



EPA Proposes Changes to Cleanup Plan for Superfund Site

Muskego Sanitary Landfill Site

Muskego, Wisconsin

August 2010

Availability session

EPA representatives will hold an open house-style availability session to discuss with residents one-on-one the proposed changes:

Thursday, Sept. 9

2 – 4 p.m. and 6 – 8 p.m.

**Muskego Public Library
S73 W16663 Janesville Road**

For more information

If you are interested in the Muskego Sanitary Landfill cleanup please contact these team members:

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Information repository

Project documents and files may be viewed at:

**Muskego Public Library
S73W16663 Janesville Road**

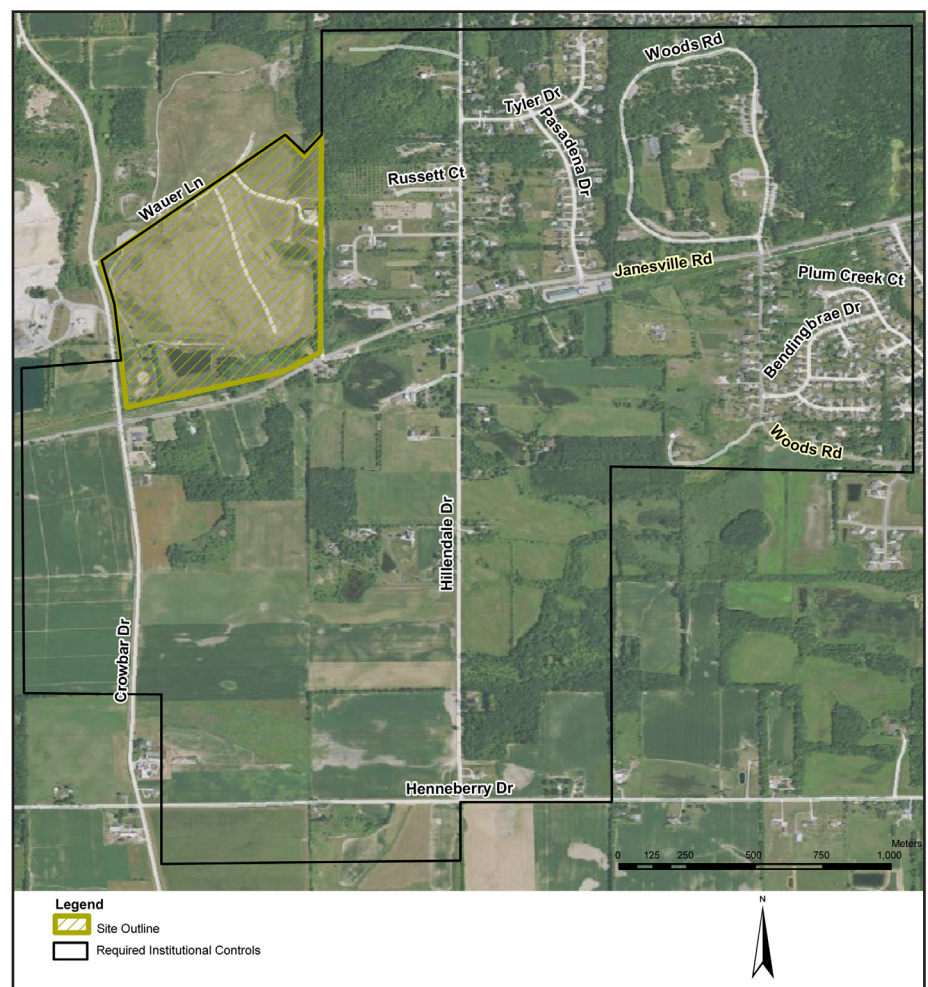
An administrative record, containing information upon which EPA based its decisions, has also been placed at this location and at EPA's Record Center, 77 W. Jackson Blvd, 7th Fl, Chicago.

On the web

www.epa.gov/region5/sites/muskego

U.S. Environmental Protection Agency wants to make changes to the original cleanup plan for the Muskego Sanitary Landfill Superfund site because additional investigations have found contamination has spread to underground water supplies outside the landfill boundaries. Underground water is known as “ground water” in environmental terms. Changes to the cleanup plan are also necessary to:

- Upgrade source control measures currently in place.
- Sample and evaluate areas beyond the landfill to verify the contamination is naturally breaking down.
- Provide for backup measures if the contamination is not breaking down.
- Prevent human exposure to the areas of contamination.



Muskego Sanitary Landfill Site Location Map

This fact sheet explains the proposed changes in the cleanup plan and why EPA believes the modifications are necessary. A complete description of the changes is detailed in an EPA document called “explanation of significant differences.” The original plan for the cleanup of the Muskego Sanitary Landfill site is described in two other documents both called “record of decision,” which EPA issued in 1992 and 1995. To view site-related documents visit the information repository noted on Page 1.

Site history and background

The Muskego Sanitary Landfill site includes a former landfill that occupies about 60 acres. It is located north of Janesville Road (State Highway 24) and east of Crowbar Road. The closed landfill area is divided into three sections: the Old Fill Area, the Southeast Fill Area, and the Non-Contiguous Fill Area. The Old Fill Area consists of about 40 acres and was originally a sand and gravel pit. It included some oil and paint waste as part of a drum salvage operation. The Old Fill Area was closed and covered in 1977.

The Southeast Fill Area covers about 16 acres directly east of the Old Fill Area. It operated from 1977 to 1980 when it was closed and covered. Investigations showed this area contained about 800,000 cubic yards of nonhazardous waste.

The Non-Contiguous Fill Area occupies about 4 acres and is located east and northeast of the Old Fill Area. This section contained a place for buried drums, two refuse areas that contained several crushed drums of municipal waste material, and another refuse area that held fill material and additional municipal waste. A portion of the Non-Contiguous Fill Area was also used as an animal carcass rendering plant. The plant included unlined lagoons, ponds, and two wastewater discharge areas, which were considered sources of the ground water contamination.

Previous cleanup activities

In 1991, EPA ordered site operator Waste Management of Wisconsin Inc. and several other companies that sent industrial waste to the landfill to clean up part of the Non-Contiguous Fill Area. These companies were considered responsible for site contamination and any needed cleanup. Cleanup of the Non-Contiguous Fill Area involved excavating about 1,000 waste-filled drums and about 2,500 cubic yards of surrounding soil in the buried drum area. The drum waste and contaminated soil containing volatile organic compounds or VOCs were separated, tested, and taken to off-site treatment and disposal facilities.

In 1992 and 1995 EPA adopted plans for containing and controlling waste in the site’s landfill areas and cleaning

up the site’s VOC-contaminated ground water. EPA documented those plans in two records of decision.

The 1992 cleanup plan included:

- Site controls to prevent access, excavation, and disturbance of the landfill cap, including additional fencing.
- Installation of a landfill cap over portions of the site constructed to EPA and Wisconsin standards.
- Installation or upgrade of landfill liquids control systems.
- Active landfill gas control and monitoring.
- Ground water oversight of some monitoring and private wells.

The 1995 cleanup plan included:

- Ground water monitoring and pumping tests.
- Removal, treatment and disposal of ground water near the Non-Contiguous Fill Area.
- Monitoring and evaluation of the ground water treatment system.

Led by Waste Management, a group of companies cleaned up the site under separate legal orders issued in 1992 and 1995. Since completion of the landfill cover and ground water treatment and monitoring systems, EPA has done three comprehensive, formal reviews of the site to ensure the cleanup is still protecting people and the environment. Such reviews are required by law and are done every five years. The 1999 review recommended hooking up nearby residences to the municipal water system and abandoning several drinking water wells.

In 2004 another formal review showed the cleanup might not be working as expected because ground water contamination had been moving off-site. That review recommended further study. A third five-year review was completed in August 2009. It recommended more on-site ground water monitoring wells, evaluation of whether natural processes were lowering ground water contaminant levels, and using updated site controls such as restrictive covenants and a municipal ground water ordinance to ensure that people and the environment are still being protected. Verifying natural processes such as decay, dilution and evaporation are lowering pollution to safe levels. This is called “monitored natural attenuation” or MNA in environmental terms.

Nearby private wells have been replaced with municipal water in areas where contamination has been detected at levels of concern. Old, deep wells used for industrial purposes have also been closed. Municipal water has already been provided to those residents closest to the landfill. So far about 80 homes or businesses have been

hooked up to municipal water. There are residents south and east of the landfill still drawing water from private wells. To identify problems in time to take further steps to protect them, additional monitoring wells have been installed.

Contaminants of concern

Pollutants found in the site's landfill area during the drum trench removal and other investigations included VOCs such as benzene, toluene, chloroform, trichloroethene, ethyl benzene, and methylene chloride as well as compounds commonly found in motor oil. Samples also included hazardous metals such as lead, copper, zinc, chromium and cadmium.

The primary concern about ground water quality is the possible movement of VOCs off the site. Low levels of VOCs, primarily vinyl chloride, have historically been found to the east, southeast and south of the landfill area.

Proposed explanation of significant differences

Ground water issues mainly triggered the proposed cleanup modifications. Ground water is already being sampled and monitored in multiple locations and depths around the Muskego Sanitary Landfill site due to the VOC concerns. However, more evaluation should be done to determine exactly what contamination associated with the site is moving beyond the landfill boundaries. As a result, additional ground water monitoring locations and the implementation of an MNA evaluation are needed to enhance the cleanup. These added measures will ensure the cleanup protects people and the environment from contact with the contamination and complies with federal and state cleanup standards.

The proposed modifications include:

- **Monitored natural attenuation.** As previously mentioned, MNA uses natural processes such as evaporation, decay and dilution to naturally reduce contaminant levels in soil and ground water. EPA proposes the addition of a ground water MNA plan and expansion of ground water treatment, if necessary, to more thoroughly clean up the site.
- **Improvement of institutional controls.** Institutional controls are legal requirements such as ordinances, deeds and covenants. The proposed cleanup changes call for upgrading existing deed restrictions and site controls in the form of a municipal ground water

ordinance with the city of Muskego and a municipal well head protection plan. These will ensure that use of ground water potentially contaminated by the site is restricted.

- **Evaluation of cleanup performance.** An evaluation of the performance of the cleanup components at the landfill is needed to determine if they are protecting people and the environment while complying with federal and state requirements. The evaluation includes the landfill liquid and gas collection systems, the landfill cap, and the ground water treatment and monitoring systems. The evaluation of the existing systems includes options to upgrade them as necessary.
- **Wellhead protection plan.** The closest municipal well to the site is Muskego City Well #7, located about 1 mile east of the landfill. Site-related pollutants have not been detected in City Well #7, but some ground water contamination from the landfill may flow in its direction if more cleanup steps are not taken. As a precaution, a wellhead protection plan is needed that outlines the sampling, reporting and cleanup actions to ensure any contaminated ground water associated with the site does not affect City Well #7.

Next steps

A copy of the explanation of significant differences document will also be sent to the Muskego Public Library where it will be available to the public. It will also be posted on the Web at www.epa.gov/region5/sites/muskego.

Contractors will monitor the cleanup and manage institutional controls, such as deed restrictions, to minimize possible human exposure to contamination in the future. This will be done under EPA oversight.

In a related matter, it is anticipated that U.S. Department of Justice will file a proposed settlement in federal court with Waste Management and a group of other companies potentially responsible for the site contamination. Under this settlement, the companies would agree to do all of the work described in the explanation of significant differences, reimburse most of EPA's past costs, and pay all of EPA's costs for overseeing future work. DOJ will hold a public comment period on the proposed settlement. This would include a statement of work that incorporates the cleanup changes identified in the explanation of significant differences. Information on the comment period will be posted in the *Federal Register* (www.epa.gov/fedrgstr).

EPA Proposes Changes to Cleanup Plan

Availability Session

Thursday, Sept. 9

(details inside)

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MUSKEGO SANITARY LANDFILL SITE: EPA Proposes Changes to Cleanup Plan for Superfund Site

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