

# **Site Review And Update**

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**MONROE TOWNSHIP LANDFILL**

**MONROE TOWNSHIP, MERCER COUNTY, NEW JERSEY**

**CERCLIS NO. NJD980505671**

**AUGUST 17, 1992**

**REVISED**

**APRIL 20, 1993**

**U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**Public Health Service**

**Agency for Toxic Substances and Disease Registry**

**Division of Health Assessment and Consultation**

**Atlanta, Georgia**

## **Site Review and Update: A Note of Explanation**

The purpose of the Site Review and Update is to discuss the current status of a hazardous waste site and to identify future ATSDR activities planned for the site. The SRU is generally reserved to update activities for those sites for which public health assessments have been previously prepared (it is not intended to be an addendum to a public health assessment). The SRU, in conjunction with the ATSDR Site Ranking Scheme, will be used to determine relative priorities for future ATSDR public health actions.

REVISED SITE REVIEW AND UPDATE

MONROE TOWNSHIP LANDFILL

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CERCLIS NO. NJD980505671

Prepared by the  
New Jersey Department of Health  
Under Cooperative Agreement with the  
Agency for Toxic Substances and Disease Registry

## SUMMARY OF BACKGROUND AND HISTORY

The Monroe Township Landfill is on a 94-acre site near Spotswood Gravel Hill Road and Matchaponix Avenue in Monroe Township, Middlesex County, New Jersey (Figure 1). The landfill, which occupies 86 acres of the site, was operated by the Township from the mid-1950s through 1968. Princeton Disposal Service, acquired by Browning-Ferris Industries of South Jersey Inc. in 1972, leased the property in 1968, and operated the landfill until 1978.

In June 1978, the New Jersey Department of Environmental Protection (NJDEP) closed the landfill when leachate began migrating into adjacent residential areas northeast of the site. A sedimentation pond and drainage channels for collection of surface water runoff were installed in 1982-1983. In 1984, remedial actions performed at the site included installation of a landfill cap and construction of a slurry wall and leachate collection system equipped with an open leachate storage lagoon. A hydrogeologic investigation conducted at the site from 1987 through 1989 included monitoring and sampling of residential wells. Additional environmental samples were collected in 1991 during a supplemental investigation. An underground leachate storage tank was installed in 1991, replacing the storage lagoon. In 1991, surface water runoff controls were upgraded, the landfill cap was rebuilt along the northern portion of the site, and a fence was installed around the site perimeter.

In April 1989, the Agency for Toxic Substances and Disease Registry (ATSDR) completed a preliminary health assessment of the site. That assessment identified the following potential exposure pathways (past, present, future): (1) exposure to volatile organic compounds (VOCs) and metals in leachate, groundwater, surface water, and soil through ingestion and direct contact; (2) exposure to VOCs in air through inhalation; and (3) exposure to metals in biota through ingestion. Potentially exposed populations included site trespassers, area residents, and on-site employees.

The 1989 preliminary health assessment did not report site-related community health concerns; the assessment did identify the following public health concerns:

- unrestricted site access could result in people being exposed to on-site contaminants, including those in leachate and soil;
- an open leachate storage lagoon on the site could be contaminating surface water and the underlying shallow aquifer;
- surface water runoff could be transporting site contaminants to off-site areas, including Manalapan Brook and Mill Lake, via on-site drainage ditches;

- existence of private potable wells near the site could result in residents being exposed through the groundwater system; and
- hunting and fishing near the site could result in people being exposed through the food chain.

In summary, ATSDR in 1989 categorized the site as a public health concern because human exposure to site contaminants could have occurred, could be occurring, or could occur in the future at levels that could cause adverse health effects, primarily through direct contact with on-site leachate. ATSDR also concluded that additional information was needed to adequately assess the impact of the site on public health. ATSDR made the following recommendations: (1) sample soil, surface water, air, and biota; (2) obtain current information on groundwater use in the area; (3) sample additional private potable wells, if necessary; and (4) further study the hydrogeology of the site.

#### CURRENT SITE CONDITIONS

On June 9, 1992, Ms. Laurie A. Pynch of the New Jersey Department of Health conducted a site visit of the Monroe Township Landfill. Ms. Pynch was accompanied by the New Jersey Department of Environmental Protection and Energy (NJDEPE) site manager and technical coordinator, and an environmental specialist from the Middlesex County Health Department (MCHD) Solid Waste Control Program.

The landfill is on an open, hilly area that slopes sharply down to the north. The site is well vegetated, primarily with grass. There are heavy stands of tall trees along most of the site perimeter. The landfill cap appeared to be well maintained, except for several areas of surface pooling along the on-site access road. The area of the former leachate storage lagoon has been properly backfilled with clean soil and gravel, graded, and covered with vegetation.

The sedimentation pond and drainage ditches appeared to be in good condition. Standing water, presumably from surface water runoff, was seen in the sedimentation pond during the site visit. The sedimentation pond is a physical hazard (falling, drowning) to site trespassers. No signs of soil erosion were seen at the site.

During the site visit, the perimeter fence generally appeared to be in good condition. However, an entrance gate along the southern site boundary was found unlocked and open. Warning signs were posted on the fence at numerous locations.

Several private homes are adjacent to the northeastern part of the site, in the vicinity of the underground leachate storage tank. During the site visit, the emergency leachate pumping system was being tested (a daily routine), producing a continuous loud noise. Illegal dumping, primarily of household trash, was observed at several locations along Spotswood Gravel Hill Road.

A potable well survey was performed in 1986 to determine groundwater usage within a half-mile radius of the site. It was determined that, except for one, all residences were connected to the public water system in 1975. No contaminants were detected in that private potable well during the 1987-1989 investigation; the well is not screened in the impacted aquifers underlying the site. MCHD reported that no new well permits have been issued since the public water supply became available.

Information from the 1991 supplemental environmental investigation (1) suggests that contaminant migration to off-site areas through the groundwater system is unlikely because of the operation of the leachate collection system and the apparent localized nature of groundwater contamination. During the supplemental investigation, environmental samples also were collected from on-site soil, surface water, and sediment. Gas vent monitoring for VOCs is being performed annually in accordance with New Jersey Clean Air Act requirements. Data analysis revealed no evidence of significant contamination of soil, surface water, or air. Several semivolatile compounds were detected in on-site sediment samples at levels slightly above background concentrations. Current site data and site conditions do not suggest that there are any completed exposure pathways.

#### CURRENT SITE ISSUES

A leachate collection system assessment was performed in 1991 during the supplemental investigation to evaluate the effectiveness of the system in controlling off-site contaminant migration through the groundwater. Organic compounds and metals were detected in several on-site monitoring wells during successive sampling events from 1987 through 1991. Analysis of the samples indicates that site contaminants have not migrated downgradient from the wells or from the site through the leachate collection system. Groundwater flow near the affected monitoring wells is currently controlled by the leachate collection system, resulting in an inward flow gradient (toward the landfill). Leachate from the leachate collection system is released into the public utility sewage system and monitored in accordance with a New Jersey Pollution Discharge Elimination System (NJPDES) permit.

On November 7, 1990, MCHD documented severe soil erosion along the northern bank of the landfill and cited Browning-Ferris Industries on failure to maintain the landfill cap. Surface water

runoff/soil erosion controls were upgraded in 1991 in accordance with a plan approved by the Freehold Soil Conservation District (FSCD). MCHD reported no erosion problems during a subsequent site inspection (August 9, 1991). FSCD issued a compliance report on March 12, 1992. Surface water discharge from the sedimentation pond and drainage channels is monitored in accordance with a NJPDES permit.

According to local and county officials, community health concerns have been minimal because the landfill has been closed and remedial actions have been implemented. Local residents periodically have expressed concerns about surface water runoff/soil erosion at the site; the potential for exposure to site contaminants in off-site areas; and illegal dumping adjacent to the site.

### CONCLUSIONS

1. As was recommended in the 1989 preliminary health assessment, groundwater monitoring wells were sampled during the 1991 supplemental environmental investigation. On-site soil, surface water, and sediment samples also were collected as part of that investigation. Gas vent monitoring is being performed in accordance with New Jersey Clean Air Act requirements. In addition, EPA and NJDEPE have completed a risk assessment of the site.

2. A 1986 potable well survey determined that most homes within a half-mile radius of the site were connected to the public water system in 1975. The 1991 supplemental environmental investigation indicated that contaminant migration to potential off-site potable wells through the groundwater system was unlikely. Further investigation of groundwater use in the area and potable well sampling does not appear to be warranted.

3. During the 1991 supplemental environmental investigation, data analysis revealed no evidence of contamination of soil, surface water, or air. Several semivolatile compounds were detected in on-site sediment samples at levels slightly above background concentrations. 1991 surface water and sediment quality data do not suggest the need for biota sampling.

4. Because new site data and information have become available since the preparation of the preliminary health assessment, a public health assessment is needed. However, because there are no completed exposure pathways and few community concerns associated with this site, and it appears that the recommendations of the preliminary health assessment have been addressed, preparation of a public health assessment is not considered a priority.

5. The data and information developed in this Site Review and Update have been evaluated to determine if follow-up actions may be indicated. Further site evaluation is needed to determine public health actions.

#### RECOMMENDATIONS

Using information on current site conditions and from the documents reviewed, ATSDR makes the following recommendations:

1. Perform a public health assessment using new site data and information, including the baseline risk assessment. Because there are no completed exposure pathways, community concerns are minimal, and previous public health recommendations have been addressed, preparation of the assessment is not considered a priority.

2. Educate community members about the nature and extent of contamination at the site in order to address their concerns about potential exposure to site contaminants in off-site areas.

#### DOCUMENTS REVIEWED

Supplemental Environmental Investigation, Monroe Township Landfill, Middlesex County, New Jersey, Paul C. Rizzo Associates Inc., 1991.



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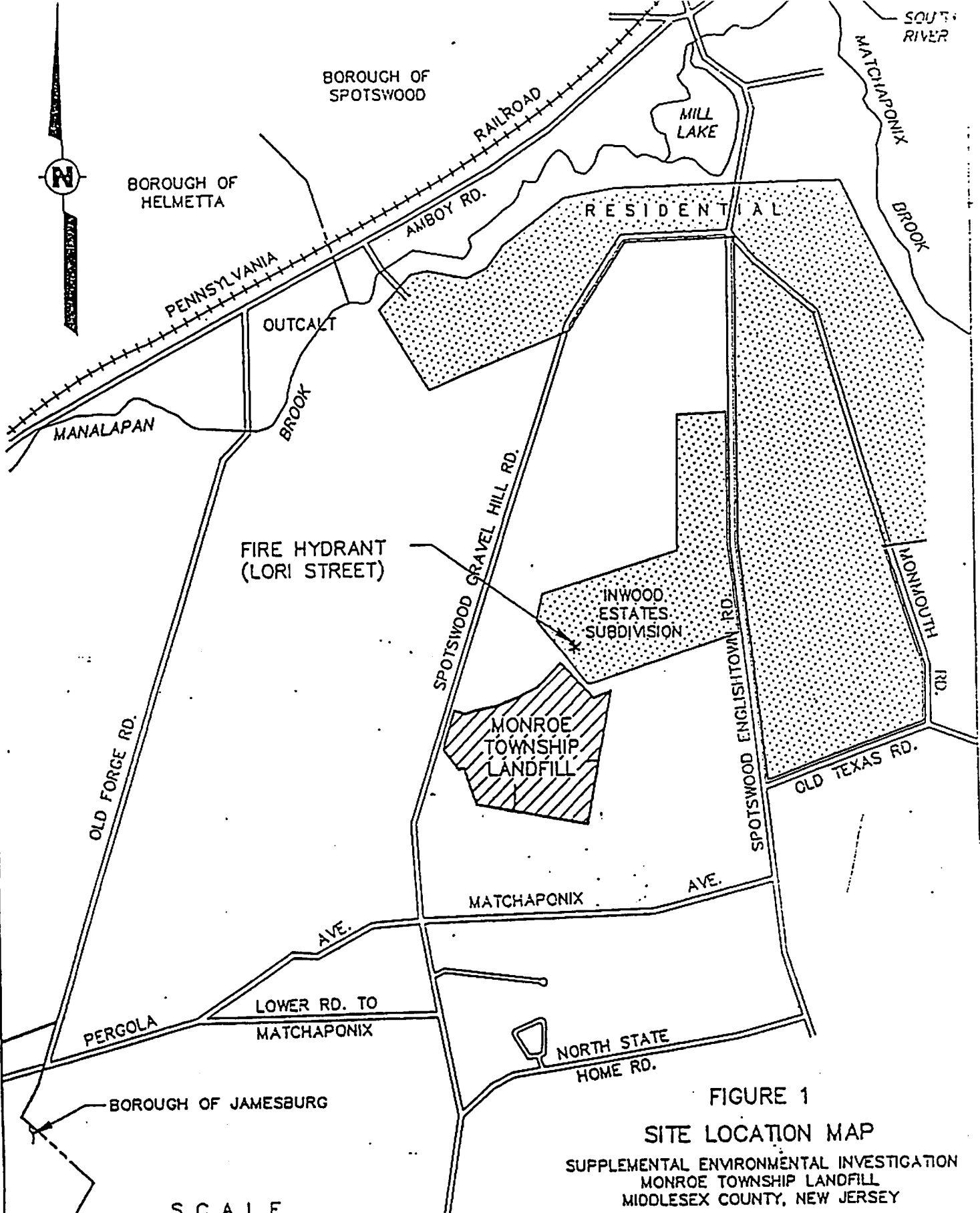


FIGURE 1

SITE LOCATION MAP  
 SUPPLEMENTAL ENVIRONMENTAL INVESTIGATION  
 MONROE TOWNSHIP LANDFILL  
 MIDDLESEX COUNTY, NEW JERSEY

PREPARED FOR  
 BROWNING-FERRIS INDUSTRIES  
 OF SOUTH JERSEY, INC.  
 HOUSTON, TEXAS

REFERENCE:  
 MAP OF MONROE TWP., MIDDLESEX CO., N.J.  
 1983, PREPARED BY HARRY APPLIGATE,  
 TOWNSHIP ENGINEER.

**PCR** Paul C Rizzo Associates, Inc.  
 CONSULTANTS