



TETRA TECH, INC.

1703 W. Industrial Ave.
Midland, Texas 79701
(432) 686-8081

August 6, 2007

Mr. Paul Evans
U.S. Bureau of Land Management
620 E. Greene St.
Carlsbad, NM 88220

Mr. Gerry Guye
New Mexico Oil Conservation Division
1301 W. Grand Ave
Artesia, NM 88210

RE: Grayburg Deep 10 Battery Work Plan
Eddy County, New Mexico
Unit C, Sec. 19, T17S, R30E

Dear Sirs:

On behalf of ConocoPhillips, Tetra Tech, Inc. (Tetra Tech) submits this work plan to perform a subsurface investigation at ConocoPhillips' SENMU Grayburg Deep 10 Battery (Site; Figure 1). This work is in support of ConocoPhillips efforts to delineate and remediate a recent 115 barrel mixed crude oil/produced water release into an unlined 35 x 55 foot bermed catchment basin (C141 attached; Figure 2). The Site is located approximately 2 miles west of Loco Hills in Eddy County, New Mexico (32° 49.514698N, 104° 0.71802W). The Bureau of Land Management (BLM) is the land administrator.

The Site is located immediately north of the western portion of the Delaware Basin. The area is underlain by Guadalupian age formations, which contains a thick sequence of sandstones, shales, siltstone, and evaporites¹. In the immediate vicinity of the Site, topography is nearly level to moderately undulating. The Simona Series soil at the Site is calcareous sand overlying fractured indurated caliche.²

Depth to water in the vicinity of the Site is estimated at over 100 feet below ground surface (fbgs). This interpretation is based potentiometric surface contours (330 fbgs) described by Hiss¹ for aquifer systems in northern Eddy County. The New Mexico Office of State Engineer's database and the United States Geological Survey's database^{3,4} did not yield any depth to groundwater information in this area. The U.S. Geological Survey, 1955 topographic map, 1:24,000 scale, entitled "Red Lake SE New Mexico" identifies a windmill approximately 3.3 miles west of the Site. No information is available on the depth of water at this location. The nearest surface water body is a playa, located approximately 1,950 feet southeast of the Site.

¹ Hiss, W.L. 1980. Movement of Ground Water in Permian Guadalupian Aquifer Systems, Southeastern New Mexico and Western Texas. In New Mexico Geological Society 31st Field Conference publication entitled "Trans-Pecos Region Southeastern New Mexico and West Texas." Pp 289 – 294.

² U.S. Department of Agriculture, Natural Resources Conservation Services. Webb Soil Survey Database.

³ New Mexico Office of State Engineer. W.A.T.E.R.S. Database.

⁴ United States Geological Survey. Groundwater Levels for the Nation Database.

Scope of Work

To delineate the lateral and vertical extent of the mixed crude oil/produced water affected area, Tetra Tech will perform the following activities:

1. A backhoe will be used dig exploratory trenches in the affected area.
2. The BLM and New Mexico Oil Conservation Division (NMOCD) will be notified 48 hours before the field investigation begins.
3. It is anticipated that 5 trenches will be excavated along the perimeter and inside the affected area and soil samples will be collected every five feet in each trench. Soil samples collected from the trenches will be field tested using chloride and electrical conductivity (EC) field screened techniques^{5,6} to find the vertical and lateral clean boundary of the release area. A photo-ionization detector (PID) will be used to screen for volatile organic hydrocarbons (VOC). Diesel range petroleum hydrocarbons (TPH_{DRO}) will be field screened using a PetroFLAG System.⁷ Field analyses using a chloride test kit and EC test will determine that a clean boundary of less than (<) 1,000 milligrams per kilogram (mg/kg) chloride and < 1,000 micro Siemens per meter (μ S/m) EC. VOC and TPH_{DRO} field analysis will determine the clean boundary of < 50 parts per million (ppm) VOC and < 5,000 ppm TPH.
4. Two soil samples from each soil trench (highest salinity and TPH_{DRO} reading and basal sample, (15 possible) will be submitted to a laboratory for confirmation analyses. The samples will be placed into glass sample jars, sealed with Teflon-lined lids, and placed on ice for transportation to an analytical laboratory where they will be analyzed for chloride (USEPA Method 300.0A), electrical conductivity (Standard Method 2510B SW-846 Method 9050A), total petroleum hydrocarbons (TPH_{DRO} and TPH_{GRO}, Method 8015) and benzene, ethylbenzene, toluene and total xylenes (BTEX, Method 8260). In addition, the basal samples each soil trench will be analyzed for BTEX and chloride synthetic precipitation leaching potential (SPLP_{BTEX} and SPLP_{Cl}; USEPA Method 1312/8015 & 300.0A, respectively). These analyses will be used to confirm clean boundaries have been identified.
5. Excavated soil will be returned to the trench for handling during site remediation.

Tetra Tech will supervise and direct all subcontractor activities, and prepare a findings report describing and documenting what was done at the Site, including a site map. This report on activities, results, and recommendations will be submitted for ConocoPhillips, BLM and NMOCD's review and approval.

⁵ U.S. Environmental Protection Agency Grant No. R827015-01-1. IPEC Guidelines for Remediation of Small Brine Spills, January 12, 2004. Univ. of Tulsa, OK.

⁶ Conner, J.A. and C.J. Newell. 2004. Strategies for Addressing Oil Field Brine Releases to Plants, Soil and Groundwater. Publ. No. 4758, American Petroleum Institute, Washington D.C. p 25.

⁷ U.S. Environmental Protection Agency, 2001. Innovative Technology Verification Report, Dexsil Corporation PetroFLAG™ System. Prepared by Tetra Tech EM Inc. for USEPA National Exposure Research Laboratory Office of Research and Development. EPA/R-01/092.

Project Schedule

ConocoPhillips' has authorized Tetra Tech to proceed and is prepared to commence work on this project immediately following receipt of BLM's and NMOCD's notification to proceed.

Mr. Greg Pope will serve as the Project Manager and will have the authority to commit whatever resources are necessary to support the project team. It will be Mr. Pope's responsibility to ensure that the Client's needs are met in terms of scope of work and schedule. Mr. Pope is located in Tetra Tech's Midland, Texas, office.

If you concur with this Work Plan, please notify me or Mr. Pope by giving authorization to proceed. Please contact me or Mr. Pope, if you have any questions or require additional information.

Sincerely,

Tetra Tech, Inc.

Charles Durrett

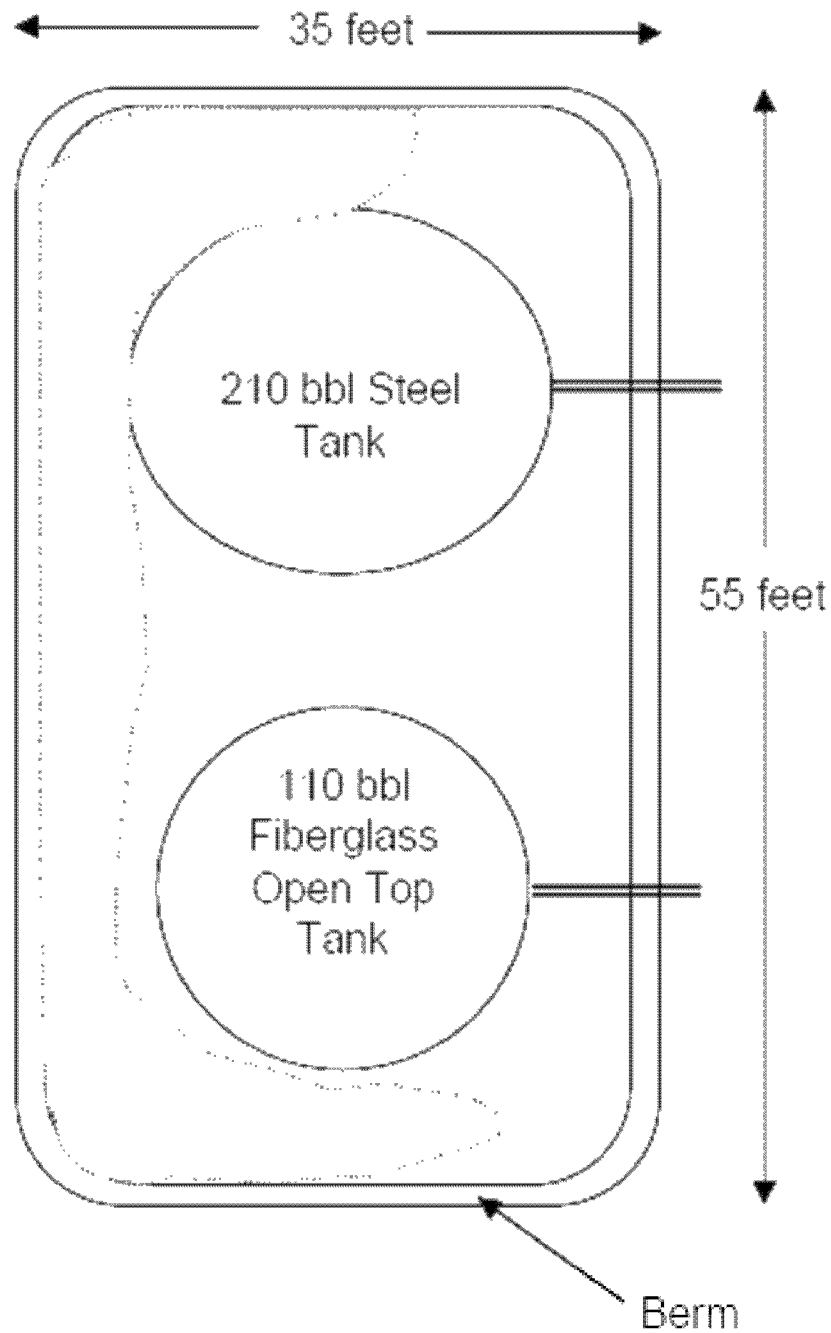
Digitally signed by Charles Durrett
DN: CN = Charles Durrett, C = US, O
= Tetra Tech
Date: 2007.08.06 17:15:10 -05'00'



Charles Durrett
Office Manager

Greg W. Pope, P.G
Project Manager

Cc: Jesse Sosa, ConocoPhillips

Attachment



 TETRA TECH, INC.	
	Southeastern New Mexico Unit
Figure2. Foot Print of Crude Oil/Produced Water Release at Grayburg Deep Unit 10 Battery ,	

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

ATTACHMENT 1

Form C-141
Revised October 10, 2003

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

Submit 2 Copies to appropriate
District Office in accordance
with Rule 116 on back
side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company ConocoPhillips Company	Contact Jesse A. Sosa
Address 3300 N. "A" St., Bldg. 6 #247 Midland, TX 79705-5	Telephone No. (505)391-3126
Facility Name Grayburg Deep Unit Well #10	Facility Type Gas Well

Surface Owner BLM	Mineral Owner BLM	Lease No. LC028793A
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LOCATION OF RELEASE

Unit Letter C	Section 19	Township 17S	Range 30E	Feet from the 660	North/South Line North	Feet from the 2480	East/West Line West	County Eddy
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Latitude 32.49512 Longitude 104.00718

NATURE OF RELEASE

Type of Release Oil and Produced Water	Volume of Release 115	Volume Recovered 0
Source of Release 3 inch bullplug on tank	Date and Hour of Occurrence am 6/29/07	Hour of Discovery 9am 7/2/07
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Jim Amos (BLM) & Mike Bratser (NMOCD)	
By Whom? Jesse Sosa	Date and Hour 2 pm 07/02/2007	
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.*

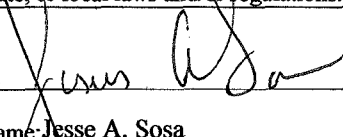
Describe Cause of Problem and Remedial Action Taken.*

While making rounds MSO found contaminated area around tank. Contamination was caused by all fluids emptying out of tank due to half inch hole in 3 inch bullplug caused by internal corrosion. MSO had last checked location on Friday June 29, 2007 and fluid was still in tank.

Describe Area Affected and Cleanup Action Taken.*

HSE arrived on location and measured spill size affected area of 9 ft X 84 ft, all was inside diked and fenced area. Area will be delineated to determine necessary clean up actions.

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: Jesse A. Sosa		Approved by District Supervisor:	
Title: HSER Lead		Approval Date:	Expiration Date:
E-mail Address: Jesse.A.Sosa@conocophillips.com		Conditions of Approval:	
Date: 07/02/2007 Phone: (505)391-3126		Attached <input type="checkbox"/>	

* Attach Additional Sheets If Necessary