

**United States Environmental Protection Agency
Region V
POLLUTION REPORT**

Date: Wednesday, November 16, 2011

From: Kevin Turner

To: Brian Schlieger, U.S. EPA
Kevin McCormack, U. S. Coast Guard

Jason El-Zein, U.S. EPA

Subject: Hartford Area Hydrocarbon Plume Site
N. Olive Street, Hartford, IL
Latitude: 38.8361210
Longitude: -90.0951620

POLREP No.: 15	Site #: 524
Reporting Period: April 1, 2011 - November 15, 2011	D.O. #:
Start Date: 10/20/2003	Response Authority: CERCLA/OPA
Mob Date:	Response Type: Non-Time-Critical
Demob Date:	NPL Status: Non NPL
Completion Date:	Incident Category: Removal Assessment
CERCLIS ID #:	Contract #
RCRIS ID #:	Reimbursable
FPN# E04503	Account #

Site Description

Please refer to POLREP's #1 and #4 for details.

Current Activities

After a series of meetings with the Hartford Work Group (HWG) respondents in the Summer/Fall of 2003, the U.S. EPA requested that Work Plans be submitted and site activities commence during negotiations of a final Administrative Order of Consent (AOC).

In the last three years, U.S. EPA and the U. S. Department of Justice (U.S. DOJ) in conjunction the Illinois Environmental Protection Agency have set about to negotiate the next enforceable order (Consent Decree) with the Responsible Parties (RPs). As part of the Consent Decree negotiations a "trust fund" will be established by the RPs to pay for the clean-up as required by the Statement of Work (SOW). A third-party contractor will be responsible to implement the SOW. These attorney/client privileged negotiations continue at this time.

Vapor Related Activities

Determined the status of current operations and maintenance activities regarding the existing soil vapor extraction (SVE) system including a series of vacuum tests to determine the vacuum influence exerted upon the vapor control boring's and corresponding vapor probes.

Provided control of vapors into selected residential living spaces by interim protection measures.

To date, a total of 173 homes have been inspected for "needs assessment" purposes. Of the 173 homes, 141 homes having some form of interim measures performed. It is important to note that homeowners continue to "opt in" to the needs assessment program, albeit in limited numbers.

The Effectiveness Monitoring Plan has been approved for residential sampling with the exception of the Event-Based Monitoring section. A time series analysis completed in 2006 is being used to define an "event" for the Event-Based Monitoring section.

The HWG submitted the Phase 3 SVE Expansion Technical Memorandum outlining the expansion of the Area Wide Vapor Extraction System in North Hartford. Phase 3A field work began on October 3, 2006. The HWG completed Phase 3B SVE system expansion on June 25, 2007. Restoration of damage

to asphalt and concrete roads was completed on July 3, 2007.

Due to seasonal changes of Mississippi River along with winter snow melt and rainfall events, sub-surface petroleum vapors can make it past the area-wide vapor control system (SVE) and have been detected under slab in as many as 17 residential properties. These vulnerable homes can require daily testing to verify that petroleum vapors are not affecting indoor air quality. U.S. EPA has tasked the Apex Oil Technical Team perform additional testing and sheltering of residents at a nearby hotel if it is determined that vapors are impacting indoor air quality.

Daily vapor control system operations and maintenance, SVE effective monitoring along with O & M of the in-home protective measures is performed by the Apex Technical Team. (Ongoing)

SVE wells along West Forest and East Watkins have been shut-down due to the apparent removal of vapor mass from the southernmost portion (buffer zone) of vapors that resided in soil gas. The agency has requested ongoing testing through the various seasons to continually prove soil gas is devoid of petroleum vapors. Because of this decrease in mass hydrocarbon removal, HWG is currently only operating 2 thermal oxidizers units used for vapor destruction purposes. (Ongoing)

In late October, 2011, the Hartford Community Center experienced a vapor intrusion event that was not forecasted by Mississippi River stage nor expected due to the current maintenance approach by the Apex Technical Team contractors. Several homes near the center of the plume also demonstrate vapor migration from deeper geologic zones to shallower zones. Further updates and evaluation of the Conceptual Site Model and the emphasis of the forthcoming remedy design are warranted.

Groundwater Related Activities

HWG has installed 5 sentinel wells for Village of Hartford drinking water wellhead protection purposes. The wells are sampled quarterly and results reported to the agencies. (Ongoing)

Investigated the lateral extent of free product hydrocarbons with the HWG recommended random optical screening tool (ROST™) (2004/2005).

The HWG has presented conceptual site model (CSM) information. The CSM will be updated as data is collected and will help determine and measure the impacts to the area wide regional groundwater and Mississippi River (2006).

The pilot tests for free-phase product hydrocarbon removal using the H2A mobile high vacuum removal technologies are complete (2005/2006).

The U.S. EPA has a standing request for data and awaits updates to visual information depicting the vertical extent of the dissolved phase hydrocarbon plume. This conceptual site model information is to be updated as new geotechnical and groundwater plume data becomes available.

Dissolved phase well installations were completed in September, 2005. The Dissolved Phase Ground Water Investigation Report was submitted to U.S. EPA in January of 2006.

On July 31, 2006, the HWG submitted the LNAPL Active Recovery 90% Design Report for construction installation of a LNAPL removal system using "high vacuum extraction" technologies.

Initial installation of the manifold piping network started in the fall of 2006 with the construction installation of MPE pilot test wells to follow in the future.

The Agency has requested the assistance of Mr. Don Bussey, Hydro-geologist, and Mr. Terrance Johnson, Environmental Scientist, of U.S. EPA's Environmental Response Team (Las Vegas) to provide technical assistance with LNAPL recovery techniques, dissolved phase concerns and other project groundwater related issues.

Five Multi-Phase Extraction (MPE) wells were installed as part of the Area "A" Pilot Systems for removal of free-phase floating oil was completed in late 2008.

The Apex Technical Team has installed a petroleum product recovery well and 3 observation wells near there intersection of North Olive Street and East Forest Street.

The HWG received approval from three railroad rights-of-way operators to install a 2-inch HPDE plastic and 2-inch braided stainless steel flex-hose into an existing 10-inch petroleum pipeline used to transfer

total produced fluids to the pilot system fluids treatment and storage compound were successfully installed in March of 2011.

On November 3, 2011, the HWG obtained the required access agreements from the Railroad Companies that were necessary to pump total produced fluids underneath two active railroad lines from the Site to the liquids treatment compound located on property owned by Shell Oil Company.

On November 7, 2011, The Area A Pilot Study was initiated. This pilot study will compare a variety of product removal technologies to support the forthcoming remedy selection.

General Project Activities

U.S. EPA has participated in the development of a formal program with the local fire department to prepare for and respond to vapor intrusions through the 911 emergency notification system.

Daily Mississippi River gauge data is collected and compared with site groundwater monitoring wells and pressure transducers to better understand the hydraulic connection of impacted waters of the State with the River, and, to better understand the potential threats to the Mississippi River via active and abandoned sewers and pipeline corridors leading to the Mississippi River and surrounding surface water bodies. Furthermore, water gauge data is used to better understand the groundwater flow and migration towards the Mississippi River in comparison to the influences upon the regional groundwater pumping/consumption usage.

IEPA has issued a permit modification to the HWG existing air permit as related to the 4 high temperature thermal oxidizers used to destroy the extracted gasoline vapors. This approach will allow HWG to operate the SVE system at higher vacuum pressures to aid in the removal of groundwater from occluded wells; to better separate and manage groundwater being introduced into the SVE system with a new vapor liquid separator; and to utilize the current SVE manifold piping as the means to convey vapors and liquids from the "Area A" MPE pilot study area. (Ongoing)

The RCRA Corrective Action Branch is actively participating in a variety of technical matters such as in-home sheltering of Harford residents, gasoline vapor mitigation measures, residential and SVE system effectiveness monitoring, LNAPL removal and long-term dissolved phase concerns. (Ongoing)

Community Relations Activities

During the week of May 23, 2005, U. S. EPA went door-to-door to meet with homeowners who have yet to opt into the needs assessment program. U.S. EPA is confident that all new participants were identified by that effort and that little more can be done to increase homeowner participation beyond what is already being conducted by HWG agents.

A U. S. EPA sponsored press release was conducted on May 25, 2005, in cooperation with the HWG community relations spokesperson. Future press releases are anticipated.

U. S. EPA developed and mailed an "August, 2006 Fact Sheet" that was mailed to all residents in the Village of Hartford on August 2, 2006.

The agencies will continue to disseminate information to the public as required and address any questions that may arise. Development of new "Fact Sheets" and the dissemination of such to members of the public are anticipated for every phase of clean-up.

Documents maintained by the U.S. EPA in the official Administrative Record were up dated in January 2007 and April 2010. The Information Repository at the Village of Hartford Public Library was updated in January of 2007 and June of 2010. Adobe (PDF) versions of the project documents are available for public review during normal visiting hours at the Village of Hartford Library located on Hawthorne Street

Planned Removal Actions

Vapor Related Activities

As a means to exhibit better sub-surface vapor control, the Apex Technical Team will connect several monitoring wells to the SVE system to capture, where possible, petroleum vapors migrating from deeper to shallower geologic zones to sweep vapors that accumulate under vulnerable homes and the Hartford Community Center.

Groundwater Related Activities

Quarterly monitoring of the sentinel wells is on-going.

Quarterly and Semi-annual gauging of selected monitoring wells is on-going.

A Pilot Study will be used to evaluate a variety of hydrocarbon removal technologies in support to the development of a Final Remedy. The work related to this pilot study was stipulated in the July 2010 Unilateral Administrative Order.

Next Steps

The Administrative Order on Consent (AOC) was signed on March 17, 2004 and became effective on June 24, 2004.

U.S. EPA has concluded formal legal matters related to the United States Department of Justice in United States v. Apex Oil Company. On July 6, 2006, the United States District Court for the Southern District of Illinois granted the United States motion for partial summary judgment against the Apex Oil Company. The remaining issues were tried before the bench beginning January 7, 2008, with testimony completed on February 6, 2008. Ultimately, the U.S. DOJ/U.S. EPA received a favorable decision on July 28, 2008, which was confirmed by the 7th Circuit Court of Appeals on August 25, 2009. The Supreme Court denied Apex Oil's Petition for a Writ of Certiorari on October 4, 2010.

On July 20, 2010, U.S. EPA issued a Unilateral Administrative Order {(UAO) RCRA-05-2010-0020} to Apex Oil Company, BP America Inc., Shell Oil Company, Sinclair Oil Corporation, and The Valero Companies. The UAO is for work including implementation of a pilot test in Area "A", followed by continuous operation of a multiphase extraction system at that location, along with management of recovered vapors and liquids at treatment facilities located east of the Village of Hartford on property owned by Shell Oil Company. (Ongoing)

Key Issues

The U.S. EPA, HWG and Apex Technical Team are working together to identify additional work which can be completed while further negotiations take place. (Ongoing)

Because the current AOC defined scope of work is virtually completed, the U.S. DOJ/U.S. EPA/Illinois EPA are negotiating a Consent Decree which will define the future scope of work project expectations, remedies and schedule from all the identified project respondents. (Ongoing)

On October 28, 2011, the project ceiling using OPA funds was increased by \$500,000 to \$2,800,000.00. As the project progresses, additional reimbursable monies will be needed from the oil pollution fund in order to maintain current level of effort. (Ongoing)

As an interim measure, the current SVE system does not maintain 100% sub-surface control of petroleum vapors. The forthcoming remedy approach is hinged upon the addition of new vapor extraction wells along with the Area "A" Pilot Study for liquid petroleum capture and removal technology(s) best suited for site clean-up objectives.

Estimated Costs *

	Budgeted	Total To Date	Remaining	% Remaining
Extramural Costs				
RST/START	\$1,350,000.00	\$893,066.00	\$456,934.00	33.85%
Intramural Costs				
USEPA - Direct (Region, HQ)	\$1,450,000.00	\$1,242,256.00	\$207,744.00	14.33%
Total Site Costs				
	\$2,800,000.00	\$2,135,322.00	\$664,678.00	23.74%

* The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The OSC does not necessarily receive specific figures on final payments made to any contractor(s). Other financial data which the OSC must rely upon may not be entirely up-to-date. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

response.epa.gov/HartfordArea

POLREP #15 Last Updated 11/17/2011