

Waukegan Harbor Superfund Site



Location: Waukegan, Illinois

Site Issue: High Levels of polychlorinated biphenyls (PCBs) contamination in the harbor.

Solution: Dredged 42,000 yds.³ of PCB-containing sediments, thermally separated PCBs from select sediments, and in-place isolation of remaining sediments.

Client: Waukegan Harbor Trust



Brief History

An aluminum casting operation at Waukegan Harbor used polychlorinated biphenyl (PCBs) from 1950 to 1976. Some of the PCBs were released through floor drains into Waukegan Harbor and an adjacent stream known as the Crescent Ditch. Most of the PCB mass remained in the organics at the point of discharge and above an impermeable clay layer approximately 25 feet below the water level of Lake Michigan.

HE&C personnel were involved in this project starting in 1981 with the development of alternatives for removing and containing sediments with PCB concentrations greater than 50 ppm. The services on this project included development of conceptual alternatives, technical support for litigation negotiation support for a settlement with the regulatory agencies, preparation of the remedial design, and construction management of the remediation. The settlement included the negotiation of a reasonable mass-based cleanup standard. After settlement with the agencies, HE&C personnel were responsible for the design of confined disposal facilities, water treatment works, caps, and dredging equipment. The same HE&C personnel managed the implementation of the sediment removal project including monitoring of sediment resuspension and dewatering of the dredged sediment.

A new public boat slip was to be built on a portion of the site on which polynuclear aromatic hydrocarbons were found during the pre-design investigation. Historic research indicated that a manufactured gas plant occupied the site at the turn of the century. HE&C personnel conducted an investigation of the new slip area, designed and constructed a containment cell for the impacted sediment and dredged the impacted sediment into the cell.

Major Remedial Activities Performed by HEC Personnel

- Designed and constructed the isolation of an old boat slip with a 300-foot long by 20-foot wide cut-off wall (see photo) and constructed a slurry wall around the entire slip to create a containment cell for sediment with PCB concentrations less than 50 ppm.
- Designed and constructed a containment cell to hold PAH impacted sediment from a former MGP located on the site.
- Dredged and thermally treated 7,000 yds.³ of sediments with PCB concentrations greater than 500 ppm.
- Dredged and disposed into the old boat slip 35,000 yds.³ of sediment with concentrations between 50 ppm and 500 ppm.
- Rerouted an impacted stream and constructed two other containment cells. One of the cells enclosed the original impacted stream bed.
- Thermally treated 12,000 tons of sediments and soil impacted with PCBs.
- Thermally treated sediments and soils were placed in the containment cells which were then closed by installing a TSCA approved impermeable cap on each cell.

