

Ivey-sol® • SPT®

DNAPL Case Study

Ivey-sol • SPT Technology was successfully used to remediation of a commercial dry-cleaning facility. The subject facility had been in operational since ca. 1971. The DNAPL contamination was comprised of DCE (Dichloroethylene) and TCE (Trichloroethylene) dry-cleaning solvents. Some minor Brominated compounds were also detected. The impacts were limited to the soil and groundwater under the building foundation at a depth ranging between 18 ft and 20 ft (5.5 to 6 m) present above a silty-clay confining layer. Historical investigation determined that the floor drains discharged into the subsurface soils and were not connected to the near-by municipal sewer (ca. 1980's). Historical spills of dry-cleaning chemicals within the facility entered the floor drains and served as the principle source of the DNAPL contamination being treated at the subject site.

The groundwater table was encountered at approximately 9 ft (2.7 m) within a silty sand and gravel layer. The baseline DCE and TCE levels ranged between 11 and 27 ppm in the soils while the groundwater concentrations ranged between 8 and 35 ppm.

A pump and treatment system was installed consisting of two shallow extraction wells and a groundwater treatment system. Injection Wells (IW) were installed for the injection of Ivey-sol Mixtures. Four IWs outside the building perimeter, and a total of six IWs installed through the foundation floor (slab-on-grade) floor within the building. Ivey-sol injections were undertaken every month for a period of 11 months. Over this period, the DCE and TCE dissolved levels increased at the extraction wells following each Ivey-sol injection. Thus, the Ivey-sol injections allowing for the managed liberation and recovery of the DCE and TCE until regulatory clean-up requirements were achieved in < 18 months.

The client estimated saving between \$40,000 and \$50,000 compared to alternatives that were considered. The site clean-up was undertaken as part of a Buy-Sell 'Condition of Sale' Agreement.

Typical DNAPL Contaminated Site. Ivey-sol Injection Wells & Extraction Wells to Remediate DNAPL Contamination in a Timely and Cost Effective Manner.

