

# Brewster Well Field

## New York

EPA ID#: NYD980652275

### EPA REGION 2

Congressional District(s): 19

Putnam

Village of Brewster

#### NPL LISTING HISTORY

Proposed Date: 12/1/1982

Final Date: 9/1/1983

## Site Description

Volatile organic compounds (VOCs) were discovered in the Village of Brewster Well Field's water distribution system in 1978. Subsequent testing revealed a large plume of ground water contamination. The source of the contamination was traced to a dry-cleaning establishment that has been in operation since 1958. Operators disposed of dry-cleaning wastes in a dry well located adjacent to the establishment until 1983. Between 1978 and 1984, the Village of Brewster used several drilling, blending, and pumping strategies to keep contaminant levels down. In 1984, the Village, in association with EPA's Office of Research and Development, installed a treatment system to remove the VOCs so as to provide safe drinking water to approximately 2,000 area residents. The nearby East Branch Croton River is a significant brown trout fishery and, in combination with two other nearby streams, is a part of the Croton System contributing to New York City's water supply. A water intake lies 12 miles downstream of the site. Woods and wetlands surround the well heads, pump houses, and access roads, and the wetlands connect directly with the East Branch Croton River.

Site Responsibility: This site is being addressed through federal and state actions.

## Threat and Contaminants

Ground water is contaminated with VOCs, including tetrachloroethylene and vinyl chloride. River water and sediments also contain VOCs, but at much lower concentrations. Since the water supply at the public well field is currently being cleaned to drinking water standards, the health threat is reduced. However, surface water needs continued monitoring to ensure that there are no ill effects on river life.

## Cleanup Approach

This site is being addressed in two long-term remedial phases focusing on the clean up of the ground water and controlling the source of contamination.

#### Response Action Status

Ground Water: The State began a remedial investigation and feasibility study (RI/FS) to determine the nature and extent of the ground water contamination and to evaluate remedial alternatives in early 1984. During the course of the RI/FS, the Village of Brewster installed a full-scale packed column air stripper, which treated the entire water supply. On the basis of results from the State's study, EPA selected a remedy for the ground water in 1986, that included continuing to operate the existing air stripping system at the well field and designing and constructing a ground water management system that would contain the plume of contamination and restore ground water quality in the vicinity of the site by extracting the contaminated ground water from wells, treating the extracted ground water with an air stripper, and reinjecting the treated water into the ground. In 1991, after the ground water management system was constructed and started up, the reinjection wells began to clog. After evaluating various corrective measures, it was determined that the most appropriate approach would be to discharge the treated ground water to the East Branch Croton River instead of reinjecting it. Construction of an underground discharge pipe and outfall system for the ground water management system was completed in September 1996 and the system was restarted in October 1996. The modification to the selected remedy (i.e., changing the final disposition of the treated groundwater from reinjection to surface water discharge) was documented in a December 1996 Explanation of Significant Differences (ESD). On April 11, 1997, EPA approved a Preliminary Close-Out Report, documenting the completion of construction activities at the site. After operating the groundwater management system for 10 years as a long-term response action, in October 2007, the State assumed responsibility for its operation and maintenance.

Source Control: In 1988, following the completion of a source control RI/FS, EPA selected a remedy for cleaning up the source of the ground-water contamination that included excavating about 100 cubic yards of sediments, sludge, and soil contaminated with VOCs from the dry well located outside of the dry cleaners; treating/disposing of these materials off-site; removing the dry well; and decontaminating the excavated dry well and associated debris and disposing of them off-site at an EPA-approved hazardous waste facility. EPA began cleanup activities in 1989; these activities were completed in 1991.

Entire Site: Five-year reviews are undertaken at sites to ensure that implemented remedies protect public health and the environment and that they function as intended by site decision documents. In April 2002, EPA issued a Five-Year Review report, which concluded that the response actions implemented at the site are in accordance with the remedy selected by EPA and that the remedy was protective of human health and the environment. In April 2007, EPA issued a second Five-Year Review report, which concluded that additional data was needed before a protectiveness determination can be made. Based on the data that was collected, an addendum to the second Five-Year Review was completed in September 2009. The addendum concluded that the implemented remedial actions were protective of the human health and the environment.

The results of soil gas samples collected beneath the slab of the former dry cleaner (now a Subaru dealership) showed elevated VOC concentrations. Because of concerns that vapors could be impacting indoor air at the dealership, a subslab mitigation system was installed. Further investigation at the dealership indicated that a small volume of contaminated soil was present underneath the building. The subslab mitigation system was enhanced so that it could target the contaminated soil. There are no impacted private water supply wells in the vicinity of the groundwater plume. Since new wells cannot be drilled without a permit from the County Department of Health, the installation of new wells in the contaminated plume is effectively prevented. To prevent the potential exposure to the contaminated soils on the Subaru dealership property and to area groundwater, EPA notified the local planning board that EPA should be contacted prior to the approval of any construction on the dealership property and any planned development in the general vicinity of the site. The dealership was similarly notified. Periodic reminders will be issued to the planning board and the dealership. The County Department of Health's restrictions related to the installation of wells and the notifications to the planning board and the dealership constitute institutional controls, which were added to the implemented remedy. These changes were documented in an October 2009 ESD. For the remedy to be protective in the long term, additional data will need be collected to ensure that the groundwater management system is effectively capturing the groundwater plume and that the enhanced subslab mitigation system is addressing the contaminated soil. It is anticipated that the next review will be performed by April 2012.

## Cleanup Progress

The source of the contamination at the well field, the dry well, has been excavated and removed from the site. The Village of Brewster's ground water treatment system continues to treat ground water for distribution to the public, eliminating the risk of ingesting contaminated water. The ground water management system, which has been in operation since 1996, has treated approximately 279 million gallons of contaminated water, to date. It is estimated that 10,000,000 gallons of contaminated ground water will be treated per year for 10 years.

## Site Repositories

Brewster Village Hall, 208 East Main Street, Brewster, NY 10509

EPA Region 2 Superfund Records Center, 290 Broadway, 18th Floor, New York, NY 10007-1866