

# Health Assessment for

POHATCONG VALLEY GROUNDWATER CONTAMINATION

CERCLIS NO. NJD981179047

WARREN COUNTY, NEW JERSEY

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Agency for Toxic Substances and Disease Registry  
U.S. Public Health Service

## THE ATSDR HEALTH ASSESSMENT: A NOTE OF EXPLANATION

Section 104(i)(7)(A) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, states "...the term 'health assessment' shall include preliminary assessments of potential risks to human health posed by individual sites and facilities, based on such factors as the nature and extent of contamination, the existence of potential pathways of human exposure (including ground or surface water contamination, air emissions, and food chain contamination), the size and potential susceptibility of the community within the likely pathways of exposure, the comparison of expected human exposure levels to the short-term and long-term health effects associated with identified hazardous substances and any available recommended exposure or tolerance limits for such hazardous substances, and the comparison of existing morbidity and mortality data on diseases that may be associated with the observed levels of exposure. The Administrator of ATSDR shall use appropriate data, risk assessments, risk evaluations and studies available from the Administrator of EPA."

In accordance with the CERCLA section cited, this Health Assessment has been conducted using available data. Additional Health Assessments may be conducted for this site as more information becomes available.

The conclusions and recommendations presented in this Health Assessment are the result of site specific analyses and are not to be cited or quoted for other evaluations or Health Assessments.

HEALTH ASSESSMENT  
POHATCONG VALLEY GROUNDWATER CONTAMINATION  
WARREN COUNTY, NEW JERSEY

Prepared by  
Environmental Health Service  
New Jersey Department of Health (NJDOH)  
and  
Division of Science and Research  
New Jersey Department of Environmental Protection (NJDEP)

Prepared for  
Agency for Toxic Substances and Disease Registry (ATSDR)

OBJECTIVES

The Remedial Investigation and Feasibility Study (RI/FS) of the Pohatcong Valley Groundwater Contamination study area is being conducted by the U.S. Environmental Protection Agency (USEPA) and is in the second year of the work plan. Based upon the current stage of site investigation, the objectives of this Health Assessment are to:

- \* Assess the nature and magnitude of potential health effects associated with the site and determine the site's degree of public health concern;
- \* Identify, if necessary, immediate actions necessary to minimize exposure to hazards and contamination associated with the site;
- \* Identify, if necessary, deficiencies in data or information regarding the site;
- \* Document the concerns of the community with regard to the site;
- \* Review remedial activities within the context of potential public health implications;
- \* Assess whether additional health study or investigation of the site is warranted.

SUMMARY

The Pohatcong Groundwater Contamination site refers to the general contamination of the Kittatinny Limestone aquifer underlying the Pohatcong Valley. The site comprises approximately 3,500 acres including areas of Franklin Township, Washington Township, and Washington Borough, in Warren County, New Jersey. Thirty-four potentially responsible parties (PRPs)

have been identified by NJDEP as contributing to contamination of the region's sole source aquifer. Beginning in the late 1970s, analysis of private and municipal wells revealed contamination by volatile organic compounds, most notably trichloroethene and tetrachloroethene, potentially affecting 12,000 valley residents. A Spill Fund project conducted by NJDEP to install an alternative water supply for all the residents was begun in January 1988 and is complete, although residential participation is elective. The USEPA is conducting the RI/FS. The Pohatcong Valley Groundwater Contamination site was added to the National Priorities List in March 1989 and is currently ranked 106 of 108 sites in New Jersey. ATSDR and NJDOH consider this site to be of potential public health concern. This site is being evaluated for follow-up health study and evaluation.

#### SITE DESCRIPTION

The Pohatcong Valley is bordered to the north by the Oxford Mountains, to the south by the Pohatcong Mountains, and includes portions of Washington Borough, Washington Township, and Franklin Township. The Pohatcong Groundwater Contamination site encompasses about 3,500 acres within the Valley.

The aquifer underneath the Valley previously served as the sole source of potable water for the residents. NJDEP investigated two public supply wells in Washington Borough in 1978 and 1979. Analyses revealed high levels of tetrachloroethene and trichloroethene, prompting the closing of one well and the installation of a carbon filtration system at the other. In 1984 and 1985, the Warren County Health Department detected trichloroethene and a number of other volatile organic chemicals in 79 private wells throughout the Valley. In cases where permissible levels for drinking water were exceeded, bottled water was supplied by the County. A Spill Fund project to close the wells using the contaminated aquifer and install an alternative water supply for all the residents was begun by NJDEP in January 1988 and completed in March 1989. To date, approximately 40 residents have refused service connection because of financial concerns regarding future water bills. Currently, potable water for the residents of Pohatcong Valley comes from two newly installed public supply wells. Semiannual sampling of these public supply wells has not detected any volatile organic compound (VOC) contamination.

USEPA conducted a preliminary study to determine the scope of the work plan for a RI/FS in October 1988. The RI/FS was initiated in late 1989. NJDEP has identified and initiated enforcement actions against several PRPs located in the Valley and bordering highlands.

#### SITE VISIT

A site visit to the Pohatcong Valley was conducted by the NJDEP, Division of Science and Research, on April 26, 1989. Washington Borough is relatively densely populated and contains a mixture of commercial and residential areas. Franklin Township is relatively sparsely populated, with farmlands and grazing cows along side Route 57.

Three facilities were visited: American National Can Company, Warren Controls, and the High Point Landfill. Warren Controls is located on Route 57 in Franklin Township. Several 55-gallon uncapped drums were found in the backyard of the facility. No signs of leachate from these drums was observed. The American National Can Company is located on Route 31, approximately 0.5 mile north of the intersection of Routes 57 and 31 in Washington Borough. The High Point Landfill is located on the northern side of the Valley, near the top of Pohatcong Mountain, in Franklin Township. The size of the Landfill is approximately 3 miles by 3 miles. The Landfill is fenced. No apparent physical hazards were observed at the American National Can Company or the High Point Landfill.

#### COMMUNITY CONCERNS

Although the site was only recently added to the NPL and the PRPs have not been clearly linked to the groundwater contamination, there is public concern with the groundwater contamination problem experienced in the area. Issues of long-term health effects associated with utilizing contaminated groundwater for potable and domestic purposes, and the financial burden of converting to a public water supply are the primary issues associated with the site. Approximately 40 residents have refused service connection to the public water supply due to the water bill that would be incurred.

#### ENVIRONMENTAL CONTAMINATION AND PHYSICAL HAZARDS

The primary environmental pathway at the Pohatcong Valley site is associated with groundwater. Pathways associated with other media, particularly soils, surface water, and air, may be of concern at various PRP locations depending upon local conditions. At the present stage of site investigation, there are no data or information sources available to substantiate possible environmental pathways other than groundwater.

Groundwater contamination data in the study area were collected from the late 1970s to the mid 1980s. The concentrations of the following contaminants in potable wells exceeded the New Jersey drinking water standards in effect at that time (values in parentheses are maximum concentrations detected): trichloroethene (500 ppb), tetrachloroethene (561 ppb), ethyl benzene (1.6 ppb), 1,2-trans-dichloroethene (19 ppb), 1,1,1-trichloroethane (180 ppb), 1,1,2-trichloroethane (29 ppb), 1,1-dichloroethane (190 ppb), dichloromethane (11 ppb), toluene (2.3 ppb), vinyl chloride (18 ppb), and chloroform (7.9 ppb).

Analyses of surface soil samples collected at the Fielbacks Welding property and Buchman's Sales property showed significant concentrations of 1,1,1-tetrachloroethane (TCA), ethyl benzene, o-dichlorobenzene, m-dichlorobenzene, styrene, toluene, 1,2,4-trimethyl benzene, m-xylene, and numerous other unidentified chemical compounds.

No outstanding or discernible physical hazards are associated with the site.

## QUALITY ASSURANCE/QUALITY CONTROL

Quality assurance/quality (QA/QC) control data were not available for review and evaluation. Analyses of the wells currently providing the public water supply is subject to QA/QC review by the NJDEP/Division of Water Resources.

## DEMOGRAPHICS

The population affected by the contaminated aquifer is estimated to be approximately 12,000. Land use in the Pohatcong Valley includes rural farms within portions of Washington and Franklin Townships and relatively densely populated residential areas in Washington Borough.

No readily identifiable sensitive populations, with the exception of children, pregnant women, and the elderly, inhabiting the Valley, are associated with the site.

## ENVIRONMENTAL DATA GAPS

The Remedial Investigation of the Pohatcong Groundwater Contamination area has not been completed. The following site data and information needs are identified as desirable for the formulation of a comprehensive Health Assessment.

Additional groundwater samples are needed to comprehensively characterize and delineate the groundwater contamination in the Pohatcong Valley. Although available data indicate areas of high and low levels of contamination, the sampling points were residential wells which were not cited based upon suspected source areas. Areas of high contaminant concentrations may exist which are not indicated by the available data.

Records from the Victaulic Company of America, a PRP, indicate that industrial wastewater has been discharged into an abandoned building foundation southwest of the property. Data describing possible contamination at this location is limited.

Pohatcong Creek is the primary surface water drainage for the Valley. Pohatcong Creek originates near Hackettstown at South Pohatcong Mountain and runs through the Valley. The creek could potentially be affected by the contaminated aquifer or the potential sources of the contamination. Since the creek is used for recreation (e.g., fishing) and irrigation, contamination via food chains may potentially exist. Sampling data on the Pohatcong Creek are not currently available.

Environmental data describing the nature and extent of contamination which may be associated with individual PRP sites within the Pohatcong Valley study area are needed.

## EXPOSURE PATHWAYS

The primary human exposure pathway associated with the site is through the use of contaminated groundwater for potable and domestic purposes. The current public water supply has been analyzed and found to be uncontaminated. However, it is probable some Pohatcong Valley residents were exposed to VOCs from the late 1970s to 1988. Potential human exposures may have resulted from ingestion of contaminated well water, dermal absorption, and/or inhalation from activities such as laundering clothes or showering.

Groundwater in the Pohatcong Valley continues to be utilized. The location of several private wells within the vicinity of the Fielbacks Welding property and Buchman's Sales property constitutes a potential exposure pathway of concern. Ten farm wells, which are used to water livestock, remain unsealed. Although bioaccumulation of volatile organic compounds in livestock and the foodchain is possible, this pathway is not likely to be significant at this site, based upon available data and information.

Human exposure pathways associated with environmental media other than groundwater are presently undocumented but may be significant depending upon conditions existing at individual PRP locations.

## PUBLIC HEALTH IMPLICATIONS

NJDEP files indicate that groundwater contamination in the Pohatcong Valley has been present since the late 1970s. The aquifer underlying the site was used as the sole source for potable water in the area. Human exposure to groundwater contaminants is likely to have occurred from using the contaminated well water before the closure of the wells.

The cumulative impact to the public health of past exposure to contaminated groundwater is unknown. The public health concern associated with the site has diminished with the availability of a public water supply. However significant risks may be associated with wells which are still utilized for potable and/or domestic purposes.

## CONCLUSIONS AND RECOMMENDATIONS

On the basis of the information reviewed, ATSDR has concluded that the Pohatcong Valley Groundwater Contamination site is of public health concern because of the risk to human health resulting from possible exposure to hazardous substances at concentrations that may result in adverse health effects. As noted in Environmental Contamination section above, human exposure to volatile organic compounds may occur and/or may be occurring, and probably occurred in the past via the potable and domestic use of contaminated groundwater.

The precise source(s) of the contamination need to be identified, if possible. An industrial survey is recommended to obtain site-specific

information from each of the PRPs. Fences may need to be erected, if direct contact with soils at or near any PRP properties, are determined to pose a health concern.

Sample Pohatcong Creek for site-related contaminants to help determine if the use of the creek water for recreation, fishing, or irrigation purposes can result in a human exposure pathway of concern.

A review of possible environmental and subsequent human exposure pathways associated with various PRP locations within the Pohatcong Valley study area should be conducted, within the context of this Health Assessment, when such information becomes available.

A residential well survey to locate additional groundwater sampling points is necessary to determine the extent of groundwater contamination. Monitoring or closure of all contaminated wells is recommended.

In accordance with CERCLA as amended, the Pohatcong Valley Groundwater Contamination site has been evaluated for appropriate follow-up with respect to health effects studies. Since human exposure to on-site and off-site contaminants may currently be occurring and probably occurred in the past, this site is being considered for follow-up health effects studies. After consultation with Regional EPA staff and State and local health and environmental officials, the Division of Health Studies, ATSDR, and the New Jersey Department of Health will determine if follow-up public health actions or studies are appropriate for this site.

When indicated by public health needs, and as resources permit, the evaluation of additional relevant health outcome data and community health concerns, if available, is recommended.

CERTIFICATION

This Health Assessment was prepared by the New Jersey State Department of Health under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the health assessment was initiated.



Technical Project Officer, SPS, RPB, DHAC

The Division of Health Assessment and Consultation (DHAC), ATSDR, has reviewed this Health Assessment and concurs with its findings.



Division Director, DHAC, ATSDR

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