



Department of
Environmental
Conservation

FACT SHEET

State Superfund Program

Meeker Avenue Plume
Meeker Avenue
Brooklyn, NY 11222

SITE No. 224121
NYSDEC REGION 2

November 2021

Where to Find Information:

Access project documents through the DECinfo Locator

<https://www.dec.ny.gov/data/DecDocs/224121/>

and at these location(s):

(*Repositories may be temporarily unavailable due to COVID-19 precautions. If you cannot access the online repository, please contact the NYSDEC project manager listed below for assistance)

Brooklyn Public Library

Greenpoint Branch
107 Norman Avenue
Brooklyn, NY 11222
(718) 349-8504

Brooklyn Community Board 1

435 Graham Avenue
Brooklyn, NY 11222
(718) 389-0009

[Key project documents and project summary also are available on the NYSDEC website at:

<https://www.dec.ny.gov/chemical/8439.html>]

Who to Contact:

Comments and questions are welcome and should be directed as follows:

Project-Related Questions

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Project-Related Health Questions

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Project Update

Soil Vapor Investigation to Continue

The New York State Department of Environmental Conservation (NYSDEC) is committed to working with our partners at the New York State Department of Health (NYSDOH), the U.S. Environmental Protection Agency (EPA), local officials, and the community on the comprehensive cleanup of pollution affecting areas of Greenpoint and East Williamsburg. DEC has already performed an extensive investigation which found chlorinated volatile organic compound (CVOC) contamination in soil, soil vapor, and groundwater. Where needed and access was granted, NYSDEC took action to install soil vapor mitigation systems to protect indoor air quality in private properties. NYSDEC is seeking to expand the number of properties granting access for sampling to prevent potential exposure to contamination and fully protect public health and the environment. This fact sheet will provide an update on activities to investigate the plume and ongoing outreach to evaluate the potential for soil vapor intrusion.

About the Meeker Avenue Plume:

The Meeker Avenue Plume (“site”) is a 0.3 square mile area in Greenpoint/East Williamsburg along Newtown Creek (see attached map). This section of Brooklyn has a long industrial history, with chlorinated solvents, such as tetrachloroethene (PCE) and trichloroethene (TCE), used by numerous companies within the site boundary for dry cleaning, drum reconditioning, metal fabrication, metal plating, as well as other industrial and commercial uses. NYSDEC has conducted numerous investigations of the area to identify sources of contamination and evaluate the potential for exposure. Based on this information, the Meeker site was recently nominated to the EPA’s National Priorities List. For information regarding the nomination, see <https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0203407>. As the EPA evaluation process proceeds, NYSDEC will continue its work to identify potential contamination in the Meeker Avenue area.

Soil Vapor Intrusion Investigation: Due to the presence of chlorinated volatile organic compounds (CVOCs) in groundwater, NYSDEC will conduct a supplemental soil vapor intrusion investigation this winter to evaluate the potential for exposure to CVOCs through the process known as soil vapor intrusion (SVI). SVI is the migration of volatile chemicals from subsurface into the indoor air of buildings, potentially affecting indoor air quality and causing public health issues if not addressed. Please refer to

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the attached NYSDOH fact sheet on SVI. Property owners within the site boundary will receive a letter from NYSDEC requesting permission to collect samples in their home or business. The proposed sampling will include collection of one (or more) samples from beneath the building foundation, one from the basement or lowest floor, and one from outdoor air (an ambient air sample).

Site Description: The site is bounded by the former Mobil Brooklyn Refinery/current British Petroleum (BP) Terminal to the north along Norman Avenue and Bridgewater Street, Newtown Creek to the east, Lombardy and Withers Streets to the south, and Kingsland (aka Grandparents) Avenue to the west. To date, six distinct sources of contamination have been identified:

- Former Spic and Span Cleaners and Dyers (DEC ID No. 224129)
- Former Klink Cosmo Cleaners (DEC ID No. 224130)
- ACME Steel/Metal Works (DEC ID No. 224131)
- ACME Steel/Brass Foundry (DEC ID No. 224132)
- Former Lombardy Street Lacquer and Soap Mfg. (DEC ID No. 224182)
- Former Goodman Brothers Steel Drum Co. (DEC ID No. 224211)

All six locations are listed in the NYSDEC's Registry of Inactive Hazardous Waste Disposal Sites as class 2 sites

(i.e., action required). Additional site details, including environmental and health assessment summaries, are available on NYSDEC's Environmental Site Remediation Database (by entering the site ID) at: <https://www.dec.ny.gov/cfm/xtapps/derexternal/index.cfm?pageid=3>

We encourage you to share this fact sheet with neighbors and tenants, and/or post this fact sheet in a prominent area of your building for others to see.

Stay Informed With DEC Delivers

Sign up to receive site updates by email:

www.dec.ny.gov/chemical/61092.html

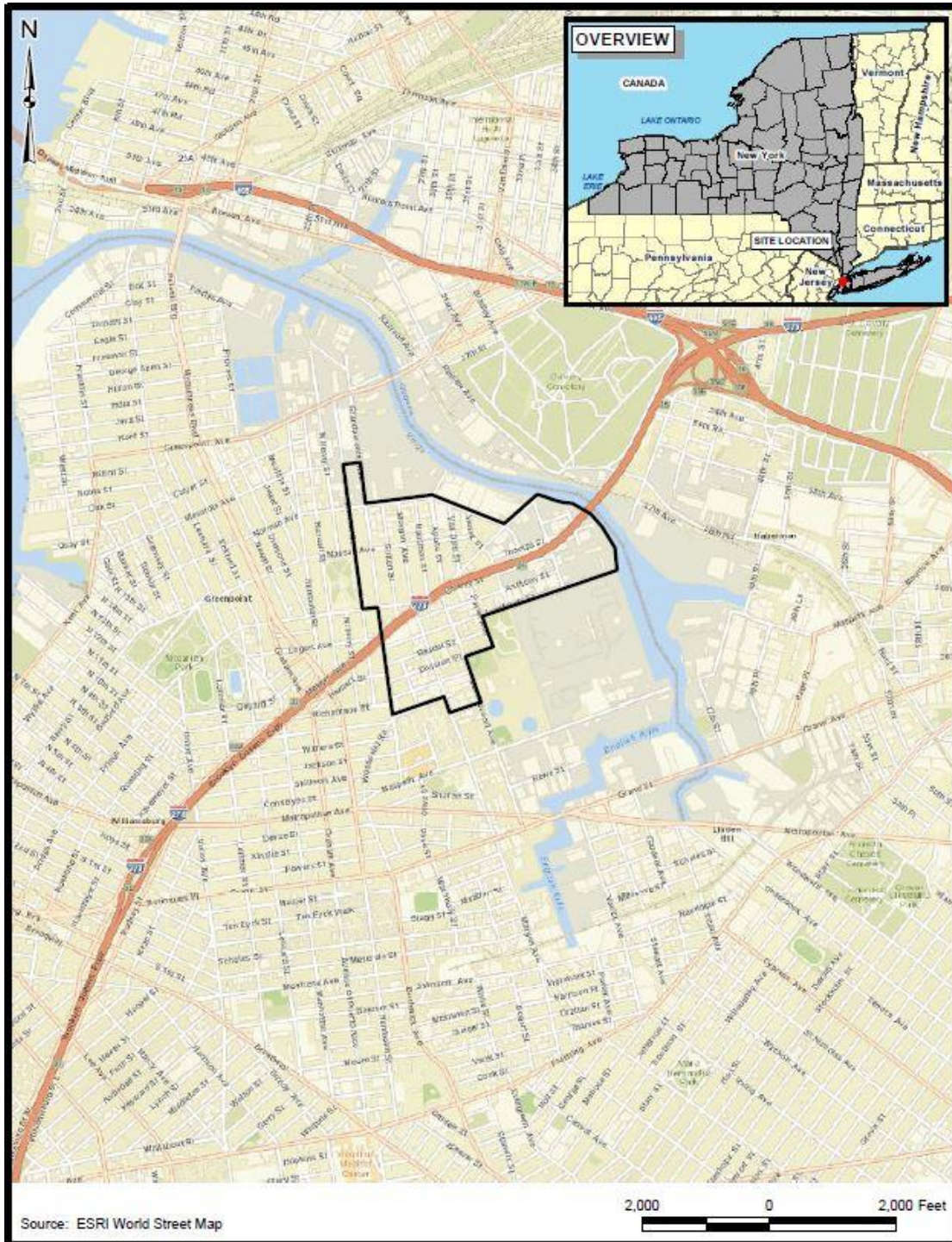
Note: Please disregard if you already have signed up and received this fact sheet electronically.

DECinfo Locator

Interactive map to access DEC documents and public data about the environmental quality of specific sites: <https://www.dec.ny.gov/pubs/109457.html>

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Site Location



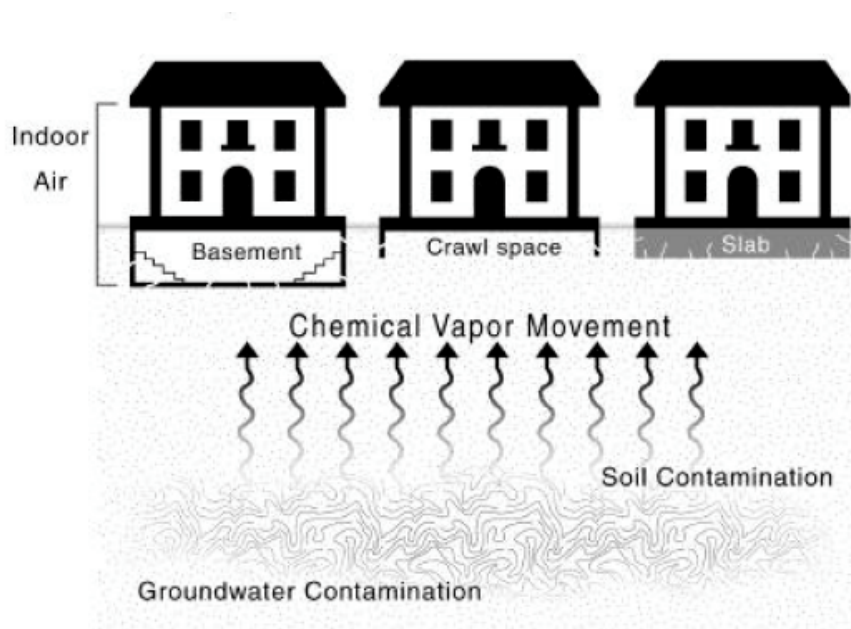
What is soil vapor intrusion?

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).