

**RECEIVED**

*By Kellie Jones at 8:23 am, Jan 26, 2016*

**APPROVED**

*By Kellie Jones at 8:23 am, Jan 26, 2016*



## **Bone Springs Water Flood Central Facility**

**BLM #NMNM 88523X**

**Lea County, NM**

### **Closure Report**

Release Date: July 20, 2015

**January 25, 2016**

Prepared by:

Zack Thomas

Environmental Representative

Mewbourne Oil Company

701 S. Cecil

Hobbs, NM 88240

Kellie Jones  
Environmental Specialist, District 1  
Oil Conservation Division, EMNRD  
E-Mail: Kellie.Jones@state.nm.us

**RE: Bone Springs Water Flood Facility                      Remediation Closure Report**

Kellie,

Mewbourne has retained Blade Services to address environmental issues for the site detailed herein.

The site is located southwest of Maljamar, NM, in Lea County. The spill was the result of a lightning strike that burned three tanks and some surrounding equipment.

**Site Assessment**

On August 6, 2015 and August 14, 2015, DFSI personnel obtained 10 surface and BGS (below ground surface) samples of the leak area. Each sample was tested for chloride levels as well as BTEX. The BTEX samples were performed using a Mini Rae Photoionization Detector (PID). All the clean field samples found under the BLM/NMOCD standards were taken to lab for confirmation. Those results are attached.

DFSI conducted a groundwater study of the area and has determined that according to the New Mexico Office of the State Engineer the average depth to groundwater for this area is 550 foot below ground surface. Therefore, no eminent danger of groundwater impact or threat to life is anticipated.

**Conclusion**

After careful review DFSI proposed the following:

Remove the contaminated soil in the area of SP #1 to 6" BGS. In the area of SP #2, excavate to 1' BGS. In the areas of SP #4, #5, #9, and #10, we removed 2' BGS. The contaminated soil in the area of SP #3 was excavated to 4' BGS. The areas of

SP #7 and SP# 8 were excavated to 4' BGS, and a 20 mil liner will be installed in the area of SP #8. We further delineated SP #6 and excavated 2' BGS.

Before backfill, bottom hole samples were taken to ensure all contaminants have been remediated and are attached. These samples were taken to an approved lab for confirmation before backfilling. Upon approval of this plan the areas will be backfilled with fresh caliche on location and like topsoil in the pasture area. The pasture area will be seeded with a BLM approved seed mix. All contaminated materials were hauled to an approved NM state disposal.

Please feel free to contact me with any questions concerning this remediation closure request.

Sincerely,

A handwritten signature in cursive script, appearing to read "Z. Thomas".

Zack Thomas  
Environmental Representative  
Mewbourne Oil Company  
701 S. Cecil  
Hobbs, NM 88240  
Office: (575) 393-5905  
Mobile: (575) 602-2188  
Fax: (575) 393-7259  
Email: [zthomas@mewbourne.com](mailto:zthomas@mewbourne.com)

# Site Diagram

**Mewbourne, Bone Springs  
Waterflood Central Facility**  
Lea County, NM  
Drafted By: Lance Crenshaw, 8-10-15

0 0.004 0.008 0.016 Miles

## Legend

### Misc\_points

#### Types

- ⚡ Electrical Box
- ⚡ Power Pole
- ⬢ Headers
- ⬢ Injection
- ⬢ Pumpjacks
- ⬢ Tanks
- ⬢ Valves
- ⬢ Other
- ⬢ Soil Bores
- ⬢ sample\_pts
- ☆ Source

### Pipeline

#### Type

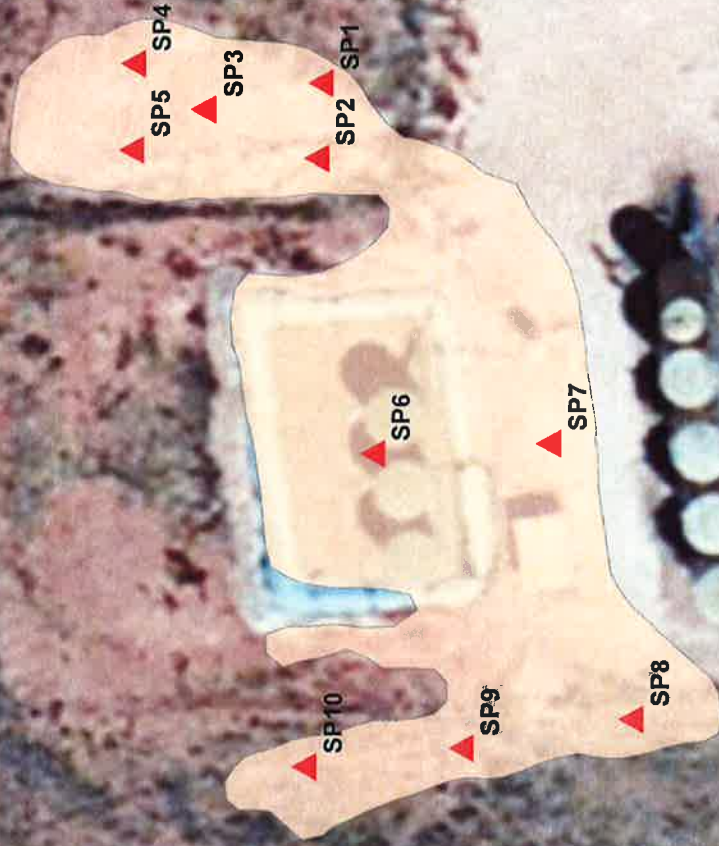
- Above Ground Line
- Buried Line

### Spill

- <all other values>

### Spill\_Media

- Oil and Produced H2O
- Oil
- Other
- Produced Water



Lance Crenshaw  
GIS Technician

Soil Remediation and Ground Water Remediation  
Environmental Assessments  
Regulatory Compliance



**DFSI**

**Environmental Services**

Office: 575-964-8394  
Fax: 575-964-8396

Cell: 575-441-2359  
Email: lcrenshaw@diversifiedfsi.com

Source: Esri, DigitalGlobe, GeoEye, i-cub  
swisstopo, and the GIS User Community

Company Name: Mewbourne SP Date: 9/18/2015

Location Name: Water Flood Rel Date:

SP Date: \_\_\_\_\_  
Rel Date: \_\_\_\_\_

Mewbourne  
Water Flood

**Company Name:**  
**Location Name:**

[illegible]

Lab Confirmation Sample	Yellow
Field Sampling	Green
Needs Delineation and confirmation samples	Red

[illegible]

Lab Confirmation Sample	
Field Sampling	
Needs Delineation and confirmation samples	



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

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September 28, 2015

ZACK THOMAS  
MEWBOURNE OIL COMPANY  
P. O. BOX 5270  
HOBBS, NM 88240

RE: BONE SPRINGS WATERFLOOD CENTRAL FACILITY

Enclosed are the results of analyses for samples received by the laboratory on 09/21/15 16:12.

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:**

MEWBOURNE OIL COMPANY  
ZACK THOMAS  
P. O. BOX 5270  
HOBBS NM, 88240  
Fax To: (575) 937-6252

Received:	09/21/2015	Sampling Date:	09/21/2015
Reported:	09/28/2015	Sampling Type:	Soil
Project Name:	BONE SPRINGS WATERFLOOD CENTRAL	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP 1 @ 1' (H502483-01)**

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	09/23/2015	ND	1.86	93.1	2.00	11.4	
Toluene*	<0.050	0.050	09/23/2015	ND	1.62	80.9	2.00	11.5	
Ethylbenzene*	<0.050	0.050	09/23/2015	ND	1.52	76.2	2.00	11.8	
Total Xylenes*	<0.150	0.150	09/23/2015	ND	4.77	79.5	6.00	10.8	
Total BTEX	<0.300	0.300	09/23/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 105 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	09/23/2015	ND	416	104	400	3.77	

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	09/24/2015	ND	174	87.1	200	3.66	
DRO >C10-C28	<10.0	10.0	09/24/2015	ND	192	95.8	200	6.90	

Surrogate: 1-Chlorooctane 66.8 % 47.2-157

Surrogate: 1-Chlorooctadecane 74.7 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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 P. O. BOX 5270  
 HOBBS NM, 88240  
 Fax To: (575) 937-6252

Received:	09/21/2015	Sampling Date:	09/21/2015
Reported:	09/28/2015	Sampling Type:	Soil
Project Name:	BONE SPRINGS WATERFLOOD CENTRAL	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP 2 @ 2' (H502483-02)**

BTEX 8021B			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2015	ND	1.86	93.1	2.00	11.4	
Toluene*	<0.050	0.050	09/23/2015	ND	1.62	80.9	2.00	11.5	
Ethylbenzene*	<0.050	0.050	09/23/2015	ND	1.52	76.2	2.00	11.8	
Total Xylenes*	<0.150	0.150	09/23/2015	ND	4.77	79.5	6.00	10.8	
Total BTEX	<0.300	0.300	09/23/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 106 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	448	16.0	09/23/2015	ND	416	104	400	3.77	

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	09/24/2015	ND	174	87.1	200	3.66	
DRO >C10-C28	<10.0	10.0	09/24/2015	ND	192	95.8	200	6.90	

Surrogate: 1-Chlorooctane 67.9 % 47.2-157

Surrogate: 1-Chlorooctadecane 75.7 % 52.1-176

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\*=Accredited Analyte

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Received:	09/21/2015	Sampling Date:	09/21/2015
Reported:	09/28/2015	Sampling Type:	Soil
Project Name:	BONE SPRINGS WATERFLOOD CENTRAL	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP 3 @ 6' (H502483-03)**

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	09/23/2015	ND	1.86	93.1	2.00	11.4	
Toluene*	<0.050	0.050	09/23/2015	ND	1.62	80.9	2.00	11.5	
Ethylbenzene*	<0.050	0.050	09/23/2015	ND	1.52	76.2	2.00	11.8	
Total Xylenes*	<0.150	0.150	09/23/2015	ND	4.77	79.5	6.00	10.8	
Total BTEX	<0.300	0.300	09/23/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 105 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	464	16.0	09/23/2015	ND	416	104	400	3.77	

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	09/24/2015	ND	174	87.1	200	3.66	
DRO >C10-C28	<10.0	10.0	09/24/2015	ND	192	95.8	200	6.90	

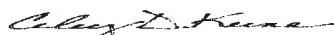
Surrogate: 1-Chlorooctane 65.2 % 47.2-157

Surrogate: 1-Chlorooctadecane 71.9 % 52.1-176

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\*=Accredited Analyte

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Received:	09/21/2015	Sampling Date:	09/21/2015
Reported:	09/28/2015	Sampling Type:	Soil
Project Name:	BONE SPRINGS WATERFLOOD CENTRAL	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP 4 @ 2' (H502483-04)**

BTEX 8021B			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/23/2015	ND	1.86	93.1	2.00	11.4	
Toluene*	<0.050	0.050	09/23/2015	ND	1.62	80.9	2.00	11.5	
Ethylbenzene*	<0.050	0.050	09/23/2015	ND	1.52	76.2	2.00	11.8	
Total Xylenes*	<0.150	0.150	09/23/2015	ND	4.77	79.5	6.00	10.8	
Total BTEX	<0.300	0.300	09/23/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 107 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	752	16.0	09/23/2015	ND	416	104	400	3.77	

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	09/24/2015	ND	174	87.1	200	3.66	
DRO >C10-C28	<10.0	10.0	09/24/2015	ND	192	95.8	200	6.90	

Surrogate: 1-Chlorooctane 67.3 % 47.2-157

Surrogate: 1-Chlorooctadecane 73.4 % 52.1-176

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HOBBS NM, 88240  
Fax To: (575) 937-6252

Received:	09/21/2015	Sampling Date:	09/21/2015
Reported:	09/28/2015	Sampling Type:	Soil
Project Name:	BONE SPRINGS WATERFLOOD CENTRAL	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP 5 @ 3' (H502483-05)**

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	09/23/2015	ND	1.86	93.1	2.00	11.4	
Toluene*	<0.050	0.050	09/23/2015	ND	1.62	80.9	2.00	11.5	
Ethylbenzene*	<0.050	0.050	09/23/2015	ND	1.52	76.2	2.00	11.8	
Total Xylenes*	<0.150	0.150	09/23/2015	ND	4.77	79.5	6.00	10.8	
Total BTEX	<0.300	0.300	09/23/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 107 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	960	16.0	09/23/2015	ND	416	104	400	3.77	

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	09/24/2015	ND	174	87.1	200	3.66		
DRO >C10-C28	<10.0	10.0	09/24/2015	ND	192	95.8	200	6.90		

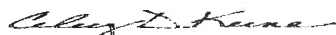
Surrogate: 1-Chlorooctane 74.2 % 47.2-157

Surrogate: 1-Chlorooctadecane 78.8 % 52.1-176

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Fax To: (575) 937-6252

Received:	09/21/2015	Sampling Date:	09/21/2015
Reported:	09/28/2015	Sampling Type:	Soil
Project Name:	BONE SPRINGS WATERFLOOD CENTRAL	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP 6 @ 1' (H502483-06)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<2.00	2.00	09/23/2015	ND	1.86	93.1	2.00	11.4	
Toluene*	7.28	2.00	09/23/2015	ND	1.62	80.9	2.00	11.5	
Ethylbenzene*	6.73	2.00	09/23/2015	ND	1.52	76.2	2.00	11.8	
Total Xylenes*	47.0	6.00	09/23/2015	ND	4.77	79.5	6.00	10.8	
Total BTEX	61.0	12.0	09/23/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 127 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	09/23/2015	ND	416	104	400	3.77	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	2630	50.0	09/24/2015	ND	174	87.1	200	3.66	
DRO >C10-C28	13100	50.0	09/24/2015	ND	192	95.8	200	6.90	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	2630	50.0	09/24/2015	ND	174	87.1	200	3.66	
DRO >C10-C28	13100	50.0	09/24/2015	ND	192	95.8	200	6.90	

Surrogate: 1-Chlorooctane 158 % 47.2-157

Surrogate: 1-Chlorooctadecane 214 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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 Fax To: (575) 937-6252

Received:	09/21/2015	Sampling Date:	09/21/2015
Reported:	09/28/2015	Sampling Type:	Soil
Project Name:	BONE SPRINGS WATERFLOOD CENTRAL	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP 7 @ 5' (H502483-07)**

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	09/23/2015	ND	1.86	93.1	2.00	11.4	
Toluene*	<0.050	0.050	09/23/2015	ND	1.62	80.9	2.00	11.5	
Ethylbenzene*	<0.050	0.050	09/23/2015	ND	1.52	76.2	2.00	11.8	
Total Xylenes*	<0.150	0.150	09/23/2015	ND	4.77	79.5	6.00	10.8	
Total BTEX	<0.300	0.300	09/23/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 105 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	09/23/2015	ND	416	104	400	3.77		

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	09/24/2015	ND	174	87.1	200	3.66	
DRO >C10-C28	<10.0	10.0	09/24/2015	ND	192	95.8	200	6.90	

Surrogate: 1-Chlorooctane 67.8 % 47.2-157

Surrogate: 1-Chlorooctadecane 73.4 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

MEWBOURNE OIL COMPANY  
ZACK THOMAS  
P. O. BOX 5270  
HOBBS NM, 88240  
Fax To: (575) 937-6252

Received:	09/21/2015	Sampling Date:	09/21/2015
Reported:	09/28/2015	Sampling Type:	Soil
Project Name:	BONE SPRINGS WATERFLOOD CENTRAL	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP 9 @ 4' (H502483-09)**

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	09/23/2015	ND	1.86	93.1	2.00	11.4		
Toluene*	<0.050	0.050	09/23/2015	ND	1.62	80.9	2.00	11.5		
Ethylbenzene*	<0.050	0.050	09/23/2015	ND	1.52	76.2	2.00	11.8		
Total Xylenes*	<0.150	0.150	09/23/2015	ND	4.77	79.5	6.00	10.8		
Total BTEX	<0.300	0.300	09/23/2015	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 85.6-137

Chloride, SM4500Cl-B			mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	560	16.0	09/23/2015	ND	416	104	400	3.77		

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	09/24/2015	ND	174	87.1	200	3.66	
DRO >C10-C28	<10.0	10.0	09/24/2015	ND	192	95.8	200	6.90	

Surrogate: 1-Chlorooctane 64.5 % 47.2-157

Surrogate: 1-Chlorooctadecane 70.6 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



### Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
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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Cardinal Laboratories

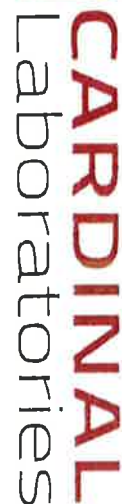
\*=Accredited Analyte

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---

Celey D. Keene, Lab Director/Quality Manager



### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326



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

---

September 29, 2015

ZACK THOMAS

MEWBOURNE OIL COMPANY

P. O. BOX 5270

HOBBS, NM 88240

RE: BONE SPRINGS WATERFLOOD CENTRAL FACILITY

Enclosed are the results of analyses for samples received by the laboratory on 09/28/15 14:45.

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,

A handwritten signature in black ink that reads "Coley D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 MEWBOURNE OIL COMPANY  
 ZACK THOMAS  
 P. O. BOX 5270  
 HOBBS NM, 88240  
 Fax To: (575) 937-6252

Received:	09/28/2015	Sampling Date:	09/21/2015
Reported:	09/29/2015	Sampling Type:	Soil
Project Name:	BONE SPRINGS WATERFLOOD CENTRAL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SAMPLE PT. 8 @ 7' (H502565-01)**

BTX 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	09/29/2015	ND	2.01	100	2.00	1.66	
Toluene*	<0.050	0.050	09/29/2015	ND	1.72	86.0	2.00	1.99	
Ethylbenzene*	<0.050	0.050	09/29/2015	ND	1.67	83.3	2.00	2.07	
Total Xylenes*	<0.150	0.150	09/29/2015	ND	5.21	86.9	6.00	2.16	
Total BTX	<0.300	0.300	09/29/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 107 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	656	16.0	09/29/2015	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	09/28/2015	ND	167	83.4	200	12.7	
DRO >C10-C28	<10.0	10.0	09/28/2015	ND	178	88.9	200	20.0	

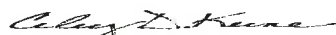
Surrogate: 1-Chlorooctane 105 % 47.2-157

Surrogate: 1-Chlorooctadecane 118 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 MEWBOURNE OIL COMPANY  
 ZACK THOMAS  
 P. O. BOX 5270  
 HOBBS NM, 88240  
 Fax To: (575) 937-6252

Received:	09/28/2015	Sampling Date:	09/21/2015
Reported:	09/29/2015	Sampling Type:	Soil
Project Name:	BONE SPRINGS WATERFLOOD CENTRAL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SAMPLE PT. 10 @ 5' (H502565-02)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/29/2015	ND	2.01	100	2.00	1.66	
Toluene*	<0.050	0.050	09/29/2015	ND	1.72	86.0	2.00	1.99	
Ethylbenzene*	<0.050	0.050	09/29/2015	ND	1.67	83.3	2.00	2.07	
Total Xylenes*	<0.150	0.150	09/29/2015	ND	5.21	86.9	6.00	2.16	
Total BTEX	<0.300	0.300	09/29/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 108 % 85.6-137

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	576	16.0	09/29/2015	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	09/28/2015	ND	167	83.4	200	12.7	
DRO >C10-C28	<10.0	10.0	09/28/2015	ND	178	88.9	200	20.0	

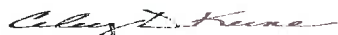
Surrogate: 1-Chlorooctane 117 % 47.2-157

Surrogate: 1-Chlorooctadecane 127 % 52.1-176

Cardinal Laboratories

\*=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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Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





PHYS H

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <u>Neubourne</u>		P.O. #: <u>19131</u>	
Project Manager: <u>Zach Thomas</u>		Company: <u>Diversified DESI</u>	
Address:		Attn:	
City:	State:	City:	State:
Phone #:	Fax #:	Address:	Zip:
Project #:	Project Owner:	Phone #:	Fax #:
Project Name: <u>Neubourne</u>			
Project Location: <u>Bone Springs Whitehead Central Facility</u>			
Sampler Name: <u>Chris Flores</u>			
FOR LAB USE ONLY			
Lab I.D.	Sample I.D.	DATE	
<u>H502565</u>	<u>Sample Point 8 @ 7'</u>	<u>9-21-2015 1:00 PM</u>	
<u>2</u>	<u>Sample Point 10 @ 5'</u>	<u>3:00 PM</u>	
(G)RAB OR (C)OMP		DATE	
# CONTAINERS		TIME	
GROUNDWATER		X	
WASTEWATER		X	
SOIL		X	
OIL		X	
SLUDGE		X	
OTHER:		X	
ACID/BASE:		X	
ICE / COOL		X	
OTHER:		X	
MATRIX		X	
PRESERV		X	
SAMPLING		X	
ANALYSIS REQUEST		X	
Chloride		X	
TPH		X	
BTEX		X	
REMARKS:		X	
Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:	
Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:	
REMARKS:		Email to: <u>lcenshaw@diversifiedsi.com</u>	
Delivered By: (Circle One)		males	
Sampler - UPS - Bus - Other:		mburton	
3.20		mofferson	
Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326		cflores	



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: Mewbourne Oil Company	Contact: Zack Thomas
Address: PO Box 5270 Hobbs NM 88241	Telephone No. 575-393-5905
Facility Name: Bone Springs Central Water Flood Facility	Facility Type: Water Flood Injection Facility

Surface Owner: BLM	Mineral Owner: BLM	API No.
--------------------	--------------------	---------

#### LOCATION OF RELEASE

Unit Letter N	Section 23	Township 18S	Range 32E	Feet from the 660'	North/South Line South	Feet from the 1980'	East/West Line West	County Eddy
------------------	---------------	-----------------	--------------	-----------------------	---------------------------	------------------------	------------------------	----------------

Latitude 32.7275472 Longitude -103.7389861

#### NATURE OF RELEASE

Type of Release: Produced water	Volume of Release: estimated 297 bbls	Volume Recovered: 275 bbls PW
Source of Release: Fiberglass water tanks	Date and Hour of Occurrence 7-20-15	Date and Hour of Discovery 7-20-15 4:00 pm
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Kellie Jones (NMOCD) Jim Amos (BLM)	
By Whom? Zack Thomas	Date and Hour 7-21-15 10:00 am	
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.\*

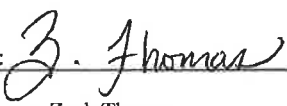
Describe Cause of Problem and Remedial Action Taken.\*

The water flood facility was struck by lightning. Upon being struck, the facility caught fire. Maljimar VFD was immediately contacted to extinguish the fire and vacuum trucks were used to recover all standing fluid as soon as the location was deemed safe.

Describe Area Affected and Cleanup Action Taken.\*

Affected area- The produced water leaked over the secondary containment behind location toward the North (100 ft by 40 ft) and Northwest (18 ft by 125 ft). Vacuum trucks recovered 225 bbls from the secondary containment and 50 bbls from pasture area. Final remediation will be conducted in accordance with the NMOCD's Guidelines for Remediation of Spills, Leaks and Releases.

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

Signature: 		<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Zack Thomas		Approved by Environmental Specialist:	
Title: Environmental Rep.		Approval Date:	Expiration Date:
E-mail Address: zthomas@mewbourne.com		Conditions of Approval:	
Date: 7-22-15 Phone: 575-602-2188		Attached <input type="checkbox"/>	

\* Attach Additional Sheets If Necessary



# 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 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
<a href="#">CP 00677</a>			LE	1	1	26	18S	32E		617750	3621373*	700		
<a href="#">CP 00808</a>			LE	4	4	26	18S	32E		618973	3620178*	400		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 2

### Basin/County Search:

County: Lea

### PLSS Search:

Section(s): 23, 22, 24, 14, 26 Township: 18S Range: 32E

\*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.



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

---

January 08, 2016

ZACK THOMAS

MEWBOURNE OIL COMPANY

P. O. BOX 5270

HOBBS, NM 88240

RE: BONE SPRINGS WATERFLOOD CENTRAL FACILITY

Enclosed are the results of analyses for samples received by the laboratory on 01/04/16 16:30.

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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

MEWBOURNE OIL COMPANY  
ZACK THOMAS  
P. O. BOX 5270  
HOBBS NM, 88240  
Fax To: (575) 937-6252

Received:	01/04/2016	Sampling Date:	01/04/2016
Reported:	01/08/2016	Sampling Type:	Soil
Project Name:	BONE SPRINGS WATERFLOOD CENTRAL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP #1 (H600015-01)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/06/2016	ND	1.98	99.2	2.00	12.0	
Toluene*	<0.050	0.050	01/06/2016	ND	2.01	101	2.00	12.6	
Ethylbenzene*	<0.050	0.050	01/06/2016	ND	1.86	93.2	2.00	12.3	
Total Xylenes*	<0.150	0.150	01/06/2016	ND	5.93	98.9	6.00	11.7	
Total BTEX	<0.300	0.300	01/06/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIB) 101 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/05/2016	ND	400	100	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	01/08/2016	ND	194	96.9	200	1.41	
DRO >C10-C28	90.5	10.0	01/08/2016	ND	185	92.5	200	2.06	

Surrogate: 1-Chlorooctane 71.6 % 35-147

Surrogate: 1-Chlorooctadecane 77.7 % 28-171

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 MEWBOURNE OIL COMPANY  
 ZACK THOMAS  
 P. O. BOX 5270  
 HOBBS NM, 88240  
 Fax To: (575) 937-6252

Received:	01/04/2016	Sampling Date:	01/04/2016
Reported:	01/08/2016	Sampling Type:	Soil
Project Name:	BONE SPRINGS WATERFLOOD CENTRAL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP #2 (H600015-02)**

BTEX 8021B			mg/kg		Analyzed By: CK				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/06/2016	ND	1.98	99.2	2.00	12.0	
Toluene*	<0.050	0.050	01/06/2016	ND	2.01	101	2.00	12.6	
Ethylbenzene*	<0.050	0.050	01/06/2016	ND	1.86	93.2	2.00	12.3	
Total Xylenes*	<0.150	0.150	01/06/2016	ND	5.93	98.9	6.00	11.7	
Total BTEX	<0.300	0.300	01/06/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 96.8 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	352	16.0	01/05/2016	ND	400	100	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	01/08/2016	ND	194	96.9	200	1.41	
DRO >C10-C28	<10.0	10.0	01/08/2016	ND	185	92.5	200	2.06	


Surrogate: 1-Chlorooctane 69.5 % 35-147

Surrogate: 1-Chlorooctadecane 66.4 % 28-171

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 MEWBOURNE OIL COMPANY  
 ZACK THOMAS  
 P. O. BOX 5270  
 HOBBS NM, 88240  
 Fax To: (575) 937-6252

Received:	01/04/2016	Sampling Date:	01/04/2016
Reported:	01/08/2016	Sampling Type:	Soil
Project Name:	BONE SPRINGS WATERFLOOD CENTRAL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP #3 (H600015-03)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/06/2016	ND	1.98	99.2	2.00	12.0	
Toluene*	<0.050	0.050	01/06/2016	ND	2.01	101	2.00	12.6	
Ethylbenzene*	<0.050	0.050	01/06/2016	ND	1.86	93.2	2.00	12.3	
Total Xylenes*	<0.150	0.150	01/06/2016	ND	5.93	98.9	6.00	11.7	
Total BTEX	<0.300	0.300	01/06/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.7 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1140	16.0	01/05/2016	ND	400	100	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	01/08/2016	ND	194	96.9	200	1.41	
DRO >C10-C28	<10.0	10.0	01/08/2016	ND	185	92.5	200	2.06	

Surrogate: 1-Chlorooctane 72.8 % 35-147

Surrogate: 1-Chlorooctadecane 72.3 % 28-171

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 MEWBOURNE OIL COMPANY  
 ZACK THOMAS  
 P. O. BOX 5270  
 HOBBS NM, 88240  
 Fax To: (575) 937-6252

Received:	01/04/2016	Sampling Date:	01/04/2016
Reported:	01/08/2016	Sampling Type:	Soil
Project Name:	BONE SPRINGS WATERFLOOD CENTRAL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP #4 (H600015-04)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/06/2016	ND	1.98	99.2	2.00	12.0	
Toluene*	<0.050	0.050	01/06/2016	ND	2.01	101	2.00	12.6	
Ethylbenzene*	<0.050	0.050	01/06/2016	ND	1.86	93.2	2.00	12.3	
Total Xylenes*	<0.150	0.150	01/06/2016	ND	5.93	98.9	6.00	11.7	
Total BTEX	<0.300	0.300	01/06/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 95.8 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	608	16.0	01/05/2016	ND	400	100	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	01/08/2016	ND	194	96.9	200	1.41	
DRO >C10-C28	<10.0	10.0	01/08/2016	ND	185	92.5	200	2.06	

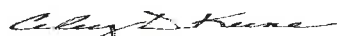
Surrogate: 1-Chlorooctane 77.7 % 35-147

Surrogate: 1-Chlorooctadecane 73.5 % 28-171

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

MEWBOURNE OIL COMPANY  
ZACK THOMAS  
P. O. BOX 5270  
HOBBS NM, 88240  
Fax To: (575) 937-6252

Received:	01/04/2016	Sampling Date:	01/04/2016
Reported:	01/08/2016	Sampling Type:	Soil
Project Name:	BONE SPRINGS WATERFLOOD CENTRAL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP #5 (H600015-05)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/06/2016	ND	1.98	99.2	2.00	12.0	
Toluene*	<0.050	0.050	01/06/2016	ND	2.01	101	2.00	12.6	
Ethylbenzene*	<0.050	0.050	01/06/2016	ND	1.86	93.2	2.00	12.3	
Total Xylenes*	<0.150	0.150	01/06/2016	ND	5.93	98.9	6.00	11.7	
Total BTEX	<0.300	0.300	01/06/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 96.6 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1060	16.0	01/05/2016	ND	400	100	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	01/08/2016	ND	194	96.9	200	1.41	
DRO >C10-C28	<10.0	10.0	01/08/2016	ND	185	92.5	200	2.06	

Surrogate: 1-Chlorooctane 69.0 % 35-147

Surrogate: 1-Chlorooctadecane 71.8 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

MEWBOURNE OIL COMPANY  
ZACK THOMAS  
P. O. BOX 5270  
HOBBS NM, 88240  
Fax To: (575) 937-6252

Received:	01/04/2016	Sampling Date:	01/04/2016
Reported:	01/08/2016	Sampling Type:	Soil
Project Name:	BONE SPRINGS WATERFLOOD CENTRAL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP #6 (H600015-06)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/06/2016	ND	1.98	99.2	2.00	12.0	
Toluene*	<0.050	0.050	01/06/2016	ND	2.01	101	2.00	12.6	
Ethylbenzene*	<0.050	0.050	01/06/2016	ND	1.86	93.2	2.00	12.3	
Total Xylenes*	<0.150	0.150	01/06/2016	ND	5.93	98.9	6.00	11.7	
Total BTEX	<0.300	0.300	01/06/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 95.8 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	01/05/2016	ND	400	100	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	01/08/2016	ND	194	96.9	200	1.41	
DRO >C10-C28	<10.0	10.0	01/08/2016	ND	185	92.5	200	2.06	

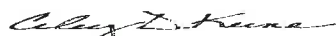
Surrogate: 1-Chlorooctane 60.9 % 35-147

Surrogate: 1-Chlorooctadecane 59.1 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

MEWBOURNE OIL COMPANY  
ZACK THOMAS  
P. O. BOX 5270  
HOBBS NM, 88240  
Fax To: (575) 937-6252

Received:	01/04/2016	Sampling Date:	01/04/2016
Reported:	01/08/2016	Sampling Type:	Soil
Project Name:	BONE SPRINGS WATERFLOOD CENTRAL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP #8 (H600015-07)**

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/06/2016	ND	1.98	99.2	2.00	12.0	
Toluene*	<0.050	0.050	01/06/2016	ND	2.01	101	2.00	12.6	
Ethylbenzene*	<0.050	0.050	01/06/2016	ND	1.86	93.2	2.00	12.3	
Total Xylenes*	<0.150	0.150	01/06/2016	ND	5.93	98.9	6.00	11.7	
Total BTX	<0.300	0.300	01/06/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 95.4 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	976	16.0	01/05/2016	ND	400	100	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	01/08/2016	ND	194	96.9	200	1.41	
DRO >C10-C28	<10.0	10.0	01/08/2016	ND	185	92.5	200	2.06	

Surrogate: 1-Chlorooctane 70.3 % 35-147

Surrogate: 1-Chlorooctadecane 72.2 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

MEWBOURNE OIL COMPANY  
ZACK THOMAS  
P. O. BOX 5270  
HOBBS NM, 88240  
Fax To: (575) 937-6252

Received:	01/04/2016	Sampling Date:	01/04/2016
Reported:	01/08/2016	Sampling Type:	Soil
Project Name:	BONE SPRINGS WATERFLOOD CENTRAL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP #9 (H600015-08)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/06/2016	ND	1.98	99.2	2.00	12.0	
Toluene*	<0.050	0.050	01/06/2016	ND	2.01	101	2.00	12.6	
Ethylbenzene*	<0.050	0.050	01/06/2016	ND	1.86	93.2	2.00	12.3	
Total Xylenes*	<0.150	0.150	01/06/2016	ND	5.93	98.9	6.00	11.7	
Total BTEX	<0.300	0.300	01/06/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 95.2 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	624	16.0	01/05/2016	ND	400	100	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	01/08/2016	ND	194	96.9	200	1.41	
DRO >C10-C28	<10.0	10.0	01/08/2016	ND	185	92.5	200	2.06	

Surrogate: 1-Chlorooctane 68.1 % 35-147

Surrogate: 1-Chlorooctadecane 63.7 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

MEWBOURNE OIL COMPANY  
ZACK THOMAS  
P. O. BOX 5270  
HOBBS NM, 88240  
Fax To: (575) 937-6252

Received:	01/04/2016	Sampling Date:	01/04/2016
Reported:	01/08/2016	Sampling Type:	Soil
Project Name:	BONE SPRINGS WATERFLOOD CENTRAL	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: SP #10 (H600015-09)**

BTEX 8021B			mg/kg						
			Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/06/2016	ND	1.98	99.2	2.00	12.0	
Toluene*	<0.050	0.050	01/06/2016	ND	2.01	101	2.00	12.6	
Ethylbenzene*	<0.050	0.050	01/06/2016	ND	1.86	93.2	2.00	12.3	
Total Xylenes*	<0.150	0.150	01/06/2016	ND	5.93	98.9	6.00	11.7	
Total BTEX	<0.300	0.300	01/06/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 95.1 % 73.6-140

Chloride, SM4500Cl-B			mg/kg						
			Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	592	16.0	01/05/2016	ND	400	100	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	01/08/2016	ND	194	96.9	200	1.41	
DRO >C10-C28	<10.0	10.0	01/08/2016	ND	185	92.5	200	2.06	

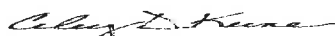
Surrogate: 1-Chlorooctane 62.5 % 35-147

Surrogate: 1-Chlorooctadecane 66.5 % 28-171

Cardinal Laboratories

\*=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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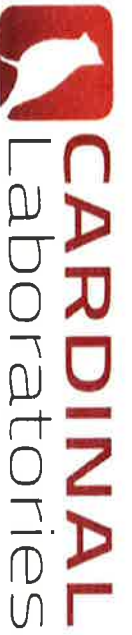
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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

newbourne

ANALYSIS REQUEST

BILL TO

Company Name: <u>Newbourne</u>		P.O. #: <u>5723</u>																			
Project Manager: <u>Zack Thomas</u>		Company: <u>Blade Services</u>																			
Address: <u>14665</u>		Attn: <u>Rick</u>																			
City: <u>14665</u>		Address: <u>Hobbs, NM</u>																			
State: <u>NM</u>		City: <u>Hobbs, NM</u>																			
Zip: <u>88240</u>		State: <u>NM</u>																			
Phone #: <u></u>		Zip: <u>88241</u>																			
Fax #: <u></u>		Phone #: <u>575 340 5004</u>																			
Project Name: <u>Bone Springs water flood</u>		Fax #: <u></u>																			
Project Location: <u>Mallinor</u>		PRESERV																			
Sampler Name: <u>Rick Newberry</u>		SAMPLING																			
FOR LAB USE ONLY																					
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER	DATE	TIME	CP	TPH	8015	BTEX			
<u>1466015</u>	<u>SP #1</u>												<u>1-4-16</u>	<u>9:40 AM</u>	<u>✓</u>						
	<u>SP #2</u>												<u>1-4</u>	<u>9:20 AM</u>	<u>✓</u>						
	<u>SP #3</u>												<u>1-4</u>	<u>9:15 AM</u>	<u>✓</u>						
	<u>SP #4</u>												<u>1-4</u>	<u>12:15 PM</u>	<u>✓</u>						
	<u>SP #5</u>												<u>1-4</u>	<u>10:40 AM</u>	<u>✓</u>						
	<u>SP #6</u>												<u>1-4</u>	<u>11:20 AM</u>	<u>✓</u>						
	<u>SP #8</u>												<u>1-4-16</u>	<u>12:10 PM</u>	<u>✓</u>						
	<u>SP #9</u>												<u>11/4/16</u>	<u>11:00</u>	<u>✓</u>						
	<u>SP #10</u>																				
Relinquished By: <u>MCS</u>		Date: <u>1-4-15</u>		Received By: <u>Blade Services</u>		Date: <u>1-4-15</u>		Time: <u>4:30</u>		Sample Condition: <u>Intact</u>		CHECKED BY: <u>Zack</u>		Phone Result: <u>Yes</u>		Fax Result: <u>Yes</u>		Add'l Phone #: <u></u>		Add'l Fax #: <u></u>	
Delivered By: (Circle One)		Sample Condition: <u>Intact</u>		CHECKED BY: <u>Zack</u>		Phone Result: <u>Yes</u>		Fax Result: <u>Yes</u>		Add'l Phone #: <u></u>		Add'l Fax #: <u></u>		REMARKS: <u>Bladeservices@hotmail.com</u>							
Sampler - UPS - Bus - Other: <u>O.L.C.</u>		Copied: <u>Yes</u>		Checked: <u>Yes</u>		Phone Result: <u>Yes</u>		Fax Result: <u>Yes</u>		Add'l Phone #: <u></u>		Add'l Fax #: <u></u>		REMARKS: <u>Zack</u>							

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326





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

January 21, 2016

ZACK THOMAS

MEWBOURNE OIL COMPANY

P. O. BOX 5270

HOBBS, NM 88240

RE: BONE SPRINGS WATERFLOOD CENTRAL FACILITY

Enclosed are the results of analyses for samples received by the laboratory on 01/19/16 14:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-15-7. 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:**

MEWBOURNE OIL COMPANY  
ZACK THOMAS  
P. O. BOX 5270  
HOBBS NM, 88240  
Fax To: (575) 937-6252

Received:	01/19/2016	Sampling Date:	01/19/2016
Reported:	01/21/2016	Sampling Type:	Soil
Project Name:	BONE SPRINGS WATERFLOOD CENTRAL	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Celey D. Keene
Project Location:	NOT GIVEN		

**Sample ID: SP 3 @ 4' (H600108-01)**

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	01/20/2016	ND	1.77	88.3	2.00	1.48	
Toluene*	<0.050	0.050	01/20/2016	ND	1.75	87.7	2.00	0.520	
Ethylbenzene*	<0.050	0.050	01/20/2016	ND	1.61	80.4	2.00	1.16	
Total Xylenes*	<0.150	0.150	01/20/2016	ND	4.99	83.2	6.00	1.16	
Total BTEX	<0.300	0.300	01/20/2016	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 102 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	848	16.0	01/20/2016	ND	448	112	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	01/19/2016	ND	194	96.9	200	3.69	
DRO >C10-C28	<10.0	10.0	01/19/2016	ND	179	89.5	200	4.37	

Surrogate: 1-Chlorooctane 83.7 % 35-147

Surrogate: 1-Chlorooctadecane 88.9 % 28-171

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 and 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 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 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

**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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Cardinal Laboratories

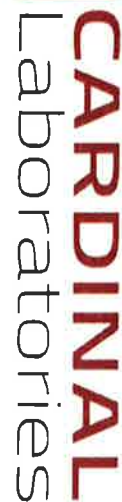
\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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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: Mewbourne Oil Company	Contact: Zack Thomas	
Address: PO Box 5270 Hobbs NM 88241	Telephone No. 575-393-5905	
Facility Name: Bone Springs Central Water Flood Facility	Facility Type: Water Flood Injection Facility	
Surface Owner: BLM	Mineral Owner: BLM	API No.


**LOCATION OF RELEASE**

Unit Letter N	Section 23	Township 18S	Range 32E	Feet from the 660'	North/South Line South	Feet from the 1980'	East/West Line West	County Eddy
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Latitude 32.7275472 Longitude -103.7389861

**NATURE OF RELEASE**

Type of Release: Produced water	Volume of Release: estimated 297 bbls	Volume Recovered: 275 bbls PW
Source of Release: Fiberglass water tanks	Date and Hour of Occurrence 7-20-15	Date and Hour of Discovery 7-20-15 4:00 pm
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Kellie Jones (NMOCD) Jim Amos (BLM)	
By Whom? Zack Thomas	Date and Hour 7-21-15 10:00 am	
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.*		
Describe Cause of Problem and Remedial Action Taken.*  The water flood facility was struck by lightning. Upon being struck, the facility caught fire. Maljimar VFD was immediately contacted to extinguish the fire and vacuum trucks were used to recover all standing fluid as soon as the location was deemed safe.		
Describe Area Affected and Cleanup Action Taken.*  Affected area- The produced water leaked over the secondary containment behind location toward the North (100 ft by 40 ft) and Northwest (18 ft by 125 ft). Vacuum trucks recovered 225 bbls from the secondary containment and 50 bbls from pasture area. For complete details of remediation reference closure report dated January 25, 2016. Final remediation was conducted in a accordance with the NMOCD's Guidelines for Remediation of Spills, Leaks and Releases.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		

Signature: 		<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Zack Thomas		Approved by Environmental Specialist:	
Title: Environmental Rep.		Approval Date:	Expiration Date:
E-mail Address: zthomas@mewbourne.com		Conditions of Approval:	Attached <input type="checkbox"/>
Date: 1-25-16 Phone: 575-602-2188			

\* Attach Additional Sheets If Necessary