E-REDOX® CASE STUDY: ENHANCEMENT OF *IN SITU* 1,4-DIOXANE DEGRADATION

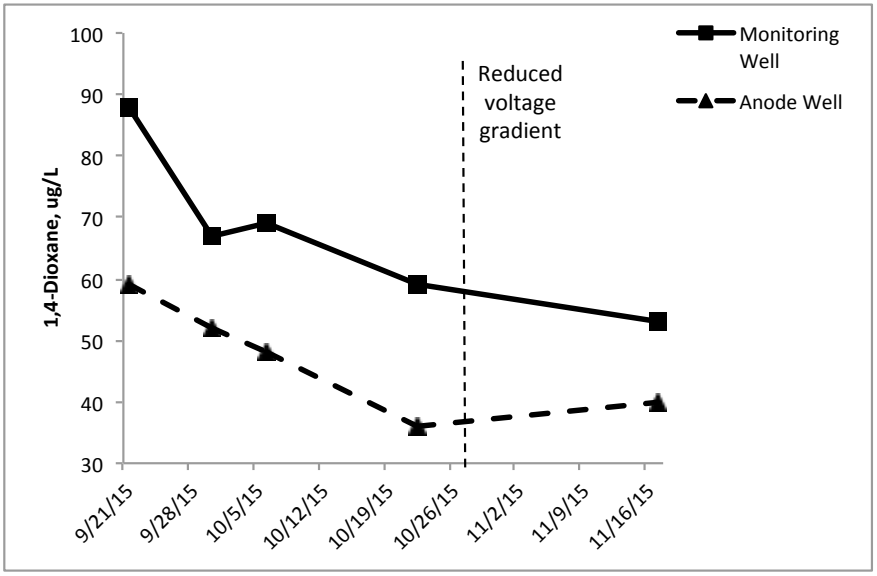
Location: Former adhesives plant in South Carolina

Contaminated Matrix: Groundwater and subsurface soil

Primary Contaminants of Concern: Chlorinated VOCs (1,4-Dioxane is considered as a secondary contaminant)

Project Objective: Pilot-scale field demonstration of *in situ* contaminant degradation enhanced by E-Redox® technology

Case Study Description & Results: E-Redox® electrodes were installed in wells 17-ft apart and a constant low voltage gradient was applied to the system. A well down-gradient from the E-Redox® anodic well was used as a monitoring well. After one month of operation, the voltage-gradient was reduced. The figure below shows the decreasing trend in 1,4-dioxane (1,4-D) concentrations in both the anode well and the monitoring well during the 3-month project period. The decrease in 1,4-D concentrations in the anode well was likely due to oxidation from the peroxides and radicals produced by the E-Redox® anodic reactions, while may have been the result of a combined electrochemical oxidation at mineral surfaces and stimulation of microbial degradation activity. Overall, the field data from the SC site suggested that E-Redox® technology enhanced *in situ* degradation of 1,4-D.



Concentrations of 1,4-dioxane during E-Redox® field applications