

Because they resist attack from various chemicals, Geosynthetics are becoming useful tools in cleaning up environmental disasters.

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# GEOSYNTHETICS CLEANUP TOOLS

**A**dd geosynthetics to the arsenal of weapons that can be used to clean up the environment. Their use in liners and drainage systems has become standard in constructing new landfills, and now their qualities of chemical resistance, durability and cost effectiveness are also being put to work in environmental remediation projects.

**Burning pond had been polluted with diesel fuel.**



Just how cost effective it is to design for geosynthetics can be answered by three projects undertaken by Soil & Material Engineers, which began several years ago to extend the application of geosynthetics in environmental remediation projects. In constructing dredge containment dikes over very soft sediments, the late Allan Halliburton proved that a geotextile could provide sufficient reinforcement to support the fill. The reinforcement function of the geo-

textile, he found, is short lived because the weight of the fill soon consolidates the sediments, increasing their shear strength and leading to an equilibrium independent of the geotextile.

One of our first environmental geotextile applications was for a soil cap placed on a pond filled with organic mucks. The pond contained significant amounts of diesel fuel spilled from an adjacent truckstop. On two occasions, the fuel had been burned off by setting fire to the pond. Diesel fuel concentrations in the muck and partially decayed organic matter exceeded 1,000 mg/kg. The Ohio EPA, the landowner and the client agreed that the contaminated deposits should be removed and the pond closed.

Removal began with drainage with pumps, rerouting recharge waters into the pond, and lowering the spillway to prevent the water from rising to its original level. To excavate the sediments without damaging surrounding trees, we built an earth ramp and work pad at the south end of the pond. From the pad, a backhoe removed the contaminated muck and replaced it

