

SITE REVIEW AND UPDATE

ROCKY HILL MUNICIPAL WELLS

**ROCKY HILL BOROUGH, SOMERSET COUNTY,
NEW JERSEY**

CERCLIS NO. NJD980654156

Prepared by:

New Jersey Department of Health
Environmental Health Service

Under Cooperative Agreement with the
Agency for Toxic Substances and Disease Registry

SUMMARY OF BACKGROUND AND HISTORY

The approximately 2-acres Rocky Hill Municipal Well (RHMW) site is located in Rocky Hill Borough, Somerset County, New Jersey, near the intersection of Route 206 and Route 518 (Figure 1). The site consists of two wells, which were first constructed in 1936. One well (well # 1) was abandoned and sealed sometime between 1976 and 1978. Well #2 is in current use and supplies drinking water to approximately 1000 Rocky Hill Borough residents.

In 1978, Rutgers University conducted a survey of the groundwater in the vicinity of Rocky Hill. The study revealed the presence of trichloroethylene (TCE) in the Rocky Hill Municipal Well. The samples taken at well # 2 showed it to be contaminated with TCE at 25 parts per billion (ppb). Because of the contamination, well #2 was closed in 1978. Testing performed by the Borough between 1978 and 1983 showed that the TCE contamination levels ranged between approximately 50 ppb and 200 ppb. During the shutdown of well # 2 from 1978 to 1983, the Borough obtained potable water from the Elizabethtown Water Company.

Rocky Hill Borough installed air strippers in July 1983 to remove the TCE from the drinking water supplied to the Borough residents. The site was placed on the National Priorities List (NPL- a.k.a. Superfund) in September 1983.

In 1984, the New Jersey Department of Environmental Protection (NJDEP) and the U.S. Environmental Protection Agency (USEPA) signed a cooperative agreement enabling NJDEPE to conduct a Remedial Investigation/Feasibility Study (RI/FS) of this site and a nearby related NPL site known as the Montgomery Township Housing Development (MTHD) site.

A Remedial Investigation/Feasibility Study (RI/FS) of the Rocky Hill Municipal Well site began in 1986. Results of the sampling have revealed that a plume of TCE contamination roughly from Route 206 east to the Millstone River; north to Sycamore Lane; and south to Route 518 (Figure 2). Contamination levels of TCE detected in monitoring wells ranged from below the detection limit, 5 ppb, to 650 ppb. The contamination plume has apparently reached the Millstone River, where groundwater discharge is likely but not detected as of this date.

During the RI/FS as many as 13 potentially responsible parties (PRP's) were identified, however, the main source of contamination is thought to be Princeton Gamma Tech which is located near the site on Route 518 in Montgomery Township.

During the investigation, TCE was detected in the shallow groundwater below the Princeton Gamma Tech facility at a maximum concentration of 5,900 ppb. TCE was also detected in the Princeton Gamma Tech septic tank. The RI/FS reported that past discharge of TCE into the Princeton Gamma Tech septic tank was the likely source of the Rocky Hill Municipal Well site TCE contamination.

A Health Assessment was prepared for the Agency for Toxic Substances and Disease Registry

(ATSDR) in August 1988. The Health Assessment noted that contaminated groundwater and air were the only identifiable human exposure pathways. It also concluded that potential human exposure to VOC contaminated well water may have occurred in the past and that the potential for human exposure had been removed through the air stripping. The Health Assessment also concluded that there was a potential for inhalation exposure to contaminated air to residents near the water treatment site.

The Health Assessment did not report specific site-related community health concerns, however, according to the NJDEP there was some past community concerns regarding the location of the air stripper and possible associated air and noise pollution.

In its final conclusion, based on the available data, ATSDR found the Rocky Hill Municipal Well site to be of potential public health concern.

The Health Assessment recommended that: 1) indoor air samples should be taken in area residences to determine if volatile organic compounds (VOC's) are off-gassing into basements and 2) surface water and sediment sampling from near by bodies of water be continued.

CURRENT SITE CONDITIONS

On February 9, 1994, J.J. Winegar of the New Jersey Department of Health (NJDOH) visited the Rocky Hill Municipal Well site accompanied by the Montgomery Township Health Officer.

The site was found to include a small one story stone building, a large water tower, and two air stripping units, all surrounded by a chain link fence. The fence and the building appeared to be secure and there was no evidence of any trespassing on the site. The site has not changed since the original health assessment was written.

Rocky Hill Municipal Well # 2 is still in operation and supplying potable water to the Borough residents. Water from the well is treated to remove/reduce contaminant concentrations below New Jersey Maximum Contamination Levels (MCLs). Since water quality will be closely monitored by NJDEP and local officials, additional evaluation of water quality from this well by the NJDOH and the ATSDR is not indicated.

The air stripping units were in operation at the time of the site visit and no odors or significant noise were noted.

The surrounding area is largely commercial and residential. The nearest residences appear to be about 200 feet from the site.

CURRENT ISSUES

Past public health concerns, regarding potential human exposure pathways associated with the Rocky Hill Municipal Well site, appear to be valid. There are, however, no documented on-going exposures to site-related contaminants associated with the site. For a period of ten years, from 1968 when Princeton Gamma Tech began operations until well # 2 was closed in 1978, residents of Rocky Hill Borough may have been exposed to TCE in their drinking water.

The public health concern raised in the Health Assessment, involving possible human exposures to TCE (and other VOC's) contaminated air released from the air stripper, does not appear to be valid in light of current conditions. According to the South Brunswick Township Water Department (personal communication, 2/16/94), no air sampling has been performed at the site. However, at the pretreatment levels currently found in the well, of between 40 ppb and 214 ppb, it is unlikely that appreciable quantities of VOC's are released into the ambient air.

According to the local health officer (personal communication), there are no current public health concerns regarding the site. In addition, there are no known community complaints regarding odor or noise from the air stripping operation.

PUBLIC HEALTH IMPLICATIONS

This section contains a discussion of the possible health effects in persons exposed to a specific contaminant at the site. Evaluations of State and local databases are not indicated because of the unlikelihood of adverse health effects. In addition, there were no specific community health concerns to address.

Health effect evaluations are accomplished by estimating the amount (or dose) of those contaminants that a person might come in contact with on a daily basis. This estimated exposure dose is then compared to established health guidelines. People who are exposed for some crucial length of time to contaminants of concern at levels above established guidelines are more likely to have associated illnesses or disease.

Health guidelines are developed for contaminants commonly found at hazardous waste sites. Examples of health guidelines are the ATSDR's Minimum Risk Level (**MRL**) and the USEPA's Reference Dose (**RfD**). When exposure (or dose) is below the MRL or RfD then non-cancer, adverse health effects are unlikely to occur.

MRLs are developed for each route of exposure, such as acute (less than 14 days), intermediate (15 to 364 days), and chronic (365 days and greater). ATSDR presents these MRLs in Toxicological Profiles. These chemical-specific profiles provide information on health effects, environmental transport, human exposure, and regulatory status.

The toxicological effects of the contaminants detected in the environmental media have been considered singly. The cumulative or synergistic effects of mixtures of contaminants may serve to enhance their public health significance. Additionally, individual or mixtures of contaminants may have the ability to produce greater adverse health effects in children as compared to adults. This situation depends upon the specific chemical being ingested or inhaled, its pharmacokinetics in children and adults, and its toxicity in children and adults.

In evaluating the toxicological significance of potential exposure of Borough residents to TCE, the following assumptions were made: 1) Adults drank 2 liters of water per day and children drank 1 liter per day; 2) an individual body weight of adults is 70 kilograms and a child is 10 kilograms; and 3) residents drank water every day for 10 years. Residents of Rocky Hill Borough may have been exposed to TCE in their drinking water at an estimated maximum concentration of 25 ppb.

The estimated exposure dose is well below ATSDR's intermediate oral MRL of 0.07 mg/kg/day. Exposure doses were also below the no observed adverse effect levels (NOAELs) for chronic exposure in animals (for effects other than cancer) in studies cited in ATSDR's Toxicological Profile for this chemical.

Studies have shown that TCE is carcinogenic in animals; the USEPA classifies TCE as a probable human carcinogen. Based upon the maximum concentration found in well # 2 in 1978 and resultant estimated exposure doses, the lifetime excess cancer risk (LECR) associated with oral exposure to TCE would present an insignificant or no increased risk of cancer. For example, for every 1 million persons exposed for 10 years to 25 ppb of TCE in their drinking water, at most, an additional 1 (adult) or 4 (children) cancers may occur in 70 years. Therefore, for the approximately 1000 Rocky Hill Borough residents exposed to contaminated water, it is unlikely that they will develop cancer from their exposure.

CONCLUSIONS

Conclusions made in the 1988 ATSDR Health Assessment, regarding the site being of potential public health concern, would only be partially true. A reevaluation of past exposures, using present day health assessment procedures and based on current site conditions and data, the ATSDR/NJDOH has determined that the site would be of no apparent public health hazard. This category applies to both past and the present conditions at the site.

It is unlikely, based on a worse case scenario of exposure dose and duration, that residents of Rocky Hill Borough will experience any adverse health effects from the past exposure to contaminants in their drinking water.

The original health assessment noted that due to the air stripping treatment at the site, the potential for human exposure to contaminated groundwater had been removed. This conclusion remains valid.

As long as the groundwater treatment system remains in operation it is unlikely that exposure to contaminants, resulting in adverse health effects, would occur.

The level of TCE contamination in well #2, at the pretreatment levels currently found in the well, of between 40 ppb and 214 ppb, it is unlikely that appreciable quantities of VOC's are released into the ambient air.

RECOMMENDATIONS

The recommendation in the original health assessment to continue surface water and sediment sampling in the nearby bodies of water is valid. This is particularly important in the region where the contamination plume has apparently reached the Millstone River, where groundwater discharge is likely but not detected as of this date.

The recommendation in the original health assessment to take indoor air samples in residences; is not considered valid in light of current site conditions.

Remedial activities implemented at the Rocky Hill Municipal Well site, and the related Montgomery Township Housing Development (MTHD) site, are sufficient to address concerns of the ATSDR, the NJDOH, and the community regarding the site. The remedial actions are consistent with protection of the public health.

After a review of the most recent documents and the current site conditions for the Rocky Hill Municipal Well site, the ATSDR and the NJDOH have determined that no further action is required at the site based on the following facts: (1) there are no known community health concerns about past exposure to contaminants; (2) ATSDR/NJDOH has determined that estimated exposure doses, for past exposures at the Rocky Hill Municipal Well site, were well below ATSDR's intermediate oral MRL and the lifetime excess cancer risk (LECR) associated with oral exposure to TCE would present an insignificant or no increased risk of cancer (3) there are no current exposures at the site that are likely to result in adverse health effects.

RECOMMENDATIONS OF THE HEALTH ACTIVITIES RECOMMENDATIONS PANEL (HARP)

The data and information developed in the Site Review and Update for the Rocky Hill Municipal Wells site, Rocky Hill Borough, New Jersey, has been evaluated by ATSDR's Health Activities Recommendation Panel (HARP) for appropriate follow-up with respect to health activities. Although past exposures have occurred to site-related contaminants, the panel determined that no

follow-up health actions are indicated at this time.

PUBLIC HEALTH ACTION PLAN

The Public Health Action Plan (PHAP) for the Rocky Hill Municipal Wells site contains a description of the actions that have been or will be taken by ATSDR and/or NJDOH at or in the vicinity of the site subsequent to the completion of this Site Review and Update. The purpose of the PHAP is to ensure that this Site Review and Update not only identifies public health hazards, but provides a plan of action designed to mitigate and prevent adverse human health effects resulting from exposure to hazardous substances in the environment. Included; is a commitment on the part of ATSDR/NJDOH to follow up on this plan to ensure that it is implemented.

Actions Planned

1. ATSDR and the NJDOH will coordinate with the appropriate environmental agencies to develop plans to implement the recommendations contained in this public health consultation.
2. ATSDR will provide an annual follow up to this PHAP, outlining the actions completed and those in progress. This report will be placed in repositories that contain copies of this site review and update, and will be provided to persons who request it.

ATSDR will reevaluate and expand the Public Health Action Plan (PHAP) when needed. New environmental, toxicological, health outcome data, or the results of implementing the above proposed actions may determine the need for additional actions at this site.

CERTIFICATION

The Site Review and Update for the Rocky Hill Municipal Wells site was prepared by the New Jersey 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 site review and update was initiated.

Technical Project Officer, SPS, RPB, DHAC

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

Division Director, DHAC, ATSDR

DOCUMENTS REVIEWED

1. Woodward-Clyde Consultants, Remedial Investigation/Feasibility Study for Montgomery Township Housing Development / Rocky Hill Municipal Wellfield site, April 1988.
2. Health Assessment for Rocky Hill Municipal Wellfield, Somerset County, New Jersey, ATSDR, August 1988.
3. Record of Decision, Rocky Hill Municipal Wellfield, NJDEPE, June 30, 1988.
4. Agency for Toxic Substances and Disease Registry. Toxicological Profile for Trichloroethylene. Atlanta: ATSDR, April 1993.

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