APPROVED
By Olivia Yu at 10:30 am, Oct 03, 2017

NMOCD approves of the proposed delineation for 1RP-4617. Laboratory analyses (BTEX, TPH, and chlorides) must reflect depths at which permissible levels were obtained and maintained for a minimum of 10 ft. further in depth. Permissible chloride levels are 600 mg/kg.

1RP-4617

DELINEATION PLAN

Pogo Oil and Gas Operating, Inc., Langlie Jal Unit #32

Crude Oil Spill

Lea County, New Mexico

LAI Project No. 17-0173-01

August 29, 2017

Prepared for:

Pogo Oil & Gas Operating, Inc.

1515 Calle Sur, Suite 174

Hobbs, NM 88240

Prepared by:

Larson & Associates, Inc.

507 North Marienfeld Street, Suite 205

Midland, Texas 79701

Mark J. Larson, P.G.

Certified Professional Geologist #10490

Sarah R. Johnson

Staff Geologist

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Table of Contents

Figures

Attachments

1.0 INTRODUCTION

Larson & Associates Inc. (LAI) has prepared this delineation plan on behalf of Pogo Oil and Gas, LLC for submittal to the New Mexico Oil Conservation Division (OCD) District 1 for a crude oil spill at the Langlie Jal Unit 32 (Site) located in Unit C (NE/4, NW/4), Section 6, Township 25 South, and Range 37 East in Lea County, New Mexico. The geodetic position is North 32.1647224° and West -103.204071°. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

1.1 Background

The spill occurred on February 15, 2017, due to failure in a partially buried flow line causing the release of approximately 4 barrels (bbl) of produced water, 6 bbl of crude oil and minimal gas. No liquids were recovered. The topography allowed for the released fluids to migrate east of the failure point, covering an area of approximately 7,870 square feet. The spill was discovered by the ranch supervisor for Woolworth Trust, Bob Haddox, and reported to the appropriate field personnel. All of the nearby wells in the vicinity were turned off and inspected for failure. It was determined that the failure in unit 32 was due to corrosion of the flow line. On February 15, 2017, approximately 3 hours after the release was discovered, M.Y. Merchant reported the incident to OCD District I (verbal communication with Maxey Brown). The initial C-141 was submitted to the OCD on February 15, 2017 and was assigned remediation permit number 1RP-4617.

1.2 Physical Setting

The physical setting is as follows:

- The surface elevation is approximately 3,220 feet above mean sea level (msl);
- The topography slopes gently to the southeast;
- The nearest surface water is a small playa located about 100 feet east of the failer point;
- The soils are designated as “Simona-Upton association, 0 to 3 percent slope” consisting of 0 to 8 inches of gravelly fine sandy loam underlain by fine sandy loam;
- Surface geology is of the Ogallala formation from the Lower Pliocene to middle Miocene, the depositional environment is of alluvial and eolian nature with petrocalcic soils of the southern High Plains;
- Groundwater occurs in the Ogallala formation;
- The nearest fresh water well is located in Unit H (SE/4, NE/4), Section 32, Township 24 South Range 37 East about 0.5 miles northeast of the site;
- Depth to groundwater is reported at 73.53 feet bgs (1991).

1.3 Remediation Action Levels

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

Criteria	***Result***	***Score***
Depth-to-Groundwater	50 – 99 Feet	10
Wellhead Protection Area	No	0
Distance to Surface Water Body	<200 Horizontal Feet	20

The following RRAL apply to the release for ranking score: 30

- Benzene 10 mg/Kg
- BTEX 50 mg/Kg
- TPH 100 mg/Kg

2.0 PRELIMINARY DELINATION

On May 16, 2017, Phoenix Environmental, LLC (Phoenix) personnel conducted a Site visit, photographed the spill, and collected soil samples. A background sample was collected about 200 feet north of the Site to determine lateral migration. Soil samples were collected at Test Hole 1 at a depth of 0 – 6", 2', 4', 6.5', 8', 10', 12', and 14'. The soil samples were delivered to Cardinal Laboratories under preservation and chain of custody and tested for total petroleum hydrocarbons (TPH), BTEX (sum of benzene, toluene, ethylbenzene, and xylene), and chloride. TPH was only reported to C28 (diesel range organics) and was reported above the RRAL at 34,200 mg/Kg in the sample from 0 – 6". Pogo contracted a backhoe operator to excavate soil from the center of the spill to about 3.5 feet bgs, by about 65 feet east and west and by about 11 feet north and south. The excavated soil was placed on a plastic liner to avoid any additional contamination.

3.0 DELINEATION PLAN

LAI proposes to collect soil samples at three (3) locations from the bottom of the excavation. The samples will be collected with direct push technology (DPT) at a depth of 0.5, 1.0, 3.0, 4.0, 5.0, 6.0, 8.0, and 12 feet below the bottom of the excavation based on the subsurface conditions. Samples will be collected from each sidewall opposite (north and south) of the bottom samples, as well as opposite ends (west and east). Samples will be collected outside of the excavation in each cardinal direction (north, south, east and west) at depths of 0.5, 1.0, 3.0, 4.0, 4.0, 6.0, 8.0 and 12 feet below ground surface (bgs) depending on subsurface conditions, as well as the soil stock pile. The soil samples will be delivered under preservation and chain of custody to Permian Basin Environmental Lab (PBEL) in Midland, Texas,

and analyzed for BTEX, TPH, including gasoline range organics (GRO), diesel range organics (DRO) and oil range organics (ORO) and chloride by EPA SW-846 Methods 8021B, 8015M and 300, respectively. Pending laboratory results, further delineation will be determined to reach cleanup level standards. Figure 3 presents a site map showing proposed soil sample locations.

4.0 REMEDIATION PLAN

Pogo will include a remediation plan in the delineation report to be submitted to the OCD upon receipt of the laboratory report.

Figures

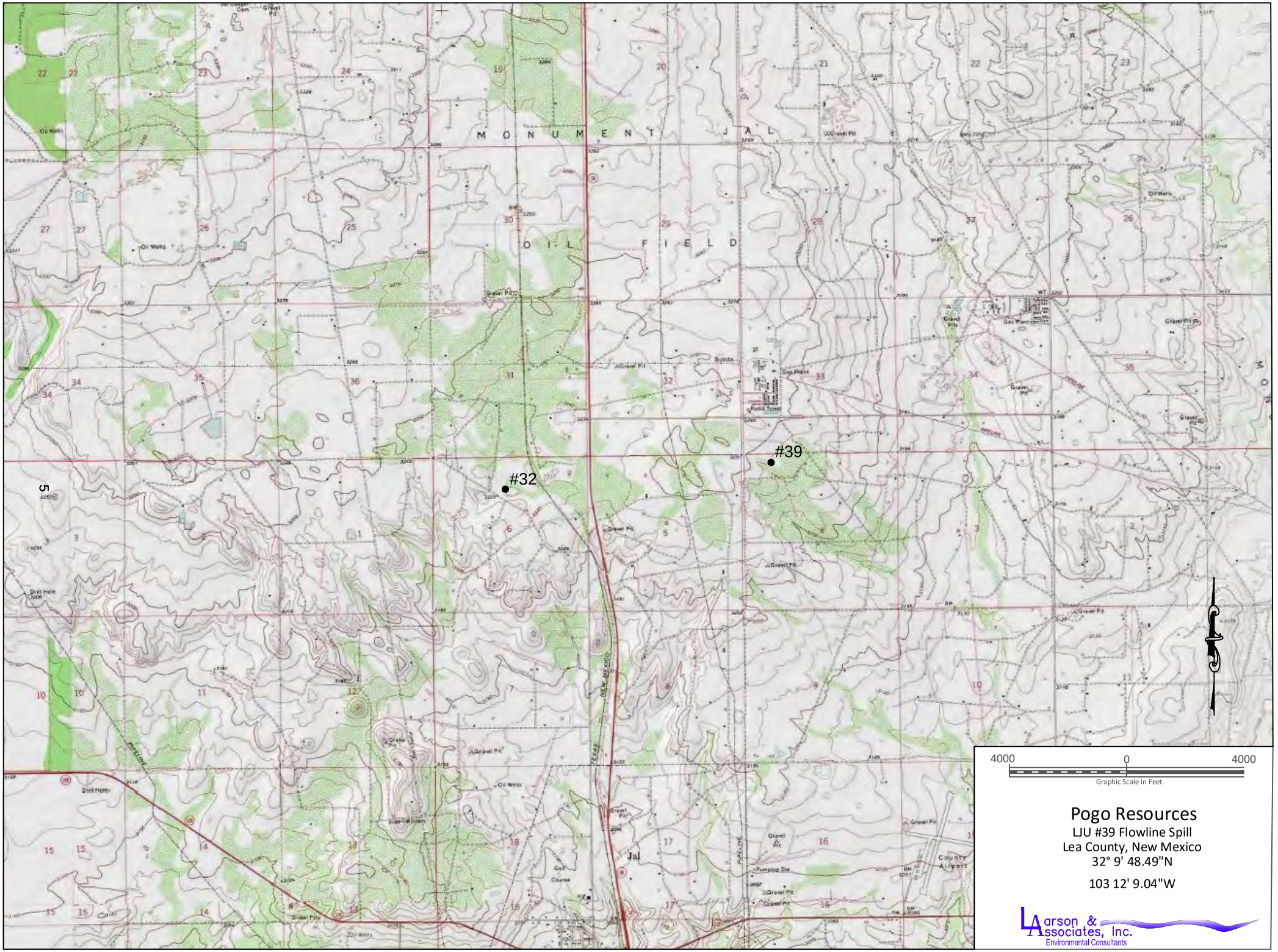

Figure 1 - Topographic Map

Figure 2 - Aerial Map

Figure 3 - Site Map Showing Excavation Area and Proposed Sample Location

Attachment A

Photographs

Soil Excavation Prior to Remediation Viewing East, August 23, 2017

Soil Excavation Prior to Remediation Viewing North, August 23, 2017

Soil Excavation Prior to Remediation Viewing West, August 23, 2017

Soil Excavation Prior to Remediation Viewing South, August 23, 2017

Excavated Soil Viewing North, August 23, 2017

Extended Spill Viewing West of Excavation, August 23, 2017

Extended Spill Viewing East Towards Excavation, August 23, 2017

Attachment B

Initial C-141

VII Conclusion

Based on the C-141 documentation along with the preliminary delineation work provided above, Penroc Oil Corporation will provide a subsequent delineation report along with a proposed remediation workplan once sampling analyses has been completed. The operator respectfully request the NMOCD's to review the data provided to date and provide insight on remediation plans once the subsequent sampling report is submitted.

VIII Initially Reviewed C-141

HOBBS OCD
FEB 16 2017
RECEIVED

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

PENROC OIL CORPORATION

X Initial Report ☐ Final Report

Name of Company **Penroc Oil Corporation**	Contact **M.Y. Merchant**
Address **PO Box 2769, Hobbs, NM 88241**	Telephone No. **575-492-1236**
Facility Name **Langlie Jal Unit #032**	Facility Type **Producing Well**

Surface Owner **Woolworth Trust**	Mineral Owner **Multiple Ownerships**	API No. **30-025-11481**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	06	25S	37E	660	North	1920	West	Lea

Latitude 32.1647224 **Longitude** -103.204071 NAD83

NATURE OF RELEASE

Type of Release **Oil / Gas / Produced Water**	Volume of Release **4 bbl of water, 6 bbl of oil, and minimal gas**	Volume Recovered **0 at time of report**
Source of Release **Buried flowline failure**	Date and Hour of Occurrence **2/15/17 at approx. 1:00 PM**	Date and Hour of Discovery **2/15/17 at 1:30 PM**
Was Immediate Notice Given? X Yes ☐ No ☐ Not Required	If YES, To Whom? **Maxey Brown**	
By Whom? **M.Y. Merchant**	Date and Hour **2/15/17 at 4:00 PM**	
Was a Watercourse Reached? ☐ Yes X No	If YES, Volume Impacting the Watercourse. **Not Applicable**	

If a Watercourse was Impacted, Describe Fully.*

Not Applicable

RECEIVED
By Olivia Yu at 10:56 am, Feb 21, 2017

Describe Cause of Problem and Remedial Action Taken.*

Please see attached documentation

Describe Area Affected and Cleanup Action Taken.*

Please see attached documentation

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:	OIL CONSERVATION DIVISION
Printed Name: **Kyle Townsend**	Approved by Environmental Specialist:
Title: **Agent**	Approval Date: 2/21/2017 Expiration Date:
E-mail Address: **kyle@pogooilandgas.com**	Conditions of Approval: see attached directive Attached ☒
Date: **2/15/17** Phone: **713-305-9886**	

* Attach Additional Sheets If Necessary

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