



alternative
environmental
solutions

REMEDICATION GASOLINE CONTAMINATED PROPERTY

Overview

A hydrocarbon release from a gasoline station was discovered after petroleum vapors were reported in the basement of their commercial building. Following a preliminary site evaluation and the removal of three registered underground storage tanks/dispensers, AES conducted site characterization activities in accordance with Pennsylvania environmental laws. AES coordinated the collection of soil samples from strategic locations on-and off-site using GeoProbe Direct-push technology and oversaw the installation of groundwater monitoring wells by a Pennsylvania-licensed driller. Unleaded gasoline compounds were identified in soils around the former gasoline delivery line, and dissolved-phase unleaded gasoline compounds were reported at elevated concentrations in the groundwater beneath and downgradient of the site. In addition, separate-phase hydrocarbons were present on the groundwater table in the vicinity of the former tank field.



Photograph of groundwater treatment system.

Remedial System

AES conducted remedial pilot testing, including pumping and vacuum tests, at the site to determine the appropriate remedial technologies to address the petroleum-impacted soils and groundwater beneath the site. Based on the results of the pilot testing, AES designed, constructed, and installed a remediation system, including groundwater pump-and-treat and soil vapor extraction (SVE) technologies, to recover residual hydrocarbons from the groundwater and subsurface soils. Groundwater treatment was accomplished through granular activated carbon (GAC) vessels, while the SVE system included a 300 cubic feet per minute (cfm) catalytic oxidizer, which was later downgraded to a vapor GAC once hydrocarbon vapor concentrations were decreased significantly.



Photograph of AES' groundwater treatment system.

Results

After operating the remediation system continuously for a little over two years, hydrocarbon concentrations in the groundwater were significantly reduced to undetectable levels, as were hydrocarbons in the vapor stream. Quarterly groundwater sampling revealed that dissolved-phase unleaded gasoline compounds in the monitoring wells had also been reduced significantly. Based on these results, AES submitted the appropriate reporting to the Pennsylvania Department of Environmental Protection (PADEP) and a release of liability for soils and groundwater under was subsequently obtained. During the period of operation, the remediation system successfully treated almost 4 million gallons of water and recovered almost 600 pounds of hydrocarbons.

Work Tasks

- Routine Maintenance ✓
- Equipment Repair ✓
- General Housekeeping ✓
- 24/7 Alarm Condition Response ✓

AES O&M Statistics:

- Continuous Operation*, Groundwater System: 95+%
- Continuous Operation*, SVE System: 95+%
- No major period (>2 days) where system was down

* includes carbon change outs, equipment upgrades, repairs, etc.