

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY


INTEROFFICE COMMUNICATION

TO: Keith Creagh, Director

FROM: Susan Leeming, Assistant Chief  
Remediation and Redevelopment Division

DATE: July 1, 2016

SUBJECT: Monthly Status Update for the former Zephyr Refinery, 1220 Holton Road  
Muskegon, Michigan; Site ID No. 61000063



The Michigan Department of Environmental Quality (MDEQ) continues to work with its federal partners; the United States Environmental Protection Agency (US EPA) on the fire suppression ditch sediment removal; and the United States Army Corps of Engineers (USACE) on remediation of the uplands.

The MDEQ's cost share of the sediment removal project is being funded with Strategic Water Quality Initiative Funds (SWQIF). The upland remediation portion of the project will be funded with a \$6 million State of Michigan legislative appropriation along with other state and federal dollars to reduce petroleum contamination and stimulate redevelopment of the impacted properties. The following details describe progress that took place in June 2016 towards meeting project objectives.

***MDEQ/USACE's Upland Remediation***

**Soil and Groundwater Remediation**

The Self-sustaining Treatment for Active Remediation (STAR) field pilot study was completed in May. The STAR field pilot study focused on an area containing heavier or "diesel" range petroleum compounds and an area containing lighter or "gasoline" range petroleum compounds. "Pre" and "post" pilot study soil samples were collected for laboratory analyses. The samples collected were also compared visually and showed favorable results with little indication of petroleum in the samples collected after the test was completed. A thorough evaluation of the STAR technology's effectiveness will be completed after the draft report is received, which is scheduled to be completed in July.

**Groundwater Treatment**

Modifications to the groundwater treatment system have been completed and tested. An application for a NPDES discharge permit to operate the modified system has been submitted. When the permit is approved, the modified system will be placed in operation. The modifications will improve overall system operation and reduce infrastructure needs and will also open up acres of the former refinery property for redevelopment.

The MDEQ has hired a consulting firm to evaluate the recovery well system and help develop a plan to improve the pumping capacity of the recovery wells and improve the overall system performance. The evaluation began in April and is expected to continue through the summer.

#### ***MDEQ/US EPA Great Lakes Legacy Act Wetland Remediation***

The US EPA and MDEQ have signed the project agreement for the fire suppression ditch area remediation and restoration project. The wetlands permit is going through revisions. We will continue to work with the US EPA and MDEQ's Water Resources Division to finalize it so the US EPA can begin the contracting process for the remediation and restoration work. An on-site meeting and site walk over was conducted on June 16 with the US EPA, their engineers and the property owners for a last review and discussion of the bid specifications before the US EPA finalizes their bid documents and solicits bids from qualified contractors.

The MDEQ and US EPA are also working together with local leaders and groups to keep the community informed of progress and activities at the site. A public meeting to discuss the fire suppression ditch sediment removal project in more detail is tentatively scheduled for October 27. Additional project information is available at the following link: <http://www.greatlakesmud.org/muskegon-lakes-zephyr-site.html>.

#### ***Current System Operating Status***

The recovery of non-aqueous phase liquid (NAPL) or petroleum product that remains undissolved in the groundwater continues to be collected on a weekly schedule to remove as much of the contamination as possible. The recovery efforts have resulted in the removal of 21,400 gallons of NAPL since February 2012. Approximately 700 gallons of product were recovered this month. The manual recovery efforts will be significantly reduced as the groundwater recovery system begins to recover the NAPL after the NPDES permit is approved and the system is fully operational.

Operation and maintenance activities continue weekly, sampling is being conducted per appropriate permit requirements, and system components are being changed and replaced as needed to ensure operation of the system.

#### ***Anticipated Milestones Schedule***

<b>MDEQ/USACE UPLAND REMEDIATION ACTIVITIES</b>	
In-Situ Pilot Study (STAR) – Performance Evaluation	July-August 2016
<b>MDEQ UPLAND REMEDIATION ACTIVITIES</b>	
In-Situ Chemical Oxidation Full Scale Evaluation	June-August 2016

<b>MDEQ/US EPA WETLAND REMEDIATION ACTIVITIES</b>	
US EPA prepares and finalizes contract document	July 2016
Advertise project bid specifications, receive and review bids, and recommend project award	July-August 2016
Award bid to contractor and finalize contract	August-September 2016
Contractor mobilizes to the site and prepares for wetland remediation	September 2016
Wetland remediation	October 2016 – January 2017
Wetland restoration	Spring 2017