RECEIVED
By OCD District 1 at 2:37 pm, Sep 30, 2015

APPROVED
By OCD District 1 at 2:38 pm, Sep 30, 2015

1. Ensure BLM approval/concurrence.
2. Ensure the site has been delineated vertically.

Larson & Associates, Inc.
Environmental Consultants

1RP-3844
Investigation Summary
Diamond 31 Fed Com #1 Produced Water Spill
September 18, 2015

Introduction

This investigation summary is prepared for EOG Resources, Inc. (EOG) by Larson & Associates, Inc. (LAI) for a produced water spill at the Diamond 31 Fed Com #1 SWD tank battery (Site) located in Unit J (NW/4, NE/4), Section 31, Township 24 South, Range 34 East, Lea County, New Mexico. The geodetic position is north 32° 10' 19.82" and west 103° 30' 37.96". The spill occurred on August 28, 2015, due to lightning striking the tank battery causing a fire. The estimated volume of the spill was 1,570 barrels (bbl) with about 1,560 bbl captured within the lined steel containment and recovered. Approximately 10 bbl of produced water escaped and flowed east of the containment. The spill covers an area measuring about 45 feet in width by about 125 feet in length. The release was reported to the New Mexico Oil Conservation Division (OCD) District 1 on September 8, 2015. OCD issued remediation project (RP) number 1RP-3844. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

Setting

The setting is as follows:

- The surface elevation is about 3,455 feet above mean sea level (MSL);
- The topography is slightly undulating and slopes to the southeast;
- The nearest surface water feature is an intermittent drainage located about 1,050 feet southwest of the Site;
- The soils are designated as "Berino-Cacique loamy fine sands association", consisting of loamy fine sand to about 05 feet bgs and sandy clay loam to about 5 feet bgs, derived from reworking the Blackwater Draw (Pleistocene) and Ogallala (Pliocene) formations, in descending order;
- Groundwater is greater than 200 feet bgs according to records from the New Mexico Office of the State Engineer (OSE);
- No fresh water wells are located within 1-mile of the Site according to OSE records;
- The nearest fresh water well is located about 7.4 miles east of the Site, in Unit C (NE/, NW/4), Section 35, Township 24 south, Range 34 East;

Remediation Action Levels

Remediation action levels (RRAL) were calculated for benzene, BTEX and TPH based on the following criteria established by the OCD (*Guidelines for Remediation of Leaks, Spills and Releases, August 13,* 1993):

Criteria	*Result*	*Score*
Depth-to-Groundwater	>100 feet	0
Wellhead Protection Area	No	0
Distance to Surface Water Body	> 1000 Horizontal Feet	0

The following RRAL apply to the release for ranking score: 0

- Benzene 10 mg/Kg
- BTEX 50 mg/Kg
- TPH 5,000 mg/Kg

Initial Samples and Analysis

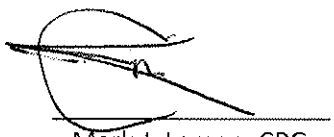
Initial samples were collected on September 4, 2015. LAI personnel used a direct push rig to collect soil samples at four (4) locations (DP-1 through DP-4) between approximately 6 and 8 feet bgs. Permian Basin Environmental Lab (PBEL) in Midland, Texas, analyzed the upper sample (0 to 1 foot) for total petroleum hydrocarbons (TPH) by SW-846 method 8015 modified. All samples were analyzed for chloride by method 300. Table 1 presents the analytical data summary. Figure 3 presents the sample locations. Attachment A presents the laboratory report.

TPH was below the RRAL. Chloride decreased below 250 milligrams per kilogram (mg/Kg) in samples between about 2 and 4 feet bgs and increased in concentration with depth. The sample results suggest that the area may be affected from an earlier spill. Chloride exceeded 250 mg/Kg in all bottom samples

LAI personnel collected a composite sample of soil (SP-1) that was scraped from the area and stockpiled on north of the containment. The TPH concentratio0n was 30,500 mg/Kg and above the RRAL. Chloride was 5,570 mg/Kg. This soil was hauled from the location and disposed at an OCD approved landfill.

Remediation Plan

- Collect soil samples from 10, 12 and 14 feet bgs at DP-3 and analyze for chloride by method 300;
- Excavate soil to approximately 4 feet bgs from area shown on Figure 3, and install 20 mil thickness poly liner in bottom of excavation;
- Backfill excavations with clean topsoil and seed with BLM seed blend #2;
- Dispose contaminated soil at OCD approved landfill; and
- Prepare final report for submission to OCD.



Mark J. Larson, CPG

Tables

Table 1
Investigation Soil Sample Analytical Data Summary
EOC Resources, Inc., Diamond 31 Fed Com #1 Tank Battery Spill
UL G (SW/4, NE/4), Section 31, Township 24 South, Range 34 East
Lea County, New Mexico
1RP-3844

Sample	Depth (Feet)	Collection Date	C6 - C12 (mg/Kg)	>C12 - C28 (mg/Kg)	>C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
OCD RRAL:						**5,000**	
DP-1	0 - 1	09/04/2015	<27.2	593	117	**710**	3,090
	1 - 2	09/04/2015	--	--	--	--	194
	2 - 4	09/04/2015	--	--	--	--	1,100
	4 - 6	09/04/2015	--	--	--	--	1,830
DP-2	0 - 1	09/04/2015	<26.0	42.0	<26.0	**42.0**	189
	1 - 2	09/04/2015	--	--	--	--	97.6
	2 - 4	09/04/2015	--	--	--	--	697
	4 - 6	09/04/2015	--	--	--	--	3,930
DP-3	0 - 1	09/04/2015	<26.0	58.0	<26.0	**58.0**	2,160
	1 - 2	09/04/2015	--	--	--	--	424
	2 - 4	09/04/2015	--	--	--	--	3,040
	4 - 6	09/04/2015	--	--	--	--	6,190
	6 - 7	09/04/2015	--	--	--	--	6,690
DP-4	0 - 1	09/04/2015	<27.2	<27.2	<27.2	<27.2	6,650
	1 - 2	09/04/2015	--	--	--	--	2,210
	2 - 4	09/04/2015	--	--	--	--	28.5
	4 - 6	09/04/2015	--	--	--	--	5,000
	6- 8	09/04/2015	--	--	--	--	3,000
SP-1 S(Soil Pile)		09/04/2015	3,310	23,300	3,890	**30,500**	5,570

Notes: Laboratory analysis performed by Permian Basin Environmental Lab, Midland, Texas, by EPA SW-846 method 8015M (TPH) and 300.0 (chloride)
Depth in feet below ground surface (bgs)
mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)
RRAL: Recommended Remediation Action Level (RRAL) calculated from OCD guidance document (August 13, 1993)
Bold and highlighted denotes concentration greater than OCD Recommended Remediation Action Level (RRAL)

Figures

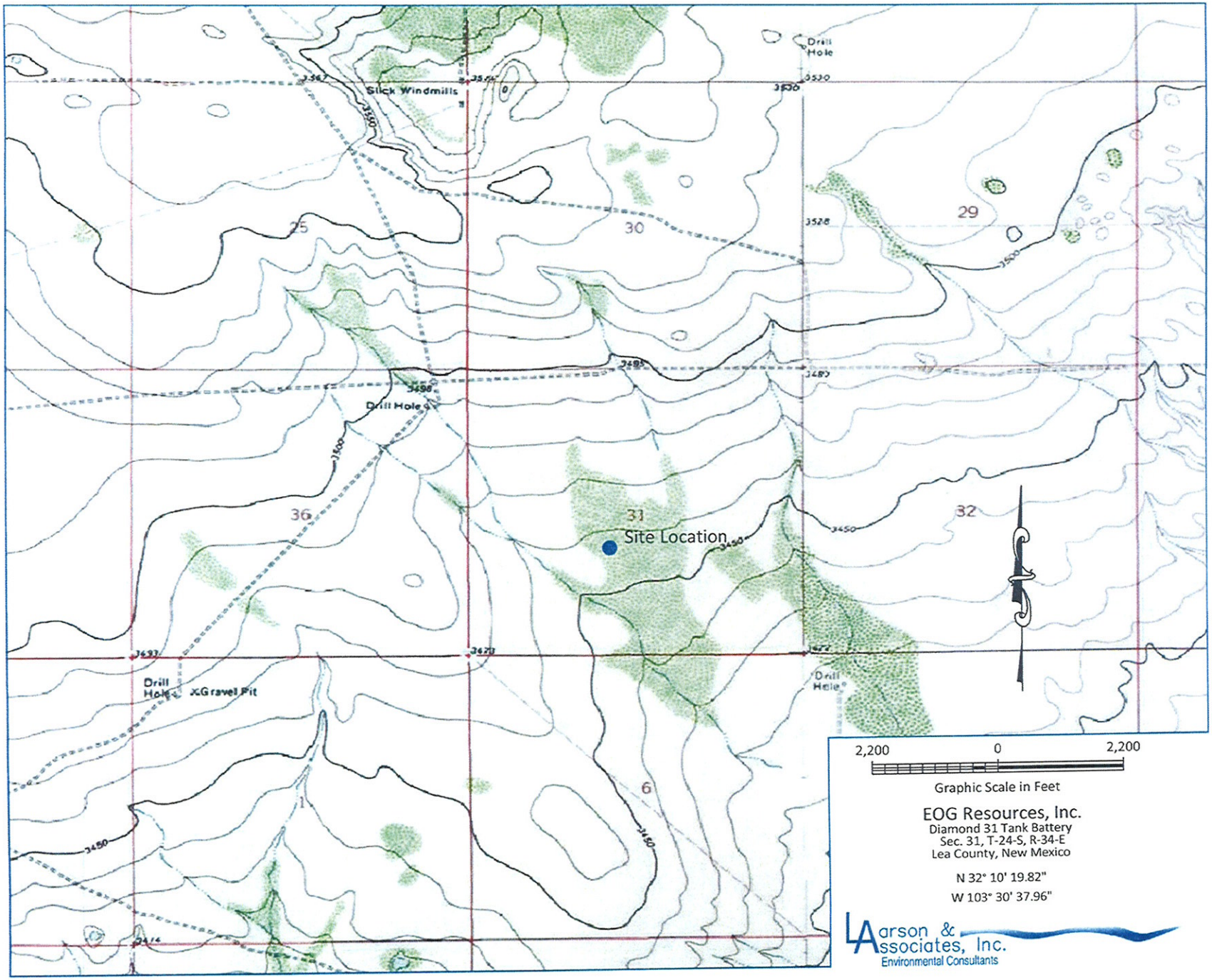


Figure 1 - Topographic Map

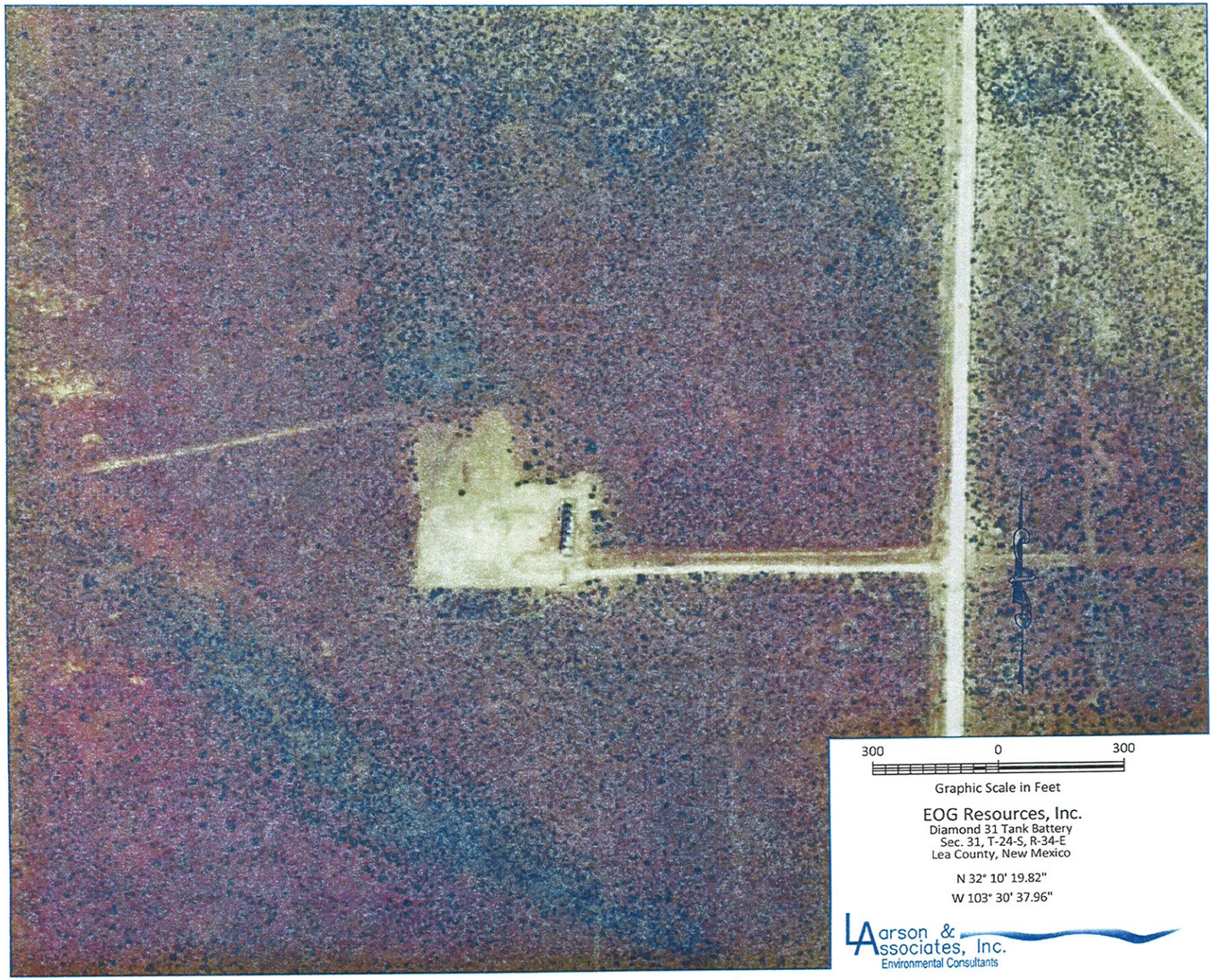


Figure 2 - Aerial Map

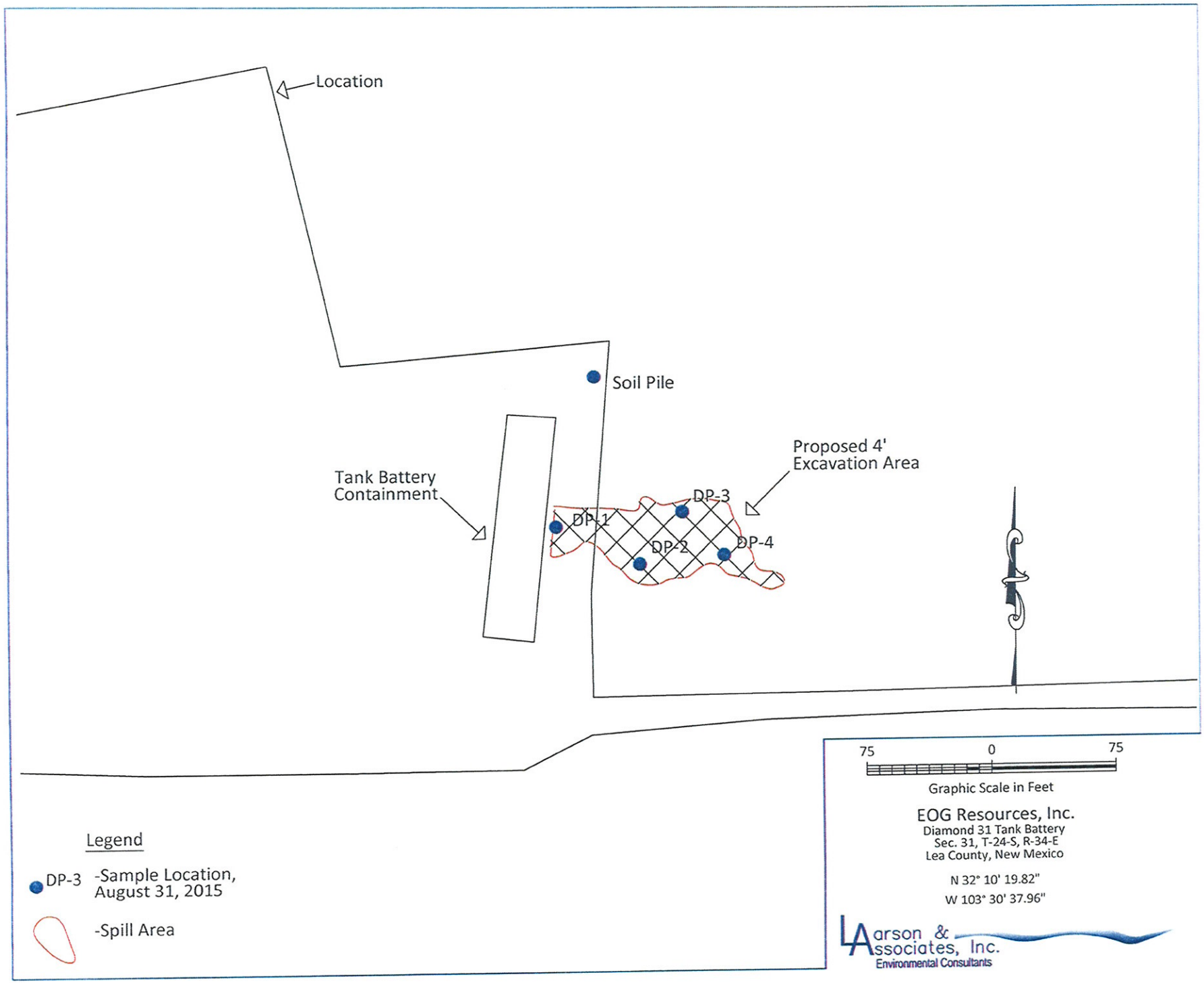


Figure 3 - Site Map

Attachment A

Laboratory Report

PERMIAN BASIN
ENVIRONMENTAL LAB, LP
10014 SCR 1213
Midland, TX 79706

PBELAB

Analytical Report

Prepared for:

Mark Larson
Larson & Associates, Inc.
P.O. Box 50685
Midland, TX 79710

Project: Diamond 31
Project Number: 15-0150-01
Location: New Mexico

Lab Order Number: 5I08011

NELAP/TCEQ # T104704156-13-3

Report Date: 09/14/15

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DP 1 (0-1)	5108011-01	Soil	09/04/15 11:15	09-08-2015 09:25
DP 1 (1-2)	5108011-02	Soil	09/04/15 11:15	09-08-2015 09:25
DP 1 (2-4)	5108011-03	Soil	09/04/15 11:15	09-08-2015 09:25
DP 1 (4-6)	5108011-04	Soil	09/04/15 11:30	09-08-2015 09:25
DP 2 (0-1)	5108011-05	Soil	09/04/15 11:45	09-08-2015 09:25
DP 2 (1-2)	5108011-06	Soil	09/04/15 11:45	09-08-2015 09:25
DP 2 (2-4)	5108011-07	Soil	09/04/15 11:45	09-08-2015 09:25
DP 2 (4-6)	5108011-08	Soil	09/04/15 11:50	09-08-2015 09:25
DP 3 (0-1)	5108011-09	Soil	09/04/15 12:15	09-08-2015 09:25
DP 3 (1-2)	5108011-10	Soil	09/04/15 12:15	09-08-2015 09:25
DP 3 (2-4)	5108011-11	Soil	09/04/15 12:15	09-08-2015 09:25
DP 3 (4-6)	5108011-12	Soil	09/04/15 12:20	09-08-2015 09:25
DP 3 (6-7)	5108011-13	Soil	09/04/15 12:20	09-08-2015 09:25
DP 4 (0-1)	5108011-14	Soil	09/04/15 12:45	09-08-2015 09:25
DP 4 (1-2)	5108011-15	Soil	09/04/15 12:45	09-08-2015 09:25
DP 4 (2-4)	5108011-16	Soil	09/04/15 12:45	09-08-2015 09:25
DP 4 (4-6)	5108011-17	Soil	09/04/15 12:55	09-08-2015 09:25
DP 4 (6-8)	5108011-18	Soil	09/04/15 12:55	09-08-2015 09:25
SP 1 COMP	5108011-19	Soil	09/04/15 13:15	09-08-2015 09:25

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

DP 1 (0-1)

5I08011-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	3090	27.2	mg/kg dry	25	P5I1101	09/08/15	09/08/15	EPA 300.0	
% Moisture	8.0	0.1	%	1	P5I0901	09/09/15	09/09/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	27.2	mg/kg dry	1	P5I1004	09/08/15	09/09/15	TPH 8015M	
>C12-C28	593	27.2	mg/kg dry	1	P5I1004	09/08/15	09/09/15	TPH 8015M	
>C28-C35	117	27.2	mg/kg dry	1	P5I1004	09/08/15	09/09/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*111 %*	*70-130*		*P5I1004*	*09/08/15*	*09/09/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*142 %*	*70-130*		*P5I1004*	*09/08/15*	*09/09/15*	*TPH 8015M*	*S-GC*
Total Petroleum Hydrocarbon C6-C35	710	27.2	mg/kg dry	1	[CALC]	09/08/15	09/09/15	calc	

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

DP 1 (1-2)

5108011-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	194	1.05	mg/kg dry	1	P5I1404	09/09/15	09/14/15	EPA 300.0	
% Moisture	5.0	0.1	%	1	P5I0901	09/09/15	09/09/15	% calculation	

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

DP 1 (2-4)

5108011-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	1100	1.06	mg/kg dry	1	PSI1404	09/09/15	09/14/15	EPA 300.0	
% Moisture	6.0	0.1	%	1	PSI0901	09/09/15	09/09/15	% calculation	

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

DP 1 (4-6)

5108011-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**1830**	11.1	mg/kg dry	10	P5I1101	09/08/15	09/08/15	EPA 300.0	
% Moisture	**10.0**	0.1	%	1	P5I0901	09/09/15	09/09/15	% calculation	

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

DP 2 (0-1)

5108011-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**189**	1.04	mg/kg dry	1	P511404	09/09/15	09/14/15	EPA 300.0	
% Moisture	**4.0**	0.1	%	1	P510901	09/09/15	09/09/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	26.0	mg/kg dry	1	P511004	09/08/15	09/09/15	TPH 8015M	
>C12-C28	**42.0**	26.0	mg/kg dry	1	P511004	09/08/15	09/09/15	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P511004	09/08/15	09/09/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*106 %*	*70-130*		*P511004*	*09/08/15*	*09/09/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*138 %*	*70-130*		*P511004*	*09/08/15*	*09/09/15*	*TPH 8015M*	*S-GC*
Total Petroleum Hydrocarbon C6-C35	**42.0**	26.0	mg/kg dry	1	[CALC]	09/08/15	09/09/15	calc	

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

DP 2 (1-2)

5108011-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	97.6	1.03	mg/kg dry	1	P511404	09/09/15	09/14/15	EPA 300.0	
% Moisture	3.0	0.1	%	1	P510901	09/09/15	09/09/15	% calculation	

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

DP 2 (2-4)

5108011-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	697	1.06	mg/kg dry	1	P511404	09/09/15	09/14/15	EPA 300.0	
% Moisture	6.0	0.1	%	1	P510901	09/09/15	09/09/15	% calculation	

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
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Midland TX, 79710	Project Manager: Mark Larson	

DP 2 (4-6)

5108011-08 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	3930	26.9	mg/kg dry	25	P511404	09/09/15	09/14/15	EPA 300.0	
% Moisture	7.0	0.1	%	1	P510901	09/09/15	09/09/15	% calculation	

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

DP 3 (0-1)

5108011-09 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**2160**	10.4	mg/kg dry	10	P5I1404	09/09/15	09/14/15	EPA 300.0	
% Moisture	**4.0**	0.1	%	1	P5I0901	09/09/15	09/09/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	26.0	mg/kg dry	1	P5I1103	09/09/15	09/09/15	TPH 8015M	
>C12-C28	**58.0**	26.0	mg/kg dry	1	P5I1103	09/09/15	09/09/15	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P5I1103	09/09/15	09/09/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*117 %*	*70-130*		*P5I1103*	*09/09/15*	*09/09/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*149 %*	*70-130*		*P5I1103*	*09/09/15*	*09/09/15*	*TPH 8015M*	*S-GC*
Total Petroleum Hydrocarbon C6-C35	**58.0**	26.0	mg/kg dry	1	[CALC]	09/09/15	09/09/15	calc	

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

DP 3 (1-2)

5I08011-10 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	424	1.04	mg/kg dry	1	P5I1404	09/09/15	09/14/15	EPA 300.0	
% Moisture	4.0	0.1	%	1	P5I0901	09/09/15	09/09/15	% calculation	

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

DP 3 (2-4)

5108011-11 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	3040	26.3	mg/kg dry	25	PSI1404	09/09/15	09/14/15	EPA 300.0	
% Moisture	5.0	0.1	%	1	PSI0901	09/09/15	09/09/15	% calculation	

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

DP 3 (4-6)

5I08011-12 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	6190	26.9	mg/kg dry	25	P5I1101	09/08/15	09/08/15	EPA 300.0	
% Moisture	7.0	0.1	%	1	P5I0901	09/09/15	09/09/15	% calculation	

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

DP 3 (6-7)

5108011-13 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	6690	27.2	mg/kg dry	25	P511101	09/08/15	09/08/15	EPA 300.0	
% Moisture	8.0	0.1	%	1	P510901	09/09/15	09/09/15	% calculation	

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

DP 4 (0-1)

5108011-14 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	6650	27.2	mg/kg dry	25	P5I1101	09/08/15	09/08/15	EPA 300.0	
% Moisture	8.0	0.1	%	1	P5I0901	09/09/15	09/09/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	ND	27.2	mg/kg dry	1	P5I1103	09/09/15	09/09/15	TPH 8015M	
>C12-C28	ND	27.2	mg/kg dry	1	P5I1103	09/09/15	09/09/15	TPH 8015M	
>C28-C35	ND	27.2	mg/kg dry	1	P5I1103	09/09/15	09/09/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*115 %*	*70-130*		*P5I1103*	*09/09/15*	*09/09/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*143 %*	*70-130*		*P5I1103*	*09/09/15*	*09/09/15*	*TPH 8015M*	*S-GC*
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	09/09/15	09/09/15	calc	

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

DP 4 (1-2)

5I08011-15 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	2210	10.6	mg/kg dry	10	P5I1404	09/09/15	09/14/15	EPA 300.0	
% Moisture	6.0	0.1	%	1	P5I0901	09/09/15	09/09/15	% calculation	

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

DP 4 (2-4)

5108011-16 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	28.5	1.02	mg/kg dry	1	P5I1404	09/09/15	09/14/15	EPA 300.0	
% Moisture	2.0	0.1	%	1	P510901	09/09/15	09/09/15	% calculation	

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

DP 4 (4-6)

S108011-17 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**5000**	27.5	mg/kg dry	25	P511405	09/09/15	09/14/15	EPA 300.0	
% Moisture	**9.0**	0.1	%	1	P510901	09/09/15	09/09/15	% calculation	

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

DP 4 (6-8)

5108011-18 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**3000**	27.8	mg/kg dry	25	P5I1404	09/09/15	09/14/15	EPA 300.0	
% Moisture	**10.0**	0.1	%	1	P5I0901	09/09/15	09/02/15	% calculation	

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

SP 1 COMP

5108011-19 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**5570**	52.6	mg/kg dry	50	P5I1404	09/09/15	09/14/15	EPA 300.0	
% Moisture	**5.0**	0.1	%	1	P5I0901	09/09/15	09/09/15	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	**3310**	132	mg/kg dry	5	P5I1103	09/09/15	09/09/15	TPH 8015M	
>C12-C28	**23300**	132	mg/kg dry	5	P5I1103	09/09/15	09/09/15	TPH 8015M	
>C28-C35	**3890**	132	mg/kg dry	5	P5I1103	09/09/15	09/09/15	TPH 8015M	
Surrogate: 1-Chlorooctane		*106 %*	*70-130*		*P5I1103*	*09/09/15*	*09/09/15*	*TPH 8015M*	
Surrogate: o-Terphenyl		*150 %*	*70-130*		*P5I1103*	*09/09/15*	*09/09/15*	*TPH 8015M*	*S-GC*
Total Petroleum Hydrocarbon C6-C35	**30500**	132	mg/kg dry	5	[CALC]	09/09/15	09/09/15	calc	

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5I0901 - % Solids										
Blank (P5I0901-BLK1)				Prepared & Analyzed: 09/09/15						
% Moisture	ND	0.1	%							
Duplicate (P5I0901-DUP1)	Source: 5I08001-01			Prepared & Analyzed: 09/09/15						
% Moisture	14.0	0.1	%		14.0			0.00	20	
Duplicate (P5I0901-DUP2)	Source: 5I08011-09			Prepared & Analyzed: 09/09/15						
% Moisture	4.0	0.1	%		4.0			0.00	20	
Batch P5I1101 - * DEFAULT PREP *** **										
Blank (P5I1101-BLK1)				Prepared & Analyzed: 09/08/15						
Chloride	ND	1.00	mg/kg wet							
LCS (P5I1101-BS1)				Prepared & Analyzed: 09/08/15						
Chloride	114	1.00	mg/kg wet	100		114	80-120			
LCS Dup (P5I1101-BSD1)				Prepared & Analyzed: 09/08/15						
Chloride	109	1.00	mg/kg wet	100		109	80-120	4.77	20	
Duplicate (P5I1101-DUP1)	Source: 5I03004-01			Prepared & Analyzed: 09/08/15						
Chloride	2090	25.5	mg/kg dry		2090			0.146	20	
Duplicate (P5I1101-DUP2)	Source: 5I03017-03			Prepared & Analyzed: 09/11/15						
Chloride	3410	28.7	mg/kg dry		3360			1.54	20	
Matrix Spike (P5I1101-MS1)	Source: 5I03004-01			Prepared & Analyzed: 09/08/15						
Chloride	2160	25.5	mg/kg dry	102	2090	64.5	80-120			QM-07

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5I1404 - * DEFAULT PREP *****										
Blank (P5I1404-BLK1)				Prepared: 09/09/15 Analyzed: 09/14/15						
Chloride	ND	1.00	mg/kg wet							
LCS (P5I1404-BS1)				Prepared: 09/09/15 Analyzed: 09/14/15						
Chloride	99.5	1.00	mg/kg wet	100		99.5	80-120			
LCS Dup (P5I1404-BSD1)				Prepared: 09/09/15 Analyzed: 09/14/15						
Chloride	96.2	1.00	mg/kg wet	100		96.2	80-120	3.40	20	
Duplicate (P5I1404-DUP1)	Source: 5I08004-01			Prepared: 09/09/15 Analyzed: 09/14/15						
Chloride	164	1.06	mg/kg dry		164			0.0585	20	
Matrix Spike (P5I1404-MS1)	Source: 5I08004-01			Prepared: 09/09/15 Analyzed: 09/14/15						
Chloride	267	1.06	mg/kg dry	93.1	164	111	80-120			
Batch P5I1405 - * DEFAULT PREP *****										
Blank (P5I1405-BLK1)				Prepared: 09/09/15 Analyzed: 09/14/15						
Chloride	ND	1.00	mg/kg wet							
LCS (P5I1405-BS1)				Prepared: 09/09/15 Analyzed: 09/14/15						
Chloride	100	1.00	mg/kg wet	100		100	80-120			
LCS Dup (P5I1405-BSD1)				Prepared: 09/09/15 Analyzed: 09/14/15						
Chloride	100	1.00	mg/kg wet	100		100	80-120	0.379	20	
Duplicate (P5I1405-DUP1)	Source: 5I08011-17			Prepared: 09/09/15 Analyzed: 09/14/15						
Chloride	4990	27.5	mg/kg dry		5000			0.160	20	

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5I1405 - * DEFAULT PREP *****										
Matrix Spike (P5I1405-MS1)	**Source: 5I08011-17**			Prepared: 09/09/15 Analyzed: 09/14/15						
Chloride	6260	27.5	mg/kg dry	1100	5000	115	80-120			

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5I1004 - TX 1005										
Blank (P5I1004-BLK1)				Prepared & Analyzed: 09/08/15						
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	*124*		"	*100*		*124*	*70-130*			
Surrogate: o-Terphenyl	*78.8*		"	*50.0*		*158*	*70-130*			*S-GC*
LCS (P5I1004-BS1)				Prepared & Analyzed: 09/08/15						
C6-C12	911	25.0	mg/kg wet	1000		91.1	75-125			
>C12-C28	1000	25.0	"	1000		100	75-125			
Surrogate: 1-Chlorooctane	*111*		"	*100*		*111*	*70-130*			
Surrogate: o-Terphenyl	*67.9*		"	*50.0*		*136*	*70-130*			*S-GC*
LCS Dup (P5I1004-BSD1)				Prepared & Analyzed: 09/08/15						
C6-C12	912	25.0	mg/kg wet	1000		91.2	75-125	0.128	20	
>C12-C28	1000	25.0	"	1000		100	75-125	0.0240	20	
Surrogate: 1-Chlorooctane	*110*		"	*100*		*110*	*70-130*			
Surrogate: o-Terphenyl	*67.8*		"	*50.0*		*136*	*70-130*			*S-GC*
Matrix Spike (P5I1004-MS1)	**Source: 5I08011-01**			Prepared: 09/08/15 Analyzed: 09/09/15						
C6-C12	933	27.2	mg/kg dry	1090	ND	85.8	75-125			
>C12-C28	1160	27.2	"	1090	593	51.9	75-125			
Surrogate: 1-Chlorooctane	*119*		"	*109*		*109*	*70-130*			
Surrogate: o-Terphenyl	*72.8*		"	*54.3*		*134*	*70-130*			*S-GC*
Matrix Spike Dup (P5I1004-MSD1)	**Source: 5I08011-01**			Prepared: 09/08/15 Analyzed: 09/09/15						
C6-C12	951	27.2	mg/kg dry	1090	ND	87.5	75-125	1.92	20	
>C12-C28	1180	27.2	"	1090	593	53.8	75-125	3.53	20	
Surrogate: 1-Chlorooctane	*122*		"	*109*		*112*	*70-130*			
Surrogate: o-Terphenyl	*74.9*		"	*54.3*		*138*	*70-130*			*S-GC*

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5I1103 - TX 1005										
Blank (P5I1103-BLK1)				Prepared & Analyzed: 09/09/15						
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	*125*		"	*100*		*125*	*70-130*			
Surrogate: o-Terphenyl	*79.0*		"	*50.0*		*158*	*70-130*			*S-GC*
LCS (P5I1103-BS1)				Prepared & Analyzed: 09/09/15						
C6-C12	861	25.0	mg/kg wet	1000		86.1	75-125			
>C12-C28	957	25.0	"	1000		95.7	75-125			
Surrogate: 1-Chlorooctane	*106*		"	*100*		*106*	*70-130*			
Surrogate: o-Terphenyl	*64.7*		"	*50.0*		*129*	*70-130*			
LCS Dup (P5I1103-BSD1)				Prepared & Analyzed: 09/09/15						
C6-C12	874	25.0	mg/kg wet	1000		87.4	75-125	1.40	20	
>C12-C28	975	25.0	"	1000		97.5	75-125	1.83	20	
Surrogate: 1-Chlorooctane	*107*		"	*100*		*107*	*70-130*			
Surrogate: o-Terphenyl	*66.0*		"	*50.0*		*132*	*70-130*			*S-GC*
Matrix Spike (P5I1103-MS1)	Source: 5I09001-11			Prepared & Analyzed: 09/09/15						
C6-C12	934	25.5	mg/kg dry	1020	ND	91.5	75-125			
>C12-C28	999	25.5	"	1020	ND	97.9	75-125			
Surrogate: 1-Chlorooctane	*123*		"	*102*		*120*	*70-130*			
Surrogate: o-Terphenyl	*77.8*		"	*51.0*		*153*	*70-130*			*S-GC*
Matrix Spike Dup (P5I1103-MSD1)	Source: 5I09001-11			Prepared & Analyzed: 09/09/15						
C6-C12	933	25.5	mg/kg dry	1020	ND	91.5	75-125	0.0459	20	
>C12-C28	1020	25.5	"	1020	ND	99.6	75-125	1.68	20	
Surrogate: 1-Chlorooctane	*123*		"	*102*		*120*	*70-130*			
Surrogate: o-Terphenyl	*76.9*		"	*51.0*		*151*	*70-130*			*S-GC*

Larson & Associates, Inc.	Project: Diamond 31	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 15-0150-01	
Midland TX, 79710	Project Manager: Mark Larson	

Notes and Definitions

S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By: _____ Date: 9/14/2015

Brent Barron, Laboratory Director/Technical Director

5I08011

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

DATE: 9/8/2015 PAGE 1 OF 2

PO #: LAB WORK ORDER #:

PROJECT LOCATION OR NAME: Diamond 31

LAI PROJECT #: 15-0150-01 COLLECTOR: Sarah Smith

Data Reported to:

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: NM

(S=SOIL) W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

PRESERVATION: HCl | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE | UNPRESERVED

ANALYSES: BTEX ☐ MTBE ☐ | TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐ | GASOLINE MOD 8015 ☐ Extended | DIESEL - MOD 8015 ☐ Extended | VOC 8260 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TCLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ | TOTAL METALS (RCRA) ☐ OTHER LIST ☐ | LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | pH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐

	Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES	FIELD NOTES
01	DP1 (0-1)	01	9/4/15	11:15	S	1				☒		X X	
02	DP1 (1-2)			↓								X	
03	DP1 (2-4)			↓								X	
04	DP1 (4-6)			11:30									
05	DP2 (0-1)	02		11:45								X X	
06	DP2 (1-2)			↓									
07	DP2 (2-4)			↓									
08	DP2 (4-5)			11:50									
09	DP3 (0-1)	03		12:15								X X	
10	DP3 (1-2)			↓									
11	DP3 (2-4)			↓									
12	DP3 (4-6)			12:20									
13	DP3 (6-7)			↓									
14	DP4 (0-1)	04		12:45								X X	
15	DP4 (1-2)			↓	↓	↓				↓			
	TOTAL												

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) Sarah Smith DATE/TIME 9/8/15 9:25 RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 2.0 THERM #: LA 1
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☑ NOT USED
☐ CARRIER BILL #
☐ HAND DELIVERED

5I0801

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

DATE: 9/8/2015 PAGE 2 OF 2

PO #: LAB WORK ORDER #:

PROJECT LOCATION OR NAME: Diamond 31

LAI PROJECT #: 15-0150-01 COLLECTOR: Sarah Barnett

Data Reported to:

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: NM

S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

	Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 # Extended	DIESEL - MOD 8015 # Extended	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	PH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDES ☒ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
16	DP4(2-4)	04	9/4/15	12:45	S	1				X																X				
17	DP4(4-6)			12:55																										
18	DP4 (6-8)			↓																										
19	SP1 COMP	05	↓	1:15	↓	↓				↓		X	X																	
	TOTAL																													

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) Sarah Barnett DATE/TIME 9/8/15 9:25 RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 2.0 THERM #: LAI
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☑ NOT USED
☐ CARRIER BILL #
☐ HAND DELIVERED

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 EOG Resources, Inc.	Contact Zane Kurtz
Address 5509 Champions Drive, Midland, TX 79705	Telephone No. 432-425-2023
Facility Name Diamond 31 Fed Com #1 SWD	Facility Type Salt Water Disposal well

Surface Owner BLM	Mineral Owner EOG Resources	API No. 30-025-40484

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	31	24S	34E	3323	N	3287	E	Lea

Latitude 32.1722 **Longitude** -103.5111

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 1570 bbls	Volume Recovered 1560 bbls
Source of Release Rupture of tanks from lightning strike	Date and Hour of Occurrence 8/28/2015	Date and Hour of Discovery 8/28/15
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

RECEIVED
By OCD District 1 at 7:36 am, Sep 09, 2015

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Lightning strike at SWD facility caused rupture of tanks and release of 1570 bbls produced water. Only 10 bbls spilled off the pad area. Incoming flow onto site was shut off. Jal Fire Department extinguished the fire at site. No free liquids to recover off the pad. 3rd party consultant will travel to site to delineate horizontal and vertical impacts. A work plan will be prepared to remediate impacted area. Work plan will include excavation of impacted material onto poly liner prior to proper disposal at Sundance disposal in Eunice, NM. Clean backfill will be used once final clearance is granted.

Describe Area Affected and Cleanup Action Taken.*

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:

Printed Name: Jamon Hohensee, EOG Resources

Title: Environmental Rep.

E-mail Address: jamon_hohensee@eogresources.com

Date: 9-8-15 Phone: 432-556-8074

OIL CONSERVATION DIVISION

Approved by Environmental Specialist:

Approval Date: 09/09/2015 Expiration Date: 11/09/2015

Conditions of Approval:
Site samples required. Delineate and remediate as per MNOCD guides. Geotag photographs of remediation required.

Attached ☐
1RP-3844

nKJ1525227809
pKJ1525228315

* Attach Additional Sheets If Necessary