

RegenesiS Remediation Services™ – TCE Plume Treated with 3-D Microemulsion®

Combined Treatment Remedies Reduce Contamination Concentrations at Wisconsin Manufacturing Facility



East Troy, Wisconsin

RegenesiS Remediation Services (RRS) was contracted to design and implement an in situ enhanced reductive dechlorination (ERD) remediation plan for this manufacturing site, impacted by trichloroethylene (TCE). The treatment included the use of 3-D Microemulsion® and Chemical Reducing Solution (CRS®) as controlled-release electron donors, and BDI® Plus to bioaugment the subsurface. The two treatment areas at this former manufacturing facility covered an area of 35,000 square feet (ft²). A total of 19,200 pounds of 3-D Microemulsion, 2,400 lbs. of CRS, and 48 liters of BDI Plus with over 10¹¹ Dehalococcoides (DHC) cells per liter were injected over a period of less than two weeks on site.

Thirty-nine direct-push injection points were advanced between both of the treatment areas. RRS utilized retractable screen tip injection tooling to apply the pH neutral 3-D Microemulsion with CRS and BDI Plus at discrete intervals in the vertical treatment intervals of 5 to 20 feet below ground surface (bgs) and 15 to 30 feet bgs. The RRS trailer and equipment configuration allowed for low pressure application of the remediation chemistry at up to three injection points simultaneously. Remediation chemistry was applied up to 100 feet from the trailer in subfreezing temperatures while RRS personnel monitored flow rates and injection pressures at each application point to optimize distribution and influence of the remediation chemistry.

Remediation Details:

Site Type: Active Manufacturing Facility

Remediation Approaches: Enhanced Reductive Dechlorination, Bioaugmentation

Technologies: 3D Microemulsion, CRS and BDI Plus

Geology: Sand

Medium: Groundwater, Saturated Soil

COCs: Chlorinated VOCs

Surficial Treatment: 35,000 ft²

Treatment Interval: 15-30 ft bgs, 5-20 ft bgs

Cubic Yards Treated: 19,444

Cost Per Cubic Yard: \$4.80 applied

About RRS:

RegenesiS Remediation Services (RRS) is a dedicated team of scientists and engineers whose primary function is to provide environmental engineering and consulting firms with specialized groundwater and soil remediation planning, design, verification and application services.

This uniquely qualified group of remediation professionals combine excellence in field activity management and RegenesiS' class-leading technologies to bring sites to closure. RRS draws from REGENESIS' 19+ years of experience working with hundreds of leading environmental engineering firms on thousands of remediation projects around the world.