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# Start of Cleanup Work Planned for September

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## Forest Waste Disposal

Genesee County, Michigan

August 2007

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### Attend the public meeting

EPA and Michigan Department of Environmental Quality representatives have scheduled a public meeting to update interested people on the progress being made in the cleanup of the Forest Waste Disposal site. The meeting will be held:

**Wednesday, Aug. 22**  
**7 - 9 p.m.**  
**130 E. Main St.**  
**Otisville, Mich.**

If you need special accommodations for the meeting or have general questions or comments contact:

#### **Dave Novak**

Community Involvement  
Coordinator  
EPA Region 5 (P-19J)  
77 W. Jackson Blvd.  
Chicago, IL 60604-3590  
312-886-7478 or 800-621-8431,  
weekdays 10 a.m. – 5:30 p.m.  
novak.dave@epa.gov

For technical questions or to talk with an MDEQ representative, see the contact information on Page 2.

### For more information

You can read more information about the Forest Waste Disposal site online at: [www.epa.gov/R5Super/npl/michigan/MID980410740.htm](http://www.epa.gov/R5Super/npl/michigan/MID980410740.htm)

Official site documents are also available at the Forest Township Library, 123 W. Main St., Otisville.



*Monitoring wells sprout from a section of the Forest Waste Disposal site. The wells track the movement of contaminated underground water supplies.*

U.S. Environmental Protection Agency officials say pollution treatment will begin this September as part of the ongoing cleanup effort at the Forest Waste Disposal site. The treatment system is among cleanup plan changes approved in September 2005 after a public hearing and comment period. One of the major goals of the 2005 cleanup plan is to destroy volatile organic compounds, or VOCs, in underground water supplies (called ground water in environmental terms) by injecting chemical oxidants. VOCs are chemicals that are found in solvents, paint and gasoline and tend to dissolve in water. At the Forest Waste site, the contaminated ground water containing VOCs is located near the northwest and northern borders of the site but at some points has moved off-site.

The chemical oxidation system and other cleanup actions included in the 2005 plan will cost about \$4.8 million and are being paid for and implemented by a private group called the Forest Waste Coordinating Committee. The primary VOC of concern is vinyl chloride, which can cause cancer. The chemical oxidant reacts with and breaks down the vinyl chloride into harmless substances (see drawing on Page 3).

Ground-water contamination begins at the site's landfill and follows the pathways shown in Figure 1 on Page 4. Contamination sits along the western boundary of the small lake and just north of the bend in Harris Road and appears to be moving to the northwest about 80 feet per year. A landfill cap

installed in 1997 greatly reduces the source of the ground-water contamination by blocking rain and snowmelt that could soak through the waste field and pick up vinyl chloride.

When the treatment starts in a few weeks, chemical oxidants will be injected into the ground water through a series of wells or borings located at 10-foot intervals along the treatment lines near Harris Road and on the west side of the small lake (see Figure 1).

### **Ground-water treatment near the landfill**

A second part of the 2005 cleanup plan includes treating VOCs in the ground water leaving the landfill area. The plan included two options for doing that. One technique would add oxygen to the ground water to speed the VOCs' natural breakdown. The other option would inject air into a trench across the ground water flow path, which is called air-sparging. The technology for adding oxygen to the ground water was tested during 2005 and 2006 and found to be ineffective. However, recent ground water data indicates VOCs and especially vinyl chloride concentrations drop off within a short distance from the landfill. For that reason ground-water treatment near the landfill may not be necessary. If experts think treatment is needed in the future, an air-sparging trench will be constructed just north of the landfill (see Figure 1 Page 4).

### **Ground-water pumping restrictions**

The 2005 cleanup plan placed well pumping restrictions on the area in and around the Forest Waste site. Computer modeling indicated this area should be larger to provide a bigger margin of safety. Figure 3 on Page 5 shows an updated map of the area where expanded ground-water pumping restrictions are in place through a Genesee County Health Department permit system.

### **Site usage and cleanup review**

About 20 semi-permanent injection wells will be installed along the chemical oxidation treatment line near Harris Road. A fence will be constructed and warning signs posted around the treatment line. In contrast, the injection wells near the lake will be portable, and access restrictions will apply only during operations. Outside of the fenced areas and locations where work is being conducted, the current limited recreational uses of the site can continue. This usage is controlled by Forest Township through a permit system.

EPA is also in the process of reviewing previous cleanup actions taken at the site. A document called the five-year review report will be completed by Sept. 30 and can be read at the Forest Township Library or on the Internet at [www.epa.gov/R5Super/fiveyear](http://www.epa.gov/R5Super/fiveyear).

### **Natural attenuation and monitoring**

The 2005 cleanup plan also relies on natural processes such as decay and dilution to reduce contamination that has already passed the chemical oxidation treatment lines. This process is called natural attenuation, and it requires extensive ground-water monitoring to verify it is working (see Figure 1 for the location of monitoring wells and Figure 3 for contamination attenuation area). Some of the numerous monitoring wells checking natural attenuation are located outside the site.

Annual sampling of private wells near the Forest Waste property is continuing and to date no VOCs have been detected. The chemical oxidation treatment should substantially reduce VOC levels and limit further movement of the contaminated ground water. Eventually, the combination of chemical oxidation and natural attenuation should result in underground water supplies both on- and off-site that are safe for drinking.

#### **More contacts**

If you would like to talk with someone about the Forest Waste site you can contact these government representatives:

For technical questions:

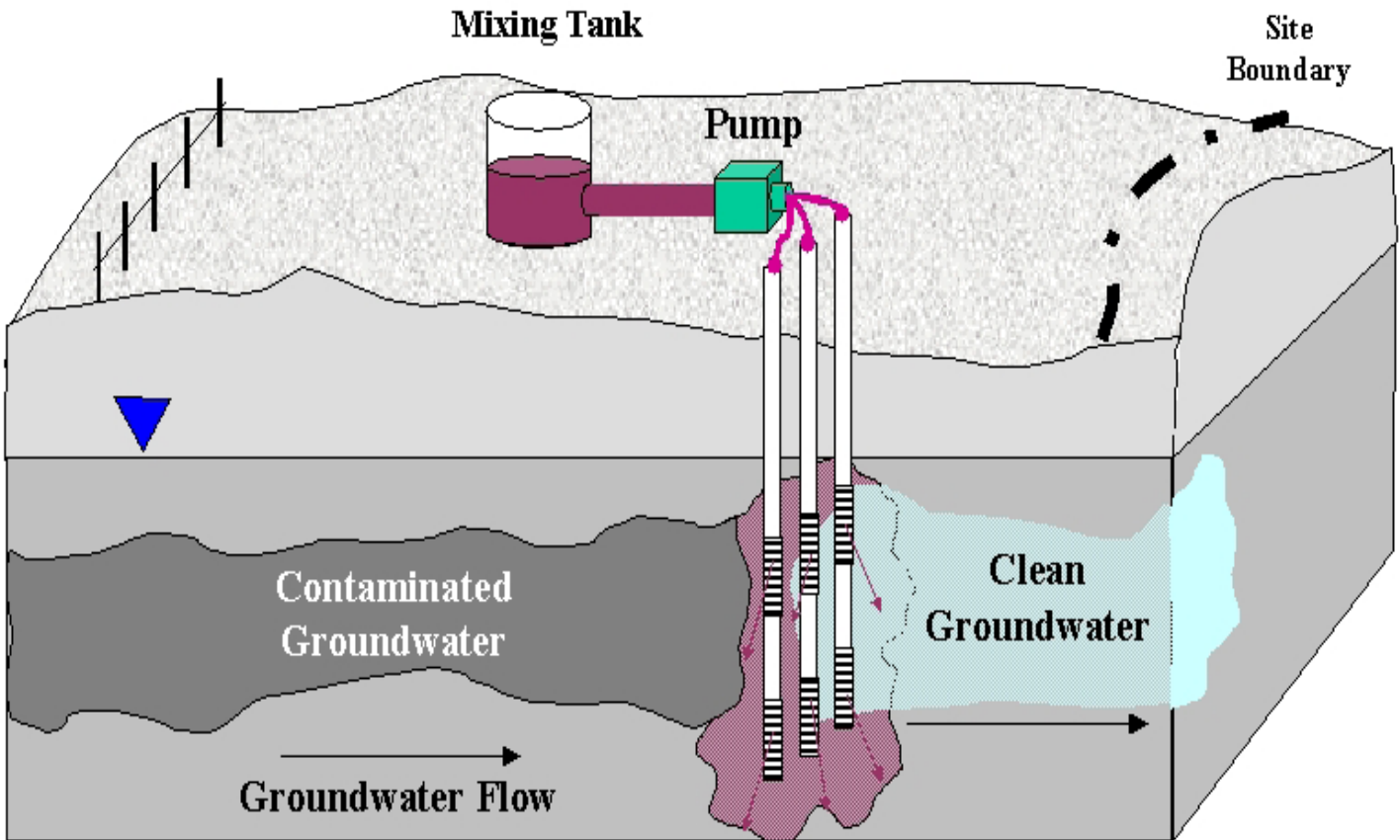
#### **Richard Boice**

Remedial Project Manager  
EPA Region 5 (SR-6J)  
77 W. Jackson Blvd.  
Chicago, IL 60604-3590  
312-886-4740  
[boice.richard@epa.gov](mailto:boice.richard@epa.gov)

At MDEQ:

#### **Deborah Larsen**

Site Manager  
Michigan Department of Environmental Quality  
P.O. Box 30426  
Lansing, MI 48909  
517-373-4825  
[larsend@michigan.gov](mailto:larsend@michigan.gov)



*The oxidation chemical, potassium permanganate, will be injected down semi-permanent wells or temporary borings at high pressure and forced out into the mass of contaminated underground water. The oxidant will then react with the vinyl chloride and cause it to break down into harmless substances.*

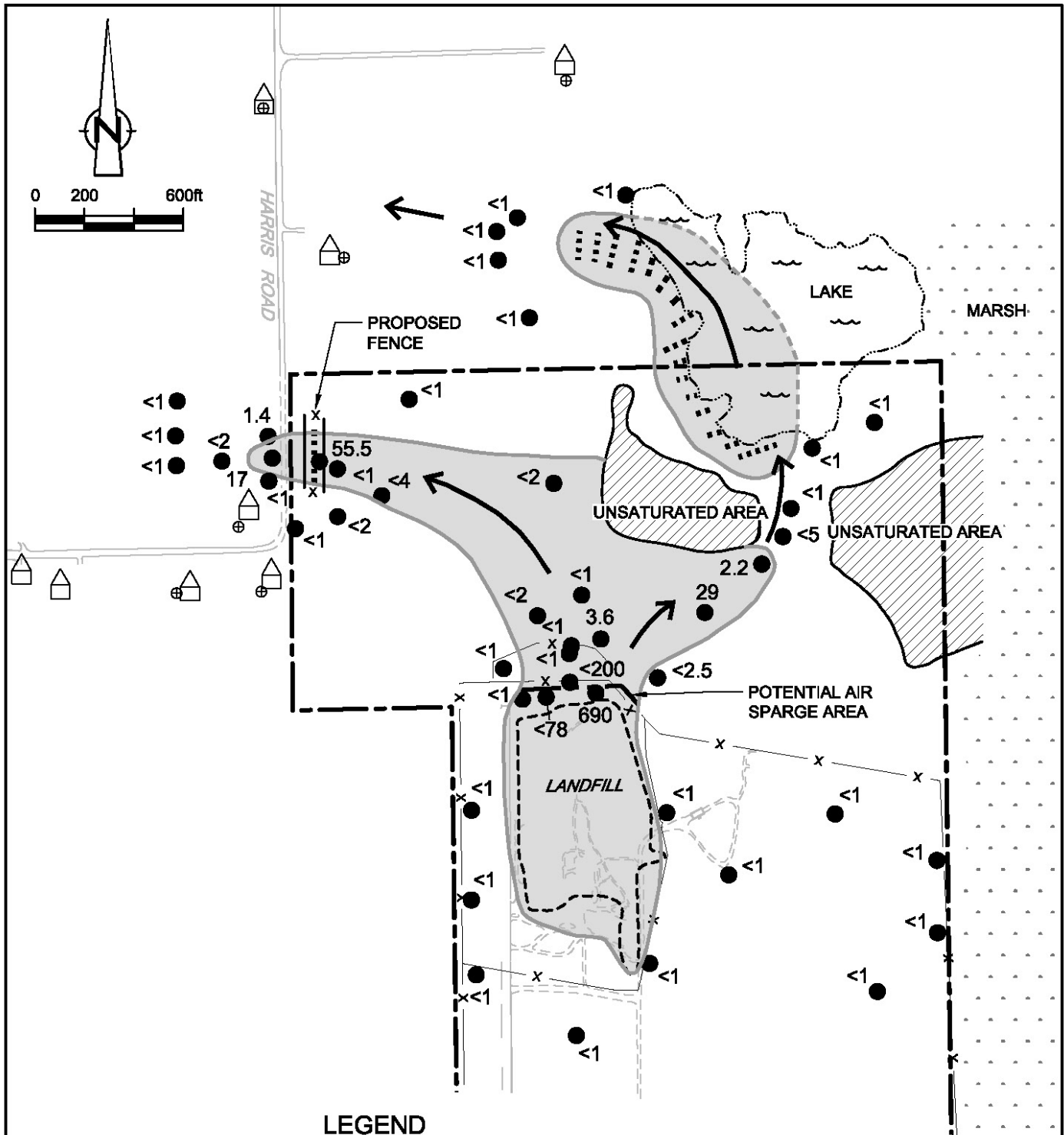
### Site history

The Forest Waste Disposal site located in Forest Township, Genesee County, Mich., originally covered 112 acres, but the area was expanded by an additional 80-acre parcel in September 2005. The disposal areas located on-site include an 11-acre landfill and nine former lagoons. General refuse and industrial and liquid waste were disposed of at the landfill and lagoons from 1973 to 1978, the year the state of Michigan revoked the landfill license due to various violations.

Human exposure to the hazardous waste stored on the site was eliminated by construction of a fence around the property to stop trespassers, complete removal of the lagoon waste in 1988-1989 and construction of a landfill cap in 1995-1997. The remaining potential health threat comes from the creeping masses of contaminated underground water, but the cleanup

actions outlined in this fact sheet are designed to solve that problem.

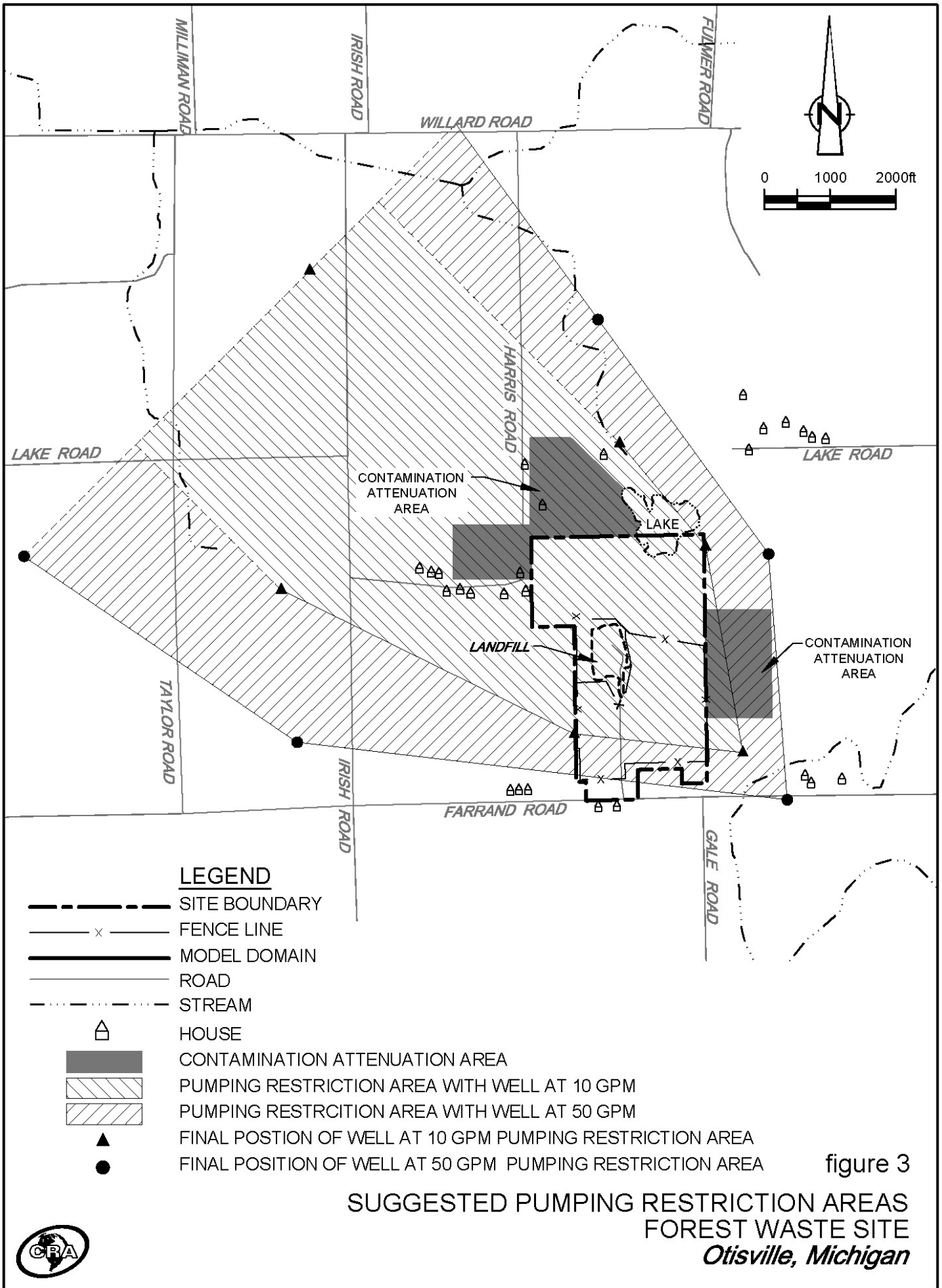
All of the site property is under control of Forest Township. Deed notices at the location prohibit excavation and construction unless approved by EPA and also bar the use of ground water for anything except sampling. In 2005 EPA decided it was safe to use sections outside the landfill area for limited recreational activities. Forest Township through a permit system has allowed model airplane flying, archery and paintball in those areas.



**LEGEND**

- APPROXIMATE PROPERTY BOUNDARY
- x - x - FENCE
- ⊕ RESIDENTIAL WELL LOCATION
- APPROXIMATE LIMIT OF IMPACTED GROUNDWATER
- MONITORING LOCATION
- 2.2 VINYL CHLORIDE CONCENTRATION
- < LESS THAN
- ..... CHEMICAL INJECTION LINE
- ← GROUNDWATER FLOW DIRECTION
- 🏠 HOUSE

figure 1  
**SITE PLAN**  
**FOREST WASTE SITE**  
*Otisville, Michigan*



# **FOREST WASTE DISPOSAL: Start of Cleanup Work Planned for September**

Region 5  
Office of Public Affairs (P-19J)  
77 W. Jackson Blvd.  
Chicago, IL 60604

United States  
Environmental Protection  
Agency



**FIRST CLASS**

# **Forest Waste Cleanup Work Scheduled for September**

**Public Meeting for Site Update  
Wednesday, Aug. 22  
(details inside)**