United States
Environmental Protection
Agency

Office of Public Affairs
Region 5
77 W. Jackson Blvd.
Chicago, Illinois 60604

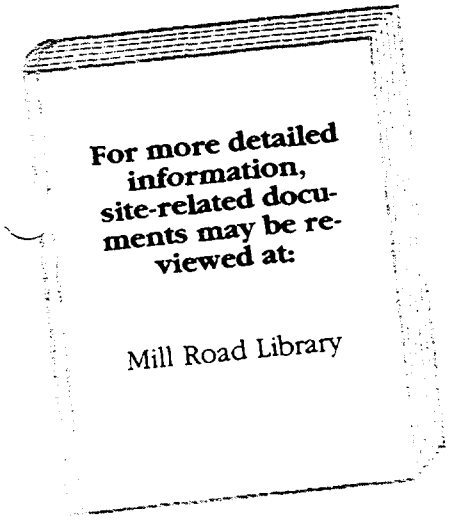
Illinois, Indiana,
Michigan, Minnesota,
Ohio, Wisconsin

# U.S. EPA Announces Changes in Moss-American Superfund Site Cleanup Plan

**Milwaukee, Wisconsin** **May 1997**

## This Fact Sheet Will Tell You About

- the site history
- the new ground-water cleanup plan
- why the ground-water cleanup plan is being modified
- how you can get more information about the site




## Introduction

The U.S. Environmental Protection Agency (U.S. EPA) has modified the remedy to clean up contaminated ground water at the Moss-American Superfund Site in Milwaukee, Wisconsin. This fact sheet explains the significant differences in the ground-water cleanup plan and why the modifications are necessary. It is a summary of the official document entitled "Explanation of Significant Differences for the Moss-American Site, Milwaukee, Wisconsin," which is available for review at the information repository for the site (see page 3). U.S. EPA plans to announce additional proposed changes to the soil and sediment elements of the cleanup plan in the near future.

The ground-water cleanup plan is being modified to test a new and potentially more effective method of ground-water cleanup. The modified cleanup plan changes the way contaminated ground water is collected. Field investigation done in 1994 found more free-product creosote than previously known. The modified approach should be a more effective method of collecting and removing the free-product creosote than the original plan. The presence of more creosote than anticipated may increase the amount of time necessary to clean up the contaminated ground water.

## Background and Site History

The 88-acre Moss-American Superfund Site includes the former location of the Moss-American creosote facility, several miles of the Little Menomonee River (a portion of which flows through the eastern half of the site) and the adjacent floodplain. The site is located in the northwest corner of the City of Milwaukee, at the southeast corner of the intersection of Brown Deer and Granville Roads. Approximately 65 acres of the site are undeveloped Milwaukee County park land. The remaining 23 acres are owned by the Union Pacific Railroad (formerly the Chicago and North Western Railroad) and are used as an automobile and light truck transport and storage area.

In 1921, the T. J. Moss Tie Company established a wood preserving facility west of the Little Menomonee River. The plant preserved railroad ties, poles, and fence posts with creosote, a mixture of numerous chemical compounds derived from coal tar. From 1921 to 1971, the facility discharged wastes to settling ponds that ultimately discharged to the Little Menomonee River. These discharges ended when the plant diverted its process water discharge to the Milwaukee sanitary sewerage system in 1971. Kerr-McGee Chemical Corporation purchased the facility in 1963 and changed its name to Moss-American. The name was changed again in 1974 to Kerr-McGee Chemical Corporation—Forest Products Division. Production at the facility ceased in 1976.

Contamination at the site was first reported in the late 1960s. In 1973, approximately 5,000 feet of the Little Menomonee River between the site and Bradley Road were dredged. Kerr-McGee cleaned out eight former settling ponds and dredged about 1,700 feet of the Little Menomonee River to remove creosote-contaminated soil and sediment. In 1978, the facilities were razed and some oil-saturated soil was excavated and disposed off site.

In 1983, the facility was placed on the U.S. EPA's National Priorities List (NPL), a roster of sites eligible for Superfund cleanup. Following discussions with potentially responsible parties (PRPs—those who owned,

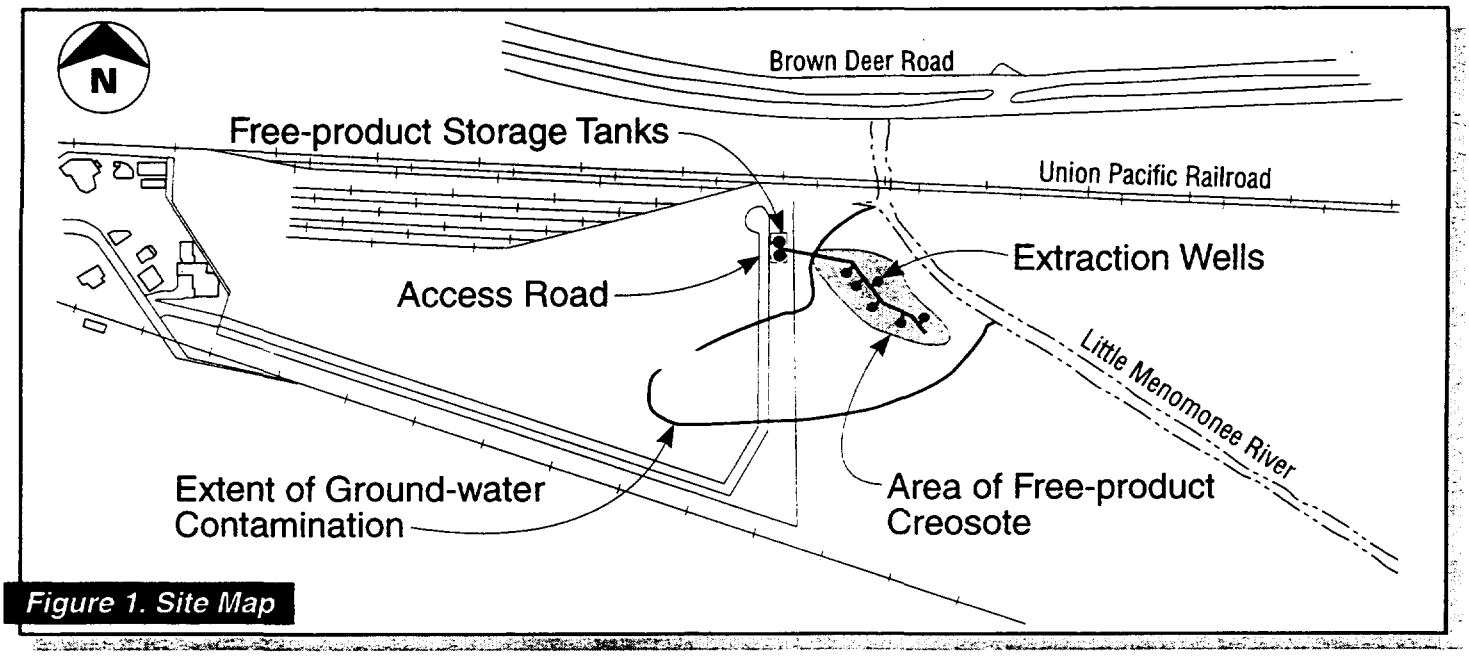



*Figure 1. Site Map*

erated, or brought waste to the site), U.S. EPA determined it would conduct a Remedial Investigation/ Feasibility Study (RI/FS) at the site. The RI/FS, which determined the nature and extent of on-site contamination and methods for cleaning it up, was completed in 1989. U.S EPA held a public meeting in 1990 on the RI/FS results and the recommended cleanup plan. Detailed information may be found in the site information repository.

U.S. EPA announced its cleanup plan in a document called a Record of Decision (ROD) in 1990. After selecting its cleanup plan, U.S. EPA, Wisconsin Department of Natural Resources (WDNR), and the PRPs signed an agreement to clean up the site. This agreement called for Kerr-McGee Chemical Corporation to implement the remedy described in the ROD.

## Recent Site Activities

In 1994, Kerr-McGee Chemical Corporation verified the presence and extent of free-product creosote in soil about 10 feet below ground surface. This work was done as part of the agreement among Kerr-McGee, U.S. EPA, and WDNR. Kerr-McGee found enough creosote for U.S. EPA to give priority to removing it before implementing the ground-water collection/ treatment plan. Kerr-McGee installed seven extraction wells to pump the creosote from below ground to an on-site storage tank (see Figure 1). During the 1995-96 operating season, about 3,100 gallons of free-product creosote were collected and removed from the site. This extraction system can only be operated seasonally, as it was not designed to operate in freezing conditions.

## Explanation of Significant Differences

Additional investigation provided a better understanding of site conditions. There have been advances in ground-water cleanup technologies that are appropriate for conditions at the Moss-American site. Therefore, U.S. EPA proposes to change the original ground-water collection and treatment remedy. The 1990 remedy included collecting contaminated ground water in drains installed parallel to the west side of the Little Menomonee River. A vertical barrier would have been installed between the collection drains and the river to prevent contaminated ground water from reaching the river. The ground water would have then been pumped to an oil-water separator. The oil would have been incinerated and the water would have been forced through tanks containing activated carbon. Activated carbon is a specially treated material that attracts contaminants. After treatment, the ground water would have been discharged to the Milwaukee Metropolitan Sewerage District sanitary sewer system or to the Little Menomonee River.

The new ground-water remedy is known as a funnel and gate system. The funnel and gate system will redirect ground-water flow by driving sheet piling (the funnel) into the soil

### *What is free-product creosote?*

"Free-product" is a term used to describe a contaminant that has not dissolved into ground water or soil but is found in the environment essentially intact. At the Moss-American site, a pool of free-product creosote is floating within a plume of contaminated ground water (see Figure 1). At this site, the free product is an oily mixture of coal-tar creosote mixed with a fuel oil carrier solvent that is in contact with the shallow ground water at the site. When the free product is removed, it is typically mixed with ground water to create a liquid mixture of water, fuel oil, and coal-tar creosote. Free-product creosote poses a challenge to ground-water management because it acts as a continuing source of ground-water contamination and it can move in different directions or at different speeds than the ground water around it.

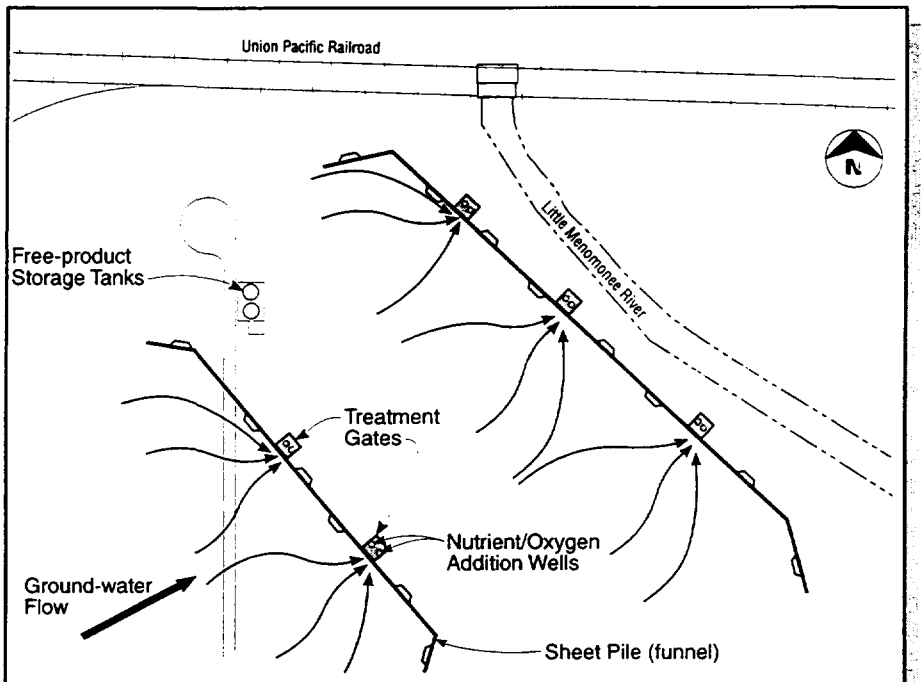



*Figure 2. Funnel and Gate Ground-water Treatment System*

underneath the contaminated aquifer (see Figure 2). Sections of piling would be interconnected and sealed. Ground-water flow would be directed to engineered soil mixtures placed in gaps (the gate) in the sheet piling. As the ground water moves through the gates, bacteria in the soil mixtures will break down the contaminants. Air and nutrients would be injected into the gates to increase the amount of naturally occurring bacteria in the soil mixtures, thereby increasing the amount of ground-water contamination the bacteria can break down. To prevent free-product creosote from entering the gates and clogging the system, the PRPs will install sumps or collection wells west of the gates that will allow the creosote to be pumped to an on-site storage tank. Two rows of sheet piling (funnel and gate systems) would be constructed. The first system would be placed near the boundary between Railroad and County property. The second system would be just west of the Little Menomonee River. Several ground-water monitoring wells would also be installed to monitor the effectiveness of the funnel and gate systems.

The construction cost for the funnel and gate system is nearly identical to the more conventional ground-water treatment approach in the 1990 ROD. However, operation and maintenance costs are substantially less than those costs for the previously planned cleanup method. Because the large quantity of free-product creosote may require considerably more time to collect and treat ground water than anticipated in 1990, reduced operation and maintenance costs become more important.

The PRPs will construct a pilot funnel and gate system at the site prior to full-scale implementation. During the pilot project, designers will monitor the effectiveness of the funnel in capturing the contaminated ground-water plume and directing it toward the gates. The designers will also monitor the effectiveness of the gates in breaking down ground-water contaminants. The pilot project could take 1 to 2 years. Should problems arise such as inadequate capture of contaminated ground water or insufficient removal of ground-water contaminants, U.S. EPA and WDNR will develop other remedies to clean up ground water, such as additional sumps, trenches, or gate covers.

At this time, U.S. EPA does not propose to modify the site's ground-water cleanup goals. After considering new information, U.S. EPA and WDNR believe this change:

- protects human health and the environment;
- complies with appropriate state and federal requirements; and
- is more cost effective than the original ground-water remedy.

## What's Next?

Design of the pilot funnel and gate system project is scheduled to be completed this year. U.S. EPA and WDNR will monitor the results of funnel and gate system testing and will provide a summary of their findings before making a final decision on full-scale implementation. In the meantime, the PRPs will continue collecting free-product creosote.

## Additional Information

Anyone interested in learning more about the Explanation of Significant Differences is encouraged to review the information repository for the Moss-American Site. The information repository is located at the **Mill Road Library, 6431 N. 76th Street, Milwaukee.** An administrative record containing information upon which U.S. EPA based its decisions has also been placed at the library. Post-ROD documents are included. For additional information on the Moss-American Site, please contact:

**Susan Pastor**
U.S. EPA Community
Involvement Coordinator
(312) 353-1325
pastor.susan@epamail.epa.gov

**Russell Hart**
U.S. EPA Remedial Project
Manager
(312) 886-4844
hart.russell@epamail.epa.gov

**U.S. EPA Region 5**
77 West Jackson Boulevard
Chicago, IL 60604
Toll Free 1-800-621-8431

**Gary Edelstein**
WDNR Project Manager
Box 7921
Madison, WI 53707
(608) 267-7563
edelsg@dnr.state.wi.us

## Mailing List Additions

If you did not receive this fact sheet in the mail, you are not on the mailing list for the Moss-American Superfund Site. To add your name, or to make a correction, please fill out this form and mail it to Susan Pastor at the address below.

**Susan Pastor**
U.S. EPA Region 5
Office of Public Affairs (P-19J)
77 West Jackson Blvd.
Chicago, Illinois 60604

Name _____

Address _____

Affiliation _____

Phone (Daytime) _____ (Evening) _____

*Once you are on the mailing list, you will automatically receive information from U.S. EPA regarding the Moss-American Site.*


U.S. Environmental Protection
Agency
Region 5
Office of Public Affairs (P-19J)
77 W. Jackson Blvd.
Chicago, Illinois 60604

**FIRST CLASS**

ADDRESS CORRECTION REQUESTED

# ATTENTION: Modified Moss-American Site Cleanup Plan

*This fact sheet is printed on paper made of recycled fibers.*