

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  Subsequent  Final Report

Name of Company: BP	Contact: Steve Moskal
Address: 200 Energy Court, Farmington, NM 87401	Telephone No.: 505-326-9497
Facility Name: Gallegos Canyon Unit 170	Facility Type: Natural gas well
Surface Owner: Fee	Mineral Owner: Fee
API No. 30-045-07658	

**LOCATION OF RELEASE**

Unit Letter K	Section 35	Township 29N	Range 12W	Feet from the 1,750	North/South Line South	Feet from the 1,777	East/West Line West	County: San Juan
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Latitude 36.68015° Longitude -108.07149°

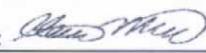
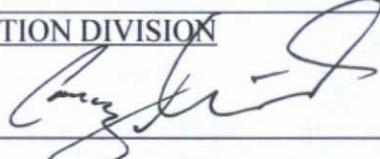
**NATURE OF RELEASE**

Type of Release: Produced water and condensate	Volume of Release: 253 bbl	Volume Recovered: 71.1
Source of Release: Failed well casing	Date and Hour of Occurrence: July 21, 2016; 2:15 PM	Date and Hour of Discovery: July 22, 2016; 8:30 AM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Landowner Contacted Brandon Powell - NMOCD	
By Whom? Jesus Villalobos - Private Landowner	Date and Hour: 7/22/16; Phone 8:30 AM Email - 5:30 PM	
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.\* A significant increase in water production of the well is suspected to be associated with a breach in the downhole casing. The produced water triggered an alarm, closing the automated choke valve. The water then filled the separator, above ground tank (pit) and production tank which subsequently became overfilled. The well was shut in and the freestanding liquids were recovered via vac-truck. Approximately 1,200 cubic yards of soil has been excavated and transported off site for landfarm treatment. Hydrogen peroxide has been amended to the groundwater interface during the excavation process. An infiltration gallery has been installed for future remedial application. Approximately 1,500 cubic yards of soil remains to be remediated.

Describe Area Affected and Cleanup Action Taken.\* Approximately 150' x 150' of surface area was affected by the release. BP proposes to remediate impacted soils through soil shredding as detailed in the attached remediation 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: Steve Moskal	Approved by Environmental Specialist: 	
Title: Field Environmental Coordinator	Approval Date: <u>9/2/16</u>	Expiration Date:
E-mail Address: steven.moskal@bp.com	Conditions of Approval: <u>Samples will be tested</u>	Attached <input checked="" type="checkbox"/>
Date: September 12, 2016 Phone: 505-326-9497		

\* Attach Additional Sheets If Necessary

#NCS1621656998 For BPH (PRO-GRO-MRO) AND Blex

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## **BP Remediation Management Plan**

To: Cory Smith (NMOCD)  
From: Steve Moskal (BP)  
CC: Jim Griswold (NMOCD)  
Date: 8/11/2016  
Re: Gallegos Canyon Unit 170 - Ex-situ Soil Remediation – Soil Shredding

Dear Mr. Smith,

The Gallegos Canyon Unit (GCU) 170 sites are active natural gas production pads within the San Juan Basin Gas Field in San Juan County, New Mexico. The site is located on a privately owned parcel with a primary use as alfalfa farming.

### **Background**

On July 22, 2016, BP experienced an unusual production well behavior where a huge influx of produced water was discharged to the surface facilities, overflowing the production tank and equipment. An estimated 253 barrels of water and condensate was discharged from the production tanks to the ground. While the secondary containment ring and berm contained the release, saturation allowed the liquids to penetrate the earthen berm and fill material below the steel containment ring. No surface discharge left the well site. However, it is evident that the subsurface flow of the spill resulted in offsite migration.

The GCU 170 is an existing groundwater monitoring site as a result of a below grade tank impact dating back to the late 1990's. An existing groundwater monitoring well (MW-3) was located just outside the earthen containment berm during the recent spill. It is believed that the monitoring well may have acted as a conduit to allow the spilled material to enter and make contact with the groundwater at approximately 10 feet below ground surface. The immediate response was to evacuate the groundwater monitoring well of free product. On July 25, 2016, MW-3 was evacuated via vac-truck for a total of 7.1 bbls of water and product. On July 26, 2016, a submersible pump was placed inside MW-3 and a total of 309 bbls of product and water was removed. On July 27, 2016, excavation of the impacted soil commenced.

To date, approximately 1,700 cubic yards of soil has been removed and transported off site for landfarm treatment. The current excavation measures approximately 60'x70'x10' deep. Impacts appear to have not migrated beyond 10 feet in depth where the groundwater interface begins to show. The area of the excavation currently remains on the southwest corner of the well pad. During a hand auger investigation on August 8 and 9, 2016, it was determined that the impacts have travelled in the subsurface to the south, below the adjoining alfalfa field. An estimated disturbance of the alfalfa field currently measures 180'x60' and takes into account topsoil storage, a buffer area and berms for the remedial excavation.

### **Proposed Remediation – Soil Shredding**

Based on recent success of soil shredding technologies used at the BP GCU 216 remediation site, BP proposes to use this technology at the subject site. At the GCU 216 site, BP successfully contracted soil shredding of nearly 40,000 cubic yards of soil to meet site closure standards.

Soil shredding involves the excavation of the impacted soil which is then placed in processing equipment, such as a hammer mill or pug mill, to mechanically process and break-up the soil. The soil becomes more uniform and is aerated during the mechanical processing. The soil is then ejected from the process equipment and a chemical oxidizer is applied, in this proposed case, a 35% solution of hydrogen peroxide and water. The total concentration of hydrogen peroxide typically ranges from 3-6%. The hydrogen peroxide quickly oxidizes the hydrocarbon impacts with the end results of soil, water and carbon dioxide. Once the soil leaves the process, it is stockpiled and allowed to sit for approximately 24-120 hours. A soil sample is collected from each segregated stockpile and submitted for laboratory analysis to determine the effectiveness of the ex-situ remediation process. If the laboratory results are of acceptable levels, the soil will be used as backfill to the excavation; if results are unsatisfactory, the soil is passed through the process once more and a subsequent laboratory sample will be collected for laboratory confirmation as described before. 48 hour notice will be provided to the regulatory agencies for the opportunity to observe and witness the stockpile sampling.

BP proposes to perform the remediation of hydrocarbon impacts by the means of soil shredding. A conservative estimate of approximately 2,500 cubic yards of soil will be treated through the soil shredding process. BP proposes to treat the impacted soil and segregate windrow stockpiles broken into 100 yard increments. A single, five point composite, soil sample will be collected to represent 100 yard stockpile. Once a baseline of 1,000 cubic yards of soil is consistently and successfully treated, BP proposes to decrease the sampling frequency to 500 yard stockpile segments. The 500 yard sampling modification will be discussed with the NMOCD for approval and input prior to implementation. BP would expect to have a sampling modification approval from the agencies within 48 working hours from the time of request. The remediation will then continue until complete and sampling will be based on the regulatory agencies approved sampling plan.

BP is currently working with the private landowner to obtain a letter of concurrence regarding the use of soil shredding at the remedial location.

It is understood, that if soil remediation is not successful via the soil shredding, an alternative method such as a dig and haul or soil vapor extraction will be necessary.

### **Site Closure and Reporting**

Once the excavation and backfill is complete, BP will ensure a minimum of 3' of clean, virgin material to cap the remediated soil. BP plans to use a minimum of 18" of landowner approved topsoil as part of the 3' of cover on the surface of the excavation area. Topsoil will be reused or imported to the site per the landowner requirements during final reclamation of the excavation.

A final remediation report will be delivered to NMOCD for approval of final site closure regarding the excavation and soil shredding activities within 60 days of the end of remediation.