MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
John Engler, Governor • Russell J. Harding, Director

INTERNET: www.michigan.gov/deq

DEQ ENVIRONMENTAL RESPONSE DIVISION
INFORMATION BULLETIN

AREA OF GROUNDWATER CONTAMINATION

Grand Haven, Ottawa County

MAY 2002

INTRODUCTION

This bulletin is designed to inform residents of the status and future plans regarding a groundwater contamination investigation being conducted in the City of Grand Haven by the Michigan Department of Environmental Quality (DEQ). What follows is an overview of DEQ efforts to date to identify and define the source and extent of groundwater contamination *(see back page)*, along with some public health and safety precautions -- ***particularly for private well owners*** *(see Drinking Water Supply)* and details on a community meeting.

DEQ staff is available to help clarify issues or address questions you may have on any aspect of this investigation. Contact information is provided at the end of this bulletin.

PUBLIC COMMENT FORUM

Representatives of the DEQ, the Ottawa County Health Department, and the City of Grand Haven will host an open comment session with community residents from ***4:00–7:00 p.m. on Thursday, May 23, 2002, at the Grand Haven Community Center, 421 Columbus, Grand Haven***. **This will be an informal meeting with a chance to discuss the issues one-on-one**.

DRINKING WATER SUPPLY

Drinking water for all homes and businesses located in Grand Haven are serviced by the NorthWest Ottawa Water System – a municipal drinking water supply system which acquires water from Lake Michigan and **not** from the groundwater. The intake for the water system lies approximately 1,200 feet off the shoreline of Lake Michigan and is tested weekly. There are, however, a number of private, shallow groundwater wells in the community that remain in use that are generally used for purposes other than drinking water (lawn/garden irrigation; swimming/wading pool use) and are the focus for public health and safety precautions noted below.

GROUNDWATER CONTAMINATION SOURCE

In carrying out its responsibility to oversee the investigation and clean-up of sites of environmental contamination, the DEQ has been investigating the former Ottawa Steel Products (OSP) site, located at 745 Woodlawn, Grand Haven, Michigan. The OSP facility operated as a metal machine shop from 1928-1984, utilizing cutting oils in its manufacturing process. The shallow groundwater (six to eight feet) underneath the OSP building has been impacted by cutting oils. It was during the investigation of the cutting oils, that groundwater monitoring wells revealed elevated levels of vinyl chloride at the bottom of the aquifer -- approximately 30 feet below ground level (see *Chronology of Events* for further investigation findings; also diagram, Page 3). Vinyl chloride is a breakdown product from degreasing compounds used in a variety of industries and is a known human carcinogen (cancer causing) based on long-term exposure; it is not a contaminant that is associated with cutting oils. While the OSP facility does **not** appear to be the source of the vinyl chloride contamination, DEQ staff continue to investigate the vinyl chloride contamination as part of the OSP project. The DEQ believes that the contamination is historical and may be the result of several different sources, and will continue to investigate potential sources for the groundwater contamination *(see Future DEQ Actions).*

PUBLIC HEALTH AND SAFETY

Due to this investigation and other findings highlighted below, **the DEQ requests, as a precautionary measure, that private well owners within the notification area *(see map)***

voluntarily abandon their wells. (***Note:*** the DEQ will assist in this abandonment by providing the necessary materials -- see *Well Abandonment).* For the purpose of this bulletin, a private well is defined as an individual well at a home or business used primarily for lawn/garden watering and swimming/ wading pool use. **Continued use of private wells may create the potential for unacceptable exposure to residents using the groundwater.** In addition, continued pumping of the groundwater through use of a private well could cause the contamination to be pulled up into the shallower groundwater. This in turn could cause a problem with vinyl chloride volatilizing (evaporating) from the groundwater and entering into homes/basements *(see diagram).* Additional toxicological information on vinyl chloride is available at www.atsdr.drc.gov under ToxFAQ's or upon request from the DEQ Grand Rapids District Office *(see end of bulletin).*

DEQ Findings: To date, the DEQ has sampled a number of private wells in the Grand Haven area. Some of these wells did show contamination. Therefore, the DEQ followed up with a study to evaluate the potential risks to residents using the contaminated groundwater, based on the following scenarios: a) exposure from swimming in groundwater; b) incidental ingestion of groundwater while swimming; c) breathing vapors while swimming; d) exposure while watering lawns. The concentrations found in several of the private wells exceeded the screening levels developed for these scenarios.

WELL ABANDONMENT

At this time, the DEQ requests that property owners voluntarily abandon their private wells. Abandoning would involve properly plugging the wellhead. The DEQ will provide, **at no cost to the property owner, all** the materials necessary for property owners to abandon their own wells; or if special assistance is needed, the DEQ will make arrangements to assist in the abandonment, **again, at no cost to the home or business owner**. If a property owner needs assistance in disconnecting their underground sprinkling system from the well and reconnecting to the City water supply, they should contact the city's Department of Public Works at 616-847-3493. The cost to reconnect an underground sprinkling system will vary depending on how the system is currently configured.

FUTURE DEQ ACTIONS

The DEQ will continue to investigate potential sources for the groundwater contamination as well as monitor the groundwater concentrations for any changes in conditions. To date, 37 monitoring wells have been installed over the 1 mile x ½ mile area of the groundwater plume. The DEQ also continues to remove and safely dispose of cutting oils from the on-site recovery well site at OSP.

CHRONOLOGY OF EVENTS

- Fall 1986-Winter 1997: The DEQ was notified of an oil-soaked parking lot at the abandoned OSP facility. The OSP facility operated as a metal machine shop from 1928-1984, utilizing cutting oils in its manufacturing process. An investigation revealed the shallow groundwater underneath the OSP building was impacted with cutting oils. Monitoring wells and a recovery well were installed by the liable parties with limited success in recovering the cutting oils.
- Spring, 1997: The DEQ contracts with a consultant, initially to rehabilitate the existing recovery well for the cutting oils. However, it was soon discovered the recovery well was substantially inadequate.
- June 1998: A new recovery well, pump well and four monitoring wells were installed. At that time, the wells were sampled and over 400 parts per billion (ppb) of vinyl chloride were first detected in the wells located at the bottom of the aquifer (approximately 30 feet). Vinyl chloride had not been found previously and is not a contaminant associated with cutting oils. **NOTE:** Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act,1994 PA 451, as amended, sets the residential drinking water criteria for vinyl chloride at 2 ppb, however, the DEQ knows of no residents using this groundwater for drinking purposes.
- October 1998: An earthprobe investigation was planned to define the limits of the vinyl chloride which could complicate any recovery of the cutting oils from the top of the groundwater aquifer (6-8 feet). Over 3,400 ppb of vinyl chloride were found off-site at the bottom of the aquifer. Although, it was evident the OSP site could not be the only source, it was still inconclusive if the OSP facility had even contributed to the contamination.
- December 1998: Another phase of earthprobe work was initiated identifying groundwater contamination in the lower half of the aquifer. The upper half of the aquifer showed little to no vinyl chloride contamination *(see diagram).*
- April 1999: Nineteen monitoring wells were installed around the City of Grand Haven. Vinyl

chloride was detected in most all of the wells. The highest contaminant concentration measured at 3,700 ppb, which was at the bottom of the aquifer east of the OSP site. The groundwater flows to the north with a slight easterly component. The groundwater aquifer starts six to eight feet below the ground surface with the bottom at 28-30 feet.

- Spring 2000: Additional shallow monitoring wells were installed to assess the contaminant concentrations in the shallow part of the aquifer. No vinyl chloride contamination was detected in the shallow wells.
- Summer 2000: The DEQ sampled several residential private wells to assess impacts. Results indicated low levels of vinyl chloride.
- Fall 2000: A soil gas study was conducted to determine if any of the vinyl chloride was volatilizing off of the groundwater. After two rounds of sampling, no vinyl chloride was detected.
- Summer 2001: The DEQ canvassed portions of the City of Grand Haven to determine the number of residential private wells. Additional private wells were sampled at that time. Results showed much higher levels, up to 740 ppb of vinyl chloride, of contaminants than previously detected.
- Fall 2001: An additional investigation was initiated to determine if the private well pumping was drawing the contamination to the top of the groundwater table. Based upon the results of this investigation, the DEQ performed a "Simulation of residential uses" study to help evaluate the potential exposures due to use of the groundwater contamination; for example: a) exposure from swimming in groundwater; b) incidental ingestion of groundwater while swimming; c) breathing vapors while swimming; d) exposure while watering lawns.
- Winter 2002: Due to the "simulation" results, a toxicologist from the DEQ Environmental Response Division then developed screening levels to determine if the levels of contaminants in the private wells were of concern. The screening levels developed showed there was a potential for concern.
- Spring 2002: The DEQ, the Ottawa County Health Department, and the City of Grand Haven notified private well owners, within the area of concern, of the findings.

The Michigan Department of Environmental Quality (DEQ) will not discriminate against any individual or group on the basis of race, sex, religion, age, national origin, color, marital status, disability, or political beliefs. Questions or comments should be directed to the DEQ Office of Personnel Services, P.O. Box 30473, Lansing, MI 48909.

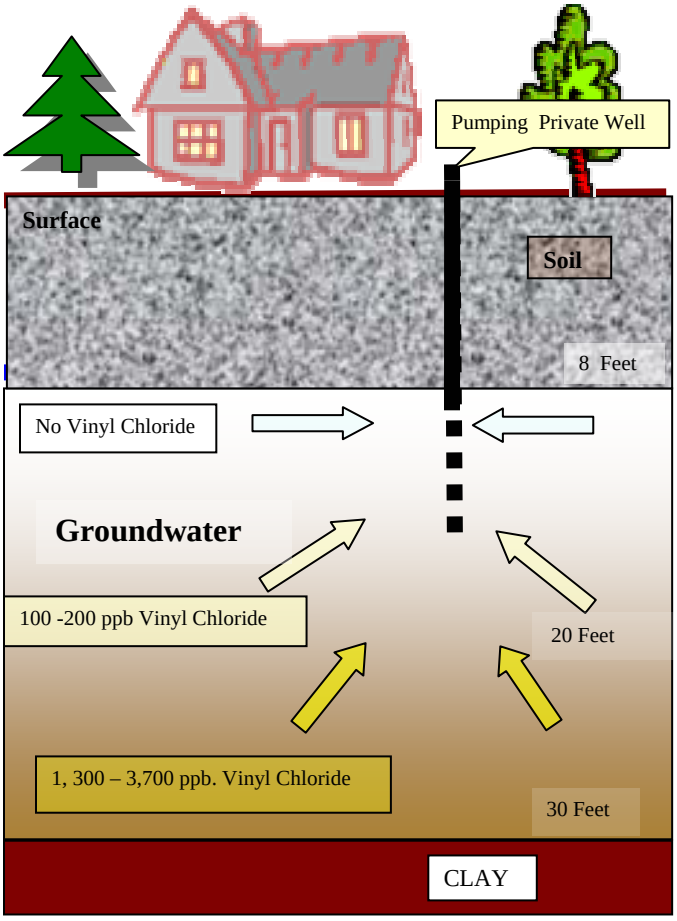

Diagram: Example of Groundwater Contamination
(House not to scale)

FOR MORE INFORMATION

Environmental sampling/analysis and well abandonment supplies:
Michigan Department of Environmental Quality
Abigail Hendershott, Project Manager
616-246-1730; henderas@michigan.gov
or Wim vanLeeuwen, Geologist
245 Colrain, S.W., Grand Rapids, MI 49548
616-246-1724 ; vanleeuw@michigan.gov

Public health issues and well abandonment procedures:
Ottawa County Health Department
Environmental Health Division
Jack VanEerden, Registered Sanitarian
12251 James Street, Suite 200
Holland, MI 49424
616-393-5645

Reconnection of underground sprinkling/ irrigation systems to municipal water supply:
City of Grand Haven, Department of Public Works
Dan Czarnecki, Director
519 Washington Avenue
Grand Haven, MI 49417
616-847-3493

Notice to Private Well Owners within Grand Haven

The Michigan Department of Environmental Quality (DEQ) is investigating an area of groundwater contamination in Grand Haven that extends approximately from Grand Avenue north to the Grand River and from Sheldon Road east to Albee Street. As part of the investigation, the DEQ has sampled a number of private wells (a private well being defined as a groundwater well used primarily for the purpose of watering the lawn/garden or for swimming/wading pool use). Some of these wells did show contamination. **Due to this contamination, the DEQ is requesting that private well owners within the notification area voluntarily abandon their wells to avoid potential contact with the contaminants.** The attached information bulletin identifies the area of concern and outlines the history of the DEQ investigation. If you do not wish to be included in future mailings, please contact Abigail Hendershott or Wim vanLeeuwen with the DEQ Grand Rapids District Office at 616-246-1720.

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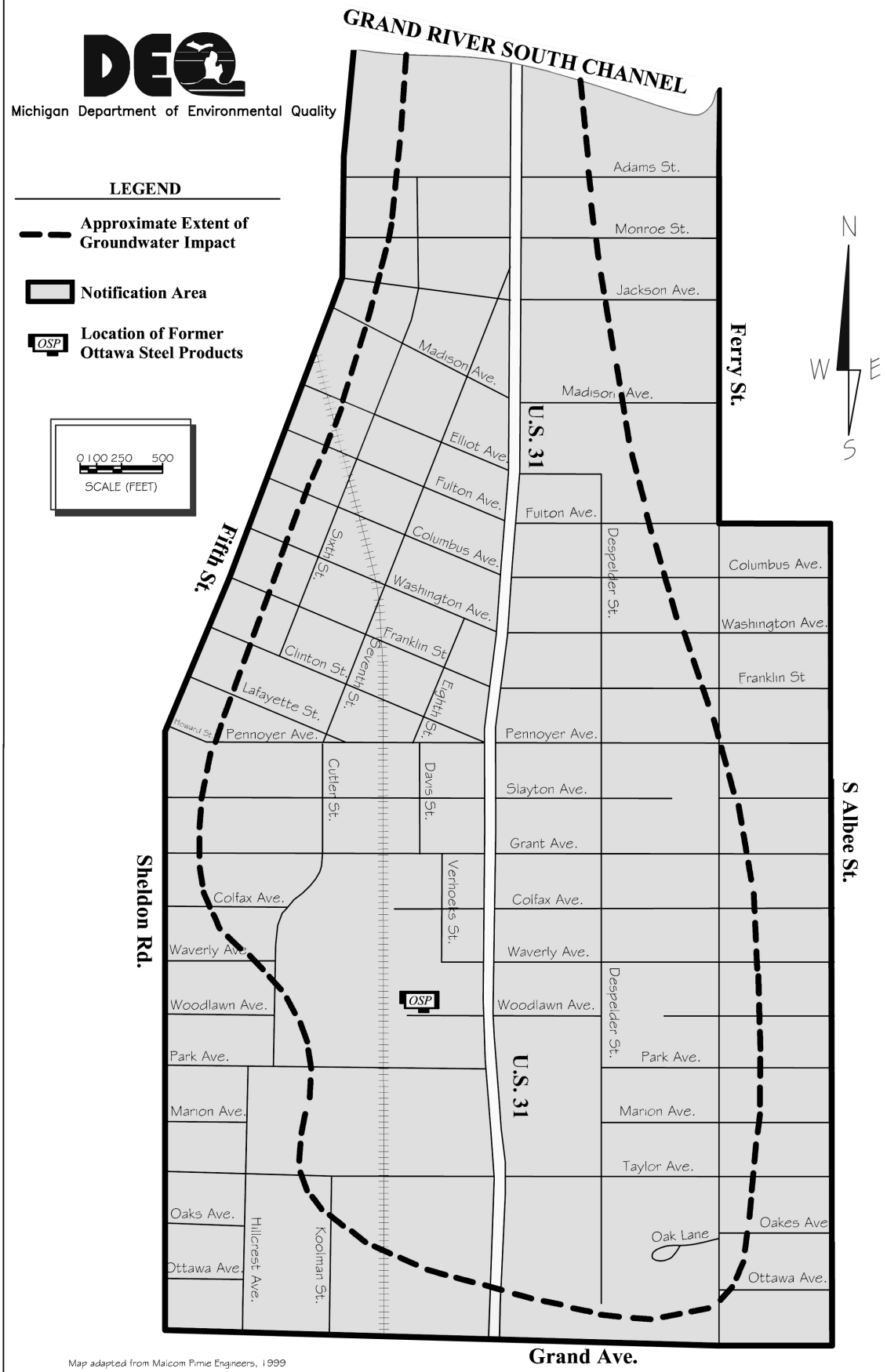
Area of Groundwater Contamination
Grand Haven, Ottawa County



Map adapted from Malcom Pirnie Engineers, 1999
by Roy F. Weston, Inc.