U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Chevy in the Hole Parcel A - Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V

Subject: **POLREP #2**
Continued Site Investigation for Removal Action Design
Chevy in the Hole Parcel A
Z5KA - FPN E11508
Flint, MI
Latitude: 43.0109900 Longitude: -83.7104816

To:
From: Brian Kelly, OSC
Date: 10/20/2011
Reporting Period:

1. Introduction

1.1 Background

Site Number:	Z5KA	**Contract Number:**	
D.O. Number:		**Action Memo Date:**	
Response Authority:	OPA	**Response Type:**	Time-Critical
Response Lead:	EPA	**Incident Category:**	Removal Assessment
NPL Status:	Non NPL	**Operable Unit:**	
Mobilization Date:	9/1/2010	**Start Date:**	9/1/2010
Demob Date:		**Completion Date:**	
CERCLIS ID:		**RCRIS ID:**	
ERNS No.:		**State Notification:**	YES
FPN#:	E11508	**Reimbursable Account #:**	

1.1.1 Incident Category

OPA Removal Action

1.1.2 Site Description

The site was used to manufacture valves, camshafts, and cylinder cases between 1926 and 1984. During these processes hydraulic fluids constantly dripped from the milling machines to the concrete floors where the oil collected in concrete pits. Several hydraulic and gasoline tanks were also present. All structures on the property were demolished in 1995.

In June 2010, the City of Flint reported to the United States Environmental Protection Agency (EPA) oil discharging through the channelized concrete river wall into the Flint River from the Chevy in the Hole Parcel A Site. EPA and the City of Flint Fire Department deployed boom to contain the oil.

Between June 2010 and April 2011, U.S. EPA investigated the cause and history of the site. Two rounds of assessment, September 2010 and April 2011, confirmed and delineated a discharge of oil from the site.

1.1.2.1 Location

The site is located at 300 South Chevrolet Avenue in Flint, Genesee County, Michigan, 48504, in a mixed residential/industrial/commercial area. The coordinates for the site are 43.009 degrees north and -83.709 degrees west. The site consists of a 13-acre parcel bordered by Chevrolet Avenue and industrial properties to the east, residential and commercial properties to the south, residential properties to the west, and the Flint River to the north. Kettering University lies on the opposite bank of the Flint River. In addition to being called Chevy in the Hole Parcel A, the site is also called former Building 5 and Flint West.

1.1.2.2 Description of Threat

The site slopes from the south to the adjacent Flint River, with an elevation drop of greater than 30 feet. The southern portion of the site is covered with thick, low-lying vegetation, and the northern portion next to the Flint River is covered by concrete slabs from former Building 5.

During U.S. EPA's initial site assessment, oil was detected in 14 of the 18 site monitoring wells. The thickness of oil in the monitoring wells ranged from 0.38 feet to 14.53 feet. Based on the well gauging, the average oil plume could be as thick as 6 feet across 3 acres; however, capillary action is likely causing oil to accumulate in the wells disproportion to its actual thickness.

As documented by GM, the City of Flint, and U.S. EPA, oil from the Chevy in the Hole Parcel A Site is discharging to the Flint River. The Flint River is a navigable waterway of the United States. Based on site conditions and the estimated volume of oil on the site, oil will continue to discharge to the Flint River unless a removal action is taken.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

Site investigation activities were completed with the purpose of providing information and results for removal activities and were conducted in September 2010 and April 2011.

The results of these activities include estimated free product volume and extent, contaminated soil volume and extent, and soil and free product characteristics. The results are detailed in the Site Assessment Report (9-2011) and Data Gaps Assessment Technical Memorandum (5-2011).

Summary of the investigation results

The purpose of the preliminary investigation was to define the vertical and horizontal extent of Nonaqueous-Phase Liquid (NAPL) at the site, estimate aquifer properties, estimate NAPL recovery rates, refine existing volume and cost estimates, and determine the waste characterization of the NAPL, soil and groundwater for treatment and/or disposal.

To determine the horizontal and vertical extent of NAPL, NAPL and soil samples were collected, ultra-violet optical screen tool (UVOST®)-laser-induced fluorescence (LIF) was conducted at 25 locations, Roto-Sonic soil borings were conducted at 21 locations, OIL-IN-SOIL™ screening test kits were used, and visual observations and instrument results were collected. The results of the NAPL data were provided to the U.S. EPA ERT and was input into a three-dimensional model and a solid surface representing the possible shape and volume of the NAPL was created.

Two NAPL samples were collected and 24 soil samples were collected, analyzed, and the results were compared to NAPL sample results. This comparison was used to determine whether NAPL was present at the sampled locations based on constituent similarity and concentrations. A total of 25 UVOST® LIF borings were advanced on-site. Seven of the 25 UVOST® LIF had a response of greater than 150 percent (%) reference emitter indicated the potential for NAPL.

The NAPL properties are consistent with mineral oils and hydraulic oils that are stable in high temperature and pressure environments. The NAPL exists throughout the property in the small pore spaces of the predominant sandy silt and appears at different elevations and locations within these tight formations.

Ten of the soil boring/UVOST® LIF locations indicated the presence of NAPL. NAPL appears to be present throughout the site with the greatest extent and thicknesses located in the center to the northwest section of the site. NAPL thickness ranged between 2 to 5 feet across the Site with the greatest NAPL thickness located near the center of the Site at boring SB28.

A total of eight slug tests, three NAPL recovery tests, a single well pumping test, and a single step-drawdown test were completed as part of this field effort to evaluate removal options involving NAPL recovery and groundwater extraction. The aquifer testing results indicate that the hydraulic conductivities and transmissivities on-site range from low to very low. Therefore, NAPL recovery will be slow.

The investigation results show that a zone of higher hydraulic conductivity exists along the northern portion of the site and lower hydraulic conductivity soils are present throughout the rest of the site and to the south as indicated in historical reports. However, the higher hydraulic conductivity soils to the north are still lower permeability soils consisting of variable sands, gravels, and silts.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

2.1.2 Response Actions to Date

See POLREP #1 for previous activities.

Current Activities (beginning 10-17-11);

LATA-KEMRON mobilized to the site on October, 17, 2011 to implement the Site Investigation Work Plan.

Outfall, Utilities and Floodwall Evaluation

LATA-KEMRON conducted an evaluation and mapping of the outfalls adjacent to the CITH site. The evaluation consisted of walking the Flint River and documenting outfall locations and noting if oil or sheen was present near or within the outfall. A Low Voltage Ultra Violet (LVUV) light was used at each outfall and at each joint and crack of the floodwall. Results indicated that oil is present within Outfall #70 and within the joints of the floodwall.

Drilling/UVOST

LATA-KEMRON conducted UVOST at six locations to evaluate the potential presence of free product and the depths of free product when detected. A Roto-Sonic drill rig was used at each location prior to the Geoprobe advancing the UVOST equipment to provide access through the concrete pad. The results of the UVOST activities were used to determine monitoring well locations and screen depths. Free product was indicated in several of the borings at depths of approximately 15 to 20 feet bgs.

Surveying Activities

Rowe and Associates survey company conducted a survey of the site that included floodwall elevations, monitor well locations and elevations, sewer manhole locations and elevations, topography of the site and other site features.

Monitor Well Installation

Three monitoring wells were installed on the site as specified in the Site Investigation Work Plan (SIWP). Screened intervals were typically between 15 and 25 feet. 10-foot long, 10-slot screens were used in each monitoring well. Each monitoring well was developed using a submersible pump and was surged as needed.

Groundwater Sampling

Several select monitoring wells as specified in the SIWP were purged and sampled. Samples were collected for system design for the parameters as specified in the SIWP.

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

U.S. EPA is unable to use the GM settlement funds under OPA. Funding for the project will rely on the OSLTF.

2.2 Planning Section

2.2.1 Anticipated Activities

Following the completion of site activities the site and analytical data will be reviewed and a report will be generated by LATA-KEMROM and submitted to the U.S. EPA for review and comment.

2.2.1.1 Planned Response Activities

The removal action will stop oil from discharging to the Flint River by outfall removal, sealing the floodwall, and boom deployment. Monthly or quarterly monitoring will be conducted as approved by U.S. EPA.

If the planned response activities outlined above are insufficient to eliminate oil discharge to the Flint River then a collection trench will be installed parallel to the River. The collection trench will intercept and remove oil prior to reaching the River.

2.2.1.2 Next Steps

Site work will be determined following the U.S. EPA review and approval of LATA-KEMRON recommendations based on the site data.

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.