

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

Form C-141  
 Revised August 8, 2011

Oil Conservation Division  
 1220 South St. Francis Dr.  
 Santa Fe, NM 87505

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

**Release Notification and Corrective Action**

**OPERATOR**  Initial Report  Final Report

Name of Company <b>Burlington Resources Oil &amp; Gas Company</b>	Contact <b>Lisa Hunter</b>
Address <b>3401 East 30<sup>th</sup> St, Farmington, NM</b>	Telephone No. <b>(505) 258-1607</b>
Facility Name: <b>San Juan 27-5 137P</b>	Facility Type: <b>Gas</b>

Surface Owner: <b>BLM</b>	Mineral Owner: <b>BLM (SF-079391)</b>	API No. <b>3003929358</b>
---------------------------	---------------------------------------	---------------------------

**LOCATION OF RELEASE**

Unit Letter <b>I</b>	Section <b>18</b>	Township <b>27N</b>	Range <b>05W</b>	Feet from the <b>2415'</b>	North/South Line <b>FSL</b>	Feet from the <b>205</b>	East/West Line <b>FEL</b>	County <b>Rio Arriba</b>
-------------------------	----------------------	------------------------	---------------------	-------------------------------	--------------------------------	-----------------------------	------------------------------	-----------------------------

Latitude 36.5736 Longitude -107.3911

**NATURE OF RELEASE**

Type of Release <b>Hydrocarbon/Produced Water</b>	Volume of Release <b>194 bbl/21 bbl</b>	Volume Recovered <b>0</b>
Source of Release <b>Production Tank</b>	Date and Hour of Occurrence <b>Unknown</b>	Date and Hour of Discovery <b>12/22/2015 9:40 AM</b>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <b>Cory Smith (OCD) &amp; Shari Ketcham (BLM)</b>	
By Whom? <b>Lindsay Dumas</b>	Date and Hour <b>1/22/2015 4:15pm</b>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

OIL CONS. DIV DIST. 3  
 DEC 30 2016  
 OIL CONS. DIV DIST. 3

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\* On 1/22/2015 at approximately 9:40 AM, MSO doing monthly tank gauging on 3 production tank, discovered the tank empty. MSO notified Area Lead, who then contacted Area Superintendent, Environmental and Safety. Area Lead, Environmental Specialist, and Safety Specialist headed to location for verification. The MSO last gauged the tank 12/22/2014, the tank had 215 bbls of fluid. MSO was last on location on 1/12/2015 to complete an equipment walk around, no release detected. It has been determined that the release amount on this location is 194 bbls of condensate and 21 bbls of produced water. Investigation is ongoing.

Describe Area Affected and Cleanup Action Taken.\*

**See Attached Work Plan.**  
 COPC is waiting for BLM approval to proceed with the soil shredding method of remediation on the San Juan 27-5 Unit 137P. Reportedly, BLM FFO is preparing a Basin-wide EA for the method, and stated recently that they expect to have it completed in January, 2017. COPC is very interested in utilizing this method of remediation, and feels that the San Juan 27-5 Unit 137P will be an ideal site to initiate. Therefore, COPC respectfully requests an extension from NMOCD to allow BLM time to finish the EA and approval our work plan.

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: <b>Lisa Hunter</b>	Approved by Environmental Specialist:	
Title: <b>Field Environmental Specialist</b>	Approval Date: <b>1/20/2017</b>	Expiration Date:
E-mail Address <b>Lisa.Hunter@cop.com</b>	Conditions of Approval:	Attached <input checked="" type="checkbox"/>
Date: <b>12/21/2016</b>	Phone: <b>(505) 258-1607</b>	<b>NC91507242760</b>

\* Attach Additional Sheets If Necessary



October 17, 2016

Ms. Vanessa Fields  
Mr. Cory Smith  
New Mexico Oil Conservation Division  
1000 Rio Brazos Road  
Aztec, New Mexico 87410

**RE: Proposed Soil Shredding Remediation Work Plan  
San Juan 27-5 #137P  
API # 30-039-29358  
ConocoPhillips Company  
Rio Arriba County, New Mexico**

Dear Ms. Fields and Mr. Smith:

LT Environmental, Inc. (LTE), on behalf of ConocoPhillips Company (COP), has prepared this Remediation Work Plan to address hydrocarbon impacts to soil at the San Juan 27-5 #137P using soil shredding. The legal site description is the northeast quarter of the southeast quarter of Section 18, Township 27 North, Range 5 West, New Mexico Principal Meridian.

### **Background**

A release of approximately 194 barrels (bbls) of condensate and 21 bbls of produced water was discovered and reported to the New Mexico Oil Conservation Division (NMOCD) on January 22, 2015. COP responded by delineating the vertical and horizontal extent of the petroleum hydrocarbon impact via multiple subsurface investigations occurring on February 6, 2015, and July 7, 2016. The results of the investigations indicate approximately 1,340 cubic yards (yds<sup>3</sup>) of soil was impacted and is overlain by approximately 215 yds<sup>3</sup> of clean overburden ranging from 0 to 6 feet thick. Lithology consists of approximately 8.5 feet of silty to clayey sand underlain by a weathered sandstone.

Based on the NMOCD site ranking criteria determined for the site: (1) depth to water greater than 100 feet below ground surface; (2) no private, domestic, or water sources located within 1,000 feet; and (3) no surface water bodies located within 1,000 feet; the remediation action levels were determined to be 10 milligrams per kilogram (mg/kg) for benzene, 50 mg/kg for total benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 5,000 mg/kg for total petroleum hydrocarbons (TPH).

### **Proposed Remediation**

COP proposes to utilize soil shredding remediation technology to treat the petroleum impacted soil with the following procedures:



1. LTE will direct the excavation, using visual observations and field screening to segregate the impacted soil from the clean overburden.
2. All clean overburden will be stockpiled for use as backfill. Any topsoil will be segregated and reused.
3. All impacted soil will be stockpiled in 100-yard intervals for the first 1,000 yards removed and then in 500-yard intervals after the initial 1,000 yards is successfully remediated according to the sampling schedule presented in the subsequent section.
4. The stockpiles of impacted soil will be bermed with clean fill to prevent potential impacts from migrating offsite due to stormwater runoff.
5. Impacted soil will be processed through a shading bucket attached to an excavator that macerates, or "shreds" the soil into a uniform soil size before it is emptied into a grizzly shaker screen to further segregate the soil.
6. A hydrogen peroxide solution ranging from 1 percent (%) to 10% hydrogen peroxide by weight in water will be applied to soil on a conveyor belt with multiple spray nozzles.
7. The treated soil will be stockpiled on-site and left to rest for at least 24 hours to allow the hydrogen peroxide to continue oxidizing the hydrocarbons.
8. Treated soil will be sampled according to the sampling schedule presented below to confirm remediation.
9. As long as soil analytical results indicate treated soil and excavation confirmation soil samples meet the applicable remediation action levels stated above, LTE will return the treated soil to the excavation for use as backfill.
10. Once all treated soil has been returned to the excavation, removed overburden will be applied, then any topsoil. LTE will compact the backfill to 90%.

### **Soil Sampling**

The following soil sampling will be conducted during remediation:

1. During source removal activities, LTE will collect confirmation soil samples from the sidewalls and floor of the excavation. These confirmation soil samples will be representative of the excavation, typically spaced at 30 foot centers along the sidewalls. Excavation floor samples will be collected approximately one sample per 625 square feet.
2. LTE will collect composite soil samples at a rate of 1 composite sample per 100 yards of treated soil, for the first 1,000 yards of treated soil. Based on the performance of the first 1,000 yards of treated material, subsequent composite soil samples will be collected every 500 yards of treated soil.
3. The area where treated soil is stockpiled will also be sampled upon completion of all remediation activities. The top 0 to 6 inches of the vadose zone beneath any areas where impacted and treated material was stockpiled will be segregated into agreed upon areas, representative of their size, between COP, LTE, and the applicable regulators. Composite soil samples will be collected from each representative area.
4. The composite soil samples will be collected in laboratory provided sample containers, placed on ice, and sent to Hall Environmental Analysis Laboratory (Hall) of Albuquerque, New Mexico, under chain of custody protocol for analysis of benzene, toluene,



ethylbenzene, and total xylenes (BTEX) by United States Environmental Protection Agency (US EPA) Method 8021B, total petroleum hydrocarbon (TPH)-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-motor oil range organics (MRO) by US EPA Method 8015M/D. The samples will be rushed on a 24 hour turnaround-time so analytical results are received the next business day.

5. All sample locations and pertinent excavation information will be mapped using a Trimble 6000 Series GPS unit capable of sub-meter accuracy.
6. All confirmation soil samples will be collected by LTE in the presence of one or more regulatory agencies, if possible, at pre-arranged meeting times.

### Reporting and Communication

LTE will track the volumes of soil excavated, treated, and sampled, as well as provide daily updates with samples collected and laboratory analytical results to COP and the state regulators. Backfill of treated material will not occur without approval from NMOCD and Bureau of Land Management. Following completion of backfill and vadose sampling, a summary report requesting closure for this Site will be submitted to the NMOCD.

LTE appreciates the opportunity to provide environmental services to COP. If you have any questions regarding this report, please contact us at (970) 385-1096.

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in black ink, appearing to read 'D. Burns'.

Danny Burns  
Project Geologist

A handwritten signature in black ink, appearing to read 'Ashley L. Ager'.

Ashley L. Ager  
Four Corners Office Manager

cc: Lisa Hunter, COP  
Katherina Diemer/Whitney Thomas, Bureau of Land Management

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 12/30/2016 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number NCS 150724210 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 III office in \_\_\_\_\_ on or before 2-28-2017 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

1220 South St. Francis Drive

Santa Fe, New Mexico 87505

505-476-3465

[jim.griswold@state.nm.us](mailto:jim.griswold@state.nm.us)