

## Originally Issued as Press Release

### Contaminated Site Cleanup with Microbial Culture KB-1® A Canadian Success Story

December 10, 2009: Thunder Bay Ontario.



**Toxicological and Environmental Associates, Inc. injecting KB-1® from stainless steel vessel into groundwater at Thunder Bay, Ontario site**

KB-1®, a dechlorinating microbial culture, is being used to enhance the cleanup of trichloroethene (TCE) in groundwater at an industrial facility in Thunder Bay, Ontario. The process, known as bioaugmentation, involves the injection of beneficial microorganisms, called *Dehalococcoides*, into groundwater where they degrade contaminants as they grow. Bioaugmentation increases the efficiency of bioremediation at sites including those where it otherwise would be ineffective.

KB-1® was developed under the direction of University of Toronto professor Elizabeth Edwards and is produced commercially by SiREM ([www.siremlab.com](http://www.siremlab.com)) in Guelph, Ontario. Despite the extensive use of KB-1® in the United States and Europe, this application marks the first use of the KB-1® culture at a Canadian site. The application of bioaugmentation in Canada was made possible by SiREM's successful completion of the New Substances Notification Regulation as governed by Environment Canada/Health Canada. The regulatory process was required to demonstrate the safety and stability of the KB-1® culture before it could be used at Canadian field sites. KB-1® is the only mixed microbial culture approved for use in Canada for groundwater remediation.

The first KB-1® bioaugmentation injection in Canada was performed by Toxicological and Environmental Associates (TEA) Inc. of Baton Rouge, Louisiana.

A total of 65 liters of KB-1® was injected into 65 locations with each liter containing approximately 100 billion *Dehalococcoides* cells. Russ Copeland, TEA Project Manager, said "Injection of the KB-1® was simple and efficient. Results after 12 weeks indicated that bioremediation using KB-1® is effective. We have seen up to a 60% reduction in TCE concentrations and a corresponding increase in degradation products as anticipated. We are now finding *Dehalococcoides* populations in monitoring wells where they were initially not detected."

Under suitable conditions, the dechlorinating microbes in KB-1® grow and spread consuming the TCE and ultimately converting it to the non-toxic end product, ethene. Establishment of a functional *Dehalococcoides* population typically takes around two to three months and is confirmed by DNA testing performed at SiREM. Once the TCE is gone, which can take as little as a few months, depending on site conditions, the introduced *Dehalococcoides* die off as they require chlorinated compounds for respiration. Given the widespread use of KB-1® in other countries and the number of sites contaminated with TCE and tetrachloroethene (PCE), the future looks bright for application of KB-1® at additional sites in Canada.



130 Research Lane, Suite 2  
Guelph, Ontario N1G 5G3  
Phone: 1-866-251-1747

[www.siremlab.com](http://www.siremlab.com)