



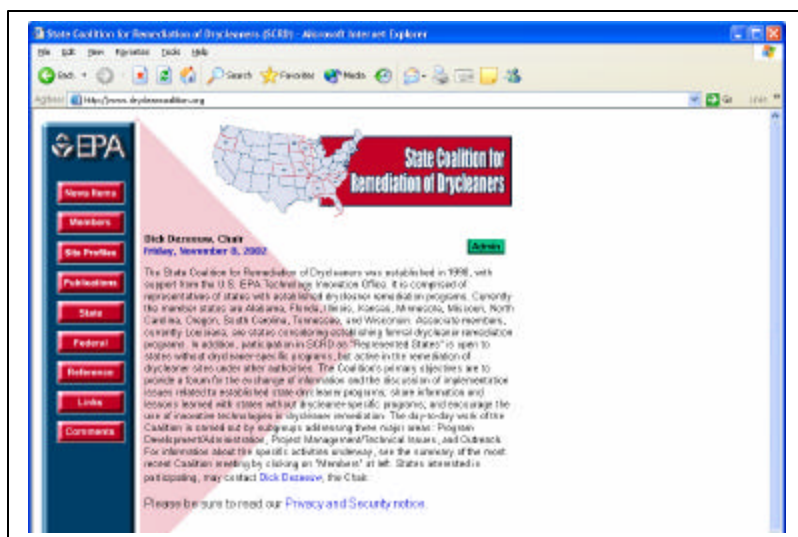
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The USEPA sponsored State Coalition for Remediation of Dry Cleaners creates site profiles on use of HRC

In early October 2001, the USEPA sponsored State Coalition for Remediation of Drycleaners (SCRD) held an annual meeting in Portland, Oregon. This meeting was designed to provide an opportunity for state SCRD representatives to exchange information and experiences specifically related to Dry Cleaner remediation projects. In addition to state representatives, these meetings are attended by members from the U.S. Environmental Protection Agency (EPA). The agency benefits by learning more about the innovative and cost-effective remedial approaches that are being used around the nation. It also equips them to pass along the information to non- SCRD member states.

Participating SCRD states include: Missouri, Alabama, Florida, Illinois, Kansas, Minnesota, North Carolina, South Carolina, Oregon, Tennessee and Wisconsin. During the meeting, seven case studies prepared by the SCRD were discussed, these studies documented valuable information on the successes, mistakes, and costs that have been incurred during efforts to clean up certain drycleaner sites.



Two of the remediation sites in particular dealt with the use of Hydrogen Release Compound (HRC[®]) to facilitate clean up at dry cleaner sites. This product, manufactured by RegenesiS, was selected due to its low-cost, ease of application, innovative approach and effectiveness.

HRC is a specially formulated, all natural product that when injected into groundwater releases ingredients crucial to microbial survival and contaminant degradation. The product is based on a three-carbon glycerol polylactate ester structure. When hydrated, HRC releases lactic acid, which is then metabolized by microbes to form other organic acid intermediates. Hydrogen is released as a byproduct, and this is used to fuel the reductive dechlorination of chlorinated hydrocarbons. The

lactic acid is released in small quantities over a 9- to 18-month period sustaining degradation and furthering remediation at the site. The two dry cleaner sites that used HRC included Contemporary Cleaners in Orlando, Florida and Hayden Island Cleaners in Portland, Oregon.

Contemporary Cleaners - Orlando, FL

This site involved PCE remediation of groundwater in the upper extent of the aquifer at depths of 6-8 ft below the ground surface to 20-25 ft below ground surface and traveling at a modest .04 ft/day. The contaminants ranged from PCE, TCE and cis 1,2 -DCE to trans 1,2-DCE and vinyl chloride. Levels of contamination ranged from 3300 ug/L of PCE to 4900 ug/L of DCE. The treatment area was 14,400 ft² requiring 6,810 pounds of HRC for remediation. HRC was applied using direct push injection at 144 locations. The results of this effort showed a reduction of PCE mass by 98%, TCE mass by 51% cis 1,2, -DCE mass by 36% and vinly chloride reductions of 58%. The overall cost of the project was \$127,000 with HRC making up \$27,197 of overall costs.

Hayden Island Cleaners – Portland, OR

The Hayden Island site involved the remediation of groundwater in the upper extent of the aquifer at depths 20-40 feet below the ground surface. The contaminants were once again PCE, TCE and cis 1,2-DCE. Contaminant levels ranged from 1,230 mg/l of PCE to 1mg/l of TCE and 3.4 mg/l of cis 1,2 -DCE. The treatment area for this site was approximately 200 ft² using two “ treatment barriers” in an attempt to cut-off migrating contaminants. This site required 2,310 pounds of HRC. Application to the site was accomplished by direct push injection at 42 locations. Results from this site showed a reduction in PCE mass of 87% after 1 year and 3 months with some increases in daughter products like TCE and cis-1,2,-DCE. Overall cost of the project was \$46,000 with HRC making up approximately \$14,000 of the total.

This information is being provided to get the word out about innovative, cost-effective groundwater remediation at dry cleaner sites. It is also being done in an effort to explain and illustrate some of the ways environmental cleanup is evolving into a more efficient and cutting edge industry.

For more information on the State Coalition for Remediation of Drycleaners and additional site profiles, visit www.drycleancoalition.org/profiles/detail.cfm?id=45.

For more information on Hydrogen Released Compound (HRC) contact Regenesi at (949) 366-8000 or visit www.regenesis.com

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