



1RP-4666. Approved with conditions:  
1. Establish boreholes as necessary in potential pooling spots along the lease road.  
2. Provide soil sampling witnessing opportunities.

April 3, 2017

VIA EMAIL: [Olivia.Yu@state.nm.us](mailto:Olivia.Yu@state.nm.us)

Ms. Olivia Yu  
Environmental Specialist  
New Mexico Oil Conservation Division District 1  
1624 N. French Drive  
Hobbs, New Mexico 88240

**Re: Delineation Plan for Paladin Energy Corporation, East Caprock SWD and Posey A 5 Spill, Unit O (SW/4, SE/4), Section 11, Township 12 South, Range 32 East, Lea County, New Mexico**

Dear Ms. Yu,

This plan is submitted to the New Mexico Oil Conservation Division (OCD) District 1 for delineating the vertical and lateral extent of spills at the Paladin Energy Corporation (Paladin) East Caprock salt water disposal (SWD) and Posey A 5 tank battery (Site). The Site is located in Unit O (SW/4, SE/4), Section 11, Township 12 South, Range 32 East in Lea County, New Mexico. On March 28, 2017, Paladin received notice from OCD that a field inspector visited the Site on February 23, 2017, and observed spills around equipment and tanks at the East Caprock SWD and at the separator located near the southeast corner of the Posey A 5 battery (API No. 30-025-00102). The spill at the East Caprock SWD was caused by a leak at the injection pump that flowed east and north around the tanks. The leak at the Posey A 5 battery was caused by a hole in the separator. The spill at the Posey A 5 battery flowed south along the east side of the lease road for about 300 feet. The geodetic position is 33° 17' 22.811" North and 103° 41' 03.547". Figure 1 presents a topographic map. Figure 2 presents an aerial map. Attachment A presents the initial C-141.

#### **Delineation Plan**

Paladin proposes to delineate the horizontal and vertical extent of the spills by collecting and analyzing soil samples from approximately 13 locations. An air rotary rig will be used to drill soil borings with discrete soil samples collected with a jam tube sampler every 5 feet (i.e., 0, 5, 10, 15, etc.) between about 15 and 25 feet below ground surface (bgs) depending on subsurface conditions. The soil samples will be submitted under preservation and chain of custody to qualified laboratory and analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA SW-846 Method 8021B, total petroleum hydrocarbons (TPH) by EPA SW-846 Method 8015 including gasoline range organics (GRO) and diesel range organics (DRO) and oil range organics (ORO) and chloride by EPA Method 300.1. The laboratory results will be compared to the recommended remediation action levels (RRAL) calculated from OCD guidance and compiled into a report for submittal to the OCD. The report will include scaled drawings showing the Site layout, spill areas and sample locations, boring logs, laboratory analysis and remediation plan. Figure 3 presents a Site drawing and proposed sample locations.

Respectfully,

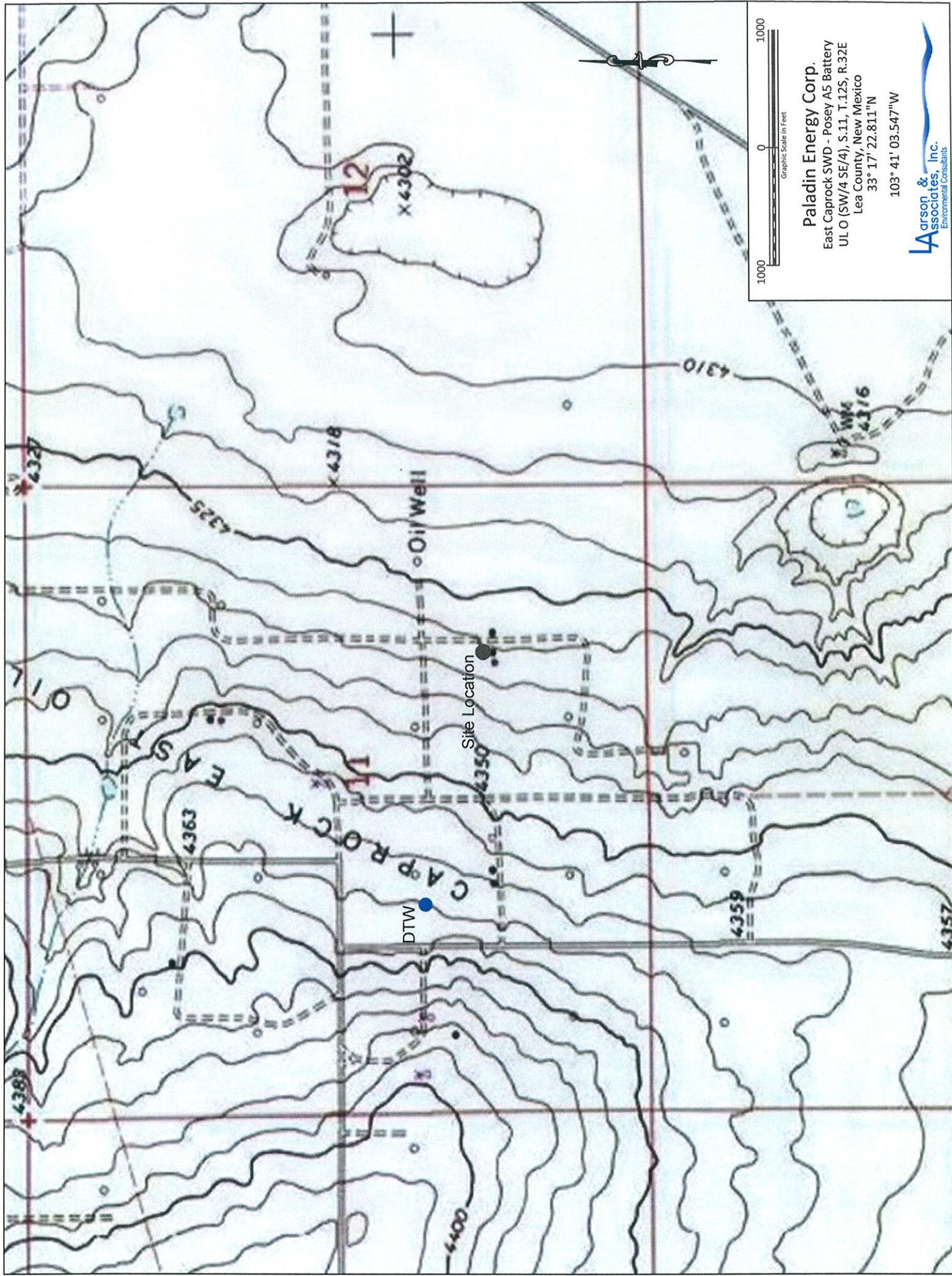
**LARSON & ASSOCIATES, INC.**

A blue ink handwritten signature, appearing to read 'Mark J. Larson', written over a blue wavy line graphic.

**Mark J. Larson**  
President/Sr. Project Manger  
[mark@laenvironmental.com](mailto:mark@laenvironmental.com)

Encl.

## Figures



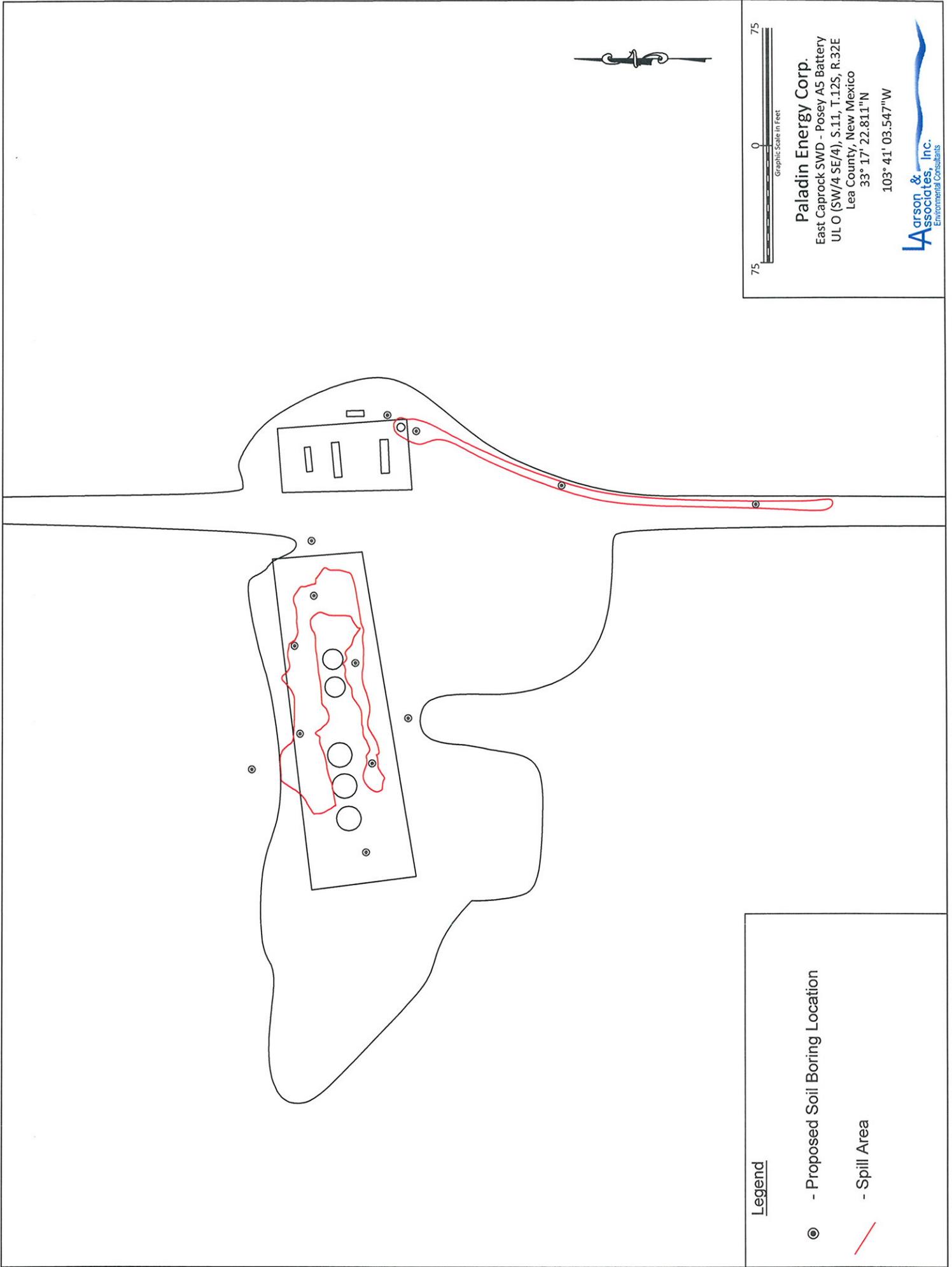
Paladin Energy Corp.  
 East Caprock SWD - Posey A5 Battery  
 UL O (SW/4 SE/4), S.11, T.12S, R.32E  
 Lea County, New Mexico  
 33° 17' 22.811"N  
 103° 41' 03.547"W

Arson &  
 Associates, Inc.  
 Environmental Consultants

Figure 1 - Topographic Map

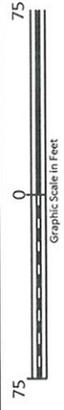


Figure 2 - Detailed Aerial Map



**Legend**

- - Proposed Soil Boring Location
- - Spill Area



**Paladin Energy Corp.**  
 East Caprock SWD - Posey A5 Battery  
 UL O (SW/4 SE/4), S.11, T.12S, R.32E  
 Lea County, New Mexico  
 33° 17' 22.811"N  
 103° 41' 03.547"W



Figure 3 - Site Map and Proposed Soil Boring Locations

**Attachment A**

**Initial C-141**

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, 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 October 10, 2003  
Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

**Release Notification and Corrective Action**

<b>OPERATOR</b>		<input checked="" type="checkbox"/> Initial Report	<input type="checkbox"/> Final Report
Name of Company: Paladin Energy Corporation		Contact: Mickey Horn	
Address: 10290 Monroe Drive Suite 301, Dallas, TX 75229		Telephone No.: (214) 352-7273	
Facility Name: East Caprock SWD/Posey A 5 Battery		Facility Type: SWD/Battery	
Surface Owner: Ricky Pierce	Mineral Owner	Lease No./API No. 3002500102	

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O / <b>P</b>	11	12S	32E	1,350	South	1,350	East	Lea

Latitude: N33° 17' 22.811" Longitude: W103° 41' 03.547"

**NATURE OF RELEASE**

Type of Release: Produced Water/Oil	Volume of Release: Unknown	Volume Recovered: None
Source of Release: Injection Pump leak/hole in separator	Date and Hour of Occurrence: 02-13-2017	Date and Hour of Discovery: 02-23-2017
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
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.*		

**RECEIVED**  
By Olivia Yu at 4:20 pm, Apr 05, 2017

Describe Cause of Problem and Remedial Action Taken.\* Leak at injection pump and hole in separator (repaired)  
Describe Area Affected and Cleanup Action Taken.\* Injection pump leak caused fluid (produced water and oil) to run east along south side of SWD to low area near east end of battery and west along north side of battery encroaching into pasture north of battery. Hole in separator caused oil to run south along east edge of lease road for about 250 feet. Will delineate and remediate to RRALS.

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: <i>Mickey Horn</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Mickey Horn	Approved by District Supervisor: <i>[Signature]</i>	
Title: Operations Manager	Approval Date: <b>4/5/2017</b>	Expiration Date:
E-mail Address: paladinmidland@suddenlink.net	Conditions of Approval: <b>see attached directive</b>	Attached <input checked="" type="checkbox"/>
Date: 04-03-2017 Phone: (432) 522-2162		

Attach Additional Sheets If Necessary

1RP-4666

nOY1709559710

foY1709559104

pOY1709560088

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 4/3/2017 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 1R-4666 has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

*The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]*

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 1 office in Hobbs on or before 5/5/2017. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C<sub>6</sub> thru C<sub>36</sub>), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C<sub>6</sub> thru C<sub>36</sub>), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

- Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

- If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

- Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

**Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.**

**Jim Griswold**

OCD Environmental Bureau Chief  
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Santa Fe, New Mexico 87505  
505-476-3465  
jim.griswold@state.nm.us