



Minnesota  
Pollution  
Control  
Agency

Remediation Division,  
Superfund Program

# 3M Oakdale Disposal Site

## Proposed cleanup plan for PFCs

c-s3-06 • May 2008

**T**he Minnesota Pollution Control Agency is proposing a cleanup plan for the 3M Oakdale Disposal Site in Oakdale, Minn. The plan addresses contamination related to perfluorochemicals (PFCs) in wastes disposed of at the site by the 3M Company. This fact sheet describes the proposed plan and how the public can comment on the proposed cleanup alternative.

### Background

The 3M Oakdale Disposal Site is located along State Highway 5 in Oakdale, just west of Interstate 694. The site is listed on both the state and federal Superfund lists. It consists of three old dump sites (called the Abresch, Brockman, and Eberle sites) at which the St. Paul-based 3M Company and other companies legally disposed of industrial wastes during the late 1940s and 50s. Disposal methods included burial and open burning.

The site was placed on the Superfund list in the 1980s due to soil and ground-water contamination from volatile organic compounds (VOCs), typically solvents. 3M completed site investigations and cleanup actions to address VOCs. Some nearby residences whose shallow wells had VOCs in them were put on city water.

Cleanup actions to address soil and ground-water contamination at the site included removing a large volume of waste material and contaminated soil, covering the site with clean soil, and installing monitoring wells and a ground-water pump-out system in 1984-85. The pump-out system is still in operation today.

### PFCs at the 3M Oakdale disposal site

In 2004, PFCs were detected in pump-out wells at the 3M Oakdale Disposal Site. Prior to this time, the MPCA did not have analytical capabilities to sample and analyze for PFCs. PFCs are a family of synthetic compounds that have been used for decades to make products that resist heat, oil, stains, grease and water. 3M made PFCs from the late 1940s until 2002 at its manufacturing facility in Cottage Grove, Minn.

PFC-containing wastes were legally disposed of in four dumps or landfills (including, besides the Oakdale site, the 3M Woodbury site, Washington County Landfill, and disposal areas at the Cottage Grove facility). These wastes have contaminated ground water flowing beneath the disposal sites, which impacted several of the city of Oakdale's municipal wells and a number of private wells in western Lake Elmo. The MPCA has installed granular activated carbon (GAC) filters at a number of residences in Lake Elmo to remove PFCs from drinking water that exceeds the MDH health-based exposure limits. 3M installed large carbon filters in 2006 at the Oakdale municipal water utility and provided a grant to the city of Lake Elmo to connect residences to the municipal water supply.

### Site investigations

The MPCA and 3M signed a Settlement Agreement and Consent Order in May 2007 governing investigation and cleanup of the four waste sites. As part of the agreement 3M completed Remedial Investigations (RI) and Feasibility Studies

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(FS) for the sites, the focus of which was to identify any remaining threats to public health or the environment from releases of PFCs at the sites. The Consent Order also required that in developing cleanup alternatives, primary consideration should go to those that excavate and destroy remaining PFC wastes; or excavate and dispose of PFC wastes in a permitted isolated, engineered containment facility.

The RI for the Oakdale site showed that previous cleanup actions had not removed all residual PFCs in a part of the site called the Abresch area. The Abresch area is shown on page 4. Straddling Highway 5, it is bounded on the north by upper 35th Street, on the east by Hadley Avenue, on the south by railroad tracks, and on the west by Granada Avenue. The Abresch area is owned by 3M and covers about 55 acres. The area north of Highway 5 is the location of proposed excavation activities. There currently is a temporary fence in this area to control access during these activities. After excavation activities are completed, the area will be returned to an unfenced open space which 3M will maintain.

The part of the Abresch area south of Highway 5 was the primary location of past waste removal actions and is where the current ground-water pump-out system is located. Additional pump-out wells will be installed in this portion of the site. This part of the site will remain fenced to control access. One additional pump-out well will be located in the area north of Highway 5.

## Feasibility study

The objective of the FS is to evaluate various response action alternatives which address PFCs in soil and ground water at the site, and to provide a recommendation for implementation. The MPCA has reviewed the alternatives and is now ready to present its proposed plan for the site.

The FS for the Oakdale site was developed with guidance and screening criteria from by the U.S. Environmental Protection Agency which are used in the federal and Minnesota Superfund programs. The FS evaluates, compares, and contrasts each alternative for:

- short and long-term effectiveness
- reduction of toxicity, mobility, or volume through treatment
- implementability
- cost effectiveness
- overall protection of human health and the environment.

The FS for the 3M Oakdale site is available on the MPCA's Web page at [www.pca.state.mn.us/cleanup/pfc/pfcsites.html](http://www.pca.state.mn.us/cleanup/pfc/pfcsites.html).

## Summary of Alternatives

Alternatives were developed in three categories: site-wide (SW), soils (S), and ground water (GW). The following alternatives were developed for the FS:

Alternative SW-1 -- No Further Action. Standard baseline option evaluated at all Superfund sites. Estimated cost: \$19,200.

Alternative SW-2 – Institutional controls, access restriction, and ground-water monitoring. Would include deed restrictions to ensure the area remains zoned industrial/commercial, fencing to restrict access, and prohibitions on new drinking-water wells. Ground-water monitoring would continue for the long term (30 years). Estimated cost: \$577,000.

Alternative GW-1 -- Enhanced ground-water recovery; air stripping/GAC pretreatment prior to POTW discharge. This alternative would expand and improve the existing pump-out system to capture and prevent migration of contaminants southeast of Hwy 5, as well as decrease capture time north of the highway. Discharge from the system would go through an air stripper to remove VOCs and Granulated Activated Carbon filtration to remove PFCs, and then discharged via pipeline to a wastewater treatment plant (POTW). Estimated cost: \$4.63 million. (GW-1 was the only ground-water alternative developed in the FS because this type of system has been proven to be effective and permanently destroys PFCs when carbon filters are thermally regenerated)

Alternative S-1 – Excavate soils to depth of 4 feet; disposal at existing off-site landfill. The three soil alternatives all are designed to remove PFCs in soils at the site and reduce migration of PFCs from soils to ground water; they differ mainly in volume of soil removed and in degree of prevention of migration to ground water. S-1 would remove soils to a depth of 4 feet and truck them to a licensed landfill permitted to accept industrial wastes. Excavated areas would be replaced with clean fill. Estimated cost: \$4.16 million.

Alternative S-2 – Excavation to 4 feet and selective removal from 4-8 feet; disposal at existing off-site landfill. Same as S-1 but with deeper excavation to remove soil concentrations down to 30 ppm PFOS. Estimated cost: \$5.6 million.

Alternative S-3 -- Excavation to 4 feet and enhanced selective soil removal from 4 feet to water table; disposal at existing off-site landfill. Same as S-1 but with deeper excavation (to the water table) to remove soil concentrations down to 6 ppm PFOS. Estimated cost: \$7.44 million.

3M has submitted an amendment to the Feasibility Study which outlined proposed off-site disposal locations. 3M is recommending that the PFC wastes from the Oakdale site, which are excavated be taken to the SKB Landfill in Rosemount, Minnesota. 3M and SKB have proposed to build a separate engineered cell at the SKB disposal facility to contain the excavated PFC waste material. This disposal location would also be used for PFC wastes excavated from the Woodbury and Cottage Grove disposal sites.

**MPCA’s recommended alternatives**

The MPCA recommends implementing the following remedies at the Oakdale site:

SW-2: Institutional Controls, Access Restriction, and Ground-water monitoring

GW-1: Enhanced ground-water recovery; air stripping/GAC pretreatment prior to POTW discharge

S-3: Excavation from 0-4 feet, enhanced soil removal from 4 feet to water table, and dis

posal at existing off-site landfill. The MPCA has determined that the separate vault for the facility in Rosemount, with the separate vault for the PFC wastes, does meet the requirement of the Consent Order for an isolated, engineered permitted facility to contain the PFC waste material.

MPCA staff believes this combination best meets the cleanup goals for the site. GW-1 and SW-2 would be implemented regardless of other alternatives chosen.

Alternative S-3 will probably take two to three construction seasons to complete.

**What are the next steps?**

The MPCA will review any comments received and finalize the choice of remedial action(s), which will be documented in a Minnesota Decision Document (MDD).

The MPCA’s responses to comments received will be included in the Response to Comments attached to the MDD. Unless significant modifications to the proposed remedies described in this fact sheet are needed, design and construction of the selected remedies should begin in late 2008 or early 2009.

After the selection of the final remedy for the Site, 3M will prepare construction design documents for MPCA review and approval. These design documents will outline activities and have a more detailed schedule to complete the cleanup actions. Included in this plan will be such items as hours of operation, construction traffic flow, worker health, and safety and noise controls.

**Public comment and meeting on proposed alternatives**

Public review and comment on the proposed cleanup plan for the Oakdale site is an important contribution to the remedy selection process. The public is invited to submit written comments on this proposed plan through June 20, 2008. Written comments may be sent to Gary Krueger, MPCA, 520 Lafayette Road, St. Paul, MN 55155-4194 or email [gary.krueger@pca.state.mn.us](mailto:gary.krueger@pca.state.mn.us).

The public is also encouraged to submit written comments in person at a public meeting on May 22, 2008 at Oakdale City Hall.

**Table of alternatives** (shaded = MPCA preferred alternatives)

Alternative	Description
1. SW-1	No further action
2. SW-2	Institutional controls, access restriction, monitoring
3. GW-1	Enhance pumpout, air stripping, GAC treatment
4. S-1	Excavate to 4 feet, offsite disposal
5. S-2	Excavate to 4 feet, selectively to 8 feet, offsite disposal
6. S-3	Excavate to 4 feet, selectively to water table, offsite disposal

**Where can I get more information?**

The full FS, along with other site-related information, is available on the MPCA Web site at <http://www.pca.state.mn.us/cleanup/pfc/pfcsites.html>, or by contacting Ralph Pribble at the MPCA, (651) 296-7792 or [ralph.pribble@pca.state.mn.us](mailto:ralph.pribble@pca.state.mn.us).



### The 3 Dump Sites that Constitute the "Oakdale Dump"

0.1 0.2 0.3 Miles ■ Location of 3M Groundwater Pumpout System Prepared 8/22/08