

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Stackyard Hollow - Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III

Subject: POLREP #14
Progress
Stackyard Hollow
Z3MD
Wheeling, WV
Latitude: 40.0772533 Longitude: -80.7054597

To:

From: Michael Towle/Debbie Lindsey, On-Scene Coordinators

Date: 4/13/2016

Reporting Period: 3/31/2016 through 4/12/2016

1. Introduction

1.1 Background

Site Number:	Z3MD	Contract Number:	
D.O. Number:		Action Memo Date:	
Response Authority:	OPA	Response Type:	Time-Critical
Response Lead:	EPA	Incident Category:	Removal Action
NPL Status:		Operable Unit:	
Mobilization Date:	7/13/2015	Start Date:	1/14/2014
Demob Date:	7/16/2015	Completion Date:	
CERCLIS ID:		RCRIS ID:	
ERNS No.:		State Notification:	WVDEP
FPN#:	E14302	Reimbursable Account #:	

1.1.1 Incident Category

This incident is an oil discharge into navigable waters of the United States from an abandoned oil production facility consisting of at least one well.

1.1.2 Site Description

The subject Site consists of a discharge of oil into a flowing perennial tributary of Wheeling Creek located in Ohio County, West Virginia. The tributary is mapped and known as Stackyard Run and exists (at the location of the discharge) within a box culvert constructed over the flowing water. Stackyard Run discharges to Wheeling Creek which is a tributary of the Ohio River in Wheeling, WV. A pipe was found running between the location of the well and Stackyard Run. Oil discharges from this pipe, from around this pipe, and directly through the stone wall of the box culvert into Stackyard Run. The source of the oil has been determined to be at least one abandoned and leaking oil well found underneath a nearby residential dwelling. The well is less than about 25 feet from the flowing water of Stackyard Run and at the end of the above-mentioned pipe. The well is a component of an on-shore production facility that may contain 5 wells and relating equipment according to documents (deeds and leases) reviewed by the OSC.

1.1.2.1 Location

The discharge point for the oil onto the flowing waters of Stackyard Run is located in a box culvert beneath a residential structure located along Joan Street, Wheeling, Ohio County, WV 26003.

1.1.2.2 Description of Threat

See prior POLREPs.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

See prior POLREPs.

The OSC continues to conduct Assessment activities at this Site. Levels of oil and volatile organic compounds have been routinely monitored in the building positioned atop the well and/or Stackyard Run. The frequency of this activity was curtailed after placement of cement in the wellbore and installation of a system to direct gas emissions outside proved somewhat successful by early September 2015 (see prior POLREPs). Absorbent materials have been placed in Stackyard Run and changed when needed. The

amount of oil that appeared in Stackyard Run may have increased after the Removal Actions of the Fall of 2015. The OSC completed additional evaluation of the Site in December 2015 and determined that additional removal actions are required to mitigate the discharge of oil from the well into Stackyard Run. On December 23, 2015, the OSC completed a re-evaluation of options to stem the discharge of oil from the abandoned oil facility and updated the OPA 90 Removal Project Plan.

The owner of the building continues to assist EPA and WVDEP through maintenance of building ventilation and direct ventilation of the well to the outside. This activity continues to contribute to the present level of safety in the building and surrounding community.

The OSC continues to define a substantial threat to the navigable waters. In addition, the Agency for Toxic Substances and Disease Registry (ATSDR) evaluated the situation and finds the incident to pose a public health hazard requiring continuing monitoring and relocation of the occupants of the structure. The City of Wheeling Health Department has also made similar recommendations. The residents have been relocated by the owner of the property.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

At this time, an abandoned oil/gas well component to an oil facility has been identified under the residential building and is discharging oil and gas to Stackyard Run and the residential building located atop the well. Last year, EPA directed its contractor to remove oil and debris from the well (using hand methods) to an attainable depth and to place cement into the well. However, it appears that the attempt was not successful and may have increased the migration of oil into Stackyard Run without stopping the flow of gas to the surface of the well and into the overlying structure. Additional actions are required.

2.1.2 Response Actions to Date

See Prior POLREPs for activities through March 30, 2016. Removal of oil and debris from the well continues. Oil and gas continue to be encountered indicating that the EPA activity of Fall 2015 was not successful and preventing the discharge of oil and gas from the facility.

The owner of the building continues to assist EPA.

The drilling rig is constructed inside the apartment building and the drilling method involves keeping the hole full of fluid to circulate and remove oily liquids from the hole into a sealed roll-off box outside. During this period, a significant amount of gel was added in order to assist in the process of removing debris from the well.

On March 28th about 35 feet had been achieved. The bit had been removed and, due to the identification of significant wear on the bit, it was believed that drilling was proceeding through 2 and possibly 3 metal pipes. Deep gouges were cut into the tri-cone bit and these gouges matched pipe strings of approximately 2 inches, 5 and 3/16 inches and estimated 7 inches. WVDEP and the OSC believed that drilling was proceeding through several strings of casing pipe and what appeared to be a sucker rod in the middle of 2 inch tubing. This observation meant it was not possible that the EPA activities of Fall 2015 had actually drilled deeper into the well and that the EPA activities which had reached a depth of about 75 feet were conducted alongside the actual well. Oil and gas were observed passing from within the 2 inch tubing. Since cement was visible, the team agreed that it was likely that cement from the EPA activities of Fall 2015 had fallen into a portion of the actual well (even though the EPA contractor actually drilled alongside the well).

After consideration of options, the operations re-commenced on March 29th using a 4.5 inch concave milling bit. The goal was to mill the 2 inch tubing and sucker rod down through whatever cement has fallen inside while staying within what is thought to be a 5 3/16 inch steel casing. The objective was to clear the 2 inch tubing from the cement and try to then pull the tubing and sucker rods from the well to allow cement to be placed into the bottom of the well. Slow drilling continued through 3/31/2016. The team noted that there was very little material (sand, rock, wood, metal, other) being returned through the fluids. Only cement appeared in the return.

On April 4, 2016, a depth of about 62 feet had been achieved. At this time, the team still believed that the drilling operations were slowly milling through casing and rods and cement.

On April 5, 2016, a depth of about 70 feet had been achieved and wood was noted in the return fluids. At about 72 feet, the well kicked and a large amount of gas issued from the well along with between 600 and 800 gallons of oil. These materials were directed into the vacuum box on the Site.

After this point, drilling operations easily commenced to a depth of about 150 feet on April 6th. Oil continued to be returned from the well into the on-site tank. Between 150 and 155 feet, the hole tightened and it was believed that the casing may either be collapsed or deteriorated.

On April 7th, 31 BBLs of oil and fluid were removed from the tank. The hole continued to be tight between 150 and 155 feet and the operations focused on reaming and trying to open up obstructions. The team concluded that the casing may be compromised in this depth interval. The bit was raised, the flow line was left in place, and operations concluded for the weekend.

When operations commenced on April 10, several feet of sand and debris had settled on the bottom of the hole. This indicated that more gel had to be added in order to satisfactorily remove debris from the hole. It was also found that water had flowed from the well into the tank to raise the tank level several feet. This indicated artesian conditions in the well. At this time, even more gel was used to try and prevent this flow

of fluid.

On April 11, the conditions changed. Sand and wood were being removed from the well along with oil and the team felt that they were again drilling into a plug. The drillers felt that pieces of wood and debris were impeding progress as they were being moved up and down the hole along with the bit. A depth of 185 feet was reached on April 12. Along with wood, pieces of rubber and pieces of wire were returned from the well.

On April 12th, the OSC and WVDEP discussed the possible scenario. It was no longer believed that the operations were commencing through a string of casing and tubing and rods. Instead, the team felt that the original blockage at about 35 feet was a plug or device originally used to set a plug into the well. The present drilling operations may have been slowly milling (grinding) this obstruction while also pushing it down the hole (to account for the initial lack of debris in the return flow). This material/blockage was finally removed at about 72 feet when the well kicked a large amount of oil and gas and the bit then moved easily down the hole to the blockage at about 152 feet. The blockage at about 152 feet may be due to another plug (wood and rubber) and compromised casing (possibly due to shot casing; e.g., pieces of wire).

The AreaRAE system has identified several detections of VOCs above the alarm level. Most of these detections relate to instances during which the equipment was being fueled or when the engines were started or adjusted. Detections on/about April 5 relate to the increased amount of oil flushed from the well. Detections above the alarm limits were not sustained.

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

See Prior POLREPs.

WVDEP located records for the well (and 2 other nearby wells). The records indicated the well owner to be C.G. Broaddus and that the well was plugged. The plugging affidavit indicated that casing pipes were pulled from the well and the well was plugged in a manner prescribed by the State in 1949. The OSC originally believed that plugging did not occur due to the discovery of the 2 inch tubing and sucker rods in the well at about 35 feet. However, it has subsequently been determined that the well had indeed been plugged, but in a manner not documented on the plugging affidavit.

The OSC examined court records and consulted a civil investigator. There is no record of C.G. Broaddus.

2.1.4 Progress Metrics

<i>Waste Stream</i>	<i>Medium</i>	<i>Quantity</i>	<i>Manifest #</i>	<i>Treatment</i>	<i>Disposal</i>
oil	solids	4 - 55-gallon drums			X
oil	oily liquids	3100 gallons			X
oil	oil solids	2 tons			X

2.2 Planning Section

2.2.1 Anticipated Activities

Continue drilling/milling activities. This activity will continue until a depth can be reached suitable to stop the flow of oil to the surface.

2.2.1.1 Planned Response Activities

Continue drilling.

Continue air monitoring.

Continue removal of oil from Stackyard Run (note that the amount of oil now in Stackyard Run is significantly reduced since it is now being minimized by a column of fluid in the well and also circulated from the well into the sealed box).

2.2.1.2 Next Steps

Continue drilling.

2.2.2 Issues

The EPA activities of 2015 did not enter the actual well. Instead, the drillers advanced alongside the outside of the actual well and installed cement initially into this new hole. Some cement however entered the actual well and is now being drilled out to allow for removal operations.

Drilling activities inside the building with the available rig are somewhat limiting; the length of the individual drill rods (about 5 feet) cause for a labor intensive operation.

The difficulty in drilling through the cement placed by EPA in 2015 and the failed plug and obstruction (believed to be a tool used to set the top plug) have caused delays. As such, the OSC is now unsure if the funding is sufficient if conditions do not change.

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

2.5.1 Safety Officer

The WVDEP will serve as the Site Health and Safety Officer during all activities. The EPA OSC will assist.

2.5.2 Liaison Officer

EPA coordinated with various entities associated with the City of Wheeling and the owner of the property.

2.5.3 Information Officer

EPA and WVDEP will continue to coordinate with the property owner to address concerns from the neighboring residents. The OSC conducted a news interview on March 23rd, 2016.

3. Participating Entities

3.1 Unified Command

3.2 Cooperating Agencies

EPA
WVDEP
Ohio County Emergency Management Agency
City of Wheeling Fire Department
City of Wheeling Health Department
ATSDR

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

6.1 Internet location of additional information/report

www.epaosc.org/stackyardhollow

7. Situational Reference Materials

No information available at this time.