This e-mail supports the NAVFAC Environmental Restoration Program with the latest information on policy, guidance, and training related to innovative technologies. Links are provided to Technology Transfer (T2) resources and tools. Our goal is to promote use of innovative technologies, remove barriers to implementing new technologies, and reduce cleanup costs, while remaining protective of the environment and human health.

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Tri-Service Environmental Risk Assessment Workgroup: Vapor Intrusion Fact Sheets

The understanding of vapor intrusion processes has evolved over time. A series of fact sheets has been prepared by the Department of Defense (DoD) Tri-Service Environmental Risk Assessment Workgroup (TSERAWG) to update and supplement the **DoD Vapor Intrusion Handbook** (2009).

These six fact sheets cover sampling and assessment techniques that allow for an improved understanding of vapor intrusion given temporal variability and the potential for the presence of background sources of volatile organic compounds (VOCs). The techniques covered include:

- **Passive sampling**: A passive sampler is a device that contains a sorbent that uptakes VOCs. Passive samplers can be used to collect time-weighted average (TWA) concentrations of VOCs in indoor air over a period of a week or more, as an alternative to collection of a time-series of canisters.

- **Real-time monitoring**: Real-time monitoring involves the collection of environmental data and reporting within a very short timeframe on the order of seconds to minutes. Examples of vapor intrusion data that can be measured and reported in real-time include: indoor air and soil vapor concentrations, building pressure differentials and ventilation rates, and tracer gas concentrations.

- **High volume sampling (HVS)**: HVS is a method for assessing vapor concentrations and distributions in the subsurface. The technique involves removing a large volume of gas from below the concrete floor slab and monitoring VOCs and pneumatic response to assess the subsurface VOC distribution.

- **Building pressure cycling (BPC)**: BPC involves inducing negative and positive pressures on a building. Evaluation of the changes of VOC concentrations under these varying pressure conditions can help to assess if background sources are an issue at a given site.

- **Tracers, surrogates, and indicators**: These techniques can be used to help guide investigations or clarify the processes affecting vapor transport at a given site. Tracers are substances that migrate similarly to VOCs of interest. Indicators are parameters that are associated with the potential for VOC exposures through vapor intrusion. Surrogates are variables with a quantitative relationship to the target VOCs of interest.

- **Methods for determining the influence of background sources**: Many of the VOCs of interest for the vapor intrusion pathway also have outdoor (ambient air) or indoor sources that are unrelated to the subsurface contamination. Forensic strategies are available for evaluating background including both field and desktop methods.


For more information, please contact EXWC_T2@navy.mil or visit our Web page at: [www.navfac.navy.mil/go/erb](http://www.navfac.navy.mil/go/erb)