

**INNOVATIVE *IN-SITU* SOIL GAS REMEDIATION AT A FORMER DRYCLEANER AND  
IMPACTS OF ENGINEERED PHYTOREMEDIATION ON CONTAMINATED GROUNDWATER**

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An engineered phytoremediation (EP) system was installed in 2006 at a vacant lot where a large drycleaner factory had previously been in operation. Groundwater at this site is impacted with tetrachloroethylene (PCE). Analytical results indicate decreases in PCE and increases in the concentration of the dechlorinated by-products especially in those areas where the EP system is present. VOCs levels in the soil gas across most of the site are in the low ppb range except in those areas where the EP boreholes exist. The boreholes are filled with highly permeable organic rich soils and the soil gas pressure levels in them are at barometric levels down to the water table. The soil gases appear to be migrating toward the EPBs where they are discharged through the boreholes and into the atmosphere (especially during periodic low pressure events). Given the study results, where the permeability of a borehole is considerably higher than the adjacent strata and the horizontal conductivity of the vadose zone is greater than that in the vertical direction, the patent pending process associated with enhancing the migration of soil gases via the BoreholeVapor Extraction™ system provides a passive means of controlling the migration/extraction of contaminated soil gases.

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