NPL Site Narrative for Peninsula Boulevard Ground Water Plume

PENINSULA BOULEVARD GROUND WATER PLUME
Hewlett, New York

Conditions at Proposal (March 8, 2004): The Peninsula Boulevard Ground Water Plume site is the location of a ground water plume with no identified sources of contamination. The area under which the ground water plume lies is predominantly residential. The plume was discovered when New York State Department of Environmental Conservation (NYSDEC) conducted a Remedial Investigation (RI) of a dry-cleaning business in Hewlett, New York. The investigation results indicated that almost six parts per million (ppm) of tetrachloroethylene (PCE) are present in shallow ground water; however, the highest concentrations and majority of plume area are not located directly beneath the subject dry-cleaning facility. Therefore, NYSDEC concluded that there is not enough evidence to identify the subject facility as a source of contamination. There are numerous other current and former dry-cleaning facilities in Hewlett.

The NYSDEC RI indicated that ground water flows from the main plume area to the northwest, in the direction of the Long Island Water Corporation (LIWC) Plant 5 Well Field. This cluster of 43 active wells (and numerous inactive wells) is located just northwest of the plume delineated by the RI. The active wells are all screened in the Jameco aquifer (i.e., aquifer of concern, as discussed below) at depths of approximately 150 feet, and contribute to the LIWC system through a common suction unit that prevents access to individual wells. LIWC considers the entire well field to be a single component of its blended system, which has 36 components (i.e., ground water wells) and serves a total population of 230,300 people. The Plant 5 Well Field component serves almost 6,400 of those people.

The people served by the LIWC Plant 5 Well Field are subject to contamination above health-based criteria before treatment, and the contaminants are attributable to the Peninsula Boulevard Ground Water Plume site. Since April 1991, the Plant 5 well water has been treated for PCE contamination by a packed tower aeration system (i.e., air strippers). PCE was detected in every quarterly raw water sample collected at the Plant 5 Well Field from 1999 through 2003, at concentrations ranging from 4.3 ppb to 14.4 ppb. Trichloroethylene (TCE) and cis-1,2-dichloroethylene (cis-1,2-DCE) were also detected in some samples, at individual concentrations ranging from 0.5 µg/L to 3.1 µg/L. The contaminants detected at the LIWC Plant 5 Well Field delineate the leading edge of the contaminated ground water plume.

The Peninsula Boulevard Ground Water Plume site is underlain by the upper glacial (water-table) aquifer, Gardiners Clay, Jameco aquifer, Magothy aquifer, Raritan clay, Lloyd aquifer, and bedrock, in descending order. The aquifer of concern is the Jameco, which consists of the Pleistocene-age Jameco Gravel and is of local importance in the site vicinity. The upper glacial aquifer is no longer used for water supply in the site vicinity. The Gardiners Clay is not a continuous confining layer throughout the two-mile radius of the site, including the Plant 5 Well Field. The upper glacial aquifer directly overlies the Jameco aquifer north of the site, and the two units are both moderately to highly permeable with nearly identical hydraulic conductivities. Based on these considerations, the upper glacial and Jameco aquifers are hydraulically connected in the immediate vicinity of the ground water plume. The Jameco aquifer is also hydraulically connected to the underlying Magothy aquifer, the primary source of public drinking water in Nassau County. The Lloyd aquifer is separated from the Magothy by the intervening Raritan clay, which is thick

and laterally extensive. The bedrock surface underlying the Lloyd aquifer forms the base of Long Island's ground-water reservoir.

The results of the NYSDEC investigation also indicated that PCE is present in a stream located in the immediate vicinity of the contaminated ground water plume. The stream flows north from the main plume area and across the grounds of Woodmere Junior High School North, about 100 feet from the building. Access to the stream is restricted by a fence; EPA visually inspected the fence as recently as April 2004.

This information shows that the site is eligible for inclusion on the NPL.

Status (July 2004): EPA is considering various alternatives for this site.

For more information about the hazardous substances identified in this narrative summary, including general information regarding the effects of exposure to these substances on human health, please see the Agency for Toxic Substances and Disease Registry (ATSDR) ToxFAQs. ATSDR ToxFAQs can be found on the Internet at ATSDR - ToxFAQs (http://www.atsdr.cdc.gov/toxfaqs/index.asp) or by telephone at 1-888-42-ATSDR or 1-888-422-8737.