



# Environmental Health Information

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## PFBA in Groundwater in the South East Metro Area

January 2008

### What is PFBA?

PFBA stands for perfluorobutanoic acid. It is one of a family of chemicals known as perfluorochemicals, or PFCs. PFCs were made by 3M in Cottage Grove and other companies around the world for use in household and industrial products such as: stain repellents, lubricants, fire retardants and suppressants, pesticides, surfactants, and emulsifiers. PFBA was made until 1998 by the 3M Company at its Cottage Grove facility for use in making photographic film. PFBA may also be a breakdown product of other PFCs.

### How did we learn PFBA was in the groundwater?

Learning about chemical contamination in groundwater is a step by step process. Though the discovery of PFCs in groundwater in Washington County is relatively new, testing information from the last couple of years suggests that the levels of PFCs in the groundwater are stable and not increasing. The testing information also suggests that PFCs have been present for some time.

3M disposed of PFC wastes at four sites in Washington County: the former Washington County Sanitary Landfill, the former Abresch dump in Oakdale, the 3M disposal site on the border of Woodbury and Cottage Grove, and onsite at the 3M Cottage Grove facility. 3M also disposed of incinerator ash containing PFCs at the Pig's Eye dump in southeast Ramsey County.

In 2004, MDH staff began collecting samples from private wells in the City of Lake Elmo to look for two PFCs, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). Low levels of PFOA were found in a few private wells near the former Washington County Landfill. More testing in 2005 revealed PFOA and PFOS in a larger group of private wells in Lake Elmo and several city wells in Oakdale. Tests in several other nearby municipal water supplies, including North St. Paul, Cottage Grove, Woodbury, and Hastings did not find PFOA or PFOS.

In spring 2006, the MDH Public Health Laboratory developed methods to look for five more PFCs. Analysis of groundwater revealed that one of these, PFBA, is widespread. PFBA seems to move very freely in groundwater; more so than PFOA or PFOS. It does not break down or degrade. PFBA is found in two distinct areas.

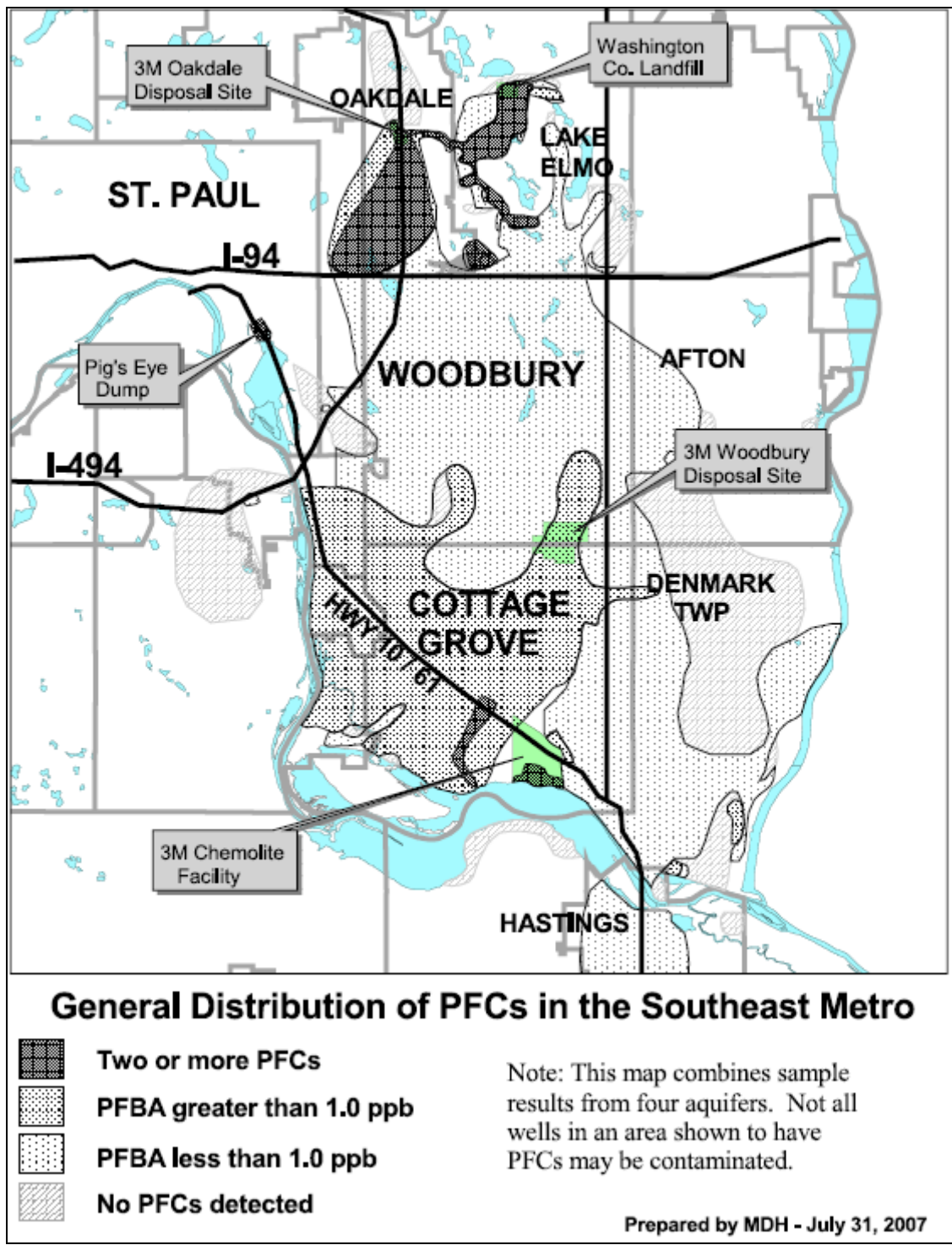
The northern area of groundwater contamination appears to originate from the former Washington County Landfill in Lake Elmo and the former Abresch Dump in Oakdale. This area extends into the City of Woodbury. Near these two disposal sites, multiple PFCs, including PFOA and PFOS, are found. Only PFBA has been detected further away from the disposal sites, at low levels in the groundwater that supplies the Woodbury municipal wells.



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Minnesota Department of Health ♦ Division of Environmental Health ♦ Site Assessment and Consultation Unit

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A second area of groundwater contamination is located further south and is primarily PFBA. PFBA has been detected in all of the city wells in Cottage Grove, St. Paul Park and Newport, and some of the city wells in South St. Paul and Hastings. The PFC contamination originates from the 3M disposal site on the border of Woodbury and Cottage Grove. The Minnesota Pollution Control Agency is investigating if there are other sources of contamination in the area. In a small area of private wells in Cottage Grove, PFOA (but not PFOS) has been detected. The source of this small area of PFOA is also being investigated.

## **How does MDH decide on safe levels of PFCs for drinking water?**

A Health Based Value (HBV) is the amount of a chemical in drinking water considered by MDH to be safe for people to drink daily for up to a lifetime. In 2002 MDH first developed HBVs for PFOA and PFOS because PFCs were disposed of in dumps and landfills in Minnesota and had been found in groundwater. HBVs are advisory values and are used by state health and environmental programs as one tool for deciding what actions should be taken.

In early March 2007, MDH issued revised Health-Based Values (HBV) for PFOA and PFOS of 0.5 parts per billion (ppb) and 0.3 ppb, respectively. In August 2007, the HBVs will be promulgated as Health Risk Limits (HRLs) under emergency rule making authority granted by the Minnesota Legislature.

Due to limited toxicological research on the five remaining PFCs for which MDH currently tests, there isn't enough scientific information to develop HBVs. However, based on their chemical characteristics, we anticipate that research will show that these five PFCs are less toxic for people than PFOA and PFOS. Unlike PFOA and PFOS, PFBA does not appear to accumulate in animals or people. The US EPA and 3M are currently doing more studies on PFBA. Once the studies are completed and reviewed, MDH will review our advice for PFBA.

Until enough information is available to develop HBVs for these chemicals, MDH is using well advisory guidelines of 1.0 ppb for PFBA, PFPeA, and PFHxA, and 0.6 ppb for PFBS and PFHxS, which is protective of people's health.

When MDH looks at a chemical in water, it also considers if the chemical could evaporate out of the water when people wash clothes or shower and be breathed in, or if the chemical could be absorbed through people's skin. The chemistry of PFCs suggests that they do not easily evaporate from water. At this time, the exposure of most concern is through drinking water and not breathing them in or absorbing them through the skin.

## **What is being done to monitor the situation?**

MDH will continue to monitor the PFC levels in municipal wells on a monthly basis. Strategic sampling of private wells is underway. MDH will report the results to citizens, local communities, local governments, county governments and the MPCA and give advice so that people's health will continue to be protected.

## **How can I reduce my exposure to PFBA?**

If PFBA has been detected in your drinking water and you wish to reduce your exposure, there are some simple steps you can take. You could use bottled water for part or all of your drinking or cooking needs. However, widespread testing of bottled water for PFCs has not been done.

Information on water filter devices is available from the Minnesota Department of Health's Evaluation of Point-of-Use Water Treatment Devices for Perfluorochemical Removal, Interim Report, at <http://www.health.state.mn.us/divs/eh/wells/waterquality/pfcpoufactsheet.pdf>

### **For more information contact:**

MDH/Site Assessment and Consultation: (651) 201-4897 or 1 (800) 657-3908, press "4" and leave a message.

To request this document in another format, call (651) 201-5000 or TDD (651) 201-5797.