U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Roosevelt Drive Oil Site - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region I

Subject: **POLREP #21**
Progress
Roosevelt Drive Oil Site
696
Derby, CT
Latitude: 41.3228000 Longitude: -73.0958000

To:
From: Gary Lipson, OSC
Date: 12/27/2012
Reporting Period:

1. Introduction

1.1 Background

Site Number:	696	**Contract Number:**	
D.O. Number:	ERRS Task Order #: 0042	**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:		**Start Date:**	8/25/1994
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	
FPN#:	014504	**Reimbursable Account #:**	01R0X08302D91CHRZ108

1.1.1 Incident Category

Time Critical Removal Action

1.1.2 Site Description

The site consists of a large warehouse type building which takes up the majority of the plot footprint on the eastern bank of the Housatonic River in Derby, CT. The facility, which was constructed along with an adjoining canal at the turn of the 20th century has served as a hydroelectric plant since its inception and currently houses two electric producing turbines which are powered by outfall from the canal located just across Route 34 (east of the building). Due to an increase of oil being released into the river when the turbines have operated in the past, these turbines are currently off-line at the request of the EPA and Connecticut Department of Environmental Protection. It is currently non-operational due to the continuing presence of subsurface oil migrating out from under the facility.

1.1.2.1 Location

The site is located on the eastern bank of the Housatonic River along Route 34 (140 Roosevelt Drive) in Derby, CT. The Site is bordered by the river to the west and south, Route 34 and a canal to the east and the Derby Cellular Products facility to the north. The site latitude and longitude is 41.3228 and -73.0958 respectively.

1.1.2.2 Description of Threat

The discharge of No.6 fuel oil product from the Site was first discovered to be impacting the Housatonic River in July 1994. An oil recovery system (Derby 1) was constructed in the fall and winter of 1994 and consists of an oil collection trench in conjunction with a recovery well. After contaminated soils and sediments were removed, this system was constructed on the south side of the structure where the impact to the river was first seen.

The No.6 oil impact to the subsurface and the Housatonic River was soon determined to be the result of a leaking underground oil pipe which connected a 20,000-gallon UST, located on the northern portion of the Hull property, with an on-site pumphouse. A second oil recovery system (Derby 2) was installed in 1999, over and adjacent to this source area, consisting of a y-shaped trench, five recovery wells, and a ground water treatment system. Although the two systems are still operating and recovering subsurface oil, there is a continuing discharge of oil into the facility tailrace. The amount of oil entering the tailrace appears to be

dependent upon the tidal influence. When the tide is low, there is less head pressure against the tailrace walls which allows oil to flow into the race. During the high tide phase, the additional pressure of the river water keeps the oil from seeping in. In recent years, a dam was constructed to physically separate the tailrace from the river and a tube skimmer installed to remove oil as it surfaces in the tailrace. The three recovery systems are recovering a total of approximately 1,000 gallons of oil per year. The tailrace is still tidally influenced, but there is a lag time as the river water works its way through the mainly earthen dam. Although the dam and skimmer are keeping oil out of the river, the two electric producing turbines are still not operational.

2. Current Activities

2.1 Operations Section

2.1.2 Response Actions to Date

EPA's clean-up contractor, Environmental Restoration (ER), has been conducting operation and maintenance (O & M) activities approximately every three weeks at the site. Activities include repairing or replacing pumps, heaters, motors, belts, hoses, bag filters, meters, gauges, and computer software on the three existing oil recovery systems (Derby 1, Derby 2, and the tailrace belt skimmer) and transportation and disposal of collected oil. In addition, the timing and operation of the groundwater depression wells and skimmer belts are modified to take advantage of current site conditions.

In recent years, EPA has been working with an engineer to determine the feasibility of installing a horizontal well(s) underneath the facility and to design a final oil collection system. The engineer completed the design specifications in early 2012 and submitted the package to EPA. His final results indicate that the well will alter the site gradient and draw the subsurface oil away from the tailrace and into a new collection system. The EPA On-Scene Coordinator has transferred the design specs to EPA's cleanup contractor who issued a request for proposal (RFP) to a number of firms specializing in directional drilling. A site walk was held on July 11, 2012 and the subcontract was awarded soon after.

On October 22, 2012, Directed Technologies Drilling, Inc. (DTD) out of Bellefonte, PA mobilized to the site to begin the installation of a 6" slotted stainless steel horizontal drain, complete with a 6" HDPE section connected to the drain at the lower, or exit end. The drilling was initiated at the lower end of the eventual drain leading up to the entry point. After a number of attempts, it was apparent the drill rig and associated tooling was unable to complete the drain on the specified bore path. Once it reached the outer foundation wall of the building, the drill head was being constantly directed upwards, pushing it above the optimal path for redirecting the subsurface groundwater flow. The crew demobilized on October 27 and worked on securing a newer drill rig and associated tooling. This setup operates a bit differently and allows the drill bit to spin on an inner rod, independent from the outer rod. This allows the bit to chew on the rock obstacles while barely advancing the entire outer rod.

Personnel remobilized on November 12, 2012 with the new drill rig and began to advance the drill bit through the original bore hole. The same issue was encountered when the drill head was once again being directed upwards at an unacceptable pitch. On November 14, 2012, the rods were withdrawn and the rig was repositioned to begin a new bore hole that would not intersect the previous path. Since the design criteria was quite restrictive based on groundwater elevation and spatial constraints due to the building foundation, the bore path was constantly monitored to ensure compliance with the specifications.

For the next few days, numerous difficulties were encountered including blockages and the loss of the recycled fluids (drilling mud and cuttings). On November 17, 2012, the new rig was able to complete the bore hole and broke through the surface approximately 300' from the point of entry. The next step was to ream the bore hole, a procedure that widens the original drilled hole to allow the 6" casing to be drawn through. The rods currently in the ground which were associated with the new rig were pulled back through the hole and replaced with rods associated with the original rig. This was done to be able to demobe the newer rig, keep rods in the ground until the casing is pulled through keeping the hole from collapsing, and to be able to begin the reaming from the lower end of the bore hole. While transferring the rods, it was apparent that there were still some tight sections within the hole and some collapsing material was interfering with a smooth push/pull. Therefore, it was decided that the reamer needed to be attached to the rods with a solid connecter as opposed to the 'flexible' attachment that the crew had on hand. The crew demobilized for a second time and made arrangements to return after the Thanksgiving Holiday break with the appropriate equipment.

The crew remobilized on November 26, 2012 and began work on November 27. A return system for the mud (lubricating material and drill cuttings) was constructed that would allow recycled mud from upper, entry end back to the mud recycling system, set up at the exit end. Additional issues were encountered during the reaming of the bore hole when due to excess strain and vibration, the drill rod behind the reamer became loose and twice detached from the reamer. Additional tooling was brought to the site in an attempt to catch and fish the reamer out of the bore path. This tooling eventually failed and new equipment was procured. On December 1, 2012, it was apparent that this new larger 'grappler' being used as a fishing tool was not working either. New strategies to complete the project were discussed and by December 5, 2012, additional resources were brought to the site. A 'sizing' tool was sent downhole to verify the gauge of the stainless steel slotted pipe. A tight section near the transition of the HDPE riser and steel pipe was encountered and after flushing out the well materials with clean water, a submersible camera was pushed into the trouble area. The pictures indicated that the steel pipe had been pinched and was now in an 'hourglass' shape as opposed to a round diameter. This was either the result of a borehole collapse or the piping being pulled through to tight a bore hole diameter. It was decided that the HDPE riser section be cut out of the way and 4" stainless be inserted in to the borehole and attached to the inside of the existing 6" casing.

The next day was spent trying to push a cutting tool into and through the existing casing. On December 7, 2012, the HDPE riser was cut from the stainless steel well materials and after a number of attempts, the 61' of riser was pushed out of the ground along with the reamer assembly.

On December 13 and 14, 2012, the crew remobilized and completed the basic well installation. Blank 4" casing was welded to 4" slotted pipe which was then pulled in to the proper position. Rubber connections were fitted onto the new well string to act as a seal between the 6" and 4" sections. At the end of the day on the 14th, the crew demobilized until a date to be determined in January.

2.2 Planning Section

2.2.1 Anticipated Activities

When the directional drilling subcontractor returns to the site in January, the remaining tasks to complete this phase of the project include: installing well seals; installation of a well vault at the entry end; and a transition section to be added to the riser on the exit end.

Additional tasks by EPAs prime contractor include a transition from the final exit end to a pump and compressor, a connection to a receiving vessel so volumes of oil/water can be estimated, and a temporary connection to the facility tail race. The effluent will be examined over a period of time so a final receiving and treatment system can be designed.

Other ancillary construction activities will include blocking and draining the canal (complete with a bypass back to the river) and reworking the gates which allows water to flow from the canal to the turbines.

EPA is planning to end their involvement at this site after the horizontal drain and final receiving vessel, complete with oil-water separation, are installed and working efficiently. It is expected that the property owner will manage day to day operations of this drainage system with CT DEP oversite**.** It is also expected that the property owner and the owner of the turbines will work together to bring the turbines back on on line and contributing to the grid.

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

DTD, the directional drilling company subcontracted for the installation of this drain, supplied a 4 person crew for the duration of the job. When the new rig was mobilized, the crew was supplemented with an additional 3 people from Vermeer, the drill rig manufacturer. ER supplied a response manager and laborer/equipment operator to support the drilling operation.

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.