



March 17, 2015

**RECEIVED**

By OCD; Dr. Oberding at 9:58 am, Mar 18, 2015

Ms. Stacie Singleton  
**Devon Energy Corporation**

6488 Seven Rivers Hwy.  
Artesia, NM 88210

AMARILLO  
921 North Bivins  
Amarillo, Texas 79107  
Phone 806.467.0607  
Fax 806.467.0622

Subject: **Soil Assessment and Remediation Work Plan**

Devon Energy Corporation  
Monk 21 State Com #1H  
API # 30-025-40986

**APPROVED**

By OCD; Dr. Oberding at 10:28 am, Mar 18, 2015

ARTESIA  
408 West Texas Ave.  
Artesia, New Mexico 88210  
Phone 575.746.8768  
Fax 575.746.8905

Dear Ms. Singleton

HOBBS  
318 East Taylor Street  
Hobbs, New Mexico 88240  
Phone 575.393.4261  
Fax 575.393.4658

Crossfire, LLC (Crossfire) has contracted Talon/LPE (Talon) to perform soil assessment and remediation services at the above referenced location. The results of our soil assessment and proposed remediation activities consist of the following.

**Incident Date**

March 2, 2015

MIDLAND  
2901 State Hwy 349  
Midland, Texas 79706  
Phone 432.522.2133  
Fax 432.522.2180

**Background Information**

OKLAHOMA CITY  
7700 North Hudson Avenue  
Suite 10  
Oklahoma City, Oklahoma 73116  
Phone 405.486.7030  
Fax 806.467.0622

The Devon Energy Monk 21 St. Com #1H is located approximately thirty-seven (37) miles southwest of Hobbs, New Mexico. The legal location for this site is Unit Letter D, of Section 21, Township 21 South and Range 34 East in Lea County, New Mexico. More specifically the latitude and longitude for the release are 32.47069399 North and -103.4818853 West. See site plan in [Appendix I](#).

SAN ANTONIO  
13111 Lookout Way  
San Antonio, Texas 78233  
Phone 210.265.8025  
Fax 210.568.2191

According to the soil survey provided by the United States Department of Agriculture Natural Resources Conservation Service, the soil in this area is made up of Kimbrough gravelly loam with 0 to 3 percent slopes. Per the New Mexico bureau of Geology and Mineral Resources, the local surface and shallow geology is comprised of lower Pliocene to middle Miocene Ogallala formation. Drainage courses in this area are normally dry. Ground water in the project vicinity is approximately 140-feet below ground surface (bgs), According to the New Mexico Office of the State Engineer. See [Appendix II](#) for the referenced groundwater data.

The ranking for this site is **0** based on the following:

Depth to ground water	>100'
Wellhead protection area	>1000'
Distance to surface water body	>1000'

ENVIRONMENTAL CONSULTING  
ENGINEERING  
DRILLING  
CONSTRUCTION  
SPILL MANAGEMENT  
GENERAL CONTRACTING

## Incident Description

While installing a new valve on a heater treater construction personnel working for Crossfire inadvertently caused the release of approximately 15bbls of produced water on the Devon Energy location. A vacuum truck was already on site working on another portion of the project when the release occurred. The vacuum truck immediately responded recovering approximately 7bbls of produced water from the location. Crews then utilized equipment on site to scrape up the heavily impacted soil and gravel on the surface of the location.

Talon mobilized personnel to perform a site assessment and soil sampling within the impacted area. Due to the rockiness of the material used to construct the well pad, refusal was encountered with a hand auger at a depth of 0.5-feet bgs [See Table 1](#). All soil samples were collected by Talon personnel wearing clean nitrile gloves. The soil samples were placed in laboratory provided sample containers, iced and transported to Cardinal Laboratories in Hobbs, New Mexico for analysis. The samples were tested for TPH (Total Petroleum Hydrocarbons) using EPA Method 8015M, and volatile organics (BTEX) using EPA Method 8021B. The chloride samples were analyzed per Method SM4500Cl-B.

## Laboratory Results

See [Appendix III](#) for complete report of laboratory results.

March 5, 2015

[Table 1](#)

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO
S-1	0	ND	560	ND	ND
S-1	0.5	--	4400	--	--
S-2	0	ND	1220	ND	ND
S-2	0.5	--	3640	--	--

(--) Analyte Not Tested

(ND) Analyte Not Detected

Based upon the site ranking of **0**, NMOCD Recommended Remedial Action Levels (RRAL) are 50 mg/kg for BTEX, 10 mg/kg for Benzene, and 5,000 mg/kg for TPH.

## Proposed Remedial Actions

- The impacted area will initially be excavated to a depth of 1-foot bgs. Field chloride titrations will then be used to guide the vertical extent of the excavation.
- Once field results indicate the impacted soil above NMOCD RRAL's for chlorides has been successfully removed confirmation soil samples will be taken at sample locations S-1 and S-2 and analyzed at the lab for total chlorides.
- All of the excavated material will be hauled to an NMOCD approved solid waste disposal facility.
- NMOCD will be presented with the analytical results from the confirmation sampling. Upon regulatory approval from NMOCD the excavated area will be backfilled with caliche and contoured to match the surrounding location.

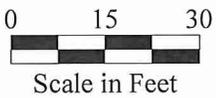
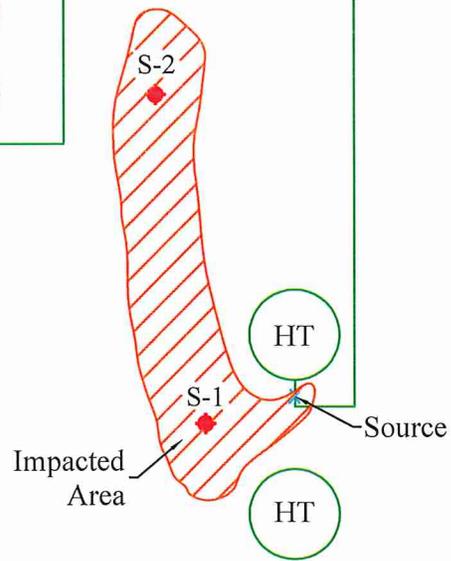
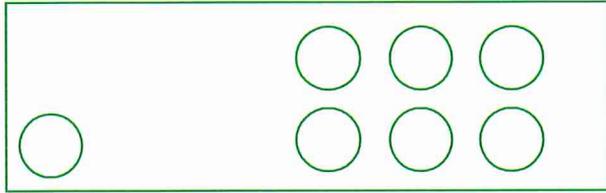
Should you have any questions or if further information is required, please do not hesitate to contact our office at (575)-746-8768.

Respectfully submitted,

  
Sheldon Hitchcock  
Project Manager

  
David J. Adkins  
District Manager

# SITE PLAN



Legend  
◆ - Sample Location



Date: 03/09/2015  
Scale: 1" = 30'  
Drawn By: TJS

Monk 21 St Com #1H  
Crossfire, LLC  
Lea County, New Mexico  
Figure 1 - Site Plan

**GROUNDWATER DATA**  
**INITIAL C-141**



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

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

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

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

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

(In feet)

POD Number	POD Sub-Code	basin	County	Q 6	Q 4	Q 16	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
<a href="#">CP 01091 POD1</a>			LE	3	3	2	28	21S	34E	643447	3591434	2210	200	140	60
<a href="#">CP 01067 POD1</a>			LE	1	3	4	28	21S	34E	643448	3591342	2298	210	140	70

Average Depth to Water: **140 feet**

Minimum Depth: **140 feet**

Maximum Depth: **140 feet**

**Record Count: 2**

**Basin/County Search:**

**County:** Lea

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

**Easting (X):** 642725

**Northing (Y):** 3593524

**Radius:** 2400

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.

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

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

Form C-141  
Revised August 8, 2011

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

### Release Notification and Corrective Action

#### OPERATOR

Initial Report  Final Report

Name of Company <b>Devon Energy</b>	Contact <b>Tom Pettyjohn</b>
Address <b>PO Box 250 Artesia, NM 88211</b>	Telephone No. <b>575- 748-3371</b>
Facility Name <b>Monk 21 State #1H</b>	Facility Type <b>Oil</b>

Surface Owner <b>State</b>	Mineral Owner <b>State</b>	API No. <b>3002540986</b>
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#### LOCATION OF RELEASE

Unit Letter <b>D</b>	Section <b>21</b>	Township <b>21S</b>	Range <b>34E</b>	Feet from the <b>330</b>	North/South Line <b>N</b>	Feet from the <b>460</b>	East/West Line <b>W</b>	County <b>LEA</b>
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Latitude: 32.47071 N Longitude: 103.48195 W

#### NATURE OF RELEASE

Type of Release <b>Brine Water</b>	Volume of Release <b>15 BBLs</b>	Volume Recovered <b>3BBLs</b>
Source of Release <b>Heater Treater</b>	Date and Hour of Occurrence <b>03/03/2015 9:27 AM</b>	Date and Hour of Discovery <b>03/03/2015 9:27 AM</b>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <b>Tomas Oberding at OCD</b>	
By Whom? <b>Tom Pettyjohn</b>	Date and Hour <b>03/03/2015 10:30 AM</b>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

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

Describe Cause of Problem and Remedial Action Taken.\*

**Victaulic clamp was removed from valve releasing brine water all brine water in container was released.**

Describe Area Affected and Cleanup Action Taken.\*

**The lease pad (120' by 120') was affected the cleanup will be done by 3<sup>rd</sup> party.**

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: <i>Nicole Wedman</i>		
Printed Name: <b>Nicole Wedman</b>	Approved by Environmental Specialist:	
Title: <b>Field Admin Support</b>	Approval Date:	Expiration Date:
E-mail Address: <b>Nicole.Wedman@dvn.com</b>	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <b>3.10.15</b> Phone: <b>575-748-1820</b>		

\* Attach Additional Sheets If Necessary

# LABORATORY RESULTS

March 05, 2015

SHELDON HITCHCOCK

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: MONK 21 STATE COM #1

Enclosed are the results of analyses for samples received by the laboratory on 03/04/15 14:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 TALON LPE  
 SHELDON HITCHCOCK  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210  
 Fax To: (575) 745-8905

Received:	03/04/2015	Sampling Date:	03/04/2015
Reported:	03/05/2015	Sampling Type:	Soil
Project Name:	MONK 21 STATE COM #1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: S-1 0' (H500606-01)**

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/05/2015	ND	1.55	77.6	2.00	10.8		
Toluene*	<0.050	0.050	03/05/2015	ND	1.37	68.4	2.00	10.5		
Ethylbenzene*	<0.050	0.050	03/05/2015	ND	1.50	75.2	2.00	12.1		
Total Xylenes*	<0.150	0.150	03/05/2015	ND	3.88	64.6	6.00	13.4		
Total BTEX	<0.300	0.300	03/05/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 78.2 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	560	16.0	03/05/2015	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	03/05/2015	ND	191	95.6	200	0.733		
DRO >C10-C28	<10.0	10.0	03/05/2015	ND	205	103	200	4.15		

Surrogate: 1-Chlorooctane 88.0 % 47.2-157

Surrogate: 1-Chlorooctadecane 88.2 % 52.1-176

**Sample ID: S-1 0.5' (H500606-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4400	16.0	03/05/2015	ND	416	104	400	3.92		

Cardinal Laboratories

\*—Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 TALON LPE  
 SHELDON HITCHCOCK  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210  
 Fax To: (575) 745-8905

Received:	03/04/2015	Sampling Date:	03/04/2015
Reported:	03/05/2015	Sampling Type:	Soil
Project Name:	MONK 21 STATE COM #1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: S-2 0' (H500606-03)**

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/05/2015	ND	1.55	77.6	2.00	10.8		
Toluene*	<0.050	0.050	03/05/2015	ND	1.37	68.4	2.00	10.5		
Ethylbenzene*	<0.050	0.050	03/05/2015	ND	1.50	75.2	2.00	12.1		
Total Xylenes*	<0.150	0.150	03/05/2015	ND	3.88	64.6	6.00	13.4		
Total BTEX	<0.300	0.300	03/05/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 77.2 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1220	16.0	03/05/2015	ND	400	100	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	03/05/2015	ND	191	95.6	200	0.733		
DRO >C10-C28	<10.0	10.0	03/05/2015	ND	205	103	200	4.15		

Surrogate: 1-Chlorooctane 88.9 % 47.2-157

Surrogate: 1-Chlorooctadecane 95.8 % 52.1-176

**Sample ID: S-2 0.5' (H500606-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3640	16.0	03/05/2015	ND	400	100	400	0.00		

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\*—Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

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

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

