Investigation into TCE soil vapor in the Como neighborhood of Minneapolis

Source of vapor is contaminated groundwater from the General Mills/Henkel Corp. Superfund Site

This Minnesota Pollution Control Agency (MPCA) fact sheet about the investigation into trichloroethylene (TCE) soil vapor originating from activities at the General Mills/Henkel Corp. Superfund Site, 2010 East Hennepin Avenue, in Minneapolis, Minnesota:

- summarizes recent activities conducted since 2010 during the soil vapor investigation at the Superfund site and in the Como neighborhood of Minneapolis that is being affected by TCE soil vapor,
- discusses the risks to human health and the environment that may be present,
- indicates the current status of the site, and
- describes the proposed mitigation for homes and other buildings that have elevated TCE soil vapor concentrations beneath their basement or foundation.

Where is the Superfund site?

The street address for the General Mills/Henkel Corp. Superfund Site is 2010 East Hennepin Avenue in Minneapolis. The site is located about one mile northeast of Dinkytown. The area in the neighborhood that is being affected by vapor from TCE-contaminated groundwater extends approximately one-half mile southwest from the former solvent disposal area on the property at 2010 East Hennepin Avenue. (see map on the next page).

The Superfund site has a long industrial history, beginning in 1930. There are residential properties as well as some businesses adjacent to the site.

What is the site's background?

General Mills, Inc. (GMI) conducted food research at the site from 1930 until 1947. At that time, the company began performing chemical research at the site. Workers dumped volatile organic compound (VOC) solvents, primarily TCE, in a soil absorption pit each year from 1947 until 1962.

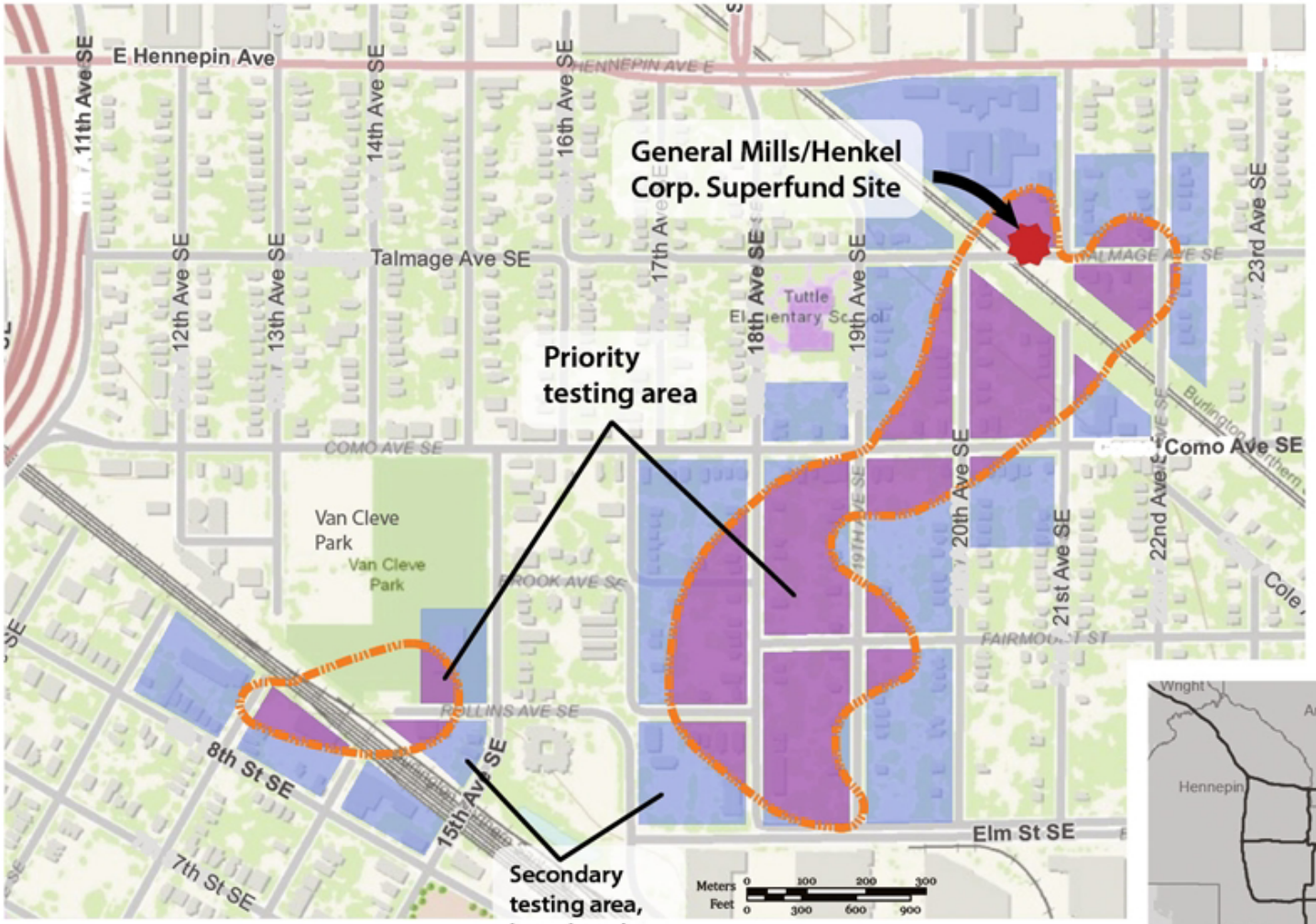
Inside the absorption pit were a series of three stacked, perforated 55-gallon drums buried about 10 to 12 feet below the surface. GMI investigated the absorption pit in 1981, and reported to the MPCA that VOCs and several other byproducts from food and chemical research processes had contaminated area soils and groundwater.

On October 23, 1984, a Response Order by Consent between the MPCA and General Mills was executed by the MPCA Citizens' Board, and this Response Order is the basis for subsequent and on-going remedial activities.

What's been done to clean up groundwater pollution from this Superfund site?

GMI, as the responsible party, led and funded the cleanup, with oversight provided by MPCA. GMI addressed soil contamination by removing drums and piping from the absorption pit in 1981.

General Mills/Henkel Corp. Superfund site study area



General Mills/ Henkel Corp. Superfund site historic disposal area

Priority testing area

Secondary testing area, based on data

Minnesota Pollution Control Agency

Extraction and treatment of impacted groundwater to stabilize the plume of VOC contamination began in 1985. MPCA approved a cleanup plan that involved using a pump-out system to pump, treat and discharge groundwater into the Minneapolis storm sewer system: VOC-contaminated groundwater was pumped from the site and sent through a stripping tower to remove TCE and other VOCs, which were released to the atmosphere. GMI designed the pump-out system to make sure the plume of contamination in the groundwater would not migrate further toward the Mississippi River. Testing shows that the plume is not moving and it is not increasing in size. Therefore, the site does not pose a risk to city of Minneapolis' drinking water supplies or to the river.

Groundwater extraction and treatment continued until 2010, at which time TCE concentrations had declined below the cleanup levels established in the Response Order. Discussions with the MPCA led to the decision to turn off the groundwater pump-out system, with the goal of continuing to monitor the groundwater to determine whether the system can remain shut down. The pump-out system was shut down on September 13, 2010.

How is the contamination plume in the groundwater affecting properties above it?

Some of the groundwater in the area is still contaminated with TCE, and could release TCE vapor that can rise through the soil and seep through basement and foundation cracks into homes and other buildings, where it could be inhaled by people. This is known as "vapor intrusion."

Minnesota Department of Health (MDH) staff has reviewed the soil gas data collected at public rights of way in the Como neighborhood of southeast Minneapolis and the MDH is concerned that vapor intrusion may be occurring.

If vapor intrusion is occurring, it is likely that vapors are higher in basements than on upper floors. The remedy for the situation is installing a vapor ventilation system, which operates like a radon mitigation system. If a building has a radon mitigation system that was installed by a certified contractor and is functioning properly, it is likely that the problem of TCE vapor in the building's indoor air is being addressed.

Groups considered to be more sensitive to potential health effects from breathing in TCE vapor include unborn children, infants, children, and people with impaired immune systems. Because of the risk of heart defects occurring in developing fetuses, the MDH is concerned about TCE exposures in women who are pregnant or who may become pregnant. Therefore, MDH supports prompt actions to investigate whether TCE vapor intrusion is occurring in the neighborhood.

What are the results of soil gas testing on public rights of way in the Como neighborhood?

The presence of TCE vapor in the soil has been confirmed with multiple samples. Several phases of investigations have been completed to date to evaluate the vapor intrusion pathway at the Superfund site. At about one-third of the locations tested, TCE concentrations measured in soil gas at eight feet below ground surface exceeded 10 times the MPCA's Residential Indoor Screening Value. As a result, General Mills has proposed to conduct sub-slab vapor sampling in people's homes to determine whether TCE soil gas concentrations are high enough to pose a potential health threat. The data from this sampling will determine whether vapor mitigation is necessary in a residence or other building.

What will General Mills do to see that people in the neighborhood are breathing indoor air with safe TCE levels?

If the sub-slab vapor sample results indicate elevated TCE vapor levels, GMI will install a sub-slab ventilation system in the overlying structure. This system is the same as a typical "radon system"

commonly installed in homes and buildings in areas where radon is naturally present in the soil. Such systems consist of a hole in the building floor, with a sealed pipe attached that leads to a low-wattage fan in the attic or on the outside of the building. The fan pulls vapors from beneath the floor and discharges them to the atmosphere through a stack on the roof.

Where can I get more information?

For more information about the General Mills/Henkel Corp. Superfund Site, its remediation, and the investigation into TCE vapor in soils of the Como neighborhood of Minneapolis, contact:

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To view the documents in the MPCA's administrative record that contain more details on the cleanup activities at this site, call the MPCA at 651-296-6300 or toll free at 800-657-3864.