

# Vestal Water Supply Well 1-1

## New York

EPA ID#: NYD980763767

### EPA REGION 2 Congressional District(s): 26

Broome  
Vestal

NPL LISTING HISTORY  
Proposed Date: 12/1/1982  
Final Date: 9/1/1983

## Site Description

The Vestal Water Supply Well 1-1 is located on the southern bank of the Susquehanna River in the Town of Vestal. An industrial park is located immediately to the southeast of the well, along Stage Road. Several marshy areas and drainage ditches encompass and interlace the industrial park. The western portion of the site includes a water district well field, a soccer field, and a fire department training center. Well 1-1 is one of three production wells in Water District 1 intended to provide drinking water to several water districts in the Vestal area. The well is moderately contaminated with several volatile organic compounds (VOCs), including 1,1,1-trichloroethane and trichloroethylene. Well 1-1 was the main source of water for District 1 until 1980, when it was closed. Well 1-2 became the main source of water until 1988, when it was closed due to mechanical failure. Well 1-3 became the primary source of water for Water District 1, until replacement Well 1-2A was installed by the Town of Vestal. Well 1-1A, which was constructed during EPA's remedial activities at this site to replace failing Well 1-1, is now being used as an extraction well to treat the contaminated groundwater through an associated air stripping facility.

The original Vestal Water Supply Site also contained Well 4-2 in Water District 4. However, this well was separated into its own NPL site, Vestal Water Supply Well 4-2, when it was discovered that Well 1-1 and Well 4-2 were contaminated by two separate sources. Well 1-1 has pumped groundwater into the Susquehanna River since 1980, in order to prevent the contaminant plume from affecting other District 1 wells. Approximately 27,000 people reside in the Town of Vestal, and approximately 17,000 rely on public water supplies for drinking water.

Site Responsibility: This Site is being addressed through Federal and State actions.

## Threat and Contaminants

Pollution from the Stage Road Industrial Park has caused the groundwater in the vicinity of Well 1-1 to be contaminated with VOCs. Soils in the industrial park also contain significant levels of VOCs in two separate locations. The use of untreated water from Well 1-1 by the residents of Vestal could have exposed a significant portion of the Town's population to contaminants before the well was taken out of service in 1980. Residents in the area receive drinking water from public supply wells which are routinely tested to ensure compliance with state and federal drinking water standards.

## Cleanup Approach

The site is being addressed in three stages: immediate actions and two long-term remedial phases focusing on cleanup of the groundwater and source remediation.

### Response Action Status

Immediate Actions : Well 1-1 was removed from service in 1980.

Groundwater: Based on the results of the site investigation performed by the State, EPA signed a Record of Decision which selected air stripping treatment technology at Well 1-1. This remedy was intended to accomplish the following: (1) restoration of District 1 water supply capacity to the level that existed prior to the loss of Well 1-1; (2) provision of a water supply to the district that provides a high level of public health protection; (3) hydraulic containment of the plume contaminants by pumping Well 1-1, thereby protecting other District 1 water supply wells; and (4) treatment of groundwater from Well 1-1 by air stripping to stop the discharge of contaminated water to the Susquehanna River. The construction of the air stripping facility was completed in 1990. Subsequently, because Well 1-1's yield decreased to a level that might have been insufficient to contain the plume of contamination, the well was replaced by EPA with a well

designated as Well 1-1A, which has a capacity similar to the original yield of Well 1-1. Well 1-1A and the associated air stripping facility will continue to treat contaminated groundwater and discharge the treated effluent to the Susquehanna River as part of EPA's long-term response actions at this site. Under CERCLIS, EPA can perform LTRA activities for only ten years after which the operation and maintenance of the groundwater treatment facility is transferred to the State. Since October 2006, NYSDEC assumed responsibility for operation and maintenance of the facility.

Source Remediation: The EPA has completed an investigation that identified two specific source areas of contamination, designated as Areas 2 and 4, within the industrial park and evaluated possible contaminant source control measures to eliminate further pollution of the groundwater. Remedial designs of in-situ soil vapor extraction (SVE) for Areas 2 and 4 contamination were completed in September 1994. Construction of the SVE system to treat contaminated soils in Area 2 was completed in January 1997. The SVE system began operations on January 18, 1997 and was terminated on November 20, 2000, after results of an interim soil sampling program confirmed that the SVE system successfully achieved the cleanup goals specified in the Record of Decision. Soil sampling was performed in Area 4 in September and October 2001 to further delineate the area of contamination and to refine the remedial design completed in September 1994. Construction of the Area 4 SVE system was started on April 1, 2003 and was completed on June 26, 2003. The remedy also included monitoring of groundwater, with future treatment for heavy metals if necessary.

In November 2005, EPA conducted soil and groundwater sampling at the site to evaluate the progress of the SVE system in cleaning-up Area 4. The results of the sampling showed that very high levels of VOCs still remained in the deep unsaturated and the shallow saturated zones. To continue the cleanup of the site, supplemental remedial action will be needed since the SVE system cannot readily remove VOCs from the fine-grained sediments, which exist at the site or from the saturated zone. In August 2006, November 2007 and July 2008, EPA conducted further soil and groundwater sampling at the site to delineate the horizontal and vertical extent of VOCs contamination remaining at the site. These results will be used to select and to design the additional treatment system needed to address the contamination at the site. The SVE system was shutdown in January 2006 and will be restarted once the additional treatment system to address the deep unsaturated and the shallow saturated zones is installed, which is expected to occur in the fall of 2009.

## Cleanup Progress

By closing down the contaminated well and making Well 1-3 and Well 1-2A the primary supplies of drinking water, residents are no longer exposed to contaminated drinking water. Groundwater from Well 1-1A is being pumped and treated prior to discharge into the Susquehanna River, thus protecting the public health and the environment. To date, the air stripping facility has treated approximately 3.1 billion gallons of contaminated groundwater over the eleven years of operation. Soil cleanup actions will remediate the sources of contamination at the site. A total of approximately 1,046 pounds of volatile organic compounds was removed from Area 2 through the operation of the soil vapor extraction treatment system. The volume of treated soil in Area 2 was approximately 17,000 cubic yards. The cleanup goals for Area 2 have been achieved. From June 2003 through January 2006, a total of approximately 2,300 pounds of VOCs was removed from Area 4 through the operation of the SVE treatment system.

A five-year review of the site was conducted in September 2008 to ensure that the implemented remedies are protective of public health and the environment. Based on this review, it was concluded that the remedial actions for this site need to be continued, and that currently there is no human or environmental exposure to contaminated groundwater and soil.

(Cleanup Yet To Be Performed)

The cleanup goals cited in the Record of Decision have not been met for the groundwater or for the soils in Area 4. The groundwater remedy is expected to be completed when groundwater cleanup goals are achieved through air stripping and cleanup of the remaining source area. The SVE system in Area 4 began operations on June 27, 2003 and was shutdown in January 2006. The system will be restarted when the system is enhanced to address the contamination located in the deep unsaturated and the shallow saturated zones and will be operated until the soil cleanup goals specified in the Record of Decision for Area 4 are achieved.

## Site Repositories

USEPA Region 2: Superfunds Records Center, 290 Broadway, 18th Floor, New York, NY 10007-1866