

SITE STATUS SUMMARY
FOX RIVER OU2 – 5 PHASE I (NEW MCSS DATABASE PROJECT)

General Project Overview

The Phase I target area is an approximately 20-acre area of more highly PCB-contaminated sediment (sediment concentrations as high as 3,000 ppm PCBs) located along the western shore of the Fox River and immediately downstream of De Pere Dam. This area of PCB-contaminated sediment was identified as part of the pre-design sediment sampling performed in 2004 and 2005 to support the design activities for OUs 2 through 5. The Phase I removal is being performed as an expedited removal action in advance of implementing the comprehensive OU2 through 5 remedy. The Phase I removal is being performed under a 2006 Consent Decree entered into by EPA and WDNR, and NCR Corporation and U.S. Paper Mills Corporation. The removal is targeting 145,300 cy of PCB-contaminated sediment (26,100 cy TSCA; 119,200 cy nonTSCA). Reportedly, the Phase I sediment project will remove approximately 1.5% and 10% of the OU2 – 5 targeted sediment volume and PCB mass, respectively. Severson Environmental Services, Inc. (Severson) is the dredging contractor; design engineering and other support activities are being provided by Shaw Environmental & Infrastructure, Anchor Environmental, L.L.C., and Foth and Van Dyke.

Cleanup Objectives

The stated project cleanup objectives summarized from the February 2007 Remedial Action Plan are:

- Remove targeted sediment to the 1 ppm target elevation over at least 95% of the target area;
- Collect post-removal samples to confirm that all sediment containing 50 ppm or greater PCBs has been removed;
- Cover sediment containing 1 ppm or greater PCBs that will remain in place with six inches of clean sand; and
- Establish side-slopes within the dredged area in a manner to maintain stability of remaining sediment, and cover them with six inches of clean sand if side slope sediments contain 1 ppm or greater PCBs.

In-Water Operations

The target area is approximately 750 ft by 1,100 ft and covers an estimated 20 acres near the turning basin located at the head of the Federal navigation channel below De Pere Dam. Target area sediment consists primarily of soft organic silt overlying interbedded layers of firmer native clay. Prior to the start of dredging, TSCA and nonTSCA sediment was delineated *in situ* based on pre-design sampling results. The target dredge depth necessary to remove sediment with 1 ppm or greater PCBs averages 4.8 feet deep with a maximum of 6.9 feet deep. A licensed surveyor will perform bathymetric surveys prior to and following dredging and sand placement for use in verifying sediment removal quantities and sand placement accuracy, respectively. The bathymetric surveys will be performed using a real-time kinematic (RTK) hydrographic survey

system with a dual frequency sound along tracklines spaced 25 feet apart forming a grid over the entire dredge area; accuracy of the system is to be a minimum of +/- 3 feet horizontal and +/- 0.25 feet vertical.

Reportedly, Severson's sediment removal and land-based operations are similar to those used for SMU 56/57. The dredge area is divided into 22 dredge management units to assist in managing the dredging operations. A permeable silt curtain is installed around the entire Phase I area perimeter and separate silt curtains are being used to separate operations within the perimeter area. The depth of the silt curtains can vary as needed, depending on river and dredging conditions. Following silt curtain installation, Severson performed initial debris removal beginning in April 2007 that consisted of manual probing of the sediment on a pre-determined grid pattern, and removal of identified debris using a barge-mounted excavator equipped with a perforated bucket, or a "specially-designed" rake and grapple. Most debris removal was performed in April but additional debris removal has been periodically required, specifically along the shoreline area located in the southern end of the dredge area.

Sediment removal is by horizontal auger dredge. Severson is actively using two dredges onsite, but only one dredge is operating at any one time. Additionally, Severson is maintaining a third dredge at the site on standby in case either of the operating dredges becomes inoperable. Dredging is being performed 24 hours per day, five days per week. The design production time for dredging is 85%. Dredging was to begin in TSCA areas and will then move to the nonTSCA areas. Advancement of the dredges is to be via a winch and cable system. The dredge procedure is to perform as many dredge passes along a single dredge line as necessary to reach the target elevation (as defined by 1 ppm PCBs) prior to moving the dredge to the next dredge line. Reportedly, dredging depth is being controlled using a combined electronic and conventional survey control grid system similar to the system Severson implemented on SMU 56/57 and Cumberland Bay, and is implementing at New Bedford Harbor.

A sand cover is to be placed over areas in which confirmatory sediment samples indicate sediment remains that contain between 1 and 50 ppm PCBs. According to Jim Hahnenberg, the EPA PM, the PRPs may decide to cover the entire dredge area with a sand cap regardless of residual PCB levels.

Land-based Operations

Dredge slurry is reportedly being pumped to the land-based operations at a maximum of 2,000 gpm and approximately 4 to 15 % solids. Similar to dredging operations, the land-based operations will operate 24 hours per day, five days per week. The land-based operations comprise sediment dewatering, material handling and transport and disposal, and water treatment. The key components of the sediment dewatering in the order of operation are: (1) 2-inch and 1-inch screens in series; (2) desanding units which are a combination of vibrating screens and hydrocyclones; (3) dual, vibrating linear motion shakers equipped with 200-mesh screens; (4) liquid overflow discharges to ten 20,000 gallon agitated mix tanks; and (5) each of the ten agitated mix tanks feeds one plate and frame filter press (eight 219 ft³ and two 135 ft³). Polymer is being added to the sediment slurry on its way to the filter presses using dedicated automated flow metering and in-line mixing.

Separated solids from each operation are being segregated as TSCA or nonTSCA for offsite disposal based on whether the dredged sediment originated in a TSCA or nonTSCA dredge area. Dewatered sediment and other removed solids are being disposed of at Veolia (formerly Onyx)/Hickory Meadows Landfill, Chilton, WI and EQ-Michigan Disposal Waste Treatment Plant, Belleville, MI for nonTSCA and TSCA sediment, respectively.

Filtrate treatment is being performed using a wastewater treatment system that comprises (1) a 75,000-gallon baffled equalization/filtrated tank; (2) four 5-micron bag filters in parallel, with each filter consisting of six filter bags; (3) four 10-foot diameter sand filters in parallel, with each filter consisting of three feet of mono-media filter sand; (4) six 10-foot diameter granular activated carbon (GAC) vessels operating in parallel, each filled with approximately 20,000 pounds of GAC; (5) 75,000-gallon effluent storage tank; (6) four bag filters in parallel, with each filter consisting of six 0.5 to 5 micron filter bags; and (7) continuous discharge through a diffuser to the Fox River.

Project Schedule and Current Status

Land-based site preparation activities were performed in 2006 and installation of the slurry treatment operations was performed in Spring 2007. Primary debris removal was performed in April 2007 and dredging began May 1, 2007 and is targeted for completion by approximately September 7, 2007; according to Jim Hahnenberg, dredging is generally proceeding in accordance with the target project schedule. Sand placement was to have been started approximately July 1, 2007 and be completed by approximately October 1, 2007. The timing for completion of the sand cover will likely depend on how much of the dredge area is ultimately capped. Equipment demobilization and site restoration activities are currently targeted for completion by November 1, 2007.

References

Personal communications with Jim Hahnenberg, EPA Project Manager, on May 25 and July 27, 2007

Shaw Environmental, Inc., Anchor Environmental LLC, Foth and Van Dyke, Severson Environmental Services, Inc., February 2007, *Lower Fox River Phase I Remedial Action – Remedial Action Plan*; prepared for NCR Corporation and U.S. Paper Mills Corporation