

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

Date: Wednesday, March 19, 2008

From: Kevin Turner and Steven Faryan

To: Brian Schlieger, U.S. EPA Jason El-Zein, U.S. EPA
Kevin McCormack, U. S. Coast Guard

Subject: POLREP #13

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

POLREP No.:	13	Site #:	524
Reporting Period:		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 Account #	
FPN#	E04503		

Site Description

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

Current Activities

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 170 homes have been inspected for "needs assessment" purposes. Of the 170 homes, 138 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.

Continue to conduct investigation for petroleum pipelines and utility lines contaminant migration pathways and how they relate to the Mississippi River.

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 Event-Based Monitoring section is currently being re-written after receiving comments on the revised draft from the Agencies. A revised draft of this section is expected by the end of March 2008.

The HWG submitted the Phase 3 SVE Expansion Technical Memorandum outlining the expansion of the Area Wide Vapor Extraction System in North Hartford. U.S. EPA conditionally approved the plan. 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.

On July 31, 2006, the HWG submitted the LNAPL Active Recovery 90% Design Report for expansion of the existing soil vapor extraction system. U.S. EPA has reviewed the LNAPL Active recovery 90% Design Report and provided comments in November 2006. Additional comments may be submitted after scientists from U.S. EPA's Emergency Response Team (ERT) perform a review of the aforementioned report.

In the spring of 2007, during high Mississippi River and ground water levels there were elevated levels of petroleum related compounds (Methane and Isopentane) measured in the sub-slab monitoring ports at 119 W. Date. During that 30 day timeframe of elevated readings, HWG offered the resident sheltering away from the home in accordance with the project Contingency Plan. Subsequently, HWG was granted access by the homeowner to conduct a geo-technical investigation specific to this residential property. It was determined that silty sand conditions exist in close proximity to 119 W. Date. These unique geologic features may have added in the accumulation of high methane and other contaminate concentrations during seasonal high stands of the groundwater table. At this time, HWG is going install a new SVE well in the street right-of-way adjacent to 119 W. Date. The Agencies may require extra measures by HWG to determine the best approach and remedy of this unique accumulation of petroleum vapor under the basement floor of 119 W. Date.

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.

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

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.

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

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 Ground Water Investigation report was submitted to U.S. EPA in January of 2006. U.S. EPA has provided comments on the Ground Water Investigation Report and additional monitoring wells will be installed and sampled as part of these comments.

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. SVE expansion will take place ahead of multi-phase extraction (MPE).

Initial installation of the manifold piping network started in the fall of 2006 with the construction installation of MPE pilot test wells to follow perhaps in 2007/2008.

The Agency has requested the assistance of Mr. Don Bussey, Senior Hydrogeologist, of U.S. EPA’s Environmental Response Team (Las Vegas) to provide technical assistance with dissolved phase and other project groundwater related issues.

HWG has committed to performing work outside of the current AOC obligations with the “Area A” MPE active LNAPL recovery pilot study.

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.

U.S. EPA Headquarters’ Office of Superfund Remediation and Technology Innovation (ORSTI) provided a comprehensive report that included critical information regarding project geotechnical and geochemical requirements. The report also identified existing data gaps with the plume investigation including recommendations how to optimize the overall nature of the PRP conducted investigation activities, data objectives, and for both short-term and long-term project goals.

Pipelines related to active petroleum barge loading operations along the Mississippi River will continue to perform annual tracer gas and hydrostatic leak detection studies in addition to various past upgrades according to Department of Transportation regulated guidelines.

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.

The HWG Technical committee has committed to a schedule for both conference calls and face-to-face meetings in 2008.

HWG has petitioned the IEPA for a permit modification to the current 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.

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 will continue to deliver construction notices to residents affected by the construction activities of the SVE system.

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 in the Fall/Winter of 2007.

Documents maintained in the U.S. EPA Information Repository and at the Village of Hartford Public Library were updated in January of 2007. 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

Construction activities related to the Phase 3 Soil Vapor Extraction System (SVE) began in early October of 2006. Related to Phase 3B SVE expansion, additional nested vapor monitoring wells will be installed for system performance monitoring purposes.

It was determined that one extraction well, HSVE-5, is not performing to optimum standards. HWG installed a replacement well (HSVE-5R) in close proximity to 119 W. Date Street.

Groundwater Related Activities

The HWG submitted the Ground Water Investigation Report to the Agencies in January of 2006. The agencies have provided comments to the HWG and additional investigation work is anticipated.

Quarterly monitoring of the sentinel wells is on-going.

Bi-monthly gauging of selected monitoring wells is on-going.

A pilot test using high vacuum extraction technologies to remove free-phase floating oil from groundwater monitoring wells was completed in late July of 2006. Additional pilot study work is anticipated.

Enforcement

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

Another former owner/operator of past refinery operations, Sinclair Oil Company, has enjoined the collaboration of the HWG and agreed to participate with past cost and future investigation work and hydrocarbon removal activities.

Next Steps

Vapor Related Activities

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A long-term pilot study related to active LNAPL recovery in "Area A" is in the early phase of construction installation. 5 multi-phase extraction wells are to be installed with start-up operations expected in the spring of 2008.

Key Issues

Sinclair Oil Company (Sinclair), a signatory to the settlement agreement, has temporarily dropped out of the HWG. The Agency is monitoring negotiations between the HWG and Sinclair, which are on-going.

Residents represented by counsel have recently allowed oil company agents into the homes to perform the required initial needs assessment. (Ongoing)

U.S. EPA is supporting the United States Department of Justice in United States v. Apex Oil Company. Apex Oil is the successor by merger to former owners and/or operators of a refinery and associated pipelines and sewers located in Hartford, Illinois from which releases of gasoline, diesel fuel, and other petroleum-based substances have occurred. These releases contributed to the large subsurface plume of petroleum-based substances under Hartford. 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 trial ultimately began on January 7, 2008, with testimony completed on February 6, 2008. U.S. DOJ/U.S. EPA awaits a "bench decision" from the federal judge of the U.S. District Court in East St. Louis, IL. (Ongoing)

- The U.S EPA and HWG are working together to identify additional work which can be completed under the current AOC

The current ceiling using OPA funds is \$ 1,138,262.00. As the project progresses, additional reimbursable monies will be needed from the oil pollution fund in order to maintain current level of effort. (Ongoing)

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