Using a Risk-Based Approach and Integrated Remedial Technologies to Close a Chlorinated DNAPL Site in Under a Decade: A Timeline of Events

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Contamination of the shallow soils and ground water at the Exxon Chemicals Baton Rouge Polyolefins Plant was caused by disposal of chlorinated hydrocarbons in an unlined pit. Using a team approach of on-site, regulatory, and consulting personnel, the site was thoroughly investigated, resulting in a model of the soils and three upper water-bearing units found to be impacted by multiple contaminants.

Soil vapor extraction, air sparging, and pump and treat technologies for contamination removal were proposed and implemented after agency approval. During the past 5+ years of operation, the system effectiveness has been monitored and adjustments made to enhance contaminant recovery. Continuous water production and analytical monitoring provided detailed data of contaminant decreases and water volume.

The Louisiana Department of Environmental Quality RECAP (Risk Evaluation/Corrective Action Program) regulation is the governing program used to determine actions for contaminated sites. Final cleanup levels based on site-specific parameters and exposure risk evaluations under this program have set an achievable endpoint to this remediation effort. For the past year of operation in this industrial setting, the soils and three ground water recovery systems have met the MO-1 levels of contamination determined to be protective of human health and the environment.

The poster presentation illustrates the progress of a timely remediation program from the initial discovery to the final conclusion that the site no longer presents a risk. A program of this sort can only succeed through the cooperation and focussed attention of a team dedicated to achieving a reasonable goal.