



Chlorinated Solvent Soil Vapor Extraction (SVE) Remediation Case Study 2005

Los Angeles California

Project Description

An active industrial facility in South Central Los Angeles was impacted by tetrachloroethylene (PCE) and trichloroethylene (TCE; former staging area degreasing) operations as a part of its operations. A phased approach to soil vapor extraction (SVE) remediation was employed: the goal of Phase I was to attain high contaminant mass removal rates with very high VOC vapor concentrations typically observed in the steep decay portion of influent concentration curve, and the goal of Phase II was to achieve mass removal rates typical of lower concentrations observed in the asymptotic component of the influent concentration decay curve.

Based on extensive site investigation and testing, the site was a good candidate for SVE for residual mass recovery after excavation of the primary source area.

Site Geology

The site geology consists of intercalated sand, silty sand, and silt lenses to approximately 60 feet below ground surface (bgs) where the water table is present and lithology changes to well graded sand. The property area is approximately one acre, and is situated between industrial and residential zones.

Contaminants of Concern

It was expected that discontinuous stingers of residual DNAPL remained in the vadose zone consisting entirely of PCE and TCE. Initial vapor concentrations reached during a soil vapor extraction pilot test were approximately 9,000 ppmV total VOCs, which is ideally suited for refrigerated condensation (C3-Technology) based on cost and performance metrics.

Vapor Treatment System Design

- 100 SCFM system
- Fourteen vapor extraction wells were operated in cycles

Performance and Results

Over 11,000 pounds of PCE and TCE were recovered in 24 months.

Phase I concluded when concentrations were reduced below 500 ppmV. Phase II employed a granular activated carbon to treat the diminished SVE vapor stream.

