NEW YORK STATE
DEPARTMENT OF

ENVIRONMENTAL
CONSERVATION

Availability Session:

(For questions and answers in an informal setting)
Tues., November 30, 1999
3-5 P.M.

Public Meeting:
Tues. November 30, 1999
7-9 P.M.

Both to be held at:
St. Mary's Parish Hall
Church St.
Nassau, NY 12123

FACT SHEET

Loeffel Site Environs
Rensselaer County
Nov. 1999

Loeffel Site Groundwater Proposed Remedial Action Plan Announced

The Remedial investigation and feasibility study have been completed to address groundwater contamination emanating from the Dewey Loeffel inactive hazardous waste disposal site (Site ID 442006). A Proposed Remedial Action Plan (PRAP) has been prepared for public review and comment. This Fact Sheet provides site background information, a summary of the site conditions, a summary of the proposed remedy from the PRAP, and information on how the public can participate in the remedy selection process.

Citizen Participation

A Public Availability Session and public meeting have been scheduled (as detailed in the sidebar at left) as part of the citizen participation program for this site. The Public Availability Session provides an opportunity for you to learn more about the site and the PRAP directly from New York State Department of Environmental Conservation (NYSDEC) staff who will be present to answer your questions. During the public meeting, the NYSDEC will present the proposed site remedies as contained in the PRAP, answer your questions, and accept public comments.

NYSDEC will accept written public comments during the thirty day period commencing on November 8, 1999 and ending on December 8, 1999. Comments should be sent to the Project Manager whose address is provided below. A "Responsiveness Summary" will be prepared that describes public comments received and how the NYSDEC will address the concerns raised.

Document Repositories. Two locations provide you access to project information:

Nassau Library
Church Street
Nassau, NY 12123
(518) 766-2715

NYSDEC
Region 4 Office
1150 N. Westcott Road
Schenectady, NY 12306
(518) 357-2045

For More Information. Call or write the following staff for more information:

Jim Ludlam, Project Manager
Div. of Hazardous Waste Remediation
NYSDEC
50 Wolf Road
Albany, NY 12233-7010
(518)457-5637

John Sheehan - NYSDOH
Bur. Of Env. Exposure Invest.
Flanigan Square
547 River St.
Troy, NY 12180
(518) 402-7890

Or call NYSDEC's Hazardous Waste Site Toll-free Information Number:
1-800-342-9296

Loeffel Site Environs: Update

Site Background

The Loeffel Site is an 11-acre inactive hazardous waste landfill located on Mead Rd., 2.5 miles upstream from Nassau Lake in Rensselaer County. The site was operated from 1952 to 1980 as a disposal facility for approximately 43,000 tons of waste materials, much of which was generated at General Electric, Schenectady Chemical (now Schenectady International) and Bendix (now Allied Signal), the responsible parties. Persistent organic chemicals such as polychlorinated biphenyls (PCBs) and volatile organic compounds (VOCs) are the compounds of concern.

In 1983 and 1984, the disposal site itself was remediated by on-site containment. This consisted of the construction of an impermeable cap with vegetative cover, placement of a vertical perimeter "clay" curtain wall keyed into bedrock, and installation of surface water drainage controls to limit surface water intrusion onto the site and to enhance surface water runoff from the site. A system designed to collect contaminated water (leachate) from within the containment system was also installed, as were groundwater wells to monitor containment effectiveness over time.

Over 1.6 million gallons of leachate has been removed from within the site. Leachate removal, at the rate of up to 375,000 gallons per year, is to continue.

After the initial remediation, downstream surface water and sediment monitoring efforts disclosed evidence that fish in the Nassau Lake drainage basin had, and continue to, exhibit high PCB levels of contamination. In fact, PCB content in fish fat acquired from the drainage basin have remained virtually unchanged since monitoring began in the 1970's. The levels of PCB in Nassau Lake and Valatie Kill fish were expected to drop after remediation of the disposal site, but did not. These data prompted the State's lawsuit against GE in 1989. It is important to understand that existing PCB levels in the Lake and Valatie Kill sediments are generally lower than cleanup goals for PCBs in other water bodies, but are significant due to the very persistent and bioaccumulative nature of the particular PCB mixture present in the Lake and Kill.

GE agreed to obtain information necessary to assess any potential risk to human health and the environment, to identify and select an appropriate cleanup alternative, and to support the natural resource damage assessment. As part of the work, the sources of PCBs and other substances identified as contaminants of the Loeffel Site, and the extent of this contamination in the off-site areas, would be determined.

On-going Investigations

Due to the complex nature of the PCB problem associated with the site, the Remedial Investigation (RI) was phased from the outset. The first phase sought to define the areal and vertical extent of PCB and other potential site related contaminants and to investigate and determine if any immediate clean up actions (known as Interim Remedial Measures, or IRMs) were required. In Phase II of the RI, additional data needs as defined by the Phase I efforts would be gathered for use in the Feasibility Study (the evaluation of remedial alternatives), to determine the nature and extent of injury to the State's natural resource (i.e. damage), and to assess potential risk to human health and the environment.

Numerous work plans (which are a pre-determined scope of proposed work) have been prepared, reviewed and approved. Each time additional tasks and data needs are defined, a new or amended work plan is developed. Work plan development began as soon as the claim was filed in September 1989. However, due to definition of tasks and level of effort needed, together with significant analytical methodology problems, final approval did not occur until September 1992. Data gathering to establish the data base and to define contaminant distribution started in October 1991 prior to the official approval of the work plan. A detailed Sampling and Analysis Plan was developed as was a Health and Safety Plan.

In October 1993, the Interim Phase I Remedial Investigation Report was submitted addressing PCB distribution in the watershed between the site and the Lake, and additional data needs; in February 1994, the Environs Remedial Phase I addendum was submitted which was followed by the Final Environs Phase I report in April 1995. Review and analysis of the "Loeffel Site Environs, Revised Feasibility Report" is ongoing. It is anticipated that a Proposed Remedial Action Plan to address this portion of the contamination problem will be issued later this fiscal year. Concurrently with the Environs (surface water pathways) investigation effort, near site groundwater contaminated with VOCs (and not PCB) took a separate track, as it is a site-related problem independent of the surface

water issues. A work plan to address near site hydrogeology was prepared and the Interim Hydrogeological Remedial Investigation Report was submitted in August 1994. Additional groundwater data needs were identified and addressed in the Phase I Final Hydrogeological Remedial Investigation submitted in October 1996.

Based on review of the Phase I document it was determined that additional hydrogeologic data was necessary. This was provided to the department in a second report entitled "Phase II Hydrogeologic Report", Loeffel Site environs Remedial Investigation, October 1997. Following approval of the Remedial Investigation General Electric completed the Loeffel Site Environs Groundwater Feasibility Study, November 1997 and based on department questions and comments the "Loeffel Site Environs Groundwater Feasibility Study Addendum", June 1998.

In addition to the above discussed level of effort, other project tracking information has been gathered. Analytical results on domestic water supplies and residential well filters is collected and submitted to the State and to respective homeowners monthly. GE prepares and submits a quarterly progress report; this report summarizes work completed in the last quarter and proposes schedules and defines level of effort anticipated for the following quarter.

Site Monitoring Activities

Long-term site monitoring and maintenance are also continuing. These activities include near-site ground and surface water quality assessment, monitoring of fish in the Nassau Lake/Valatie Kill drainage system, leachate removal and disposal from the landfill and general site grounds maintenance including security fence repair, erosion control and mowing of the grass. Long-term monitoring is conducted by a consultant under contract and supervision by DEC.

In 1992, site-related contaminants were discovered in nearby residential groundwater wells. This discovery prompted a re-evaluation of the site long-term monitoring network, which resulted in the installation by the State of 6 new wells and piezometers. These wells, together with the concurrent installation of 34-new monitoring wells by GE, are being used to enhance our understanding of groundwater contamination near the site.

Long-term monitoring of surface water indicates PCB is not a continuing release from the site property to the drainage basin. Sources of PCB releases to the Lake are believed to be residual PCB in the drainage basin deposited there prior to site closure in 1984.

Findings of the groundwater RI:

As noted earlier, the remedial investigation was conducted in a series of phases and eventually approved in July 1997. The results of the remedial investigation show that the on and offsite groundwater is contaminated with VOCs. As described in the various RI reports numerous soil and groundwater samples were collected at the site to characterize both the nature and extent of contamination. Groundwater samples were collected from over 40 on-site and off-site monitoring wells. Analysis of samples from both shallow and deep groundwater were found to contain principally (VOCs). Numerous groundwater standards are exceeded.

Currently, three private wells south east of the site, parallel to but north of South Nassau Road have been found to be contaminated. Since being identified, these wells have been fitted with individual carbon filter treatment units to ensure that residents are provided safe drinking water. Initially, NYSDOH handled sampling and analysis of selected wells, an activity now being conducted by General Electric.

The Proposed Remedial Action Plan

Based on the results of the RI/FS for the groundwater portion of the site, NYSDEC in consultation with the New York State Department of Health (NYSDOH) is proposing a two step process to reduce the health and environmental threats posed by the site.

The proposed remedy includes enhanced hydraulic containment within the existing landfill and installation of off-site groundwater recovery wells to attack the off-site plume and on-site treatment of all collected remedial waters. This selection is based on the Departments findings that this alternative, among those reviewed in the Feasibility Study, is the most protective of human health and the environment, would comply with Standards, Criteria and Guidance more quickly, has good short-term effectiveness, has the highest long-term effectiveness and is implementable. This alternative also has the highest degree of reduction in toxicity, mobility and volume of contaminants. This being the most likely alternative to prevent additional homeowner wells from being impacted by the groundwater contaminant plume.

The estimated present worth cost to implement the remedy is $8.6 million. The cost to construct the remedy is estimated to be $3.33 million, and the estimated average annual operation and maintenance cost is $344,000.

The elements of the proposed remedy are as follows:

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Any uncertainties identified during the RI/FS would be resolved.

2. Installation and operation of a new leachate collection system within the disposal site to allow for hydraulic containment of waters within the disposal site.

3. Construction and operation of a new wastewater treatment facility at the site to manage leachate and groundwater generated as part of the site remedy.

4. Installation and operation of a bedrock groundwater recovery well system south of the site to control migration of the contaminant plume and to accelerate the time needed to meet groundwater and drinking water standards in the bedrock groundwater.

5. Monitoring and maintenance of the residential well treatment systems until the groundwater in the vicinity of the residences consistently meets groundwater and drinking water standards.

6. Maintenance of the disposal site, including mowing of the cap, fence inspection and repairs as needed, cap inspection and repairs as needed, and drainage way inspection and repairs as needed.

7. Since the remedy results in untreated hazardous waste remaining at the disposal site, a long term monitoring program would be continued. There would be several elements to the monitoring program. They are:

- monitoring of water levels within and in the vicinity of the disposal site to evaluate the effectiveness of the new leachate collection system in achieving hydraulic containment of the disposal site;

- monitoring of the groundwater quality in the vicinity of the disposal site and in the vicinity of the bedrock groundwater contaminant plume, to allow for evaluations of the effectiveness of the remedial program;

- monitoring of nearby residential wells in the vicinity of the bedrock groundwater contaminant plume, to allow for identification of potential exposures to the contaminants within the bedrock contaminant plume.

This monitoring program would allow the effectiveness of the remedy to be monitored and would be a component of the long-term operation and maintenance for the site.

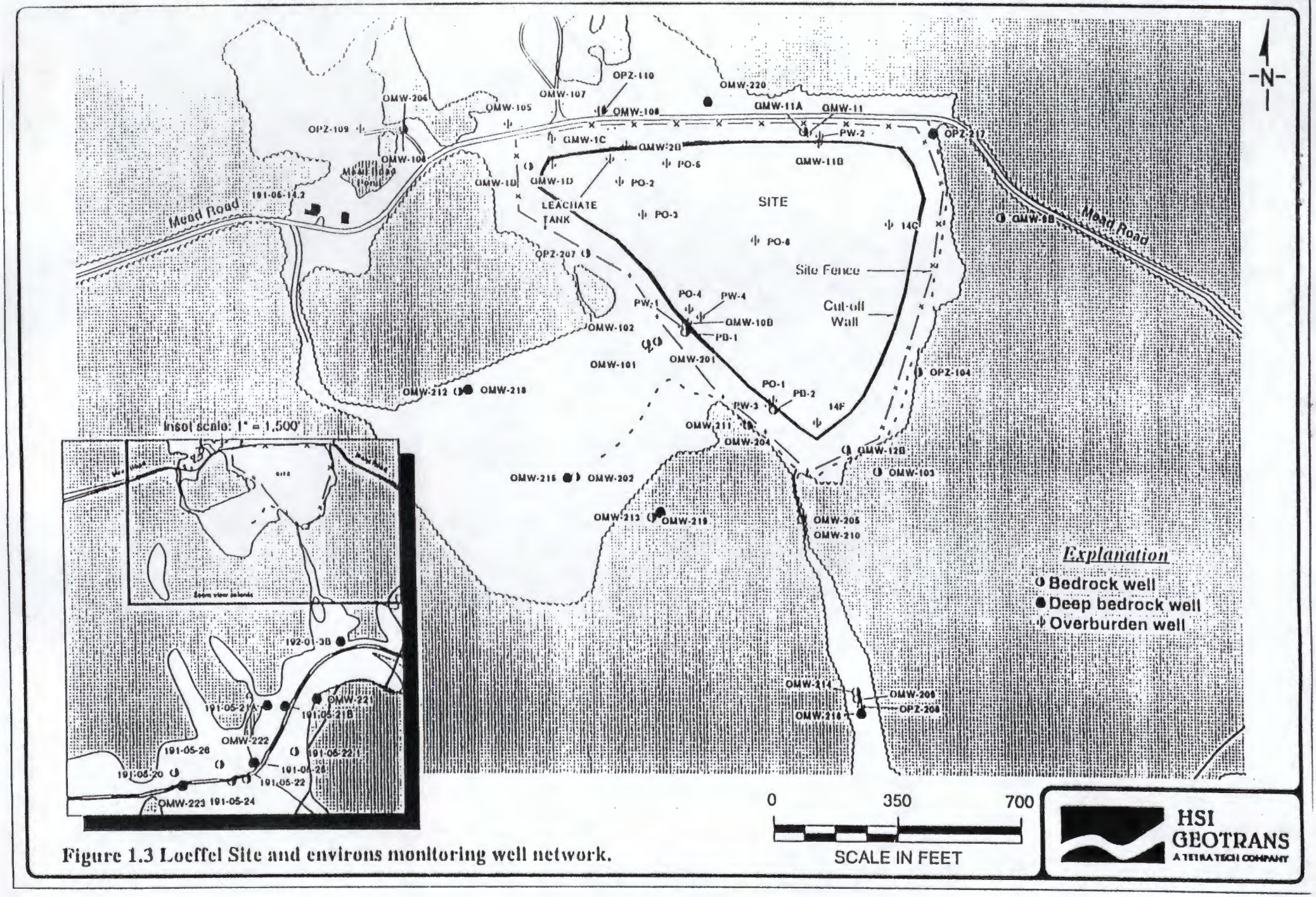

Figure 1.3 Loeffel Site and environs monitoring well network.