U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Puncheon Camp Creek Oil Spill - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #3**
Additional Funding Request to NPFC
Puncheon Camp Creek Oil Spill
Z4TC
Allred, TN
Latitude: 36.3282440 Longitude: -85.1967950

To:
From: Perry Gaughan, On Scene Coordinator
Date: 9/13/2010
Reporting Period: August 20 - September 10, 2010

1. Introduction

1.1 Background

Site Number:	Z4TC	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Emergency
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	8/11/2010	**Start Date:**	8/11/2010
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:		**Reimbursable Account #:**	

1.1.1 Incident Category

Subject: **Request for Increase in Project Ceiling**

Budget from $50,000 to $80,000

Oil Removal Project Plan

Puncheon Creek Oil Well

Allred, Overton County, Tennessee

Wells to be Plugged: Puncheon Creek Oil Well O-1

Latitude: N 36°.328244

Longitude: W -85°.196795

Start Date: August 11, 2009

Response Authority: Clean Water Act-OPA

Incident Category: Removal Action

FPN: E 10423

Site ID No.: Z4TC

Pollution Report Number: 3

Reporting Period: August 11 to Sept 8, 2010

I. Site Information and Conditions:

A. Site Description and Physical Location

The Puncheon Creek Abandoned Oil Well was referred to EPA Region 4 OSC Perry Gaughan by the Tennessee Oil and Gas Divisions Jeff Patton on August 11th, 2010. As such, TDEC requested the Agency's assistance in evaluating threats to surface waters associated with the leaking well. This well was found to be flowing live crude oil, oily brine, and natural gas to land surface and impacting Puncheon Creek near Allred, Tennessee approximately five miles east of Livingston, Tennessee. Puncheon Creek flows into the west fork of the Obey River which eventually empties into the Obey River, Dale Hollow Lake and the Cumberland River.

The abandoned well is located along a flood plain of Puncheon Creek. The creek is bound to the north and south by steep terrain which appears to be made up of numerous caves and limestone formations. Access to the well will be performed from the flood plain along the creek and swamp matts will be utilized to cross the creek and place the drill rig. ERRs contractors are currently working with the property owner to determine the extent of temporary roads which will be needed to facilitate the well plugging.

Typical costs associated with plugging abandoned wells in western Kentucky and middle Tennessee which are 200-300 feet deep run approximately $35,000 to $40,000. Because of necessary site preparation and the well being 1800 feet deep, the OSC anticipates that costs associated with this plugging operation may take two weeks at an estimated

$ 80,000.

B. Description of Threat

The general condition of the leaking well is poor. The depth of the well (approximately 1800 feet) and proximity to Puncheon Creek combined with the extremely high residual petroleum pressures and the advanced age of the well (i.e. 70 years), confirms that the threat to Puncheon Creek and the Obey River is imminent and substantial. The life expectancy of non-cemented casing used in the construction of oil wells is generally less than 10 years in Tennessee.

Most of the abandoned wells in this area lack sufficient quantities of cement in the annular space (i.e. between the production casing and the well bore) to preclude the discharge of crude oil (via leaking casing and tubing) to land surface. Crude oil is discharging at land surface from a subsurface depth of approximately 400 to 600 feet, from the Sunnybrook oil and shale formation.

C. Previous Site Actions

EPA's Emergency Response Contractor, WRS, conducted initial clean up activities, boom placement and mitigation measures to preclude the continuous discharge of oil into Puncheon Creek during early August 2010. WRS has solicited bids from local oil drilling companies and geophysics well service companies in middle Tennessee to complete the well plugging operation.

II. Current Activities:

A. Enforcement Related Activities:

EPA-Region 4 will issue a Work Assignment to Aarcher, Incorporated for the purposes of performing a deed and title search for the Puncheon Creek area oil well leaseholders. If a Potentially Responsible Party (PRP) can be identified, EPA will execute a Letter of Federal Interest and Letter of Federal Assumption pursuant to Sections 308 and 311 of the Clean Water Act. Should the PRP refuse to undertake the required removal actions, cost recovery actions would follow for all associated costs

incurred by the Government in permanently plugging and abandoning the wells.

The general scope of work of the Deed and Title Search includes information and documents covering the period 10 years prior to the drilling of the well or construction of any other facility up until the present. The report contains the following information: the names and last known addresses of entities/individuals that have owned a surface, mineral, or leasehold interest in the subject well; an organized discussion of the information gathered including conclusions on PRPs; a title analysis summary supporting the conclusions; reasonably ascertainable contact information for the site owner(s); status of the entities researched (deceased, estate disposition, etc.); bankruptcy issues, id appropriate; legal status of any corporations; partner name and contact for partnerships; legal description of the site; copies of appropriate documentation (deeds, leases, etc.); incorporation documentation as appropriate; property tax information; available regulatory documents; any other appropriate ownership documents (real property, capitol investment, etc.); ownership history table by parcel (title abstract); plat and other subject site maps showing location information; and a site map of the subject property showing notable site features.

Not all Tennessee wells have permits. State-wide permitting did not begin until 1969. In some cases, the same permit may have been assigned to multiple wells or multiple entries into the same well. The situation was most likely to have occurred in the wells drilled between 1950 and 1969. Some wells lack sufficient data to accurately assign the well to a unique latitude and longitude. Historically, the Tennessee permitting system required the well location to be surveyed prior to drilling and submission of the permit application. In addition, no permitting mechanism was in place to verify the final drilled location of each well. The OSC continues to coordinate all abandoned oil well clean ups and plugging operations with the Tennessee Oil and Gas Section and ownership or operation of such wells are researched through this division.

B. Proposed Actions:

Planned removal actions for the near term are to secure the necessary equipment, services, manpower, and supplies to successfully permanently plug and abandon these wells in accordance with the established industry standards. Actions will include, but are not limited to: removing all tubing, rods, and miscellaneous equipment from the hole to allow for the washing down or reaming out of the wells; conducting down hole geophysical logging (i.e Gamma-VDL) to qualify the integrity of the cement behind the production casing and/or the geologic tops; setting down-hole cast iron bridge plugs at appropriate depths to prevent the migration of oil reservoir fluids into or between the various geologic horizons; cleaning out the wells of all oil reservoir related fluids in anticipation of the commencement of plugging activities; shooting or perforating casing and/or tubular goods to allow for the circulation of cement in the

annular space between the pipe and/or tubing and the bore holes; setting competent cement plugs at pre-determined intervals from the oil production interval and through identified drinking water aquifers; and restoring the sites (through grading and reseeding) upon the completion of all plugging activities.

II. ESTIMATED PROJECT COST INFORMATION

	Current Funding	Proposed Increase	New Project Ceiling
ERRS Costs	40,000	20,000	60,000
Start Costs	5,000		5,000
Contingency		10,000	10,000
EPA Direct and Indirect	5,000		5,000
Totals	**$50,000**	**$ 30,000**	**$ 80,000**

1.1.2 Site Description

1.1.2.1 Location

1.1.2.2 Description of Threat

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

2. Current Activities

2.1 Operations Section

No information available at this time.

2.2 Planning Section

No information available at this time.

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

No information available at this time.

4. Personnel On Site

No information available at this time.

5. Definition of Terms

No information available at this time.

6. Additional sources of information

No information available at this time.

7. Situational Reference Materials

No information available at this time.