

United States Environmental Protection Agency
Region V
POLLUTION REPORT

Date: Monday, December 10, 2007

From: James Augustyn

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Subject: Removal Action
Saginaw River Sediment Dioxin Contamination Site (Wickes Park)
Wickes Park, Saginaw, MI
Latitude: 43.3936000
Longitude: -83.9644000

POLREP No.:	3	Site #:	B5KF
Reporting Period:	December 3 - 9, 2007	D.O. #:	
Start Date:	11/24/2007	Response Authority:	CERCLA
Mob Date:	11/12/2007	Response Type:	Time-Critical
Demob Date:		NPL Status:	Non NPL
Completion Date:		Incident Category:	Removal Action
CERCLIS ID #:	MID 980 994 354	Contract #	
RCRIS ID #:			

Site Description

Late on Friday, November 9, 2007, Dow notified U.S. EPA that preliminary data for a sediment sample collected from within the channel of the Saginaw River was in excess of 1.6 parts per million (ppm) Dioxin TEQ. This is the highest TEQ analytical result recorded for either the Tittabawassee or Saginaw Rivers. On November 11, 2007, U.S. EPA issued a verbal General Notice Letter of Potential Liability to Dow.

On Monday, November 12, 2007, U.S. EPA, MDEQ and Dow representatives met at Wickes Park in the City of Saginaw to review site conditions and discuss U.S. EPA's expectations for the conduct of an expedited time-critical removal action. An Administrative Order by Consent was signed by U.S. EPA and Dow on November 15, 2007, for the performance of the removal. Dow has collected physical site data such as river depth, velocity measurements, channel profile measurements, and collected additional sediment samples for waste characterization and dewatering studies.

Current Activities

The following tasks have been completed by Dow's contractor during the period from December 3 - 9, 2007:

On Monday, December 3rd, Site mobilization and setup continued. Dow's contractors continued with the installation of the water treatment, conveyor belt and dewatering systems. Heating units were put into place throughout the shelters surrounding the water treatment, conveyor belt and dewatering systems.

The barge remained anchored in position on the river next to the proposed dredge area. Crews shortened the slurry pipeline from the barge to the dewatering system. Dow installed turbidity monitoring stations up river and down river of the dredge area.

On Tuesday, December 4th, Site mobilization and setup was completed. Dow performed a test of the treatment systems using river water. While the river water was running through the system, Dow performed maintenance and modifications to the systems.

On Wednesday, December 5th, suction dredging activities were initiated. Prior to dredging, ice in the river was broken up with the use of a small motor boat. The barge remained anchored in position in the river next to the proposed dredge area.

Dow began dredging of contaminated sediment from the removal area. The system ran for approximately 2 hours before it was shut down by Dow due to an equipment failure within the water treatment system. One of the flanges on a sand filter connecting the incoming wastewater line broke off and the entire system was immediately shut down. Sand from the filter and approximately 200 gallons of wastewater was spilled onto the containment pad. The spilled wastewater drained into the site sump and was pumped back into the fractionation tanks. Approximately 17 yards of sediment was removed and transported to the Salzburg Road Landfill for disposal.

An initial sample of the effluent water was collected while the system was running and analyzed for total suspended solids (TSS). The TSS result reported verbally to U.S. EPA was 2,990 mg/L. Dow worked through the night to fix the problem. In order to better treat the water, Dow setup two additional fractionation tanks with built in weirs. The water will now be pumped from the dewatering system into the fractionation tanks with baffles and then through the remainder of the water treatment system. The baffles would slow the movement of the water and allow the suspended sediments to settle out of the water column. Dow also switched out the 1 micron bag filters and inserted 0.5 micron bag filter in order to remove more of the finer suspended sediments within the water column.

On Thursday, December 6th, dredging activities continued in the afternoon after the two weir tanks were added to the system to enhance the settling of suspended sediment. Dredging operations were shut-down shortly after startup to install omitted plugs in the weir tanks. Dredging continued following installation of the plugs.

Following startup, the sand and bag filter influent and effluent were inspected to evaluate pre and post-bag filtration efficiency. Inspection of both pre and post bag filtration liquids indicated very little filtration was occurring as the influent and effluent filter liquids appeared equally cloudy. Only 12 of the 32 bag filters functioned properly as the majority of the post bag filtration liquids were cloudy containing obvious suspended sediment. Dow immediately isolated and valved off the malfunctioning bag filters. Inspection of the malfunctioning bag filter chambers revealed the filter bags were not entirely suited for the particular filter chamber thereby allowing sediment heavy liquids to partially bypass the bag filters.

Total Suspended Solids (TSS) samples were collected from the functioning bag filter influent and effluent. The TSS results reported verbally to the U.S.EPA were 900 mg/L (bag filter influent) and 1 mg/L (bag filter effluent) respectively. Additionally, one effluent sample was collected from the treatment system discharge line and analyzed for TSS. As reported to the U.S.EPA, the TSS result was 320 mg/L. The 320 mg/L is an improvement from the previous day TSS result of 2,990 mg/L but is still above the 10 mg/L TSS criteria.

Approximately 17 yards of sediment was removed and taken to Salzburg Road Landfill for disposal. Crushed corn-cobb sorbent was added to the dewatered sediment to ensure the absence of free liquids during transportation to the landfill.

On Friday, December 7th, prior to dredging activities, Dow reconfigured the influent lines such that the second set of weir tanks delivered to the site previously were placed in parallel with the first weir tanks to split the influent flow thereby providing enhanced settling time for the suspended sediments to settle out within the two tanks.

Within approximately ten minutes of sediment dredging startup, the bag filters immediately clogged with fine sediment allowing no flow. Inspection of the bag filters revealed massive clogging. Inspection of the system frac tank hose connections revealed the discharge line from the frac tanks flow from the bottom of the frac tank whereby fine bottom sediment which settled out overnight was reagitated and resuspended in the flow. The fine sediment passed through the sand filters and collected in the bag filters. Dow attempted to backwash the sand filters with no success, the system still contained very fine sediment continually clogging the bag filters immediately. Dow attempted to re-circulate the system water through the weir tanks and dewatering system unsuccessfully. Dredging was discontinued so that modifications could be made to the system to reduce the amount of fine sediment collecting in the bag filters.

On Saturday, December 8th, no dredging occurred as modifications to the dewatering and treatment system took place the entire day. Modifications included; relocation of the weir tank inlet piping, insertion of an energy dissipation structure within both weir tank inlets, relocation of the weir tank outlet piping from the tank bottom to a higher elevation to allow discharge decanting, cutting notches on both weir tanks to allow water to flow over the last baffle instead of under the baffle thereby eliminating flow from re-suspending bottom tank sediment, reconfiguration and re-piping of the two frac tanks to be used solely as backwash storage and settling tanks, installation and hook-up of a polymer flocculent system, and replacement of all 0.5 micron bag filters with 1 micron bag filters which fit the bag filter screens correctly allowing all bag filter units to be used.

On Sunday, December 9th, dredging activities resumed. Previous system modifications appeared to have partially solved the bag filter problem, however, bag filter replacements were still required every 1-hour. A total of 3 trucks, approximately 20 cubic yards each, were loaded with dewatered sediment and transported to the Salzburg Road Landfill for disposal. Two additional weir tanks were delivered to the site for insertion into the system to further enhance the settling time for suspended sediment.

Planned Removal Actions

- Dow will continue to monitor the turbidity stations up river and downriver of the dredge area.
- Dow will continue to dredge and remove contaminated sediments within the proposed dredging area.
- Transportation and disposal of the impacted sediment to Salzburg Road Landfill.
- Treatment and discharge of water generated from the impacted sediment dewatering operations.
- Dow will continue to refine the treatment system to meet the 10 mg/L TSS requirement

Next Steps

- Dow will collect post-removal confirmation samples throughout the dredged area.

Estimated Costs *

	Budgeted	Total To Date	Remaining	% Remaining
Extramural Costs				
Intramural Costs				
Total Site Costs	\$0.00	\$0.00	\$0.00	0.00%

* 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.

Disposition of Wastes

To date, a total of 5 trucks have been loaded with sediment and transported to the Salzburg Road Landfill, totaling approximately 94 cubic yards of sediment.

response.epa.gov/saginawriversedimentdioxincontaminationsite