

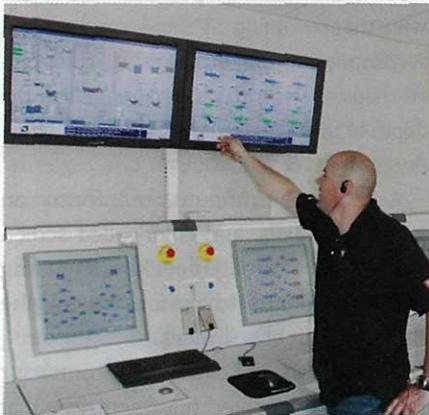
World's Largest PCB Cleanup Takes Fresh Approach

Precision Dredging and Processing Saves Millions on Wisconsin's Fox River

By Mike Larson

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Contractor uses precision dredging and sophisticated processing plant for nine-year, \$600-million remediation in major northeastern Wisconsin river



A Boskalis Dolman manager checks detailed information provided by the programmable logic control system that operates and monitors sediment-processing operations. (Mike Larson photo)

TOP: One of the world's largest membrane filter presses shakes out dried "filter cake" sediment that has had most of the water squeezed out to prepare it for landfilling. Eight of the giant presses, with 188 plates each, work in Tetra Tech's Fox River cleanup facility. (Photo courtesy of Boskalis Dolman)

Tetra Tech EC Inc. is using a one-of-a-kind processing system to dredge, separate, and dewater contaminated silt in order to clean up 13.3 miles of the lower Fox River near Green Bay in northeastern Wisconsin.

World's Largest Cleanup of its Type This massive cleanup will dredge and process 3.8 million cubic yards of river sediment contaminated with polychlorinated biphenyls (PCBs) that can cause severe health problems for wildlife and for humans who eat fish from PCB-contaminated spots.

To fix 600 acres of contaminated riverbed that can't be dredged effectively, the Tetra Tech team will seal PCB-containing silt in place by capping it with combinations of sand, gravel, and rock ranging from 6 in. to 33 in. thick.

The dredged sediment slurry is pumped directly from the dredges to a one-of-a-kind computer-controlled processing plant that removes debris and sand before squeezing the water out of the contaminated silt to make a dry "filter cake" that is landfilled.

The sand that's removed during processing is washed and tested to be sure it meets cleanliness standards, then reused as fill or sold for other beneficial reuse, such as making concrete. The water removed from

the slurry during processing is highly filtered, then used in the processing plant or returned to the river.

Tetra Tech EC, Morris Plains, N.J., is the environmental division of Tetra Tech Inc., Pasadena, Calif.

Tetra Tech EC Vice President of Remediation Ray Mangrum manages the project. Says Mangrum, "The PCBs adhere to the organic silt in the river, so that's what you need to landfill. There's no use in excavating and processing more silt than necessary, and there's no sense in incurring the expense to landfill any more sediment than you need to. We are dredging only the amount of sediment necessary, removing the sand for reuse, then drying out the PCB-laden silt and depositing it into a landfill."

Tetra Tech's plan to accurately map the pockets of contamination, precision-dredge only the amount of sediment that needs removing, cap and cover some areas, and landfill only the dried PCB-laden silt, has resulted in a total cost of about \$160 per cu yd, including the landfilling.

Tetra Tech says its approach is costing \$50 million to \$100 million less than other cleanup methods would have.

The cleanup will take nine years to complete, with crews dredging 24 hours a day, five days a week, from April to >>

