**Resident Questions on 10-60 Main St - Ashland MA**

**12.g. Who installed the monitoring wells?**

USEPA/MassDEP Response: There are three (3) groundwater monitoring wells on the 10-60 Main Street property that were previously installed by the U.S. Environmental Protection Agency (USEPA) to study groundwater contamination downgradient of the Nyanza Chemical Waste Dump Superfund Site (the "Nyanza Superfund Site"). These three monitoring wells are identified as MW-40Main (located in front of the current 30/40 Main Street building), and RMW-405A and RMW-405B (co-located in the southeast corner of the mill parking lot near the Sudbury River). These monitoring wells are sampled as needed to study the Nyanza groundwater plume. USEPA has requested that these three monitoring wells be retained and protected during future redevelopment and construction activities at the property. Please see the attached map showing the approximate locations of these three USEPA wells.

Several other groundwater monitoring wells (unrelated to the Nyanza Superfund Site) reside on the 10-60 Main St. property that were installed by other entities to investigate contamination related to former historic mill operations. For information on these non-USEPA monitoring wells, please contact the Licensed Site Professional (LSP) for Ashland Properties, LLC.

**14.a. It is my understanding that a substantial portion of downtown Ashland is impacted by the Nyanza plume. Does the section from 10-60 Main Street differ from other downtown areas in terms of contamination levels or site conditions? If so, what are the specific differences and any additional concerns?**

USEPA/MassDEP Response: Based on sampling and investigations conducted by USEPA over many years, the Nyanza groundwater plume flows from the Site on Megunko Road through downtown Ashland in a north/northeasterly direction toward the Sudbury River. A section of the Nyanza groundwater plume flows below a portion of the 10-60 Main St. property (e.g., below existing buildings at approximately 20-60 Main Street and the south/southeast area of the mill's parking lot). In this area, the groundwater depth is historically shallow due to its proximity to the Sudbury River. Depth to groundwater has been measured in USEPA wells on the property (RMW-405A and RMW-405B) in the range of 0.4 to 3.5 feet below the ground surface.

One difference between the 10-60 Main Street property and other downtown areas is that the Nyanza groundwater plume is co-located/co-mingles with groundwater VOC contamination from former historic mill operations conducted at the property. Since the depth to groundwater is historically shallow due to its proximity to the Sudbury River, there is the potential for future vapor intrusion into the proposed, more modern, more air-tight buildings constructed on the 10-60 Main Street property. Therefore, engineering controls are required in future building plans to mitigate the vapor intrusion risk. Examples of engineering controls proposed for the 10-60 Main Street project include a ground floor/open air garage and the installation of vapor barriers in ground floor spaces such as storage and utility rooms and limiting the 10 Main Street building to only commercial use.

Indoor air sampling previously conducted by the USEPA confirmed that indoor air VOC concentrations in the existing mill building do not exceed vapor intrusion screening levels for its current commercial use (in the current, less air-tight building). Therefore, the existing mill building does not have a vapor mitigation system, as compared to nearby residences, commercial buildings, and the Town Hall which have vapor mitigation systems (e.g., sub-slab depressurization systems) that were installed by USEPA. These vapor mitigation systems are inspected and maintained by the Massachusetts Department of Environmental Protection (MassDEP).

**14.b. If this area does not differ significantly, would it be treated differently than other sections of downtown during remediation?**

USEPA/MassDEP Response: The USEPA is not conducting remediation work in downtown Ashland. The USEPA is implementing groundwater remedial actions outlined in the July 2020 Record of Decision (ROD), including enhanced extraction and recovery of dense non-aqueous liquid (DNAPL) and testing in-situ chemical oxidation (ISCO) in the Site contaminant source area on Megunko Road. The objective is to further address residual contamination in the contaminant source area and ultimately reduce VOC concentrations over time in the downgradient groundwater plume which flows under sections of downtown Ashland.

**14.c. What technological advances are currently available for addressing contamination in this area?**

USEPA/MassDEP Response: Please see the response to Question # 14b. For further information about on-property contamination, mitigation measures/technologies related to the historical mill operations, please contact the LSP for Ashland Properties, LLC.

**15.f. If there was no mitigation to the site, what would be the long-term health risks for residents, especially children or pregnant individuals?**

USEPA/MassDEP Response: The USEPA has conducted several removal and remedial actions at the Nyanza Superfund Site from the 1980s to the present time to address and remediate source area contamination. Groundwater flowing from the Nyanza Site contains residual VOC contaminants that can pose a vapor intrusion risk to humans over time in occupied buildings situated above the plume where groundwater is shallow, such as near the Sudbury River. However, vapor intrusion risks can be mitigated through properly selected, installed, and tested engineering controls in future building construction. The USEPA has installed over 40 vapor mitigation systems (e.g., sub-slab depressurization systems) in buildings within the footprint of the groundwater plume in downtown Ashland that have the potential for vapor intrusion.

No potable (drinking water) wells are located within 500 feet of the site. The site is not located within a designated Zone II groundwater recharge area or IWPA, Zone A of a Class A Surface

Water or Potential Drinking Water Source Area. Within the footprint of the Nyanza plume, there are no known private wells, and groundwater is not being extracted or utilized for any purpose such as irrigation. No future private/irrigation wells are planned to be installed during the proposed Ashland Properties LLC project at 10-60 Main Street.

For information about on-property contaminant mitigation measures related to the historic mill operations, please contact the LSP for Ashland Properties, LLC.

**15.g. How deep is the plume? Is it moving? Could it spread to or re-contaminate the building site in the future?**

USEPA/MassDEP Response: The VOC groundwater plume emanating from the Nyanza Superfund Site has flowed in a consistent pattern and footprint over time toward the Sudbury River in an east/northeast direction. Depth to groundwater and contaminants in the groundwater varies across the plume, with a relatively shallow depth (less than 5 ft.) in areas close to the Sudbury River. Referencing the 10-60 Main Street property, the plume boundary is located approximately under the existing 30-60 Main Street buildings, and the south/southeast section of the mill parking lot.

USEPA and MassDEP reviewed the 10-60 Main Street construction plans submitted to the Town in March 2024 and did not observe any atypical construction measures that would impact the current footprint of the Nyanza Site groundwater plume. For information about the on-property groundwater contamination related to the historical mill operations, please contact the LSP for Ashland Properties, LLC.

**15.i. Does the development of this property impact the potential migration of the remaining pollutants to surrounding properties?**

USEPA/MassDEP Response: USEPA and MassDEP reviewed the 10-60 Main Street construction plans submitted to the Town in March 2024 and did not observe any atypical construction measures that would impact the current footprint of the Nyanza Site groundwater plume. For information about the on-property groundwater contamination related to the historical mill operations, please contact the LSP for Ashland Properties, LLC.

**15.s. It would seem that vapor barriers must degrade slowly over time, as opposed to all at once at year X. How is that degradation followed and is the vapor barrier monitored for effectiveness? Please explain.**

USEPA/MassDEP Response: Vapor barriers are designed to prevent VOC vapors from entering buildings and generally designed to last for the lifetime of the building. For information about the vapor barrier(s) proposed for use on the 10-60 Main Street Project, such as manufacturer's

product specifications, future monitoring, etc. please contact the LSP for Ashland Properties, LLC.

**15.t. How does a vapor barrier impact surrounding property? What happens to the toxins that are prevented from rising into the living areas? Are they forced out beyond the barrier to the surrounding area?**

USEPA/MassDEP Response: A vapor barrier, or a sub-slab vapor membrane, is a layer of protective material that prevents vapor intrusion into buildings. There are various grades and classifications of vapor barrier material, such as plastic film, fabric, and sheets, as well as roll-on and spray-on applications. Contractors typically install vapor barriers under a building slab foundation and around retaining walls. The end result prevents vapors, such as VOCs from an underground contamination plume, from entering a building. Vapor barriers are specific to the building for which they are selected and installed, and do not negatively affect surrounding areas. Vapor barriers do not change or alter the concentration of the VOCs in the groundwater or soil below a building slab or in surrounding areas, rather they are meant to prevent existing vapors from migrating into a building and impacting the indoor air quality over time.
For information about the vapor barrier(s) proposed for use on the 10-60 Main Street Project, please contact the LSP for Ashland Properties, LLC.

**15.u. This vapor barrier lies within a flood plain. How does a vapor barrier work/withstand flooding?**

USEPA/MassDEP Response: See the response to Question # 15.t. For information about the vapor barrier(s) proposed for use on the 10-60 Main Street Project, including manufacturer's information, please contact the please contact the LSP for Ashland Properties, LLC.

**15.v. What types of things might cause a vapor barrier to fail? Historically, are you aware of some vapor barriers that may have failed and what caused the failure in those instances?**

USEPA/MassDEP Response: Historically, vapor barrier "failure" is usually from small tears that occur during vapor barrier installation, which is why smoke testing of the installed vapor barrier is important. The small tears or gaps in the vapor barrier can then be properly sealed prior to installation of the overlying floor. For information about the vapor barrier(s) proposed for use on the 10-60 Main Street Project, including manufacturer's information/specifications, please contact the LSP for Ashland Properties, LLC.

**16.b. Are there other residential sites in Massachusetts built over plumes? How do they handle health and safety risks?**

USEPA/MassDEP Response: At and/or adjacent to other Massachusetts Superfund Sites, engineering controls such as vapor barriers, active vapor mitigation systems (e.g., sub-slab

depressurization), and passive venting systems have been utilized in building design to mitigate the vapor intrusion risk associated with groundwater VOC contamination.

**16.e. What alternative mitigation measures (e.g., aerated floor systems) are feasible given the shallow groundwater table (within ~5 feet)?**

USEPA/MassDEP Response: For more information about other potential alternative vapor mitigation engineering controls that could be employed for the 10-60 Main Street project, and whether such alternative controls are necessary, please contact the LSP for Ashland Properties, LLC.

**Question submitted through the EPA Headquarters office in Washington, DC:**

**I am writing to you today with concerns about this super fund site. The town of Ashland Massachusetts is planning to build a large apartment building complex. The ground is contaminated from this super fund site. There are many concerns about the air and water if this large project is allowed. They are siting the 40 B rule at the expense of our health and safety. The downtown area has trains running through it all day long. All roads get over crowed. If we have God forbid a train accident it will be near impossible to clear the area. On another note the developer of the apartment complex said they do not plan to let the renters know that they will be living above and near contaminated soil. If you could look into this it would be helpful to all of the Ashland residents. Our small downtown area should be preserved and not over developed with risking our health and safety. Fondly, [name redacted].**

USEPA/MassDEP Response: The 10-60 Main Street property is a State designated clean-up Site under the Massachusetts Contingency Plan (MCP). The property has an MCP release tracking number (RTN) that is assigned to a site or reportable release in Massachusetts for environmental tracking. The Reportable Release or Threat of Release was reported to the State in January 1998 and was closed in 2011 via submittal of a Class A3 Response Action Outcome (Permanent Solution Statement with Conditions).

The 10-60 Main Street property is not a federal Superfund Site and is not listed on the federal National Priorities List (NPL). However, similar to other properties in an area of downtown Ashland, the 10-60 Main Street property is impacted by the Nyanza Chemical Waste Dump Superfund Site (the "Nyanza Site"), whereby a groundwater plume of residual VOC contamination is flowing belowground from the Site on Megunko Road in a north/northeast direction toward the Sudbury River. A portion of the plume flows below the south/southeast section of the property buildings and mill parking lot.

Soil contamination at the 10-60 Main Street property is not related to the Nyanza Site. Rather, the soil contamination is related to the historical mill operations that occurred at the property. There is also a separate plume of groundwater VOC contamination at the property from historical mill operations, which is co-located/co-mingles with the Nyanza groundwater plume

below ground. The depth to groundwater at the property is historically shallow (depths of less than 5 feet) due to its proximity to the Sudbury River. Consequently, there is a potential for vapor intrusion into modern, air-tight buildings constructed in the future on the 10-60 Main Street property. However, proper engineering controls incorporated into future building/construction plans can mitigate the vapor intrusion risk to future building occupants/residents. Examples of engineering controls proposed for the 10-60 Main Street project include a ground floor open air garage and the installation of vapor barriers in ground floor spaces such as the storage and utility rooms and limiting the 10 Main Street building to only commercial use. Previous indoor air sampling conducted by the USEPA confirmed that indoor air concentrations in the existing mill building do not exceed vapor intrusion screening levels for its current commercial use.

For questions and concerns about on-property soil contamination related to historical mill operations and planned soil remediation actions, please contact the LSP for Ashland Properties, LLC.

**Enclosures:**

1. Map of USEPA groundwater monitoring wells located on the 10-60 Main Street property in Ashland, MA.
2. USEPA Fact Sheet: Vapor Intrusion Guide
3. MassDEP Fact Sheet: Vapor Intrusion & Indoor Air Contamination from Waste Sites

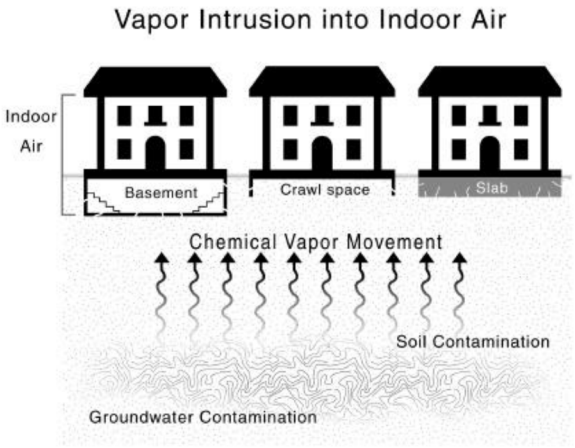

Sudbury River
MW-40MAIN
RMW-405B
RMW-405A

# EPA's Vapor Intrusion Guide October 2015

This fact sheet provides basic information about the *OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air* [OSWER Publication 9200.2-154, June 2015] ("the Guide"), which may be useful for EPA staff, state and tribal agencies, local governments and community organizations, environmental professionals, and persons without specific environmental knowledge and expertise.

## What is vapor intrusion?

Vapor intrusion refers to the migration of chemical vapors from any underground source into structures (e.g., homes, businesses, schools).




## Where and when is vapor intrusion a potential concern?

Vapor intrusion is a potential concern wherever buildings or other enclosed structures are located near an underground source of vapor-forming contamination. A wide variety of chemical contaminants can give off vapors, which can migrate towards and enter buildings or other enclosed structures as a component of a gas. Chemical contamination in the ground can arise from spills and releases above the ground surface, in addition to releases directly into the subsurface.

## Why is vapor intrusion a potential concern?

Vapor intrusion is one of many potential ways that people may come into contact with hazardous vapors while performing their day-to-day indoor activities. Depending upon building- and site-specific circumstances, concentrations of chemical vapors arising in structures from vapor intrusion may threaten human health or safety. When human health or safety is threatened by vapor intrusion, response action is warranted.

## Why did EPA publish this Guide for vapor intrusion assessment and mitigation?

EPA has statutory authority and responsibility to assess and, if warranted, mitigate vapor intrusion at hundreds of sites with subsurface contamination by vapor-forming chemicals. The Guide was published to promote national consistency and enhanced approaches in how the vapor intrusion pathway is addressed at contaminated sites within EPA's jurisdiction.

## How does EPA have authority to address vapor intrusion?

The sources of EPA authority and requirements for addressing subsurface vapor intrusion are the relevant federal statutes and regulations, which include the Comprehensive Environmental Response, Compensation, and Liability Act (Superfund law) as amended ("CERCLA") and the corrective action provisions of the Resource Conservation and Recovery Act as amended ("RCRA").

## Where and when is EPA's vapor intrusion Guide to be used? Does it pertain only to contamination by chlorinated solvents?

# EPA's Vapor Intrusion Guide October 2015

This Guide is intended for use at sites within EPA's jurisdiction that are being evaluated pursuant to CERCLA or RCRA corrective action, sites subject to EPA's brownfield grants, and certain federally operated facilities, where vapor intrusion may be of potential concern. The Guide pertains to all of the various vapor-forming chemicals that may occur as subsurface contaminants at these sites, which include many non-chlorinated compounds (petroleum hydrocarbons, for example) and compounds that are not used as solvents.

## How does EPA's Guide differ from our 2002 draft guidance?

This Guide reflects recent scientific developments and additional EPA experience since our draft guidance was released in 2002, which have led to enhanced approaches for evaluating and managing vapor intrusion. These enhanced approaches include allowing more flexibility in the sequencing of subsurface and interior/indoor sample collection, allowing more flexibility in sampling durations and methods to take advantage of technical developments, describing specific methodologies for evaluating indoor air contamination arising from sources other than vapor intrusion, and using multiple lines of evidence in evaluating and making decisions about vapor intrusion. The Guide also describes response actions (including building mitigation options) for addressing vapor intrusion, and discusses when institutional controls are appropriate to address the vapor intrusion pathway.

## How does EPA's Guide work with guidance prepared by other entities?

EPA's Guide reflects the current state of the science and is appropriate for its intended scope and purpose. EPA recommends that state agencies that have delegated authority to implement CERCLA or RCRA consider the Guide when implementing their state-specific guidance for vapor intrusion assessment and mitigation, if any. EPA anticipates that some states, tribes, and local governments will find the Guide useful for their respective cleanup and land revitalization programs also.

## How does EPA's Guide work with standards for real estate transactions?

EPA's Guide does not aim or intend to offer recommendations for vapor intrusion assessments that private parties choose to conduct as part of real estate transactions. Nor does this Guide modify existing EPA guidance regarding landowner liability protection (e.g., All Appropriate Inquiries, the *bona fide* prospective purchaser provision). On the other hand, EPA anticipates that private parties and environmental professionals will find EPA's Guide useful for understanding EPA's recommendations and expectations for assessment and cleanup.

## On-line Resources

To obtain the Guide, please visit EPA's web site at:
https://www.epa.gov/vaporintrusion/technical-guide-assessing-and-mitigating-vapor-intrusion-pathway-subsurface-vapor

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

# Fact Sheet:
# Vapor Intrusion & Indoor Air Contamination from Waste Sites

*Reformatted December 2017*

## What is Vapor Intrusion?

Vapor intrusion is a way that contamination in soil or groundwater can get into the indoor air. Contaminants that are spilled onto the ground or leak from underground storage tanks can seep down through the soil and dissolve into the groundwater. Certain contaminants can evaporate from the groundwater into air pockets in the soil and travel upwards. In undeveloped areas, the contaminants disperse into the air. However, in developed areas, vapors can enter buildings and impact indoor air quality. This movement of contaminants into a building is called vapor intrusion.

## How do vapors get into buildings?

When contaminated vapors are present directly next to or underneath the foundation of a building, vapor intrusion is possible. Warm air rising in the building can draw vapors through cracks, holes for utilities, or other openings in the foundation. This is often more likely to occur in the winter months when the frost layer, operation of furnaces, and closed windows increase the potential for vapor intrusion. Vapors can also travel through the permeable gravel used to backfill utility line installations, and be drawn into nearby buildings.

## What contaminants might be entering my home?

Only certain contaminants are a concern. Metals like lead or chromium do not cause indoor air vapor problems because they do not evaporate or volatilize. Volatile organic compounds (VOCs) are a group of contaminants that can easily become vapors. VOCs are found in petroleum products such as gasoline or fuel oil and solvents used for dry cleaning and industrial uses.

## Are there other sources of indoor air contamination?

Yes. VOCs are found in many household products including paints, paint strippers, thinners, glues, cigarette smoke, aerosol sprays, mothballs, air fresheners, new carpeting or furniture, fuels, and recently dry cleaned clothes. These products can be a source of VOCs found in indoor air. MassDEP does not regulate VOCs in indoor air from household products.

## Why is vapor intrusion a concern?

Exposure to VOCs can cause an increased risk of adverse health effects. Whether or not a person experiences any health effects depends on several factors, including the amount and length of exposure, the toxicity of the chemical and the individual's sensitivity to the chemical. When the vapor intrusion is the result of environmental contamination, MassDEP requires that steps be taken to eliminate the exposure as much as possible.

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

For sites with VOC contamination, where petroleum or solvents have contaminated soil or groundwater, MassDEP requires that the potential for vapor intrusion be investigated. You may be contacted by the site owner or others working on the cleanup. Your cooperation and consent would be requested before any testing/sampling is done on your property. You may ask the person contacting you questions about the work being done, or you may contact MassDEP.

## How can you tell if VOCs are from chemicals in my home or from vapor intrusion?

To determine if vapor intrusion is a concern, samples of the groundwater and soil gas near your home may be taken. Soil gas samples collected beneath the foundation are often the most reliable method to determine if vapors are present under the building and could cause a problem. Indoor and outdoor air samples may also be collected. A comparison of all the data is conducted to determine whether vapor intrusion may be occurring.

## What happens if a problem is found?

If vapor intrusion is affecting the air in your home, measures can be taken to address the problem, including sealing cracks in the foundation, covering sumps, adjusting the building heating, ventilation and air-conditioning systems or installing a sub-slab depressurization system.

## What is a sub-slab depressurization system?

One of the more reliable solutions to address vapor intrusion is to install a sub-slab depressurization system or SSDS. A SSDS is very similar to a radon mitigation system. The system prevents gases in the soil from entering the home. A low amount of suction is applied below the foundation and the vapors are vented to the outside through a pipe. The system is operated until it is no longer needed.