

Chemical Manufacturer Containment Walls

Remediation – Wisconsin

PROBLEM

In 1998, the EPA found arsenic in the soils near a manufacturing plant in Wisconsin. The EPA was concerned that the arsenic could potentially migrate into the nearby Menominee River and Lake Michigan and asked the company to contain the arsenic. The EPA had two major requirements for containment of the contaminated material:

1. Construction had to be completed between October 15, 1998 and January 15, 1999.
2. The containment system had to be impermeable to the rock layer which was approximately fifty feet below the ground.

SOLUTION

The design engineers on the project examined different methods of chemical containment and found sheet piling to be the optimal solution. The pile driving contractor contacted Skyline Steel in search of sheet piles that could be delivered quickly in large quantities. Skyline Steel proposed a water-swelling product to seal the joints and pulled Z-shaped sheet pile stock from all over the country to meet the delivery requirements.

Two pile driving crews worked around the cofferdam in opposite directions. The driving of the wall was completed in December of 1998, one month ahead of schedule. Although the river fluctuated up to five feet, the level of the contained water was maintained at all times. Upon inspection of the job site, no leakage of contaminated water was detected, signifying the successful containment of the contaminated material.



Above: Two walls of the cofferdam meeting before the closure piles were placed. Since good closure of the cofferdam was necessary the T-connection was fabricated on site.

PROJECT PARTNERS

Subcontractor

Durocher Dock & Dredge Inc
Cheboygan, MI

PRODUCTS

1,900 metric tons of Z-shaped sheet piles
in lengths of 50 ft. and 55 ft.



Water elevation difference, about four feet, between the inside of the cofferdam, (to the left of the wall on the left), and the outside of the cofferdam, (between the two rows of sheets and to the right of the outer wall). The outer wall was an old wall which had no sealant.