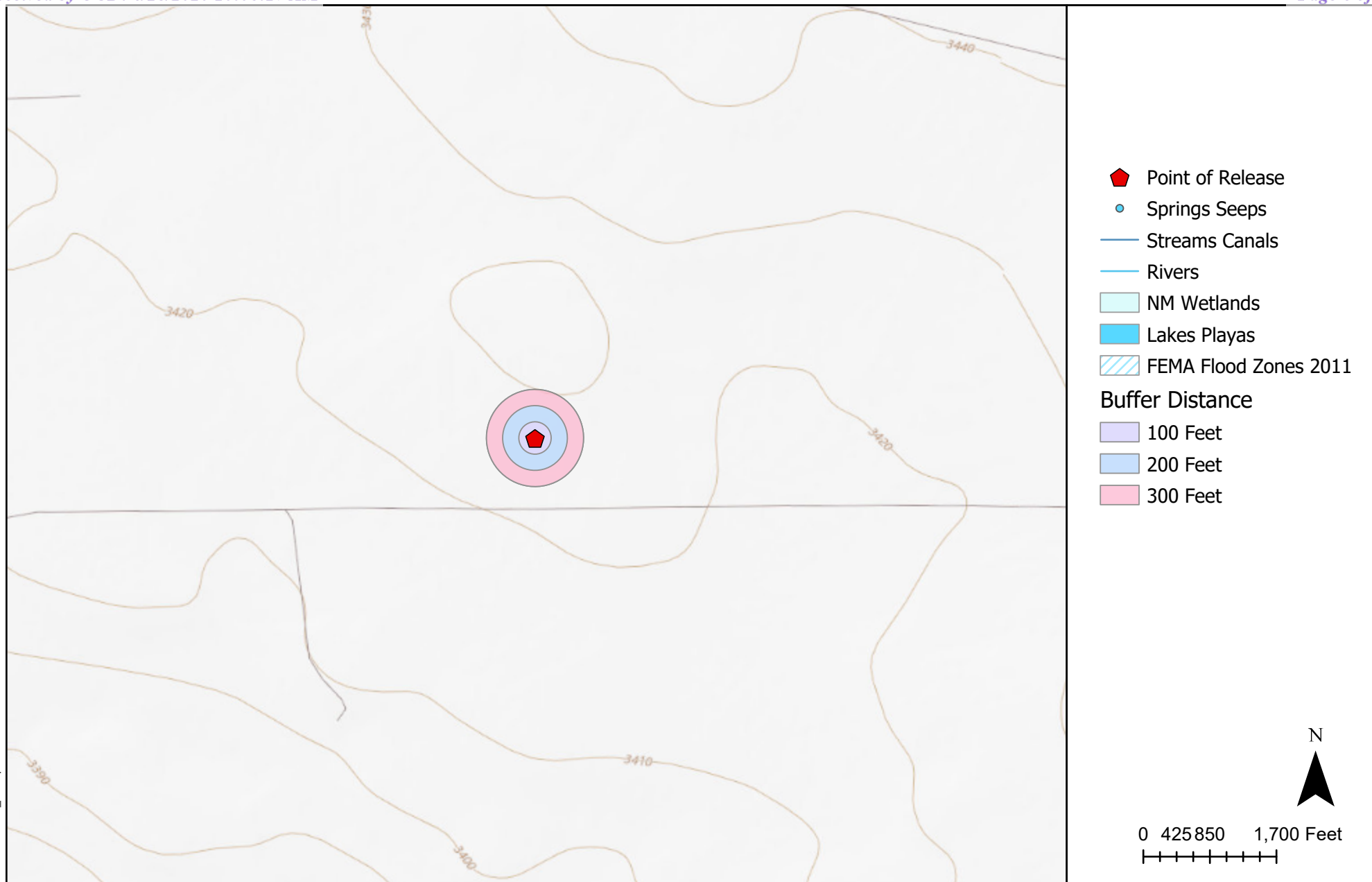
By: \_\_\_\_\_ Date: \_\_\_\_\_ Descr: \_\_\_\_\_  
 By: \_\_\_\_\_ Date: \_\_\_\_\_ Descr: \_\_\_\_\_

Drawn \_\_\_\_\_  
 Date 7/18/2019  
 Checked \_\_\_\_\_  
 Approved \_\_\_\_\_

LC



78 Roberson Rd  
 Carlsbad, NM 88220  
 (575) 230-6600



Surface Water Protection Map  
 Cotton Draw 10 Federal Com #002H - Devon Energy  
 Sec 10 T25S R31E Eddy County, New Mexico

Figure 2

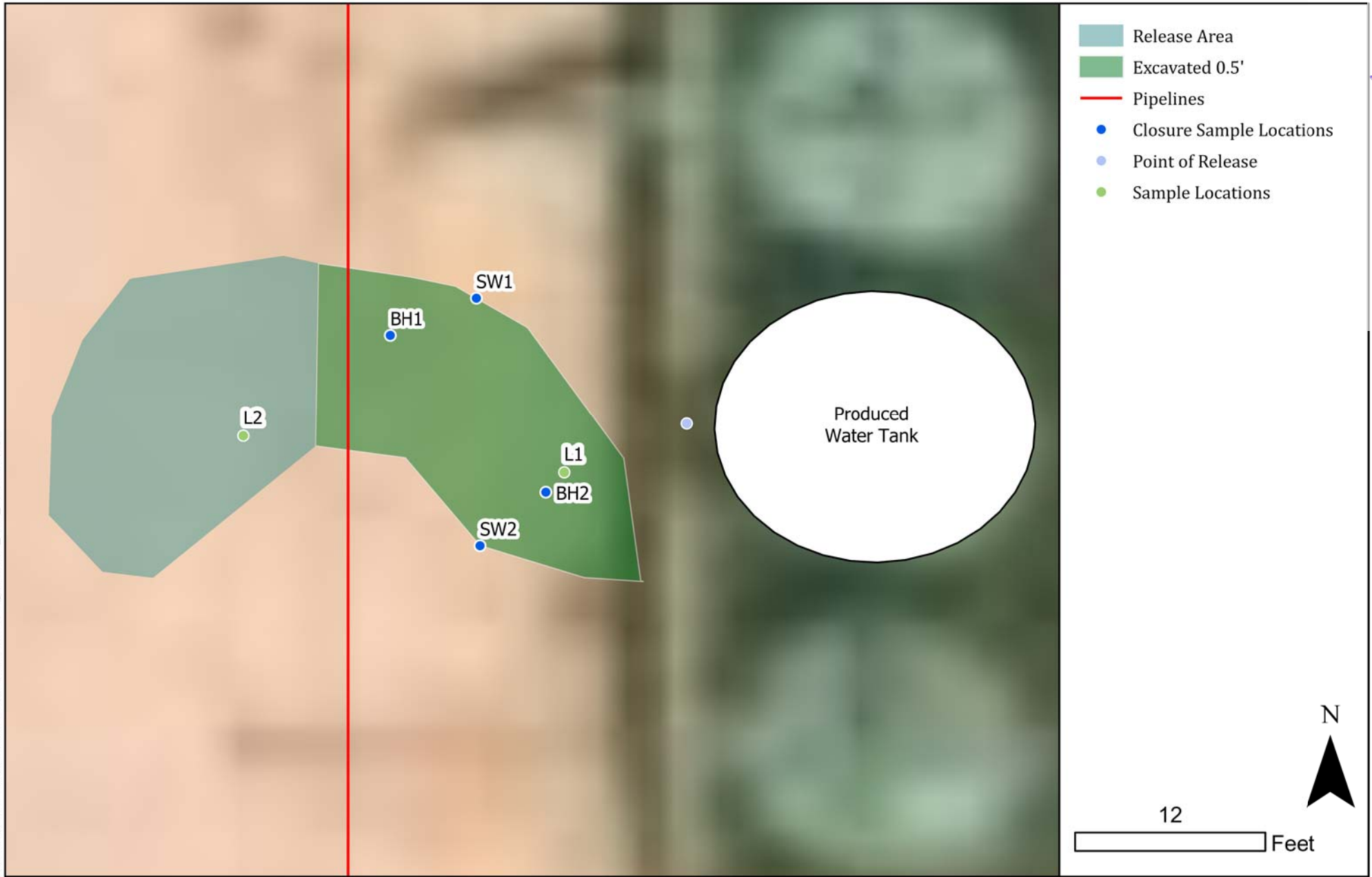
## Revisions

By: \_\_\_\_\_ Date: \_\_\_\_\_ Descr: \_\_\_\_\_  
 By: \_\_\_\_\_ Date: \_\_\_\_\_ Descr: \_\_\_\_\_

Drawn LC  
 Date 7/18/2019  
 Checked \_\_\_\_\_  
 Approved \_\_\_\_\_



78 Roberson Rd  
 Carlsbad, NM 88220  
 (575) 236-6600



Site & Sample Locations  
Cotton Draw Unit 10 Federal Com 2H- Devon Energy  
Eddy County, New Mexico

Figure 3

Revisions		
By: _____	Date: _____	Descr: _____
By: _____	Date: _____	Descr: _____

Copyright 2019 M&M Excavating, Inc. - All Rights Reserved

Drawn	Brent A. Jackson
Date	2/5/2020
Checked	_____
Approved	_____



78 Roberson Rd  
Carlsbad, NM 88220  
(575) 236-6600

## Tables

**Table 2: NMOCD Closure Criteria**

Cotton Draw 10 Federal Com #002H

Devon Energy Production Company

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)		Source/Notes	
Depth to Groundwater (feet bgs)		370-450	USGS & NMOSE (Appendix B)
Horizontal Distance From All Water Sources Within 1/2 Mile (ft)		--	
Horizontal Distance to Nearest Significant Watercourse (ft)		3500	Freshwater Emergent Wetland to the south

Closure Criteria (19.15.29.12.B(4) and Table 1 NMAC)					
Depth to Groundwater		Closure Criteria (units in mg/kg)			
		Chloride *numerical limit or background, whichever is greater	TPH	GRO + DRO	BTEX  Benzene
Less than 50' BGS		600	100		50 10
51' to 100'		10000	2500	1000	50 10
Greater than 100'	x	20000	2500	1000	50 10
Surface Water	Yes	No	if yes, then		
Less than 300' from continuously flowing watercourse or other significant watercourse?		x	600	100	50 10
Less than 200' from lakebed, sinkhole or playa lake?		x			
Water Well or Water Source					
Less than 500 feet from spring or a private, domestic fresh water well used by less than 5 households for domestic or stock watering purposes?		x			
Less than 1000' from fresh water well or spring?		x			
Human and Other Areas					
Less than 300' from an occupied permanent residence, school, hospital, institution or church?		x			
Within incorporated municipal boundaries or within a defined municipal fresh water well field?		x			
Less than 100' from wetland?		x			
Within area overlying a subsurface mine		x			
Within an unstable area?		x			
Within a 100-year floodplain?		x			

**Table 3: Summary of Sample Results**

Cotton Draw 10 Federal Com #002H  
 Devon Energy Production Company  
 2RP-4604 and 2RP-5481

Sample ID	Sample Date	Depth (feet bgs)	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	Total TPH mg/Kg	CI- mg/Kg
<b>NMOCD Closure Criteria</b>			<b>50</b>	<b>10</b>	<b>1000</b>			<b>2500</b>	<b>20000</b>
L1	9/30/2019	surface	<0.300	<0.050	<10.0	2400	732	3132	6160
		0.5	--	--	<10.0	101	21.2	122.2	896
		2	--	--	<10.0	<10.0	<10.0	<30.0	96
L2	9/30/2019	surface	<0.300	<0.050	<10.0	459	203	662	1550
		0.5	--	--	<10.0	<10.0	<10.0	<30.0	5460
		2	--	--	--	--	--	--	48
BH1	12/2/2019	0.5	<0.221	<0.025	<4.9	<9.4	<47	<61.3	270
BH2		0.5	<0.221	<0.025	<4.9	<8.5	<43	<56.4	100
SW1		0-0.5	<0.216	<0.024	<4.8	37	<48	37	250
SW2		0-0.5	<0.208	<0.023	<4.6	<8.9	<45	<58.5	1900



## **Appendix A: C141 Forms**



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

## NM OIL CONSERVATION

ARTESIA DISTRICT

FEB 05 2018

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

RECEIVED

Form C-141  
Revised April 3, 2017

## Release Notification and Corrective Action

NAB1803749983

## OPERATOR

☒ Initial Report ☒ Final Report

Name of Company	Devon Energy Production Company	Contact	Wes Ryan, Production Foreman
Address	6488 Seven Rivers Hwy Artesia, NM 88210	Telephone No.	575-390-5436
Facility Name	Cotton Draw 10 Federal Com 2H	Facility Type	Oil

Surface Owner	Federal	Mineral Owner	Federal	API No.	30-015-39230
---------------	---------	---------------	---------	---------	--------------

## LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	10	25S	31E					Eddy

Latitude\_32.15150\_ Longitude\_103.75878\_ NAD83

## NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 181bbbls	Volume Recovered 180.90 bbbls
Source of Release Produced water tank	Date and Hour of Occurrence January 21, 2018 @ 4:30 PM MST	Date and Hour of Discovery January 21, 2018 @ 4:30 PM MST
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher/Crystal Weaver, OCD Shelly Tucker, BLM	
By Whom? Mike Shoemaker, EHS Representative	Date and Hour January 22, 2018 @ 1:11 PM MST	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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.\*

Water tank ran over causing an approximate 181 bbl release. The wells producing to the battery were immediately shut in to stop the release.

Describe Area Affected and Cleanup Action Taken.\*

Approximate 181 bbbls was released the majority of the release occurred inside the lined SPCC secondary containment ring however there was a 0.10 bbl overspray that did go outside the containment area and onto the location. A vacuum truck was dispatched and recovered all the fluids that were released into the lined secondary containment. Once fluids were removed the liner was visually inspected by Devon field staff for any pinholes or punctures and none were found. Based on this inspection there is no evidence that the spill fluids left containment.

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.

## OIL CONSERVATION DIVISION

Signature: Michael Shoemaker

Printed Name: Michael Shoemaker

Title: Environmental Professional

E-mail Address: mike.shoemaker@devon.com

Date: 02/01/18

Phone: 575.748.3371

Approved by Environmental Specialist:

Approval Date: 2/6/18

Expiration Date: N/A

Conditions of Approval:

See attached

Attached

X JRP-4604

\* Attach Additional Sheets If Necessary



Cotton Draw 10 Fed Com 2H

181bbl pw\_1.21.18



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: Sheila Fisher

Map is current as of: 24-Jan-2018



Miles

0 0.01 0.02 0.04 1: 1,779













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

State of New Mexico  
Energy Minerals and Natural  
Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

### Location of Release Source

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☐ Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
Cause of Release		

## Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

### Initial Response

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

<input type="checkbox"/> The source of the release has been stopped.	
<input type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: _____	Title: _____
Signature: <u>Kendra DeHoyos</u>	Date: _____
email: _____	Telephone: _____
<b><u>OCD Only</u></b>	
Received by: _____	Date: _____

## **Appendix B: Water Well Data**



## New Mexico Office of the State Engineer

# Water Column/Average Depth to Water

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

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

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

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
<a href="#">C 03830 POD1</a>		CUB	ED	4	2	4	02	25S	31E	618632	3558432	1728	450		
<a href="#">C 02570</a>		CUB	ED	4	2	4	02	25S	31E	618704	3558489*	1814	895		
<a href="#">C 02571</a>		CUB	ED	4	1	2	02	25S	31E	618292	3559294*	1919	860		
<a href="#">C 02573</a>		CUB	ED	1	4	2	02	25S	31E	618499	3559091*	1931			
<a href="#">C 02574</a>		CUB	ED	1	1	2	02	25S	31E	618092	3559494*	1952			
<a href="#">C 02569</a>		CUB	ED	4	4	2	02	25S	31E	618699	3558891*	1981	1016		
<a href="#">C 02572</a>		CUB	ED	4	2	2	02	25S	31E	618695	3559294*	2211	852		
<a href="#">C 02568</a>		CUB	ED	4	3	1	01	25S	31E	619103	3558892*	2338	1025		
<a href="#">C 02250</a>		CUB	ED	3	1	4	21	25S	31E	614912	3553620*	4741	400	390	10
<a href="#">C 03891 POD1</a>		CUB	ED	4	4	2	01	25S	30E	610608	3558890	6466	635	429	206

Average Depth to Water: **409 feet**

Minimum Depth: **390 feet**

Maximum Depth: **429 feet**

**Record Count:** 10

**UTM NAD83 Radius Search (in meters):**

**Easting (X):** 616995

**Northing (Y):** 3557879

**Radius:** 7000

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

7/18/19 3:38 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER



USGS Home  
Contact USGS  
Search USGS

## National Water Information System: Web Interface

USGS Water Resources

Data Category:


Groundwater

Geographic Area:

United States

GO

Click to hide News Bulletins

- [Introducing The Next Generation of USGS Water Data for the Nation](#)
- [Full News](#) 

Groundwater levels for the Nation

## Search Results -- 1 sites found

site\_no list =

- 320932103443801

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

## USGS 320932103443801 25S.31E.02.23441

Available data for this site

Groundwater: Field measurements

GO

Eddy County, New Mexico

Hydrologic Unit Code 13070001

Latitude 32°09'37.4", Longitude 103°44'29.6" NAD83

Land-surface elevation 3,460.00 feet above NGVD29

The depth of the well is 1,016 feet below land surface.

This well is completed in the Rustler Formation (312RSLR) local aquifer.

### Output formats

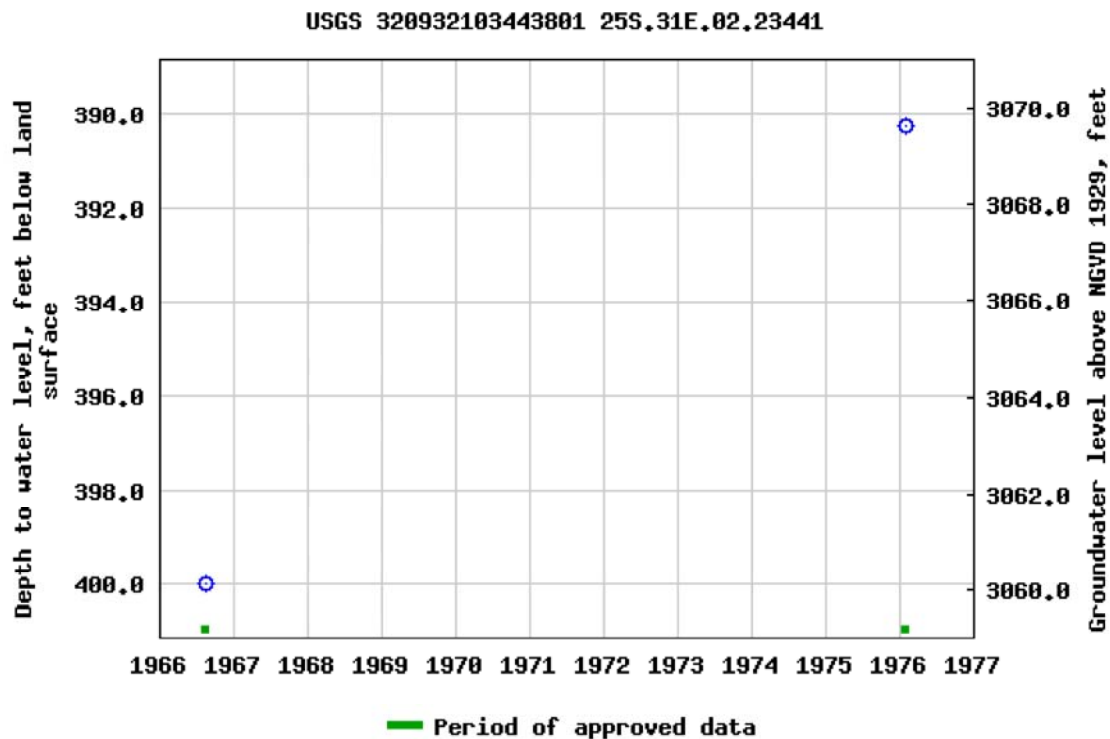
[Table of data](#)

[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](#)

[Plug-Ins](#)

[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: 2019-07-18 14:51:17 EDT

1.07 1.03 nadww01



USGS Home  
Contact USGS  
Search USGS

## National Water Information System: Web Interface

USGS Water Resources

Data Category:


Groundwater

Geographic Area:

United States

GO

Click to hide News Bulletins

- [Introducing The Next Generation of USGS Water Data for the Nation](#)
- [Full News](#) 

Groundwater levels for the Nation

## Search Results -- 1 sites found

site\_no list =

- 320952103444401

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

## USGS 320952103444401 25S.31E.02.214411

Available data for this site

Groundwater: Field measurements

GO

Eddy County, New Mexico

Hydrologic Unit Code 13070001

Latitude 32°09'50.0", Longitude 103°44'41.2" NAD83

Land-surface elevation 3,468.0 feet above NGVD29

This well is completed in the Azotea Tongue of Seven Rivers Formation (313AZOT) local aquifer.

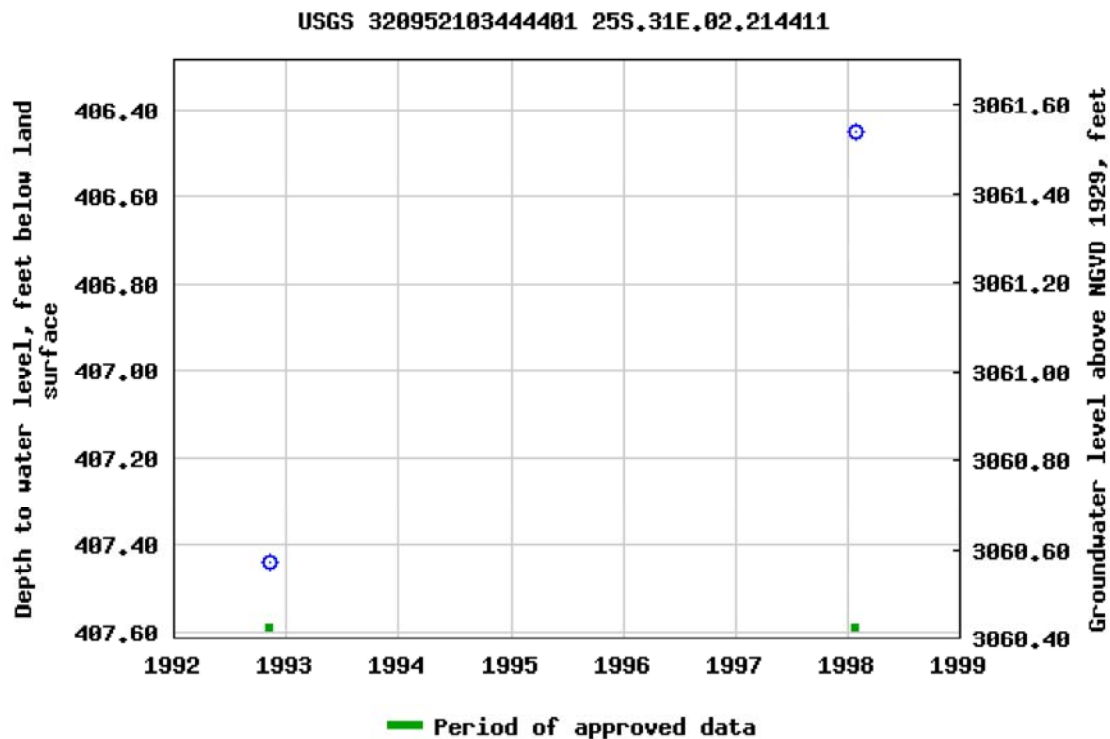
### Output formats

[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](#)

[Plug-Ins](#)

[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: 2019-07-18 15:51:15 EDT

0.95 0.9 nadww01



USGS Home  
Contact USGS  
Search USGS

## National Water Information System: Web Interface

USGS Water Resources

Data Category:


Groundwater

Geographic Area:

United States

GO

Click to hide News Bulletins

- [Introducing The Next Generation of USGS Water Data for the Nation](#)
- [Full News](#) 

Groundwater levels for the Nation

## Search Results -- 1 sites found

site\_no list =

- 321034103465501

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

## USGS 321034103465501 24S.31E.33.231113

Available data for this site

Groundwater: Field measurements

GO

Eddy County, New Mexico

Hydrologic Unit Code 13070001

Latitude 32°10'38.2", Longitude 103°46'53.0" NAD83

Land-surface elevation 3,461.00 feet above NGVD29

The depth of the well is 740 feet below land surface.

This well is completed in the Rustler Formation (312RSLR) local aquifer.

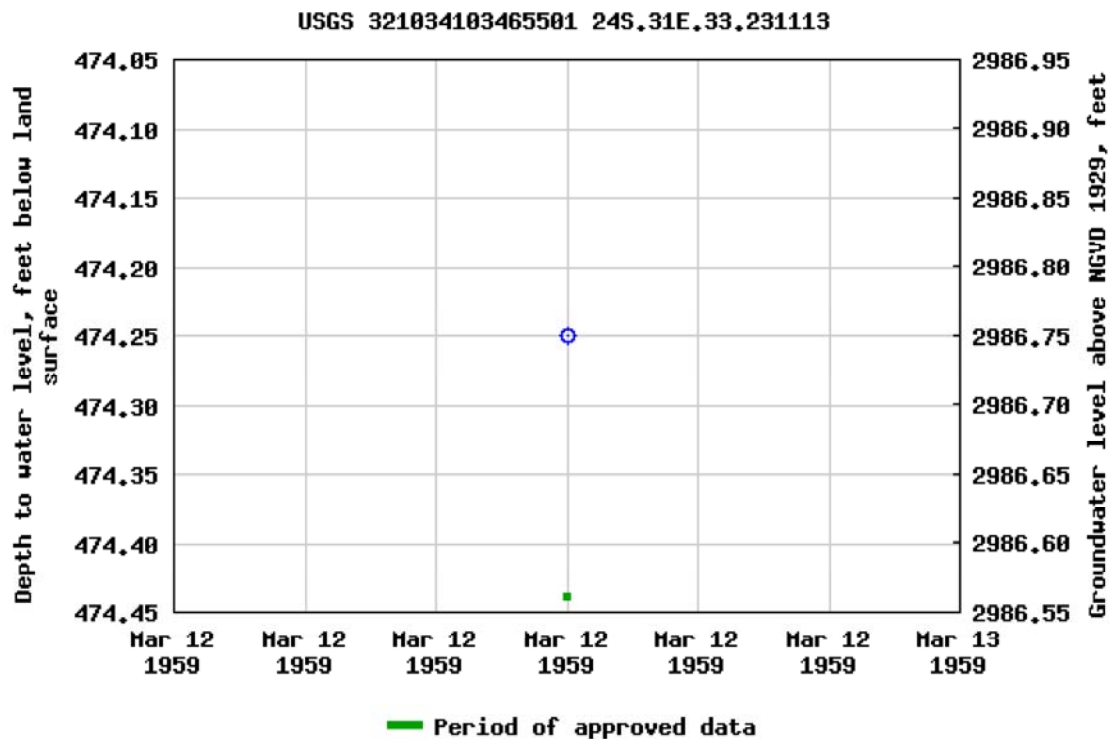
### Output formats

[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](#)

[Plug-Ins](#)

[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: 2019-07-18 17:04:24 EDT

0.95 0.89 nadww01

## **Appendix C: Laboratory Analysis**

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

---

October 09, 2019

MELODIE SANJARI

MMX

2737 PECOS HWY

CARLSBAD, NM 88220

RE: CDF 10

Enclosed are the results of analyses for samples received by the laboratory on 10/02/19 10:45.

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/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/lab_accred_certif.html).

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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

Lab Director/Quality Manager



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

**Analytical Results For:**

MMX  
2737 PECOS HWY  
CARLSBAD NM, 88220

Project: CDF 10  
Project Number: NONE GIVEN  
Project Manager: MELODIE SANJARI  
Fax To: (575) 236-6201

Reported:  
09-Oct-19 12:19

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
L 1 SURFACE	H903357-01	Soil	30-Sep-19 10:30	02-Oct-19 10:45
L 1 .5'	H903357-02	Soil	30-Sep-19 10:35	02-Oct-19 10:45
L 1 2'	H903357-03	Soil	30-Sep-19 10:45	02-Oct-19 10:45
L 2 SURFACE	H903357-04	Soil	30-Sep-19 10:55	02-Oct-19 10:45
L 2 .5'	H903357-05	Soil	30-Sep-19 11:00	02-Oct-19 10:45
L 2 2'	H903357-06	Soil	30-Sep-19 11:10	02-Oct-19 10:45

Client added TPH to sample -03 and Chloride to -03 and -06 on 10/07/19. This is the revised report and will replace the one sent on 10/04/19.

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

MMX  
2737 PECOS HWY  
CARLSBAD NM, 88220

Project: CDF 10  
Project Number: NONE GIVEN  
Project Manager: MELODIE SANJARI  
Fax To: (575) 236-6201

Reported:  
09-Oct-19 12:19

**L1 SURFACE****H903357-01 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>6160</b>		16.0	mg/kg	4	9100208	AC	03-Oct-19	4500-Cl-B	
-----------------	-------------	--	------	-------	---	---------	----	-----------	-----------	--

**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050	0.050	mg/kg	50	9100301	BF	03-Oct-19	8021B	
Toluene*	<0.050	0.050	mg/kg	50	9100301	BF	03-Oct-19	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	9100301	BF	03-Oct-19	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	9100301	BF	03-Oct-19	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	9100301	BF	03-Oct-19	8021B	

Surrogate: 4-Bromofluorobenzene (PID)	73.3 %	73.3-129	9100301	BF	03-Oct-19	8021B	
---------------------------------------	--------	----------	---------	----	-----------	-------	--

**Petroleum Hydrocarbons by GC FID****S-04**

GRO C6-C10*	<10.0	10.0	mg/kg	1	9100206	MS	02-Oct-19	8015B	
DRO >C10-C28*	2400	10.0	mg/kg	1	9100206	MS	02-Oct-19	8015B	QM-07
EXT DRO >C28-C36	732	10.0	mg/kg	1	9100206	MS	02-Oct-19	8015B	

Surrogate: 1-Chlorooctane	75.0 %	41-142	9100206	MS	02-Oct-19	8015B	
---------------------------	--------	--------	---------	----	-----------	-------	--

Surrogate: 1-Chlorooctadecane	171 %	37.6-147	9100206	MS	02-Oct-19	8015B	
-------------------------------	-------	----------	---------	----	-----------	-------	--

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

MMX  
2737 PECOS HWY  
CARLSBAD NM, 88220

Project: CDF 10  
Project Number: NONE GIVEN  
Project Manager: MELODIE SANJARI  
Fax To: (575) 236-6201

Reported:  
09-Oct-19 12:19

**L1 .5'**  
**H903357-02 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>896</b>		16.0	mg/kg	4	9100208	AC	03-Oct-19	4500-Cl-B	
-----------------	------------	--	------	-------	---	---------	----	-----------	-----------	--

**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	9100206	MS	02-Oct-19	8015B	
<b>DRO &gt;C10-C28*</b>	<b>101</b>		10.0	mg/kg	1	9100206	MS	02-Oct-19	8015B	
<b>EXT DRO &gt;C28-C36</b>	<b>21.2</b>		10.0	mg/kg	1	9100206	MS	02-Oct-19	8015B	
Surrogate: 1-Chlorooctane			79.5 %	41-142		9100206	MS	02-Oct-19	8015B	
Surrogate: 1-Chlorooctadecane			89.0 %	37.6-147		9100206	MS	02-Oct-19	8015B	

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

MMX  
2737 PECOS HWY  
CARLSBAD NM, 88220

Project: CDF 10  
Project Number: NONE GIVEN  
Project Manager: MELODIE SANJARI  
Fax To: (575) 236-6201

Reported:  
09-Oct-19 12:19

**L 1 2'**  
**H903357-03 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>96.0</b>		16.0	mg/kg	4	9100908	AC	09-Oct-19	4500-Cl-B	
-----------------	-------------	--	------	-------	---	---------	----	-----------	-----------	--

**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	9100808	MS	08-Oct-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9100808	MS	08-Oct-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9100808	MS	08-Oct-19	8015B	
Surrogate: 1-Chlorooctane			92.3 %	41-142		9100808	MS	08-Oct-19	8015B	
Surrogate: 1-Chlorooctadecane			94.6 %	37.6-147		9100808	MS	08-Oct-19	8015B	

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

MMX  
2737 PECOS HWY  
CARLSBAD NM, 88220

Project: CDF 10  
Project Number: NONE GIVEN  
Project Manager: MELODIE SANJARI  
Fax To: (575) 236-6201

Reported:  
09-Oct-19 12:19

**L 2 SURFACE****H903357-04 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>1550</b>		16.0	mg/kg	4	9100208	AC	03-Oct-19	4500-Cl-B	
-----------------	-------------	--	------	-------	---	---------	----	-----------	-----------	--

**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	9100301	BF	03-Oct-19	8021B	
Toluene*	<0.050		0.050	mg/kg	50	9100301	BF	03-Oct-19	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	9100301	BF	03-Oct-19	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	9100301	BF	03-Oct-19	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	9100301	BF	03-Oct-19	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 79.7 % 73.3-129 9100301 BF 03-Oct-19 8021B

**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	9100206	MS	02-Oct-19	8015B	
<b>DRO &gt;C10-C28*</b>	<b>459</b>		10.0	mg/kg	1	9100206	MS	02-Oct-19	8015B	
<b>EXT DRO &gt;C28-C36</b>	<b>203</b>		10.0	mg/kg	1	9100206	MS	02-Oct-19	8015B	

Surrogate: 1-Chlorooctane 88.0 % 41-142 9100206 MS 02-Oct-19 8015B

Surrogate: 1-Chlorooctadecane 115 % 37.6-147 9100206 MS 02-Oct-19 8015B

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

MMX  
2737 PECOS HWY  
CARLSBAD NM, 88220

Project: CDF 10  
Project Number: NONE GIVEN  
Project Manager: MELODIE SANJARI  
Fax To: (575) 236-6201

Reported:  
09-Oct-19 12:19

**L 2 .5'**  
**H903357-05 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>5460</b>		16.0	mg/kg	4	9100208	AC	03-Oct-19	4500-Cl-B	
-----------------	-------------	--	------	-------	---	---------	----	-----------	-----------	--

**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	9100206	MS	02-Oct-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9100206	MS	02-Oct-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9100206	MS	02-Oct-19	8015B	
Surrogate: 1-Chlorooctane			81.5 %	41-142		9100206	MS	02-Oct-19	8015B	
Surrogate: 1-Chlorooctadecane			84.4 %	37.6-147		9100206	MS	02-Oct-19	8015B	

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

MMX  
2737 PECOS HWY  
CARLSBAD NM, 88220

Project: CDF 10  
Project Number: NONE GIVEN  
Project Manager: MELODIE SANJARI  
Fax To: (575) 236-6201

Reported:  
09-Oct-19 12:19

**L 2 2'****H903357-06 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>48.0</b>		16.0	mg/kg	4	9100908	AC	09-Oct-19	4500-Cl-B	
-----------------	-------------	--	------	-------	---	---------	----	-----------	-----------	--

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

MMX  
2737 PECOS HWY  
CARLSBAD NM, 88220

Project: CDF 10  
Project Number: NONE GIVEN  
Project Manager: MELODIE SANJARI  
Fax To: (575) 236-6201

Reported:  
09-Oct-19 12:19

**Inorganic Compounds - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch 9100208 - 1:4 DI Water****Blank (9100208-BLK1)**

Prepared &amp; Analyzed: 02-Oct-19

Chloride	ND	16.0	mg/kg							
----------	----	------	-------	--	--	--	--	--	--	--

**LCS (9100208-BS1)**

Prepared &amp; Analyzed: 02-Oct-19

Chloride	416	16.0	mg/kg	400		104	80-120			
----------	-----	------	-------	-----	--	-----	--------	--	--	--

**LCS Dup (9100208-BSD1)**

Prepared &amp; Analyzed: 02-Oct-19

Chloride	416	16.0	mg/kg	400		104	80-120	0.00	20	
----------	-----	------	-------	-----	--	-----	--------	------	----	--

**Batch 9100908 - 1:4 DI Water****Blank (9100908-BLK1)**

Prepared &amp; Analyzed: 09-Oct-19

Chloride	ND	16.0	mg/kg							
----------	----	------	-------	--	--	--	--	--	--	--

**LCS (9100908-BS1)**

Prepared &amp; Analyzed: 09-Oct-19

Chloride	416	16.0	mg/kg	400		104	80-120			
----------	-----	------	-------	-----	--	-----	--------	--	--	--

**LCS Dup (9100908-BSD1)**

Prepared &amp; Analyzed: 09-Oct-19

Chloride	416	16.0	mg/kg	400		104	80-120	0.00	20	
----------	-----	------	-------	-----	--	-----	--------	------	----	--

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

MMX  
2737 PECOS HWY  
CARLSBAD NM, 88220

Project: CDF 10  
Project Number: NONE GIVEN  
Project Manager: MELODIE SANJARI  
Fax To: (575) 236-6201

Reported:  
09-Oct-19 12:19

**Volatile Organic Compounds by EPA Method 8021 - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	----------------	-----	--------------	-------

**Batch 9100301 - Volatiles****Blank (9100301-BLK1)**

Prepared &amp; Analyzed: 03-Oct-19

Benzene	ND	0.050	mg/kg						
Toluene	ND	0.050	mg/kg						
Ethylbenzene	ND	0.050	mg/kg						
Total Xylenes	ND	0.150	mg/kg						
Total BTEX	ND	0.300	mg/kg						
Surrogate: 4-Bromofluorobenzene (PID)	0.0817		mg/kg	0.100		81.7	73.3-129		

**LCS (9100301-BS1)**

Prepared &amp; Analyzed: 03-Oct-19

Benzene	1.97	0.050	mg/kg	2.00		98.5	72.2-131		
Toluene	1.90	0.050	mg/kg	2.00		94.8	71.7-126		
Ethylbenzene	1.89	0.050	mg/kg	2.00		94.7	68.9-126		
Total Xylenes	5.82	0.150	mg/kg	6.00		97.0	71.4-125		
Surrogate: 4-Bromofluorobenzene (PID)	0.0819		mg/kg	0.100		81.9	73.3-129		

**LCS Dup (9100301-BSD1)**

Prepared &amp; Analyzed: 03-Oct-19

Benzene	1.89	0.050	mg/kg	2.00		94.7	72.2-131	3.87	6.91
Toluene	1.84	0.050	mg/kg	2.00		91.9	71.7-126	3.15	7.12
Ethylbenzene	1.82	0.050	mg/kg	2.00		91.2	68.9-126	3.75	7.88
Total Xylenes	5.58	0.150	mg/kg	6.00		92.9	71.4-125	4.29	7.46
Surrogate: 4-Bromofluorobenzene (PID)	0.0801		mg/kg	0.100		80.1	73.3-129		

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

MMX  
2737 PECOS HWY  
CARLSBAD NM, 88220

Project: CDF 10  
Project Number: NONE GIVEN  
Project Manager: MELODIE SANJARI  
Fax To: (575) 236-6201

Reported:  
09-Oct-19 12:19

**Petroleum Hydrocarbons by GC FID - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	----------------	-----	--------------	-------

**Batch 9100206 - General Prep - Organics****Blank (9100206-BLK1)**

Prepared &amp; Analyzed: 02-Oct-19

GRO C6-C10	ND	10.0	mg/kg						
DRO >C10-C28	ND	10.0	mg/kg						
EXT DRO >C28-C36	ND	10.0	mg/kg						
Surrogate: 1-Chlorooctane	37.6		mg/kg	50.0		75.3	41-142		
Surrogate: 1-Chlorooctadecane	38.9		mg/kg	50.0		77.9	37.6-147		

**LCS (9100206-BS1)**

Prepared &amp; Analyzed: 02-Oct-19

GRO C6-C10	163	10.0	mg/kg	200		81.4	76.5-133		
DRO >C10-C28	154	10.0	mg/kg	200		77.2	72.9-138		
Total TPH C6-C28	317	10.0	mg/kg	400		79.3	78-132		
Surrogate: 1-Chlorooctane	38.5		mg/kg	50.0		76.9	41-142		
Surrogate: 1-Chlorooctadecane	38.9		mg/kg	50.0		77.8	37.6-147		

**LCS Dup (9100206-BS1)**

Prepared &amp; Analyzed: 02-Oct-19

GRO C6-C10	172	10.0	mg/kg	200		85.8	76.5-133	5.24	20.6
DRO >C10-C28	162	10.0	mg/kg	200		81.2	72.9-138	5.01	20.6
Total TPH C6-C28	334	10.0	mg/kg	400		83.5	78-132	5.12	18
Surrogate: 1-Chlorooctane	39.6		mg/kg	50.0		79.2	41-142		
Surrogate: 1-Chlorooctadecane	40.5		mg/kg	50.0		80.9	37.6-147		

**Batch 9100808 - General Prep - Organics****Blank (9100808-BLK1)**

Prepared &amp; Analyzed: 08-Oct-19

GRO C6-C10	ND	10.0	mg/kg						
DRO >C10-C28	ND	10.0	mg/kg						
EXT DRO >C28-C36	ND	10.0	mg/kg						
Surrogate: 1-Chlorooctane	56.3		mg/kg	50.0		113	41-142		
Surrogate: 1-Chlorooctadecane	58.1		mg/kg	50.0		116	37.6-147		

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

MMX  
2737 PECOS HWY  
CARLSBAD NM, 88220

Project: CDF 10  
Project Number: NONE GIVEN  
Project Manager: MELODIE SANJARI  
Fax To: (575) 236-6201

Reported:  
09-Oct-19 12:19

**Petroleum Hydrocarbons by GC FID - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

**Batch 9100808 - General Prep - Organics****LCS (9100808-BS1)**

Prepared &amp; Analyzed: 08-Oct-19

GRO C6-C10	216	10.0	mg/kg	200		108	76.5-133			
DRO >C10-C28	208	10.0	mg/kg	200		104	72.9-138			
Total TPH C6-C28	424	10.0	mg/kg	400		106	78-132			
Surrogate: 1-Chlorooctane	60.5		mg/kg	50.0		121	41-142			
Surrogate: 1-Chlorooctadecane	61.9		mg/kg	50.0		124	37.6-147			

**LCS Dup (9100808-BS1)**

Prepared &amp; Analyzed: 08-Oct-19

GRO C6-C10	221	10.0	mg/kg	200		111	76.5-133	2.40	20.6	
DRO >C10-C28	210	10.0	mg/kg	200		105	72.9-138	1.31	20.6	
Total TPH C6-C28	432	10.0	mg/kg	400		108	78-132	1.86	18	
Surrogate: 1-Chlorooctane	62.2		mg/kg	50.0		124	41-142			
Surrogate: 1-Chlorooctadecane	62.9		mg/kg	50.0		126	37.6-147			

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager

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

---

### Notes and Definitions

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

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

A handwritten signature in cursive script, appearing to read "Celey D. Keene", written in black ink.

---

Celey D. Keene, Lab Director/Quality Manager

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

Company Name:				<b>BILL TO</b>				ANALYSIS REQUEST					
Project Manager: <u>Melodic Sanjar</u>				P.O. #:									
Address:				Company: <u>MMX</u>									
City:		State:		Zip:		Attn: <u>Lupe Carrasco</u>							
Phone #:		Fax #:		Address:									
Project #:		Project Owner:		City:									
Project Name: <u>Easton Brass Fed to CDF10</u>				State:		Zip:							
Project Location:				Phone #:									
Sampler Name: <u>MRS</u>				Fax #:									
FOR LAB USE ONLY				MATRIX		PRESERV		SAMPLING					
Lab I.D.				(G)RAB OR (C)OMP.		# CONTAINERS		GROUNDWATER		DATE		TIME	
								WASTEWATER					
Sample I.D.								SOIL					
								OIL					
								SLUDGE					
								OTHER :					
								ACID/BASE:					
								ICE / COOL					
								OTHER :					
14903357				1 LI SURF				9/30 10:30		✓		TPH	
2 LI .5								9/30 10:35		✓		CI	
3 LI 2								9/30 10:45		Hold		BTEX	
4 LI SURF								9/30 10:55		✓		X	
5 LI .5								9/30 11:00		✓		X	
6 LI 2								9/30 11:10		Hold		X	

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:		Date: <u>10-2-19</u>		Received By: <u>[Signature]</u>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:	
Relinquished By:		Time: <u>10:45</u>		Received By: <u>[Signature]</u>		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:	
Delivered By: (Circle One) <u>2.3c</u>		Cool <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		CHECKED BY: <u>[Signature]</u>			
Sampler - UPS - Bus - Other: <u>Connected 2.7c</u>						REMARKS: email results to melodic.sanjar@undermiller.com			



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

December 09, 2019

Ashley Maxwell  
Souder, Miller & Associates  
201 S Halagueno  
Carlsbad, NM 88221  
TEL:  
FAX

RE: CDU 10 Fed

OrderNo.: 1912059

Dear Ashley Maxwell:

Hall Environmental Analysis Laboratory received 4 sample(s) on 12/3/2019 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](http://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,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order 1912059

Date Reported: 12/9/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH 1

Project: CDU 10 Fed

Collection Date: 12/2/2019 6:30:00 AM

Lab ID: 1912059-001

Matrix: SOIL

Received Date: 12/3/2019 9:23:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	270	60		mg/Kg	20	12/6/2019 9:40:54 AM	49195
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	12/5/2019 1:26:52 PM	49139
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/5/2019 1:26:52 PM	49139
Surr: DNOP	125	70-130		%Rec	1	12/5/2019 1:26:52 PM	49139
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/4/2019 1:03:11 PM	49121
Surr: BFB	86.8	77.4-118		%Rec	1	12/4/2019 1:03:11 PM	49121
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	12/4/2019 1:03:11 PM	49121
Toluene	ND	0.049		mg/Kg	1	12/4/2019 1:03:11 PM	49121
Ethylbenzene	ND	0.049		mg/Kg	1	12/4/2019 1:03:11 PM	49121
Xylenes, Total	ND	0.098		mg/Kg	1	12/4/2019 1:03:11 PM	49121
Surr: 4-Bromofluorobenzene	99.6	80-120		%Rec	1	12/4/2019 1:03:11 PM	49121

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order 1912059

Date Reported: 12/9/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: BH 2

Project: CDU 10 Fed

Collection Date: 12/2/2019 6:00:00 AM

Lab ID: 1912059-002

Matrix: SOIL

Received Date: 12/3/2019 9:23:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	100	60		mg/Kg	20	12/6/2019 10:17:57 AM	49195
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	ND	8.5		mg/Kg	1	12/5/2019 1:51:08 PM	49139
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	12/5/2019 1:51:08 PM	49139
Surr: DNOP	112	70-130		%Rec	1	12/5/2019 1:51:08 PM	49139
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/4/2019 2:14:11 PM	49121
Surr: BFB	79.8	77.4-118		%Rec	1	12/4/2019 2:14:11 PM	49121
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	12/4/2019 2:14:11 PM	49121
Toluene	ND	0.049		mg/Kg	1	12/4/2019 2:14:11 PM	49121
Ethylbenzene	ND	0.049		mg/Kg	1	12/4/2019 2:14:11 PM	49121
Xylenes, Total	ND	0.098		mg/Kg	1	12/4/2019 2:14:11 PM	49121
Surr: 4-Bromofluorobenzene	91.7	80-120		%Rec	1	12/4/2019 2:14:11 PM	49121

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



## Analytical Report

Lab Order 1912059

Date Reported: 12/9/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: SW 1

Project: CDU 10 Fed

Collection Date: 12/2/2019 6:15:00 AM

Lab ID: 1912059-003

Matrix: SOIL

Received Date: 12/3/2019 9:23:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	250	60		mg/Kg	20	12/6/2019 2:13:00 PM	49195
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	37	9.7		mg/Kg	1	12/5/2019 2:15:23 PM	49139
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/5/2019 2:15:23 PM	49139
Surr: DNOP	129	70-130		%Rec	1	12/5/2019 2:15:23 PM	49139
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/4/2019 3:24:34 PM	49121
Surr: BFB	91.7	77.4-118		%Rec	1	12/4/2019 3:24:34 PM	49121
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	12/4/2019 3:24:34 PM	49121
Toluene	ND	0.048		mg/Kg	1	12/4/2019 3:24:34 PM	49121
Ethylbenzene	ND	0.048		mg/Kg	1	12/4/2019 3:24:34 PM	49121
Xylenes, Total	ND	0.096		mg/Kg	1	12/4/2019 3:24:34 PM	49121
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	12/4/2019 3:24:34 PM	49121

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		



## Analytical Report

Lab Order 1912059

Date Reported: 12/9/2019

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: SW 2

Project: CDU 10 Fed

Collection Date: 12/2/2019 7:00:00 AM

Lab ID: 1912059-004

Matrix: SOIL

Received Date: 12/3/2019 9:23:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	1900	61		mg/Kg	20	12/6/2019 2:25:21 PM	49195
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	12/5/2019 2:39:38 PM	49139
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	12/5/2019 2:39:38 PM	49139
Surr: DNOP	150	70-130	S	%Rec	1	12/5/2019 2:39:38 PM	49139
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	12/4/2019 3:48:04 PM	49121
Surr: BFB	85.8	77.4-118		%Rec	1	12/4/2019 3:48:04 PM	49121
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	12/4/2019 3:48:04 PM	49121
Toluene	ND	0.046		mg/Kg	1	12/4/2019 3:48:04 PM	49121
Ethylbenzene	ND	0.046		mg/Kg	1	12/4/2019 3:48:04 PM	49121
Xylenes, Total	ND	0.093		mg/Kg	1	12/4/2019 3:48:04 PM	49121
Surr: 4-Bromofluorobenzene	98.0	80-120		%Rec	1	12/4/2019 3:48:04 PM	49121

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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

WO#: 1912059

09-Dec-19

**Client:** Souder, Miller & Associates**Project:** CDU 10 Fed

Sample ID: <b>MB-49195</b>	SampType: <b>mbk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>49195</b>	RunNo: <b>65000</b>								
Prep Date: <b>12/6/2019</b>	Analysis Date: <b>12/6/2019</b>	SeqNo: <b>2230260</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-49195</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>49195</b>	RunNo: <b>65000</b>								
Prep Date: <b>12/6/2019</b>	Analysis Date: <b>12/6/2019</b>	SeqNo: <b>2230261</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.0	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 Quantitative 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#: 1912059

09-Dec-19

**Client:** Souder, Miller & Associates**Project:** CDU 10 Fed

Sample ID: <b>MB-49139</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>49139</b>	RunNo: <b>64962</b>								
Prep Date: <b>12/4/2019</b>	Analysis Date: <b>12/5/2019</b>	SeqNo: <b>2227843</b>	Units: <b>mg/Kg</b>							
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	13		10.00		128	70	130			

Sample ID: <b>LCS-49139</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>49139</b>	RunNo: <b>64962</b>								
Prep Date: <b>12/4/2019</b>	Analysis Date: <b>12/5/2019</b>	SeqNo: <b>2227881</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	108	63.9	124			
Surr: DNOP	5.4		5.000		108	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 Quantitative 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#: 1912059

09-Dec-19

**Client:** Souder, Miller & Associates**Project:** CDU 10 Fed

Sample ID: <b>mb-49121</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>49121</b>	RunNo: <b>64923</b>								
Prep Date: <b>12/3/2019</b>	Analysis Date: <b>12/4/2019</b>	SeqNo: <b>2227078</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	810		1000		81.4	77.4	118			

Sample ID: <b>lcs-49121</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>49121</b>	RunNo: <b>64923</b>								
Prep Date: <b>12/3/2019</b>	Analysis Date: <b>12/4/2019</b>	SeqNo: <b>2227079</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	95.2	80	120			
Surr: BFB	1000		1000		101	77.4	118			

Sample ID: <b>1912059-001ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>BH 1</b>	Batch ID: <b>49121</b>	RunNo: <b>64923</b>								
Prep Date: <b>12/3/2019</b>	Analysis Date: <b>12/4/2019</b>	SeqNo: <b>2227083</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.6	22.98	0	93.2	69.1	142			
Surr: BFB	880		919.1		95.6	77.4	118			

Sample ID: <b>1912059-001amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>BH 1</b>	Batch ID: <b>49121</b>	RunNo: <b>64923</b>								
Prep Date: <b>12/3/2019</b>	Analysis Date: <b>12/4/2019</b>	SeqNo: <b>2227084</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.6	22.81	0	102	69.1	142	8.56	20	
Surr: BFB	950		912.4		104	77.4	118	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 Quantitative 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#: 1912059

09-Dec-19

**Client:** Souder, Miller & Associates**Project:** CDU 10 Fed

Sample ID: <b>mb-49121</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>49121</b>	RunNo: <b>64923</b>								
Prep Date: <b>12/3/2019</b>	Analysis Date: <b>12/4/2019</b>	SeqNo: <b>2227102</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.95		1.000		94.8	80	120			

Sample ID: <b>LCS-49121</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>49121</b>	RunNo: <b>64923</b>								
Prep Date: <b>12/3/2019</b>	Analysis Date: <b>12/4/2019</b>	SeqNo: <b>2227103</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	91.3	80	120			
Toluene	0.94	0.050	1.000	0	93.6	80	120			
Ethylbenzene	0.94	0.050	1.000	0	93.8	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.7	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID: <b>1912059-002ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>BH 2</b>	Batch ID: <b>49121</b>	RunNo: <b>64923</b>								
Prep Date: <b>12/3/2019</b>	Analysis Date: <b>12/4/2019</b>	SeqNo: <b>2227110</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.024	0.9681	0	98.1	76	123			
Toluene	0.99	0.048	0.9681	0.01171	101	80.3	127			
Ethylbenzene	1.0	0.048	0.9681	0	103	80.2	131			
Xylenes, Total	3.0	0.097	2.904	0.01654	103	78	133			
Surr: 4-Bromofluorobenzene	0.99		0.9681		102	80	120			

Sample ID: <b>1912059-002amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>BH 2</b>	Batch ID: <b>49121</b>	RunNo: <b>64923</b>								
Prep Date: <b>12/3/2019</b>	Analysis Date: <b>12/4/2019</b>	SeqNo: <b>2227111</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.024	0.9615	0	97.2	76	123	1.62	20	
Toluene	0.98	0.048	0.9615	0.01171	100	80.3	127	1.21	20	
Ethylbenzene	0.99	0.048	0.9615	0	102	80.2	131	1.03	20	
Xylenes, Total	3.0	0.096	2.885	0.01654	104	78	133	0.101	20	
Surr: 4-Bromofluorobenzene	0.96		0.9615		100	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 Quantitative 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  
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: SMA-CARLSBAD

Work Order Number: 1912059

RcptNo: 1

Received By: Yazmine Garduno 12/3/2019 9:23:00 AM

Completed By: Desiree Dominguez 12/3/2019 9:55:32 AM

Reviewed By: YG 12/3/19

### Chain of Custody

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

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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? Yes ☒ No ☐

(Note discrepancies on chain of custody)

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? Yes ☒ No ☐

(If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH:

(&lt;2 or &gt;12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: ENM 12/3/19

### Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.4	Good	Not Present			

## Chain-of-Custody Record

Client:

SWA - Canstad

Mailing Address:

Turn-Around Time:

☐ Standard☒ Rush

5 day

Project Name:

CDU 10 Fed

Project #:

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC☐ Other☐ EDD (Type)

Project Manager:

Ashley Maxwell

Sampler:

PWS

On Ice:

☒ Yes☐ No

# of Coolers:

Cooler Temp (including CF):

44 (2) 44 (2)

Date

Time

Matrix

Sample Name

12/2

6:30

SW1

Bt1

Container Type and #

902

Preservative Type

HEAL No:

1912059

Cooler Temp (including CF):

44 (2) 44 (2)

BTX / MTBE / TMB's (8021)

TFH:8015D(GRO / DRO / MRO)

8081 Pesticides/8082 PCB's

EDB (Method 504.1)

PAHs by 8310 or 8270SIMS

RCRA 8 Metals

8260 (VOA)

8270 (Semi-VOA)

Total Coliform (Present/Absent)

Date:

Time:

Relinquished by:

Received by:

Via:

Date:

Time:

Remarks:

direct bill to max

email results to

mloody.sawain@sondermiller.com

ashley-maxwell@sondermiller.com

## **Appendix D: Liner Inspection & Excavation Photo Logs**



Photo of excavation facing northeast



9/30/2019 Liner Inspection Photo Log







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

State of New Mexico  
Energy Minerals and Natural  
Resources Department

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

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

Incident ID	NAB1803749983
District RP	2RP-4604
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?	>100 (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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

## Oil Conservation Division

Incident ID	NAB1803749983
District RP	2RP-4604
Facility ID	
Application ID	

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.

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: Amanda Davis Title: EHS Professional

Signature: Amanda Davis Date: \_\_\_\_\_

email: Amanda.Davis@dvn.com Telephone: 575-748-0176

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_



Incident ID	NAB1803749983
District RP	2RP-4604
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: Amanda Davis Title: EHS Professional

Signature: Amanda Davis Date: \_\_\_\_\_

email: Amanda.Davis@dvsn.com Telephone: 575-748-0176

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

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

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	NAB1803749983
District RP	2RP-4604
Facility ID	
Application ID	

## Closure

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

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

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ 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)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ 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: Amanda Davis Title: EHS Professional

Signature: Amanda Davis Date: \_\_\_\_\_

email: Amanda.Davis@dmv.com Telephone: 575-748-0176

**OCD Only**

Received by: Victoria Venegas Date: 04/28/2020

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: CLOSURE DENIED Date: 06/05/2020

Printed Name: Victoria Venegas Title: Engineering Tech. III

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

State of New Mexico  
Energy Minerals and Natural  
Resources Department

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

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

Incident ID	NAB1916435152
District RP	2RP-5481
Facility ID	
Application ID	pAB1916434865

## 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?	>100 (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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



## Oil Conservation Division

Incident ID	NAB1916435152
District RP	2RP-5481
Facility ID	
Application ID	pAB1916434865

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.

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: Amanda Davis Title: EHS Professional

Signature: Amanda Davis Date: \_\_\_\_\_

email: Amanda.Davis@dvn.com Telephone: 575-748-0176

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	NAB1916435152
District RP	2RP-5481
Facility ID	
Application ID	pAB1916434865

## 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: Amanda Davis Title: EHS Professional

Signature: Amanda Davis Date: \_\_\_\_\_

email: Amanda.Davis@dvn.com Telephone: 575-748-0176

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

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

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	NAB1916435152
District RP	2RP-5481
Facility ID	
Application ID	pAB1916434865

## 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.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ 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)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ 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: Amanda Davis Title: EHS Professional

Signature: Amanda Davis Date: \_\_\_\_\_

email: Amanda.Davis@dvn.com Telephone: 575-748-0176

**OCD Only**

Received by: Victoria Venegas Date: 04/28/2020

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: CLOSURE DENIED Date: 06/05/2020

Printed Name: Victoria Venegas Title: Engineering Tech. III