New York State Department of Environmental Conservation

FACT SHEET

December 2008

More Vapor Sampling Planned at CooperVision

Site # V00175-8

Village of Scottsville, Monroe County

This fact sheet provides information regarding the next phase of environmental investigation activities at the CooperVision facility (the site) in the Village of Scottsville, Monroe County. The investigation is being conducted through New York State's Voluntary Cleanup Program (see box at right).

Upcoming Investigation:

Based on results from testing conducted between April and October 2008 (discussed in more detail below), the New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), has requested that CooperVision test some residential structures to evaluate the potential for subsurface vapor contamination to migrate into structures (e.g., through cracks in building foundations) and affect indoor air quality. This process is called vapor intrusion (see attached soil vapor fact sheet). These tests typically involve collecting indoor air samples from the lowest level of a building as well as sub-slab vapor samples. Sub-slab vapor samples are collected from very small holes drilled through the bottom floor of a building. Water in a basement sump may also be tested.

In order to better understand soil vapor migration pathways so that NYSDOH and NYSDEC can recommend the specific structures to sample, CooperVision will first be collecting additional exterior soil vapor samples from locations near the gas line on the east side of Briarwood Lane. These exterior samples are scheduled to be collected in December 2008.

To collect the exterior samples, a small drill rig will be used to punch small holes in the ground. CooperVision will work with the utility companies to make sure that underground utilities are not damaged. The soil vapor samples will then be collected from these holes and the samples will be sent to a laboratory for analysis. There will be some short periods of noise (similar to a jackhammer) when the drill rig is operating. Drilling activities will be conducted during normal working hours (approximately 8 am to 5 pm). A community air monitoring plan will be in place to ensure that these activities do not impact the ambient (outside) air quality.

Historical site specific environmental information indicated that the groundwater on the site is contaminated with chlorinated solvents such as trichloroethane (TCA) and associated breakdown products. TCA was used at the site from the mid-1970s until 1993 to release contact lenses from lens forms.

NEW YORK STATE'S VOLUNTARY CLEANUP PROGRAM

The New York State Department of Environmental Conservation's Voluntary Cleanup Program promotes the return of contaminated property to productive use. These include sites contaminated by hazardous waste, petroleum, and solid waste.

Under this program, a person or entity (such as a corporation) agrees to pay for an investigation and/or environmental cleanup of the site. In return, this volunteer gets to develop or use the property. If the volunteer performs a cleanup of the site, the volunteer receives a limited release from liability for the past environmental damage at the site.

What Happens Next:

The December 2008 test results are expected to be available by the end of January 2009. Once the soil vapor results are available, NYSDOH and NYSDEC will evaluate the information and provide recommendations to CooperVision regarding specific structures for indoor air and sub-slab vapor testing. Property owners and tenants will be notified in advance of any planned testing inside their property/residence.

About the 2008 Soil Vapor Test Results

In April 2008, CooperVision tested soil vapor within the right-of-way on both sides of Briarwood Lane and near the CooperVision building (see map). The purpose was to determine if chlorinated solvents could be moving through the soil vapor towards the off-site structures.

The results detected higher than expected levels of chlorinated solvents with the highest concentrations coming from test points near the natural gas line that runs from Briarwood Lane to the CooperVision building. These results do not suggest leaks in the natural gas line since the chemicals found in the soil vapor samples were not related to the chemicals that make up natural gas. The results did suggest that the gas line may act as a "preferential pathway" for contaminant vapors to move through the ground. In August 2008, CooperVision installed several clay plugs around the outside of the gas line to try to stop the migration of the contaminant vapors.

In October 2008, additional soil vapor samples were collected along Briarwood Lane. The results indicated decreased concentrations at some sample locations along the gas utility line, however concentrations did not decrease enough to eliminate the need for sampling on the residential side of Briarwood Lane.

Previous Investigation And Remediation Activities:

From 1999-2000, CooperVision performed an environmental investigation to determine the types and locations of contamination at the site. The investigation verified that the site groundwater and subsurface soils contained chlorinated solvents; primarily TCA and associated compounds. The highest concentrations of contaminants were found in groundwater near an area where TCA had previously been stored on the site.

In 1998, NYSDOH and the Monroe County Health Department tested water from the basement sumps of two nearby residences. No site-related contaminants were detected in any of the samples. Residents in the area are served by a public water supply and are not drinking the groundwater. Public contact with contaminated soil or groundwater is not likely as the area is covered by the building and asphalt parking lot.

Groundwater from the site flows toward Briarwood Lane. Four groundwater monitoring wells were installed at the edge of CooperVision's property along Briarwood Lane. Tests performed on the groundwater from these wells indicated that off-site contaminant migration in groundwater was not a concern.

Cleanup activities at the CooperVision site started in 2001. A material called Hydrogen Release Compound was injected into the ground at CooperVision to speed-up (accelerate) the natural breakdown process of TCA. Groundwater at the site continues to be monitored to evaluate the effectiveness of this remedy. A system to prevent contaminated vapors from entering the CooperVision building was installed in 2006.

About the CooperVision Site:

The Union Corporation manufactured contact lenses at the facility from 1976 to 1983. CooperVision acquired the facility in 1983 and continues to manufacture contact lenses at the facility today. CooperVision stopped using TCA at the site in 1993.

In 1997, CooperVision discovered TCA in subsurface soil and groundwater near an area where TCA had previously been stored. In 1999, CooperVision signed a legal agreement with the NYSDEC to perform an

environmental investigation at the site and in 2001 CooperVision signed a similar legal agreement with NYSDEC to remediate (clean up) the site.

For More Information:

Documents related to this investigation and cleanup are available for you to review at:

Scottsville Free Library
28 Main Street
Scottsville, NY 14546
(585) 889-2023
Hours: Mon., Wed. & Thurs. 1 - 8:30
Tues.- 10 - 8:30
Fri.- 10 - 5
Sat.- 10 - 1(Closed Saturdays from June 17 to September 2)

NYS Department of Environmental Conservation
Region 8 Office
6274 E. Avon-Lima Rd.
Avon, NY 14414
Hours: Monday- Friday 8:30 - 4:45 (by appointment only)
Contact: Lisa LoMaestro Silvestri for an appointment 585-226-5326

We encourage you to contact the representatives listed below with questions, comments or concerns. If you know someone who would like to be added to the mailing list, have them send in the attached mailer or contact one of the people listed below. You do **not** have to return the mailer if you received this fact sheet in the mail; your name will automatically remain on the mailing list.

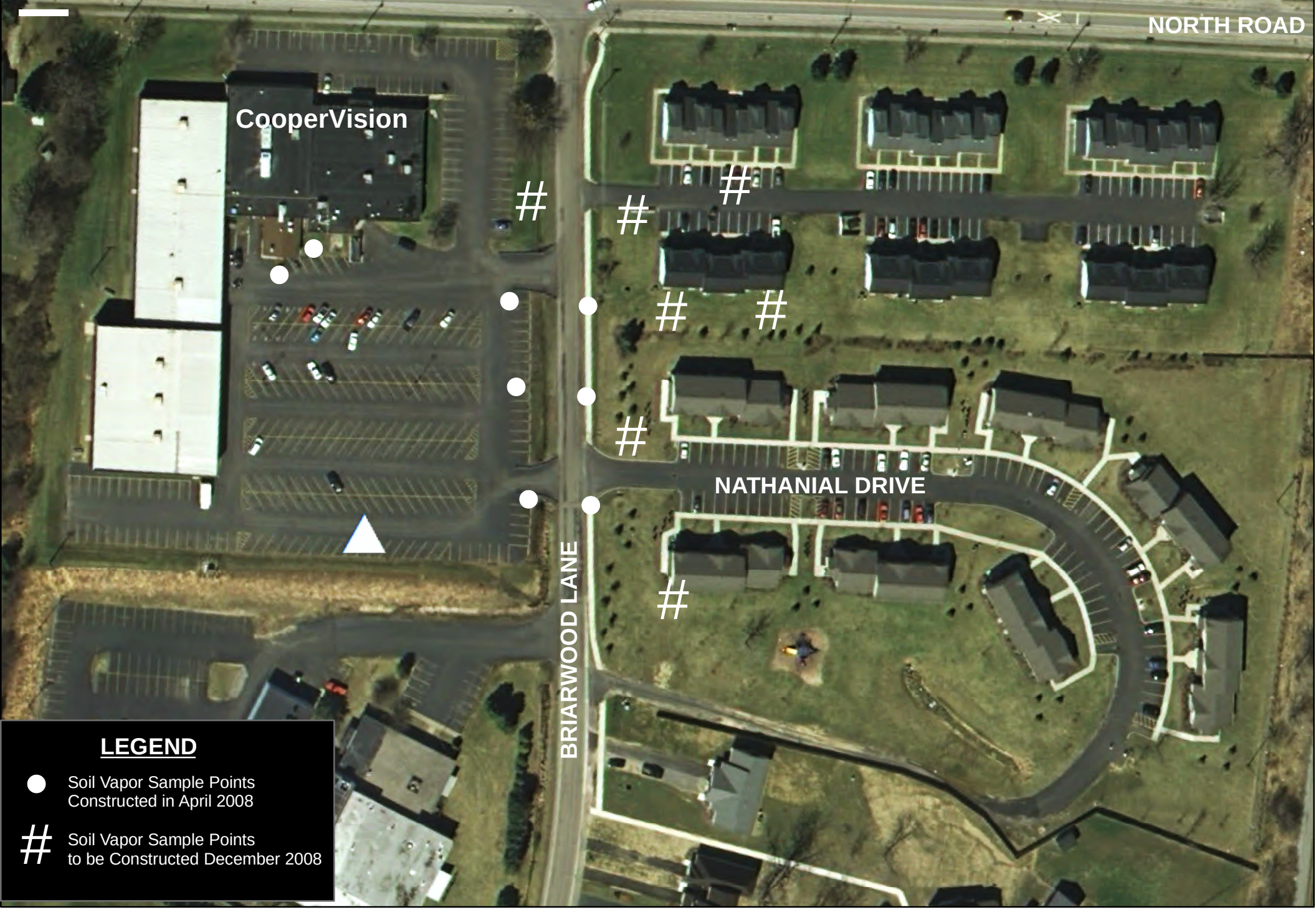
➢ For Question About the Sampling Activities, Contact:

Frank Sowers, P.E., Project Manager 585-226-5357
Lisa A. LoMaestro Silvestri, Citizen Participation Specialist 585-226-5326
NYS Department of Environmental Conservation
6274 East Avon-Lima Road
Avon, NY 14414

➢ For Site-Related Health Questions, Contact:

Julia Kenney
NYS Department of Health
New York State Department of Health
547 River Street, Room 300
Troy, NY 12180-2216
800-458-1158 ext. 27860

Jeffrey Kosmala, P.E.
Monroe County Health Department
111 Westfall Road
Rochester NY 14620
585-753-5470



COOPERVISION SITE
Village of Scottsville, Monroe County

NYSDEC Mailer

Please feel free to use this mailer for any of the following purposes:

____ 1. You would like to be placed on our CooperVision mailing list. PLEASE NOTE: If you received this fact sheet, your name is already on the mailing list.
____ 2. You would like to include the name and address of someone you know who maybe interested in receiving future fact sheets.
____ 3. You would like to be taken off our CooperVision mailing list.
____ 4. You would like to provide us with a change of name or address. If you are moving, fact sheets are NOT automatically forwarded, unless we are notified by you.
____ 5. You would like to provide us with a comment or concern. Please include your address, email address or phone number if you want us to contact you.

_____**FOLD**_____

Please complete the form as indicated below, fold and mail directly to the DEC.

Add the following name(s):

_____
_____
_____

Delete the following name(s):

_____
_____
_____

Make the following changes:

(Old)_____ (New)_____
_____ _____
_____ _____

_____**FOLD**_____

Comments or Concerns:

Frank Sowers, P.E.
Project Manager
New York State Department of Environmental Conservation
6274 East Avon-Lima Rd
Avon, NY 14414-9519

NEW YORK STATE
DEPARTMENT OF HEALTH

SOIL VAPOR INTRUSION

Frequently Asked Questions

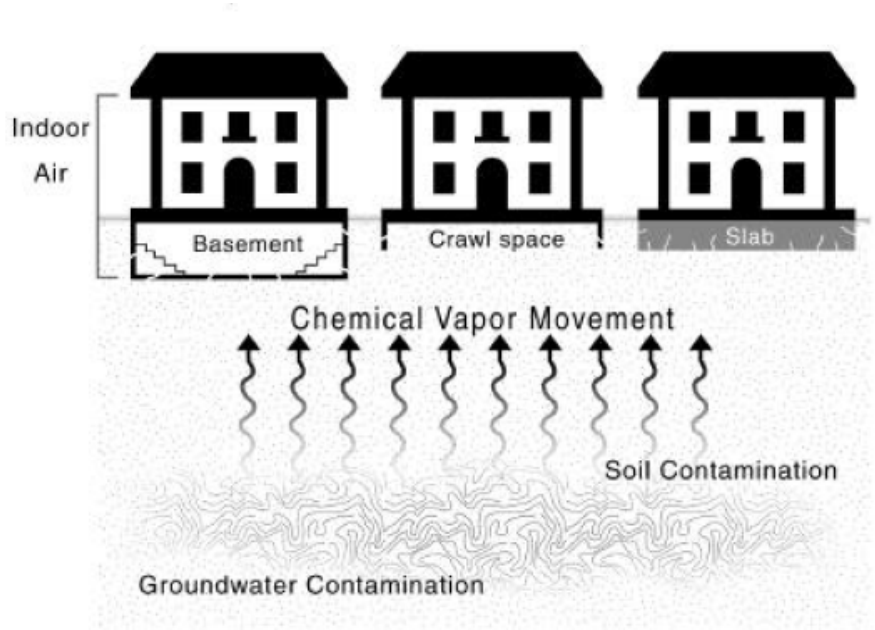
What is soil vapor intrusion?

The phrase "soil vapor intrusion" refers to the process by which volatile chemicals move from a subsurface source into the indoor air of overlying buildings.

Soil vapor, or soil gas, is the air found in the pore spaces between soil particles. Because of a difference in pressure, soil vapor enters buildings through cracks in slabs or basement floors and walls, and through openings around sump pumps or where pipes and electrical wires go through the foundation. Heating, ventilation or air-conditioning systems may create a negative pressure that can draw soil vapor into the building. This intrusion is similar to how radon gas seeps into buildings.

Soil vapor can become contaminated when chemicals evaporate from subsurface sources and enter the soil vapor. Chemicals that readily evaporate are called "volatile chemicals." Volatile chemicals include volatile organic compounds (VOCs). Subsurface sources of volatile chemicals may include contaminated soil and groundwater, or buried wastes. If soil vapor is contaminated, and enters a building as described above, indoor air quality may be affected.

When contaminated vapors are present in the zone directly next to or under the foundation of the building, vapor intrusion is possible. Soil vapor can enter a building whether it is old or new, or whether it has a basement, a crawl space, or is on a slab (as illustrated in the figure).



[Source: United States Environmental Protection Agency, Region 3]

How am I exposed to chemicals through soil vapor intrusion?

Humans can be exposed to soil vapor contaminated with volatile chemicals when vapors from beneath a building are drawn through cracks and openings in the foundation and mix with the indoor air. Inhalation is the route of exposure, or the manner in which the volatile chemicals actually enter the body, once in the indoor air.

Current exposures are when vapor intrusion is documented in an occupied building. *Potential* exposures are when volatile chemicals are present, or are accumulating, in the vapor phase beneath a building, but have not affected indoor air quality. Potential exposures also exist when there is a chance that contaminated soil vapors may move to existing buildings not currently affected or when there is a chance that new buildings can be built over existing subsurface vapor contamination. Both current and potential exposures are considered when evaluating soil vapor intrusion at a site that has documented subsurface sources of volatile chemicals.

In general, exposure to a volatile chemical does not necessarily mean that health effects will occur. Whether or not a person experiences health effects depends on several factors, including inhalation exposure, the length of exposure (short-term or acute versus long-term or chronic), the frequency of exposure, the toxicity of the volatile chemical, and the individual's sensitivity to the chemical.

What types of chemicals associated with environmental contamination may be entering my home via soil vapor intrusion?

Volatile organic compounds, or VOCs, are the most likely group of chemicals found in soil vapor, and which can move through the soil and enter buildings. Solvents used for dry cleaning, degreasing and other industrial purposes (e.g., tetrachloroethene, trichloroethene, 1,1,1-trichloroethane and Freon 113) are examples of VOCs. Examples of petroleum-related VOCs from petroleum spills are benzene, toluene, ethyl benzene, xylenes, styrene, hexane and trimethylbenzenes.

Is contaminated soil vapor the only source of volatile chemicals in my indoor air?

No. Volatile chemicals are also found in many household products. Paints, paint strippers and thinners, mineral spirits, glues, solvents, cigarette smoke, aerosol sprays, mothballs, air fresheners, new carpeting or furniture, hobby supplies, lubricants, stored fuels, refrigerants and recently dry-cleaned clothing all contain VOCs. Household products are often more of a source of VOCs in indoor air in homes than contaminated soil vapor.

Indoor air may also become affected when outdoor air containing volatile chemicals enters your home. Volatile chemicals are present in outdoor air due to their widespread use. Gasoline stations, dry cleaners, and other commercial/industrial facilities are important sources of VOCs to outdoor air.

What should I expect if soil vapor intrusion is a concern near my home?

If you live near a site that has documented soil, groundwater and/or soil vapor contaminated with volatile chemicals, you should expect that the potential for vapor intrusion is being, or has been, investigated. You may be contacted by the site owner or others working on the cleanup with information about the project. Your cooperation and consent would be requested before any testing/sampling would be done on your property. You may ask the person contacting you any questions about the work being done. You can also contact the NYSDOH's project manager for the site at 1-800-458-1158 (extension 2-7850) for additional information.

How is soil vapor intrusion investigated at sites contaminated with volatile chemicals?

The process of investigating soil vapor intrusion typically requires more than one set of samples to determine the extent of vapor contamination. Furthermore, four types of environmental samples are collected: soil vapor samples, sub-slab vapor samples, indoor air samples and outdoor air (sometimes referred to as "ambient air") samples.

Soil vapor samples are collected to characterize the nature and extent of vapor contamination in the soil in a given area. They are often collected before sub-slab vapor and/or indoor air samples to help identify buildings or groups of buildings that need to be sampled. Soil vapor samples are used to determine the *potential* for human exposures. *Soil vapor* samples are not the same as *soil* samples.

Sub-slab vapor samples are collected to characterize the nature and extent of vapor contamination in the soil immediately beneath a building with basement foundations or a slab. Sub-slab vapor results are used to determine the potential for *current* and *future* human exposures. For example, an exposure could occur in the future if cracks develop in the building's foundation or changes in the operation of the building's heating, ventilation or air-conditioning system are made that make the movement of contaminated soil vapor into the building possible.

Indoor air samples are collected to characterize the nature and extent of air contamination within a building. Indoor air sample results help to evaluate whether there are *current* human exposures. They are also compared to sub-slab vapor and outdoor air results to help determine where volatile chemicals may be coming from (indoor sources, outdoor sources, and/or beneath the building).

Outdoor air samples are collected to characterize site-specific background air conditions. Outdoor air results are used to evaluate the extent to which outdoor sources, such as automobiles, lawn mowers, oil storage tanks, gasoline stations, commercial/industrial facilities, and so forth, may be affecting indoor air quality.

What should I expect if indoor air samples are collected in my home?

You should expect the following:

- Indoor air samples are generally collected from the lowest-level space in a building, typically a basement, during the heating season. Indoor air samples may also be collected from the first floor of living space. Indoor air is believed to represent the greatest exposure potential with respect to soil vapor intrusion.
- Sub-slab vapor and outdoor air samples are usually collected at the same time as indoor air samples to help determine where volatile chemicals may be coming from (indoor sources, outdoor sources, and/or beneath the building).
- More limited sampling may be performed outside of the heating season. For example, sub-slab vapor samples without indoor air or outdoor air samples may be collected to identify buildings and areas where comprehensive sampling is needed during the heating season.
- An indoor air quality questionnaire and building inventory will be completed. The questionnaire includes a summary of the building's construction characteristics; the building's heating, ventilation and air-conditioning system operations; and potential indoor and outdoor sources of volatile chemicals. The building inventory describes products present in the building that might contain volatile chemicals. In addition, we take monitoring readings from a real-time organic vapor meter (also known as a photoionization detector or PID). The PID is an instrument that detects many VOCs in the air. When indoor air samples are collected, the PID is used to help determine whether

products containing VOCs might be contributing to levels that are detected in the indoor air.

What happens if soil vapor contamination or soil vapor intrusion is identified during investigation of a site?

Depending on the investigation results, additional sampling, monitoring or mitigation actions may be recommended. Additional sampling may be performed to determine the extent of soil vapor contamination and to verify questionable results. Monitoring (sampling on a recurring basis) is typically conducted if there is a significant potential for vapor intrusion to occur should building conditions change. Mitigation steps are taken to minimize exposures associated with soil vapor intrusion. Mitigation may include sealing cracks in the building's foundation, adjusting the building's heating, ventilation and air-conditioning system to maintain a positive pressure to prevent infiltration of subsurface vapors, or installing a sub-slab depressurization system beneath the building.

What is a sub-slab depressurization system?

A sub-slab depressurization system, much like a radon mitigation system, essentially prevents vapors beneath a slab from entering a building. A low amount of suction is applied below the foundation of the building and the vapors are vented to the outside (see illustration). The system uses minimal electricity and should not noticeably affect heating and cooling efficiency. This mitigation system also essentially prevents radon from entering a building, an added health benefit. The party responsible for cleaning up the source of the soil vapor contamination is usually responsible for paying for the installation of this system. If no responsible party is available, New York State will install the system. Once the contamination is cleaned up, the system should no longer be needed. In areas where radon is a problem, the NYSDOH recommends that these systems remain in place permanently.

What else can I do to improve my indoor air quality?

Household products and other factors, such as mold growth, carbon monoxide, and radon, can degrade the quality of air in your home. Consider the following tips to improve indoor air quality:

- Be aware of household products that contain VOCs. Do not buy more chemicals than you need at a time.
- Store unused chemicals in tightly-sealed containers in a well-ventilated location, preferably away from the living space in your home.
- Keep your home properly ventilated. Keeping it too air-tight may promote build up of chemicals in the air, as well as mold growth due to the build up of moisture.
- Fix all leaks promptly, as well as other moisture problems that encourage mold growth.
- Make sure your heating system, hot water, dryer and fireplaces are properly vented and in good condition. Have your furnace or boiler checked annually by a professional.
- Test your home for radon; take actions to reduce radon levels if needed.
- Install carbon monoxide detectors in your home; take immediate actions to reduce carbon monoxide levels if needed.

Where can I get more information?

For additional information about soil vapor intrusion, contact the NYSDOH's Bureau of Environmental Exposure Investigation at 1-800-458-1158 (extension 2-7850).