

FAQ

Vapor Intrusion Investigation Ford Livonia Transmission Plant, Livonia MI Frequently Asked Questions (FAQ)

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Groundwater

1. What is a groundwater contamination plume?

The horizontal and vertical areas where chemical contamination is located in groundwater is known as a groundwater contamination plume. Groundwater contamination plumes are the result of chemicals released onto the ground moving into groundwater. The contamination associated with the plume originating from the Livonia Transmission Plant (Plant) is migrating to the east.

2. How long has the groundwater contamination plume been in my neighborhood?

The Plant groundwater contamination plume was caused by releases of chemicals known as chlorinated compounds. The releases of these chemicals into soils and groundwater likely occurred prior to the 1990's and possibly as far back as the 1950's. In late 2015, Ford Motor Company (Ford) notified the Michigan Department of Environmental Quality (DEQ) that testing showed that the vinyl chloride plume was present off site. Ford's investigation of this plume shows that it extends into the Alden Village subdivision due east of the Plant. Additional historical investigation is being conducted by Ford as part of their response activities to gather additional information on the source and origin of the plume.

3. Is my water safe to drink?

Yes. The City of Livonia, including the Plant and the Alden Village subdivision are on a municipal water system that receives its water from the Great Lakes Water Authority in Detroit.

4. What is being done to halt the groundwater contamination plume?

In March 2017, Ford began operating a hydraulic control structure (HCS), also known as a "pump and treat" system. The HCS stops the contaminated groundwater from leaving the Plant property by continuously pumping groundwater and sending it to an on-site treatment system. This prevents additional contamination from migrating off-site onto adjacent properties. It is anticipated that the hydraulic control structure will operate long-term.

5. Is groundwater contamination still migrating and will other properties be impacted?

Investigation work has focused on the Alden Village subdivision to date, however Ford is continuing investigation of the groundwater to determine the extent of the plume.

Vapor Intrusion and Mitigation

6. What is vapor intrusion, why is it a concern, and how is it investigated?

Vapor intrusion sometimes occurs where chemicals were spilled, leaked, or dumped and not cleaned up. For example, properties such as gas stations, dry cleaners, or businesses operating metal parts degreasers use chemicals like gasoline or solvents that can cause vapor intrusion. If these chemicals are mishandled and get into the ground, they can move through the soil and dissolve into groundwater. Although the chemicals are often released as liquid, they easily evaporate, becoming a vapor under the ground that you often cannot see or smell. At some point, the vapors may come in contact with your home or business – usually around your basement or your floor. These vapors may get into your home through openings such as cracks, or other openings around pipes and sumps. This is a concern because you may breathe in these harmful vapors without knowing. The vapors, also known as soil gas, are assessed with soil gas wells or vapor pins that allow the vapors to be sampled and analyzed in a lab.

Vapor intrusion is addressed in the available informational pamphlet titled: ["What is vapor intrusion and how is it investigated"](#) by the DEQ and the Michigan Department of Human Health and Services (DHHS).

7. Why is vapor intrusion from this groundwater plume a concern?

One of the primary chemicals present in the Plant groundwater contamination plume is vinyl chloride. Vinyl chloride can volatilize from the groundwater as soil gas and present a vapor intrusion risk. Recent evaluation by peer reviewed toxicologists at the federal and state level have determined that health risks from vinyl chloride are possible at very low doses.

8. Where is the area of vinyl chloride vapor intrusion concern and how is it being determined?

The area of vapor intrusion concern is the Plant property and the areas where the contaminated groundwater plume has migrated to, which includes properties along Belden Court, Rosati Avenue, and the Alden Village subdivision. The area of investigation includes the contaminated groundwater plume and a 100' distance from the outer edge of the plume. Ford will continue to investigate additional areas beyond those currently identified based on the results of the investigations.

9. How is a DEQ vapor intrusion study done?

Groundwater is very shallow in the area, so sampling soil gas is not possible. Therefore, shallow groundwater monitoring wells with the well screens intersecting the groundwater table are needed to assess vapor intrusion. The groundwater in these wells is then sampled and concentrations are compared to numbers developed by toxicologists to see if this shallow groundwater may generate vapors that may pose an unacceptable risk. When building construction and groundwater depth allows, vapors under structures are evaluated by installing vapor "pins" in the floor of the lowest level of a structure. Indoor air samples are typically collected when vapor pins are sampled. Prior to sampling, a household chemical survey is performed and products containing chemicals found in the groundwater contamination plume are requested to be removed. Additional sampling events often occur every 3 months for a year at a minimum initially in the areas of concern to account for seasonal soil gas and vapor intrusion variability.

For more information on how the DEQ studies vapor intrusion, please visit the DEQ's vapor intrusion website at www.michigan.gov/vaporintrusion. The website contains an informational video that provides a general overview of how the DEQ studies vapor intrusion.

10. How is risk due to vapor intrusion in my home determined?

The DEQ evaluates groundwater, soil gas and indoor air sample results to determine if vapor intrusion from the subsurface is occurring. Chemicals in the different media are evaluated to determine if they originated from the sub-surface or from a household source. DHHS and DEQ toxicologists have developed groundwater, soil, soil gas, and indoor air screening levels to evaluate indoor air quality and potential health risks from vapor intrusion. The DHHS consults with Wayne County Health Department and advises what steps, if any, should be taken if exceedances are detected in the indoor air.

11. Why should I permit Ford access to my property to investigate?

In order to properly assess the vapor intrusion risks at a property, Ford will need access to the property to install groundwater monitoring wells outside of structures and, potentially, vapor pins within structures to collect soil gas samples. Without access, Ford will not be able to collect the data needed to evaluate if an unacceptable risk from vapor intrusion is present. Ford is required by the Consent Decree to obtain access, collect the necessary data, and evaluate the risk.

12. What happens if vapor intrusion poses a risk to occupants of my home or businesses?

Ford is required by the Consent Decree to implement remedial actions to mitigate risk if vapor intrusion poses a risk to occupants of a structure. A common method of addressing vapor intrusion risk is the use of a sub-slab depressurization system (similar to a radon mitigation system). If shallow groundwater prevents installation of this system, a special coating can be applied to floors (and walls of basements) to prevent vapor intrusion. Ford will perform any required remedial actions in consultation with the DEQ and the homeowner.

13. How do vapor mitigation systems work and how are they tested for effectiveness?

Sub-slab depressurization systems, (similar to radon systems) work by creating a vacuum under the slab or basement of a structure and discharges the vapors outdoors at the roof line of the structure. It is important that sumps, floor drains, cracks and other floor penetrations are properly sealed. The sub-slab depressurization systems are tested during and after installation by checking vacuum pressures through additional vapor pins installed for this purpose. After the sub-slab depressurization system operates for at least 3 days, an indoor air sample is collected from every level of the home to demonstrate the sub-slab depressurization system is working properly.

Current Investigations**14. Why is Ford installing additional wells?**

Previous groundwater wells installed by Ford were deeper and not as accurate in assessing for vapor intrusion as wells screened at the top of the water table. Ford had installed soil gas wells previously but due to the shallow groundwater table, the results from the soil gas wells were not reliable. Shallow groundwater wells were needed to assess vapor intrusion so DEQ required Ford to install additional shallow groundwater wells which was initiated in October 2018. These shallow wells were installed within right-of-ways and adjacent to residences where access was received, and additional wells are currently being installed.

15. Why did the DEQ require Ford to install mitigation systems?

Some groundwater samples from the recently installed, shallow groundwater wells detected vinyl chloride above site-specific criteria for vapor intrusion. The Consent Decree allows the DEQ to require Ford to delineate the groundwater plume for vinyl chloride and mitigate all structures within the plume and the 100' distance from the outer edge of the plume (lateral inclusion zone) within 45 days of obtaining data showing a vapor intrusion risk may be present.

16. I live within the subdivision, why is my house not receiving a mitigation system?

Only the parts of the Alden Village neighborhood where the groundwater plume contamination is above site-specific criteria, and within the 100' lateral inclusion zone, are required to be mitigated. Mitigation is only required when the criteria for vapor intrusion are exceeded. Additional investigation of the subdivision is underway. If data shows additional areas above site-specific criteria, Ford will be required to conduct mitigation for those areas as well.

17. My house had/will have a mitigation system installed. What does this mean and for how long will it run?

A mitigation system prevents sub-slab vapors from entering a structure. Ford is required to operate and maintain the mitigation systems unless and until it can be shown that a vapor intrusion risk is no longer present. The timeframe for how long these systems will need to be operated is unknown.

18. What additional work will be done?

Ford will continue to install shallow monitor wells adjacent to residences and define the groundwater plume. If additional exceedances of criteria are detected, Ford will be required to mitigate at those properties as well. Data collected will be shared with homeowners timely, and the DHHS, Wayne County Public Health, and the DEQ are available to help you understand what the data means. Additional groundwater, soil gas and indoor air sampling will be performed after systems are installed, and inspections and maintenance of the mitigation systems will be required of Ford. The Consent Decree also requires Ford to address source areas on the Plant property and conduct remedial actions for the source areas.

General Questions

19. Is the DEQ verifying the quality of Ford's work?

Data submitted by Ford is reviewed by DEQ staff and put through strict quality control measures. Ford was notified in cases where DEQ identified issues with data quality and Ford was required to correct them. Resampling is needed in some circumstances to provide representative samples, and re-sampling is underway at these locations.

In response to citizens request, the DEQ has been collecting "split samples" (samples collected at the same time as Ford's) of groundwater from shallow monitor wells. The wells are selected at random and samples are analyzed at the State of Michigan environmental laboratory. To date results from DEQ groundwater samples and Ford groundwater samples are acceptably comparable.

Ford hired an outside contractor, Arcadis, to collect soil, groundwater, soil gas and indoor air samples, and all lab analysis is done at a third-party lab. DEQ and DHHS review the data as an additional quality control to assure the data can be used for their intended purpose.

20. What process is Ford required to follow for the investigation work and potential mitigation work?

A Consent Decree was entered between the DEQ, Department of Attorney General and Ford in July 2017. This Consent Decree requires specific actions from Ford under a specified timeline and under DEQ oversight and includes stipulated penalties if Ford does not comply with the Consent Decree.

21. Who will answer my health-related questions if I believe that I have been exposed to vinyl chloride vapors?

For health-related questions, contact the DHHS Hotline at 800-648-6942, the Wayne County Department of Health, Environmental Health Section at 734-727-7400, or talk to your doctor.

22. How is the progress of this investigation being communicated?

The DEQ has a web page at www.michigan.gov/LivoniaVI. This page includes a Fact Sheet and a link to the [DEQ Vapor Intrusion website](#) that features useful resources. Additionally, Ford is required to keep a public website to update residents and the general public with the results of their investigation. This website, which is not maintained or reviewed by the DEQ, can be accessed at www.fordlivoniabostonbeaconproject.com.

Contact Information

To reach a DEQ representative, please contact the Environmental Assistance Center by phone at 800-662-9278 or by email at DEQ-RRD-FORD-LIVONIA@michigan.gov.

Michigan's Environmental Justice Policy promotes the fair, non-discriminatory treatment and meaningful involvement of Michigan's residents regarding the development, implementation, and enforcement of environmental laws, regulations, and policies by this state. Fair, non-discriminatory treatment intends that no group of people, including racial, ethnic, or low-income populations, will bear a disproportionately greater burden resulting from environmental laws, regulations, policies, and decision-making.

Meaningful involvement of residents ensures an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health.