U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Fred Boling Oil Wells Lease - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IV

Subject: **POLREP #5**
Progress Report - Abandoned Oil Well Plugging Operations Continue
Fred Boling Oil Wells Lease

Reynolds Station, KY
Latitude: 37.7425100 Longitude: -86.7431700

To:
From: Perry Gaughan, On Scene Coordinator
Date: 9/26/2014
Reporting Period: 08/18/2014 thru 09/20/2014

1. Introduction

1.1 Background

Site Number:	Z4XA	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Time-Critical
Response Lead:	EPA	**Incident Category:**	Removal Action
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	11/15/2013	**Start Date:**	11/16/2013
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:	E14409	**Reimbursable Account #:**	

1.1.1 Incident Category

This is an Oil Pollution Act removal project and an ongoing effort to plug abandoned oil wells identified in western Kentucky which are impacting neighboring streams with the potential to impact larger rivers downstream. The OPA 90 Work Plan (funding document) can be viewed in the documents section of this website.

1.1.2 Site Description

The Fred Boling Oil Well Lease consists of twenty-four (24) abandoned oil wells sitting on an 81 acre tract of farm land along Bates Hollow Road near Weberstown, Hancock County, Kentucky. The farm owner has been complaining of crude oil discharging into several tributaries on her land and affecting drinking water for her livestock and farmland downstream. Recently, she has made several complaints to Kentucky Oil and Gas officials (KOG) as well as Kentucky Department Environmental Protection and other state officials. KOG's Greg Welsh referred the property owner to EPA Region 4 ERRB's Chuck Eger for follow up action under the Oil Pollution Act.

The 24 identified oil wells were drilled in the 1940s through 1960's and continuously produced crude oil until the late 1990's. Visual inspection by KOG's Welsh, the EPA OSC and USCG Strike Team members found numerous wells leaking at land surface and impacting tributaries to Sugarcamp Creek, a contributing stream to Panther Creek in Hancock County. Panther Creek is a tributary to the Green River, which is over three hundred miles in length in Kentucky. The Green River, which empties into the Ohio River, serves as an important transportation artery for the coal industry. The Ohio River flows westerly into the Mississippi River. The farm land upon which the Fred Boling Oil Well Lease occupies is rural and hilly, with numerous tributaries to the Sugarcamp Branch of Panther Creek.

II. Assessment Findings:

On Tuesday, November 5th, EPA OSC Perry Gaughan met KOG's Greg Welsh and two USCG Strike Team members to inspect the 81 acre farm. Several of the abandoned well locations were leaking crude oil to land surface and impacting adjacent creeks. (see supporting photographs) Approximately one third of a mile west of the residence, a large twenty-five foot long sludge pit downgradient of a tank battery was filled with crude oil and sludge to a depth exceeding four feet. EPA estimates that it could be holding as much as 14,000 gallons of crude oil and it is also impacting a neighboring stream.

III. Access and Owner Concerns:

The OSC had a lengthy conversation with the property owner on signing an access agreement to perform the well plugging operations. Her initial concern was that she was reluctant to grant access to EPA subcontractors because she didn't want her farmland "torn up with random access roads to well locations". She simply wanted the contractors to treat the land as "if it were their own backyard". The OSC and Kentucky Oil and Gas' Greg Welsh stated that only previously used access roads would be used and graded as necessary and that all land would be brought back to its original state to the best of our ability.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Monday, August 18th thru Friday, Aug 22nd, 2014

Following the bankruptcy issues with WRS Inc, the National Pollution Fund Center (USCG NPFC) agreed to continue funding of this project with a second ERRs contractor (CMC Inc) with the understanding that any unused awarded funding to WRS Inc be returned to NPFC. During the week of August 18th, the OSC coordinated with EPA Region 4 Contracts Officer in issuing a new task order to CMC Inc. Subcontractor consent documentation was also approved by contracts officials.

Fred Boiling Well # O1A Monday August 25th, 2014

This well consisted of 4.5" casing and 2" production tubing. Initially, ERRs and oil well service contractors opened the well and extracted 370 feet of corroded production tubing. 380' of 2" wash tubing was inserted and wash down of the well interior was performed over two days because of a significant volume of residual oil and natural gas bleeding from this location.

On Wednesday, Aug 27th, Southern Well Services, Henderson, Kentucky logged the well for placement of a cast iron bridge plug and determination of water bearing sands/zone. The depth of the well was determined to be 384 feet. A cast iron bridge plug was set at 326 feet on a tubing collar, and the cement bond log showed significant cement behind the casing, therefore, casing perforation was not necessary. Geological logging indicated water bearing zones at 30 feet and 130 feet for future reference on neighboring wells. Cementing was performed later that afternoon and the well was filled with 45 sacks of grout to complete the well plugging.

Fred Boiling Well # O1 Thursday August 28th, 2014

This well consisted of 4.5" casing and 2" production tubing. Initially, ERRs and oil well service contractors opened the well and extracted 360 feet of corroded production tubing. 370' of 2" wash tubing was inserted and wash down of the well interior was performed because of significant volume of residual oil at this location.

On Friday, Aug 29th, Southern Well Services, Henderson, Kentucky logged the well for placement of a cast iron bridge plug and determination of water bearing sands/zone. The depth of the well was determined to be 383 feet. A cast iron bridge plug was set at 316 feet on a tubing collar, and the cement bond log showed significant cement behind the casing, therefore, casing perforation was not necessary. Geological logging indicated water bearing zones at 30 feet and 130 feet for future reference on neighboring wells. Cementing was performed later that afternoon and the well was filled with 50 sacks of grout to complete the well plugging.

Fred Boiling Well # 5N Tuesday September 2nd, 2014

This well consisted of 4.5" casing and 2" production tubing. Initially, ERRs and oil well service contractors opened the well and extracted 300 feet of corroded production tubing. 310' of 2" wash tubing was inserted and wash down of the well interior was performed because of significant volume of residual oil at this location.

On Wednesday, Sept 3rd, Southern Well Services, Henderson, Kentucky logged the well for placement of a cast iron bridge plug and determination of water bearing sands/zone. The depth of the well was determined to be 319 feet. A cast iron bridge plug was set at 278 feet on a tubing collar, and the cement bond log showed no significant cement behind the casing. Geological logging indicated water bearing zones at 30 feet and a probable oil/gas zone at 140 feet for future reference on neighboring wells. The well casing was perforated at 60 and 100 feet to protect water bearing zones. Cementing was performed later that afternoon and the well was filled with 100 sacks of grout to complete the well plugging.

Fred Boiling Well # 10 Thursday September 4th, 2014

This well consisted of 4.5" casing and 2" production tubing. Initially, ERRs and oil well service contractors opened the well and extracted 200 feet of corroded production tubing. 210' of 2" wash tubing was forced down hole apparently because of twisted casing or a large degree of pipe scale. Wash down of the well interior was performed over the remainder of the day.

On Friday, Sept 5th, Southern Well Services, Henderson, Kentucky logged the well for placement of a cast iron bridge plug and determination of water bearing sands/zone. The depth of the well was determined to be 229 feet. No cast iron bridge plug was placed do to the casing condition and the loss of a bridge plug installation tool earlier during well plugging procedures on this lease. All parties agreed the risk of losing another tool would jeopardize future well pluggings. Geological logging indicated water bearing zones at 30 feet and a probable oil/gas zone at 140 feet. The well casing was perforated at 60 and 100 feet to protect water bearing zones. Cementing was performed later that afternoon and the well was filled with 32 sacks of grout to complete the well plugging.

Fred Boiling Well # 1N Saturday September 6th, 2014

This well consisted of 4.5” casing and 2” production tubing. Initially, ERRs and oil well service contractors opened the well and extracted 310 feet of corroded production tubing. 310’ of 2” wash tubing was inserted and wash down of the well interior was performed because of significant volume of residual oil at this location.

On Monday, Sept 8th, Southern Well Services, Henderson, Kentucky logged the well for placement of a cast iron bridge plug and determination of water bearing sands/zone. The depth of the well was determined to be 315 feet. A cast iron bridge plug was set at 290 feet on a tubing collar, and the cement bond log showed no significant cement behind the casing. Geological logging indicated water bearing zones at 20 feet and a probable oil/gas zone at 130 feet for future reference on neighboring wells. The well casing was perforated at 50 and 100 feet to protect water bearing zones. Cementing was performed later that afternoon and the well was filled with 80 sacks of grout to complete the well plugging.

Fred Boiling Well # BC 3 Tuesday September 9th, 2014

This well appears to have been a primary injection well for the well field and consisted of 4.5” casing and 2” injection tubing. Initially, ERRs and oil well service contractors opened the well and attempted to extract the 2” injection tubing. Efforts failed because of an apparent rag packer at a well depth of 285 feet. On Wednesday, Sept 10th, Southern Well Services, Henderson, Kentucky ran a CCL (casing collar locator) and the packer was confirmed at 285 feet. An initial attempt to shoot the 2” injection tubing off at 254 feet was unsuccessful presumably because of cement. Another attempt was made to shoot the 2” tubing off at 191 feet but it too was unsuccessful because of cement.

Fred Boiling Well # 1 (Southside Bates Hollow Road) Thursday September 11th, 2014

This well consisted of 4.5” casing and 2” production tubing. Initially, ERRs and oil well service contractors opened the well and extracted 330 feet of corroded production tubing. 320’ of 2” wash tubing was inserted and wash down of the well interior was performed because of significant volume of residual oil at this location.

On Friday, Sept 12th, Southern Well Services, Henderson, Kentucky logged the well for placement of a cast iron bridge plug and determination of water bearing sands/zone. The depth of the well was determined to be 330 feet. A cast iron bridge plug was set at 290 feet on a tubing collar, and the cement bond log showed significant cement behind the casing. Geological logging indicated water bearing zones at 80-90 feet, Vienna limestone formation at 295 feet and the Tar Springs oil producing formation below 315 feet. The water bearing zone was protected by sufficient cement in the annular space from 100-120 feet. Cementing of the interior well was performed later that afternoon and the well was filled with 35 sacks of grout to complete the well plugging.

Fred Boiling Well # 7 (Southside Bates Hollow Road) Saturday September 13th, 2014

This well consisted of 7” casing and 2” production tubing. Initially, ERRs and oil well service contractors opened the well and extracted 350 feet of corroded production tubing. 350’ of 2” wash tubing was inserted and an apparent casing obstruction was noted at approximately 130 feet down hole. Wash down of the well interior was performed and a significant volume of residual oil and gas was noted at this location.

On Monday, Sept 15th, Southern Well Services, Henderson, Kentucky logged the well for placement of a cast iron bridge plug and determination of water bearing sands/zone. The depth of the well was determined to be 356 feet. The crew elected not to set a cast iron bridge plug because of the well obstruction at 130 feet and the possibility of getting the plug tool stuck as previously occurred in this lease. The Vienna limestone layer was found at 325, the tar springs production zone beneath that layer and water bearing sands/zone was noted at 40-50 feet. The casing was perforated at 60 feet to protect the water aquifer prior to cementing. A rubber wipe plug was used instead of a cast iron bridge plug and 105 sacks of grout were used to finalize well closure.

Fred Boiling Well # W6 (Southside Bates Hollow Road) Tuesday September 16th, 2014

This well consisted of 4.5” casing and 2” production tubing. Initially, ERRs and oil well service contractors opened the well and extracted 330 feet of corroded production tubing. 330’ of 2” wash tubing was inserted and wash down of the well interior was performed. A significant volume of residual oil and gas was noted at this location.

On Wednesday, Sept 17th, Southern Well Services, Henderson, Kentucky logged the well for placement of a cast iron bridge plug and determination of water bearing sands/zone. The depth of the well was determined to be 343 feet. A cast iron bridge plug was set at 307 feet on a tubing collar. The Vienna limestone layer was found at 328, the tar springs production zone beneath that layer and water bearing sands/zone was noted at 30-50 feet. The cement bond log showed good cement behind the well casing so no casing perforations were performed on this well. 65 sacks of grout were used later that afternoon to finalize well closure.

Fred Boiling Well # 4 (Southside Bates Hollow Road) Thursday September 18th, 2014

This well consisted of 4.5” casing and 2” production tubing. Initially, ERRs and oil well service contractors opened the well and extracted 320 feet of corroded production tubing. 325’ of 2” wash tubing was inserted and wash down of the well interior was performed. A significant volume of residual oil and gas was noted at this location.

On Friday, Sept 19th, Southern Well Services, Henderson, Kentucky logged the well for placement of a cast iron bridge plug and determination of water bearing sands/zone. The depth of the well was determined

to be 333 feet. A cast iron bridge plug was set at 306 feet on a tubing collar. The Vienna limestone layer was found at 325, the tar springs production zone beneath that layer and water bearing sands/zone was noted at 30-50 feet. The cement bond log showed good cement behind the well casing so no casing perforations were performed on this well. 72 sacks of grout were used later that afternoon to finalize well closure.

On Saturday, September 20th the majority of the ERRs crew was mobed to Glasgow, Kentucky to assist EPA with the Beaver Creek Oil Spill after the OSC initiated an OPA Emergency Task Order. The majority of the equipment on site was demobed prior to end of fiscal year close out of all OPA removals as requested by EPA Office of Emergency Management, Washington DC.

2.1.2 Response Actions to Date

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

2.1.4 Progress Metrics

Waste Stream	*Medium*	*Quantity*	*Manifest #*	*Treatment*	*Disposal*

2.2 Planning Section

2.2.1 Anticipated Activities

Removal operations will begin again after another OPA 90 Work Plan is approved by USCG and the National Pollution Fund Center. Work is anticipated to begin after October 1st, 2014.

2.2.1.1 Planned Response Activities

2.2.1.2 Next Steps

2.2.2 Issues

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.