



alternative
environmental
solutions

REMEDICATION GASOLINE CONTAMINATED PROPERTY

Overview

Following the removal of a registered underground storage tank and associated dispenser from the college campus, AES initiated site characterization activities, including soil and groundwater quality investigations in accordance with Pennsylvania environmental laws. AES coordinated the collection of soil samples from strategic locations on-site using GeoProbe Direct-push technology and oversaw the installation of 10 groundwater monitoring wells by a Pennsylvania-licensed driller. Unleaded gasoline compounds were identified in shallow soils in the vicinity of the former gasoline dispenser, and dissolved-phase unleaded gasoline compounds were reported at elevated concentrations in the groundwater beneath the site.

Following site characterization activities, AES conducted remedial pilot testing, including an 18-hour pumping and vacuum test, at the site to determine the appropriate remedial technologies that could be used to address the petroleum-impacted soils and groundwater beneath the site.



Photograph of groundwater treatment system area.



Photograph of Remedial System Pilot Testing.

Remedial System

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.

Work Tasks

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

Results

After operating the remediation system continuously for less than a year and a half, hydrocarbon concentrations in the groundwater and vapor streams were reduced to undetectable levels, and quarterly groundwater sampling revealed that dissolved-phase unleaded gasoline compounds in the monitoring wells had also been reduced to undetectable levels. Based on these results, AES petitioned the Pennsylvania Department of Environmental Protection (PADEP) to reduce the amount of quarterly sampling events from eight to four, and subsequently requested a release of liability for soils and groundwater under the statewide health standard.

AES O&M Statistics:

- Continuous Operation*, Groundwater System: 95+%
- Continuous Operation*, SVE System: 98%
- No major period (>2 days) where system was down

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