

Environmental Health Information

Weston Woods Development Site

June 2003

This information sheet provides information about public health issues related to the Weston Woods Development site in White Bear Township, Minnesota. Landfill gases (primarily methane gas and volatile organic compounds, or VOCs) associated with the former Highway 96 dump, a state Superfund site, have been detected in soil gas samples collected between the dump and the Weston Woods Development. The developer of the Weston Woods project, Mark of Excellence Homes, is taking steps to prevent the landfill gases from moving from the dump into the nearby townhomes.

What is the history of the site?

The Weston Woods development site is located in White Bear Township, Ramsey County, Minnesota. The site is located north of Minnesota Highway 96, and just west of Allandale Drive, about seven miles north of the city of St. Paul. The site is also the location of the former Highway 96 dump, which continues to be listed as a state Superfund site. The Highway 96 dump operated from the 1920s until 1973, and accepted solid and industrial wastes, including some hazardous wastes such as paints, varnishes, oils, and solvents.

The Highway 96 dump was comprised of two separate areas, known as the North and South Disposal Areas. Beginning in 1994, buried drums, contaminated soil, and other hazardous wastes were excavated and removed from the Highway 96 Dump site. Some 400 drums of waste were removed from the North Disposal Area, South Disposal Area, and a pond at the site. All remaining waste materials from the South Disposal Area were excavated and transferred to the North Disposal Area, which was then compacted and capped with a layer of clean soil. Three soil gas vents were also installed in the North Disposal Area (now known as the Consolidated Waste Area) to allow landfill gases (such as methane and VOCs) to escape into the outdoor air. Groundwater contamination from the dump is not a health concern for current residents because the townhome development's drinking water comes from a public water supply. A pumpout system is used to remove contaminated water from the ground, preventing the contamination from spreading.

In 2001, Mark of Excellence Homes (MEH) proposed to develop the 70-acre site for residential use. Due to the potential presence of landfill gas and other contamination on the site, MEH entered the Minnesota Pollution Control Agency's (MPCA) Voluntary Investigation and Cleanup (VIC) Program to obtain liability assurances for redevelopment of the site. As a condition of their liability assurance letter, MEH was required by the MPCA to have a construction contingency plan prior to beginning construction because of the potential for discovering additional wastes. MEH was also required to monitor for landfill gas to determine its extent in the development area and be able to take action to prevent it from reaching the new homes. MEH began constructing townhomes later in 2001. Due to the discovery of some debris during excavation activities, additional investigation was required by the MPCA at the locations of some townhomes located near the former South Disposal Area. Indoor air sampling completed in these units is described below.

Permanent landfill gas monitoring points (13 in all) have been constructed around the edge of the Highway 96 dump, primarily along Greenhaven Drive where it joins Weston Woods Way. Weekly sampling of the landfill gas monitoring points began in September 2001. Because samples from the monitoring points initially showed high concentrations of landfill gas, a gas

interceptor trench was constructed along Greenhaven Drive to vent the landfill gas and divert it from the development. The trench has been reconstructed several times to improve its performance, but high concentrations of landfill gas are still being detected at some of the monitoring points. Some of the gas may be from plants decomposing in the wetland next to the trench.

Does the contamination pose any health risk?

Landfill gasses are formed from the breakdown of waste materials within a dump. Landfill gases can move through the air spaces in-between soil particles for some distance away from a waste deposit such as the Highway 96 dump. While there is a natural tendency for gases that are lighter than air (such as methane and many VOCs) to rise, this upward movement can be inhibited by dense cover materials or frozen soil conditions. If this is the case, landfill gases may move horizontally and enter buildings through tiny cracks in the foundation or openings for utilities.

At high concentrations, methane gas in air is potentially explosive. This is especially of concern where the lack of ventilation in enclosed structures may allow it to accumulate until it reaches explosive concentrations. Long-term exposure to VOCs may be associated with adverse health effects including liver and kidney damage, nervous system effects, and possibly cancer.

Air samples have been collected from the townhome units nearest the former Highway 96 dump to check for the presence of landfill gas. The samples were collected from the sealed sump basket and in the mechanical room of the units, the most likely entry point for landfill gases. Only very low concentrations of methane gas, far below the level of concern, were found in the testing of these townhome units. Low concentrations of several VOCs were found in the samples, but most of them were likely from the new construction materials rather than from landfill gas. Adhesives, paints, and some wood products all give off VOCs that can be easily detected in the indoor air of new homes.

What is being done to control the landfill gases?

Landfill gases generated within the dump are partially released through passive vents drilled into the former Highway 96 dump. A landfill gas interceptor trench has been constructed along Greenhaven Drive to prevent landfill gases (including methane gas) from moving towards the development. The gas interceptor trench has not completely stopped landfill gas from moving past the trench, although the amount of landfill gas that does pass seems to be limited. The landfill gas monitoring points will continue to be checked frequently to see how well the gas extraction trench is working, in accordance with MPCA VIC program requirements. Further adjustments to the trench may be necessary.

The standard installation of radon gas extraction systems in the townhomes seems to also minimize the entry of any landfill gases into the townhomes by reducing the pressure under the slab, and providing a preferential pathway for any landfill gases to escape to the outdoor air. The townhomes are also equipped with advanced ventilation systems that increase fresh air exchange, diluting any landfill gases that might enter.

Only very low concentrations of methane gas, well below explosive levels, have been detected in completed townhome units. While some VOCs have been detected in samples of indoor air collected from completed townhome units, they are likely the result of the new construction.

The Weston Woods Development site remains enrolled in the MPCA's VIC Program. While the VIC Program is not currently providing approval for specific plans, the MPCA will continue to serve as a point of contact for residents and prospective buyers. MPCA maintains that it is the responsibility of MEH to ensure the safety of the townhomes constructed in the Weston Woods Development. MDH believes that it is important for MEH and/or future owners to work with the MPCA to fully implement these recommendations.

What does MDH recommend?

To protect the public's health, MDH recommends:

- Continuing the monitoring of the landfill gas sampling points to detect any changes in landfill gas movement, and to see how well the interceptor trench is working.
- Investigating how far the landfill gas moves beyond the interceptor trench.
- Collecting VOC samples from the gas vents in the Consolidated Waste Area and from the landfill gas monitoring points on at least an annual basis to determine the specific types and concentrations of gases, which are expected to change over time.
- Collecting more methane gas readings from inside the townhomes nearest the Consolidated Waste Area, and air samples from the sump baskets and mechanical rooms to make sure that soil gases are not entering, and that the radon/soil gas venting system is functioning properly. Periodic monitoring should also be conducted into the future to ensure this continues to be the case.
- Postponing the construction of townhome units on the empty lots near the Consolidated Waste Area until the interceptor trench is shown to be fully working as designed.
- Consolidating the information generated from the above recommendations, as well as from past activities, into clear report(s) to be made available to the MDH, the MPCA and any other interested parties.
- Providing regular (at least annual) updates on the environmental issues at the site to residents of the development. Information should continue to be provided to prospective buyers prior to purchase.
- Developing a plan for funding and implementing the long-term maintenance of the sump basket venting systems in each townhome near the Consolidated Waste Area, and for the monitoring, maintenance, and operation of the landfill gas interceptor trench.
- Restricting access to the Consolidated Waste Area. The area should not be used as a "park" because of the monitoring wells and gas vents.

Where can I get more information?

If you have questions, or would like a copy of MDH's full report on the site, the following contacts are available:

MDH:

Jim Kelly, Health Risk Assessor (651) 201-4910
Tannie Eshenaur, Community Health Educator (651) 201-4897

MPCA:

Kären Kromar, MPCA VIC Program (651) 297-3080
A copy of the report is also available at the sales office for the Weston Woods Development.

Upon request, this publication can be made available in alternative formats such as large print, Braille, or cassette tape. Please call (651) 201-4899 or TDD 1-800-627-3529.

This information sheet was prepared in cooperation with the U.S. Agency for Toxic Substances and Disease Registry.