



Tetrachloroethylene Multiphase Extraction (MPE) Remediation Case Study 2007

Los Angeles, California

Project Description

An active industrial facility in the San Fernando Valley north of Los Angeles was impacted by tetrachloroethylene (PCE) degreasing operations. A phased approach to multiphase extraction (MPE) remediation was employed; Phase I implemented high contaminant mass removal rates with very high VOC vapor concentrations, typically observed in the steep decay portion of influent concentration curve, while Phase II realized mass removal rates typical of lower concentrations observed in the asymptotic component of the influent concentration decay curve.

Site Geology

The site geology consists of intercalated sand, silty sand and silt lenses to approximately 80 feet below ground surface (bgs) where a perched low transmissivity groundwater zone exists, beneath which is a silty clay aquitard followed by a gravelly sand aquifer that is used by local municipalities as a water supply. At the time of the investigation, the lower groundwater zone beneath the confining layer had not been impacted by the contaminated perched groundwater.

Contaminant of Concern

PCE was the primary contaminant of concern. Maximum concentrations of approximately 2,000 parts per million by volume (ppmV) were observed during the initial months of operation.

Vapor Treatment System Design

- 200 SCFM system
- Sixteen dual phase extraction wells were operated in cycles
- Drop pipes of approximately 1.5 inch diameter and 80 feet in length



Performance and Results

Over 14,000 pounds of PCE were recovered in 11 months.

When influent vapor concentrations declined below 500 ppmV, a granular activated carbon system replaced the refrigerated condensation system for long term venting operations.

