



Fast Groundwater Remediation of 1,4-Dioxane & Other VOCs in a Very Small Footprint

CUSTOMER: Cooper Drum Company
LOCATION: Los Angeles, California

CHALLENGE

Between 1941 and 1987, a Cooper Drum Company site just south of Los Angeles was used to recondition and recycle used steel drums that once contained a variety of industrial chemicals. Drums were flushed and stripped in preparation for painting and resale and process waste was collected in open holding trenches and recesses resulting in the leaching of contaminants into the soil and groundwater beneath, impacting both the Cooper Drum site and the neighboring elementary school. Five monitoring wells were installed to assess the damage approximately 40 to 80 feet below ground in the shallow aquifer which indicated the contaminant plume was estimated to be 800 feet long, 250 feet wide, and extended approximately 400 feet southeast of the Cooper Drum facility. The Regional Water Quality Control Board (RWQCB) identified this aquifer as a potential drinking water source and warned that the volatile organic compounds (VOCs) could move vertically downwards into a deeper aquifer system and production wells already in municipal use.

SOLUTION

The use of ozone and hydrogen peroxide to remediate the Cooper Drum Superfund Site was a natural choice since 1,4-Dioxane is resistant to biodegradation. However, it hadn't been tried at this site until APT's aggressive in-situ chemical oxidation (ISCO) PulseOx™ technology was piloted. Two injection points were used because of the depth of the water. One injection was at 65 ft bgs and the second at 85 ft bgs. The soil was a reducing-type soil and lab tests indicated that the oxidant demand of the soil was 3 g/kg. Because the site conditions were quite challenging, several tests were conducted until the optimum injection sequence was established which resulted in an 89% reduction in 1,4-Dioxane and a 68% reduction in TCE.

WHY PulseOx?

Not only did PulseOx successfully and consistently achieve all contaminant treatment objectives, but it did so quickly and in an extremely small, mobile footprint that was operated with little or no operator intervention or mechanical failures during the pilot period.

IMPACT

The U.S. EPA concluded that the PulseOx system was successful in achieving the test objectives and containing the contaminant plume during the pilot test.

