REGENESIS
REMEDIATION SERVICES

PROJECT SUMMARY

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

Enhanced Reductive Dechlorination & Bioaugmentation Used to Remediate Chlorinated Solvents at a Brownfield Site

Louisville, Kentucky

A real estate developer and their environmental consultant selected RRS to design and implement an in situ enhanced reductive dechlorination (ERD) remediation plan for this Brownfield site originally developed in the 1890s, called Belknap Crossings. The site was impacted by two groundwater plumes averaging 300 ug/L trichloroethylene (TCE). The remediation design included the use of 3-D Microemulsion® as a controlled-release electron donor and bioaugmentation using BDI® Plus. The two TCE plumes at this former manufacturing facility covered an area of 58,000 square feet (ft^2). A total of 26,000 pounds of 3-D Microemulsion and 22 liters of BDI Plus with over 10^{11} Dehalococcoides (DHC) cells per liter were injected over a period of less than two weeks on site.

Taking advantage of 3-D Microemulsion's unique subsurface distribution characteristics, direct-push injection points were advanced every 480 ft^2. RRS utilized retractable screen-tip injection tooling to apply the pH neutral 3-D Microemulsion with BDI Plus at discrete intervals across the vertical treatment interval from 24 feet below ground surface (bgs) to 34 feet bgs in a bottom-up approach. The RRS trailer and equipment configuration allowed for low pressure application of the remediation chemistry at up to three injection points simultaneously, up to 200 feet from the trailer while monitoring flow rates and injection pressures at each application point.

Remediation Details:

Site Type: Brownfield, Former Manufacturing Facility

Remediation Approaches: Enhanced Reductive Dechlorination, Bioaugmentation

Technologies: 3-D Microemulsion, BDI Plus

Geology: Sand

Medium: Groundwater, Saturated Soil

COCs: Chlorinated VOCs

Surficial Treatment: 58,000 ft^2

Treatment Interval: 24-34 ft. bgs

Cubic Yards Treated: 21, 481

Cost Per Cubic Yard: $7.40 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.