Environmental Health Information

Baytown Township Groundwater Contamination Site

February 2002

Minnesota Department of Health
Minnesota Pollution Control Agency

This fact sheet provides information about public health issues related to the Baytown Township Groundwater Contamination site – for people living on or near the site and others who may be interested. More detailed information about this site can be found in technical reports available from the Minnesota Department of Health (MDH) and the Minnesota Pollution Control Agency (MPCA). They are also available at the Bayport Public Library.

What is the history of the site?

The Baytown Township Groundwater Contamination Site in Washington County, Minnesota, begins just west of the Lake Elmo Airport and extends eastward to the city of Bayport and the St. Croix River. The entire area of contamination is approximately six square miles.

Volatile organic compounds (VOCs) were first found in the groundwater in 1987. Additional well sampling showed VOC contamination across a wide area. This area included portions of Lake Elmo, Baytown and West Lakeland Townships, and Bayport. In 1988 the Minnesota Department of Health (MDH) issued a well-drilling advisory for portions of West Lakeland Township, Baytown Township, and the city of Bayport. This advisory puts limits on the construction of new wells, and requires additional water testing of new wells. The well drilling advisory, now known as the "Special Well Construction Area," remains in effect today. It has recently been expanded to reflect the spreading of the contaminants.

The main contaminant found is trichloroethylene (TCE). TCE is commonly used for metal cleaning and degreasing, and as a dry cleaning solvent. Another contaminant, carbon tetrachloride, has also been found at very low concentrations in a limited number of wells. Carbon tetrachloride was used in the past as a grain pesticide to kill insects.

The Minnesota Pollution Control Agency (MPCA) identified a former grain storage facility as the likely source of the carbon tetrachloride contamination. In recent samples taken from private wells, carbon tetrachloride was only rarely detected, and at very low concentrations. It appears that carbon tetrachloride levels are decreasing and may no longer be of concern.

The highest levels of TCE have been found in groundwater beneath the Lake Elmo Airport. For this reason, the MPCA requested that the Metropolitan Airports Commission (MAC), the owners of the airport, conduct an investigation and address the contamination. MAC agreed to do so, and entered into a formal agreement with the MPCA in 2000.

Since 1987, investigators have been trying to identify the source and extent of the contamination, as well as determine the direction it is moving. Monitoring wells have been installed in and around the Lake

Elmo Airport to keep track of the contaminants. In addition, water samples have been collected periodically from several hundred private wells in the area to check for contaminants.

The most complete sampling of wells in the area occurred in the spring and fall of 1999. MAC's consultant, Wenck Associates, Inc., sampled about 300 private wells to monitor levels of contaminants in wells that had been previously affected and also identify any new wells that may have become contaminated. The sampling results showed that levels of TCE continue to be highest at the Lake Elmo Airport and immediately to the east. TCE levels increased in some wells and decreased in others. A number of new wells were also found to have TCE contamination.

Sampling has continued since 1999 to monitor contaminants. Wells with higher levels of contamination have been sampled four times per year to monitor for changes in TCE levels based on the season. Sampling has also focused on better defining the extent of the contamination and targeting wells that were considered at risk of exceeding health-based standards.

Does TCE contamination pose any health risk?

Long-term exposure to high levels of TCE (much higher than has been seen at the Baytown site) in drinking water can damage the liver, kidney, immune system, and the nervous system. TCE may also harm a developing fetus if the mother drinks water containing high levels of TCE. Some studies suggest that exposure to lower levels of TCE over many years may be linked to an increased risk of several types of cancer. Because TCE evaporates easily from water, people can also be exposed to it by inhaling the vapor. TCE may evaporate from water during such activities as bathing, doing dishes, or flushing a toilet. As the TCE evaporates into the air, it can be inhaled.

The scientific information we have about the health effects of TCE comes from studies of people exposed to high levels in the workplace and from studies of animals exposed to high levels in air or water. The U.S. Environmental Protection Agency (EPA) recently re-evaluated the most current scientific information. EPA concluded that TCE may be more toxic than previously thought and issued a revised draft health risk assessment for TCE.

In response to the draft EPA health risk assessment for TCE, MDH is now recommending an exposure limit of five micrograms of TCE per liter of water (5 μg/L) be used in place of the existing MDH Health Risk Limit (HRL) of 30 μg/L for drinking water from private wells. A HRL is a concentration of a groundwater contaminant that is safe for people if they drink two liters (about two quarts) of water daily for a lifetime. MDH considers HRLs to be safe concentrations, even for sensitive groups of people such as children, the elderly, and pregnant women.

The existing HRL for TCE was established in the early 1990s, and was based on the best available scientific information at that time. MDH is in the process of revising the HRLs for all contaminants; a new HRL for TCE (which may be different than 5 μg/L) will be adopted as a part of that process.

It is important to remember that adverse health effects from TCE have only been observed at levels much higher than MDH exposure limits. Exposure to a chemical even at ten times the concentration recommended by an exposure limit is still unlikely to cause an adverse health effect.

What is being done in response to this change in the recommended exposure limit?

As of December 2001, thirteen wells at or near the Lake Elmo Airport had levels of TCE that were higher than the current HRL of 30 μg/L. Whole-house granular activated carbon (GAC) filters have been

installed by MAC to remove the TCE from all of the water used in the home, not just the water from one sink or appliance. This ensures that exposure to TCE is minimized. With the recent change in the exposure limit to 5 μg/L, many more homes will need to have GAC filters installed to remove the TCE.

MDH and MPCA are working closely with MAC to make sure the public's health is protected. We are also working with your state, county, city, and township representatives to address their concerns. The following activities are planned for the winter and spring of 2002:

- All property owners with wells that have more than 5 μg/L of TCE are being notified. Beginning the first week of March, these wells will be fitted with a whole-house GAC filter. There will be no cost to homeowners for the installation and maintenance of GAC filters for wells that exceed 5 μg/L of TCE.
- Homes with the highest levels of TCE will have GAC filters installed first. It will take several months to complete the installation of GAC filters at all of the affected homes due to the availability of GAC filter units and trained installers.
- Wells that have shown levels of TCE less than 5 μg/L in the past will be re-sampled starting in March to determine if the concentration of TCE now exceeds 5 μg/L. If any of these wells are found to exceed 5 μg/L, they will also be fitted with a whole-house GAC filter.
- Additional well sampling will be conducted over the next year throughout the affected area to determine if any other wells are approaching the new exposure limit for TCE and require more frequent monitoring.
- MDH has revised the boundaries of the Special Well Construction Area, as shown on the figure on the last page, and may add other restrictions on the construction of new wells. The water from all new wells will continue to be tested to make sure they supply safe drinking water.
- Long-term solutions, such as the installation of deeper wells, expansion of existing public water supply systems, or community water supply systems are also being explored with federal, state, and local officials.

In the interim, MDH recommends that women who are pregnant, or may become pregnant, limit their exposure to TCE. Those who are waiting for installation of a whole-house GAC filter system or wish to minimize their exposure can take the following steps on their own:

- Obtain bottled water for drinking and cooking;
- Use GAC filters that are installed beneath a sink (usually a kitchen sink) or in a refrigerator to obtain water for drinking and cooking; or
- Use other portable filters that are designed to remove volatile compounds such as TCE.

All water treatment systems should be maintained on a regular basis to ensure they are operating properly. Vent fans can also be used while showering or bathing to help remove TCE vapors.

Where can I get more information?

MDH and MPCA will be hosting a public availability session at Oak-Land Junior High School on February 27, 2002 from 5 p.m. to 9 p.m., with a presentation at 7 p.m. Staff from both state agencies, as well as county and local government, will have informational displays and be available to answer your questions. Oak-Land Junior High School is located at 820 Manning Avenue in Lake Elmo.

If you have questions, the following contacts are available:

MDH (health or water supply well issues):

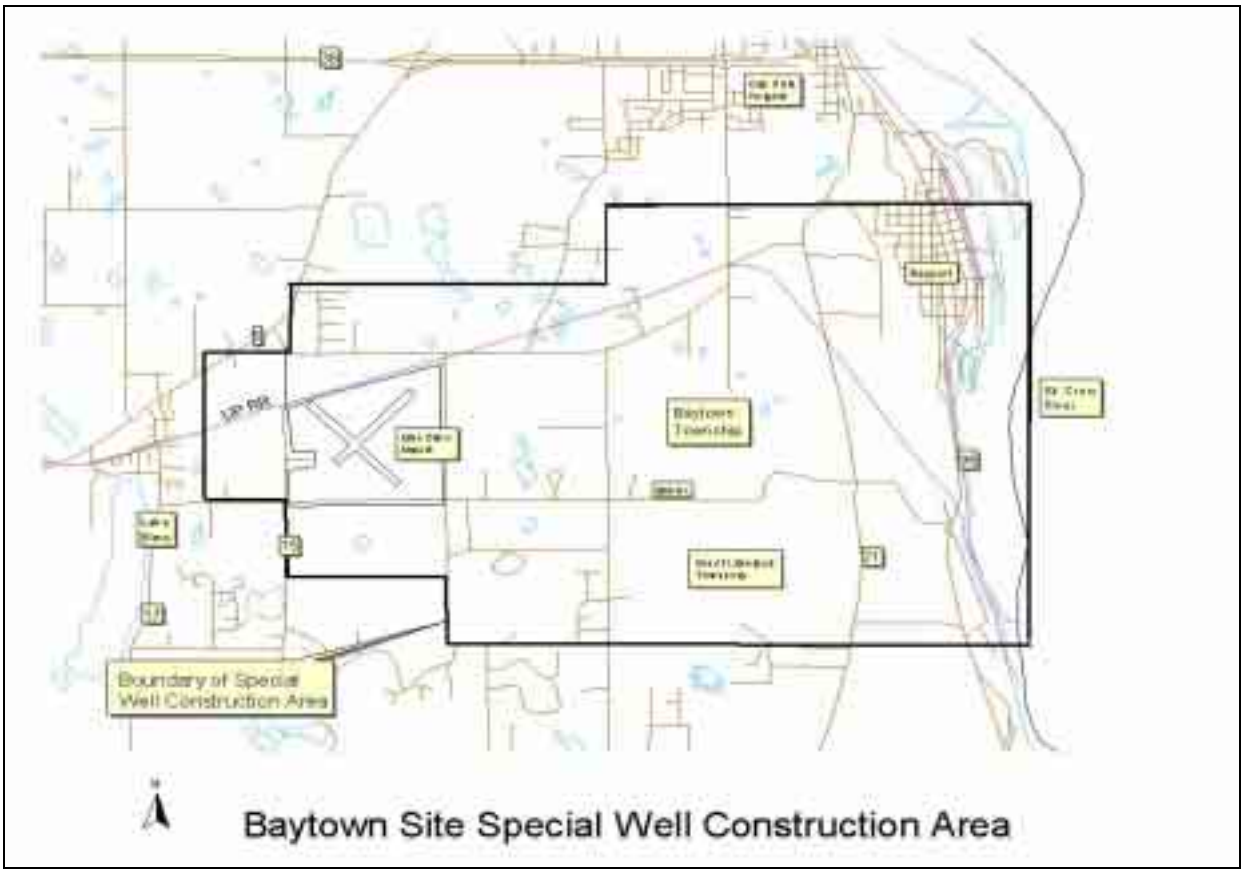
Jim Kelly, Health Risk Assessor	(651) 215-0913
Ginny Yingling, Hydrogeologist	(651) 215-0917
Patrick Sarafolean, Hydrogeologist	(651) 643-2110
Tannie Eshenaur, Health Educator	(651) 215-0916

MPCA (site investigation and oversight):

Rich Baxter, Project Manager	(651) 297-0818
Kurt Schroeder, Hydrogeologist	(651) 296-8593
Mike Rafferty, Public Information Office	(651) 297-8294

Wenck Associates, Inc. (MAC's environmental consultant):

Keith Benker, Project Manager	(651) 633-2301, ext. 1623



Upon request, this publication can be made available in alternative formats such as large print, Braille, or cassette tape. Please call (651) 215-0700 or TDD (651) 215-0707.

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