

# Air Monitoring

## KEY Services

### Advantages

*Exposure evaluation in support of site-specific risk assessments*



*Litigation support*



*Permit compliance monitoring*



*Engineering design that includes ports for discrete air sampling in air-phase carbon treatment systems*



*Ambient air sampling for PAHs and VOCs*



*Industrial hygiene sampling for PAHs and VOCs*



*Long-term staffing for air monitoring programs*



*Ambient air monitoring setup. Shown here are a high-volume sampler for PAHs, a SUMMA™ canister for VOCs, and a weather monitoring station.*



Key Environmental, Inc. (KEY) has designed and implemented programs for air monitoring including sampling and analysis of ambient air for volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbons (PAHs), industrial hygiene monitoring of workers for VOCs and PAHs, discrete air sampling of air-phase carbon treatment systems for permit compliance monitoring, and long-term monitoring in support of soil and source area remediation projects.

KEY has performed numerous air monitoring projects. A summary of some site-specific, technology-specific examples follow.

### Exposure Evaluation

KEY designed and implemented a program to monitor exposures to VOCs and PAHs generated at a wood-treating facility. Populations monitored included plant employees and inhabitants of adjacent communities. There is currently no pub-

lished environmental data available that quantitatively evaluates the airborne transport of these constituents from wood-treating processes. Currently, empirically-derived solutions are used to address these exposures, resulting in conservative and overestimated risk. Through this study, KEY quantified Site-specific exposures for use in a risk assessment. Ambient air and industrial hygiene samples were collected using U.S. EPA Methods TO-13A, TO-14A, and NIOSH Methods 5506, 1500 and 1501.



*High-volume sampler used for collection of ambient air samples for analysis of PAHs.*



*KEY has completed long-term monitoring in support of soil remediation projects.*



*KEY has designed carbon treatment systems that include access points for collection of discrete air samples.*



*Weather station installed to support an ambient air monitoring program. Wind speed and direction data were among the measured parameters.*

## Discrete Air Sampling for Permit Compliance Monitoring

KEY completed design and permitting of a soil-vapor and groundwater extraction/treatment system in New Jersey. NJDEP approved the Air Monitoring Protocol Plan for the two separate air discharges at the facility. Real-time measurement of influent and effluent air streams are collected via Tedlar™ bags attached to an access valve on the carbon tank. A MiniRAE 2000™ PID is then attached and extracts an air sample from the bag to obtain the measurement.

Discrete air samples are obtained through a septum-covered access point that was incorporated into the carbon tanks via p inch tap. A new sterile syringe and needle are used to obtain a 40-cc sample of air. The air is transferred from the syringe to an evacuated vial and shipped to a laboratory for analysis under controlled conditions.

## Long-term Monitoring

KEY has completed long-term monitoring of VOCs and particulates in support of soil and source area remediation projects. The main points of interest for these projects include:

- Long-term field staffing of the air monitoring programs using KEY personnel concurrently performing construction QA/QC, thus saving the client considerable cost through consolidation of tasks; and,
- Real-time compliance monitoring through calculation of particulate concentrations at the down-wind compliance point, based on Site meteorologic data and measured emission rates using State-approved dispersion modeling techniques.
- Maintaining complete documentation of the real-time compliance data to protect clients from any future claims by third parties or regulatory agencies.



### KEY SERVICES

#### Remedial Investigations and Site Assessments

- Phase I Assessments
- Geophysical Evaluations
- Hydrogeological/Aquifer Testing
- Soil/Sediment Characterization
- Groundwater Characterization
- Fate & Transport Evaluations
- Risk Assessments
- Natural Attenuation Assessments
- GIS/GPS/Data Management

#### Environmental Engineering

- Feasibility Studies
- Remedial Design
- Turnkey Projects
- Construction Management
- Construction QA/QC Oversight
- Monitoring/Reporting
- System Operations

#### Program Support

- Permitting
- Regulatory Support
- Expert Witness and Reports
- Contractor Procurement
- Decommissioning/Demolition

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