

## **Spring Lane Well Contamination Site**

The Spring Lane Well Contamination Site is located in Warren Township, Somerset County. The site is situated just off Mountain Avenue between Stirling Road and Hillcrest Road in a primarily residential area of single-family homes.

In 1991, the Warren Township Board of Health and the New Jersey Department of Environmental Protection (NJDEP) sampled more than 100 potable wells in the area and found ground water contamination in the area. Eleven potable wells contained the contaminants of concern (COCs): carbon tetrachloride, chloroform, and tetrachloroethylene, and their breakdown products, above Ground Water Quality Standards (GWQS). Twenty-three domestic wells were sealed and abandoned at the time and residences within the area were connected to the public water in 1995. All of the homes in the Spring Lane Well Contamination area are currently being serviced by public water mains.

An investigation to locate the source of the contamination and to determine the nature and extent of the groundwater contamination was conducted by the NJDEP from 2003 to 2005. Soil, groundwater, surface water and sediment samples were collected and analyzed throughout the area. Additionally, NJDEP conducted indoor air testing at six homes in the area in 2002 to determine whether contaminants were volatilizing from the ground water and entering the buildings, but no organic vapors were detected.

Based on the results of the remedial investigation, it was determined that the likely source of the widespread ground water contamination originated in the back yard of the residence at 69 Mountain Avenue, in Warren Township. Anecdotal evidence suggested that the former owner had used a drain within a barn-like structure on the property to wash machine parts, likely using carbon tetrachloride. Carbon tetrachloride is a chlorinated solvent that was historically used to clean machine parts, often leaching heavy metals from the machinery in the process.

Once the source of contamination was identified, NJDEP mobilized to excavate and remove the contaminated soil. The general dimensions were 40 feet by 50 feet with a depth of 16 feet. The material was excavated and removed. A total of 48 truckloads (approximately 1,440 tons) of contaminated material were disposed off-site.

During the course of the excavation, an old septic system was discovered. The septic system was constructed of masonry block and measured 7 feet by 7 feet with a depth of 7 feet and contained water and oily sludge. The sludge was contaminated with heavy metals, specifically lead with a total concentration of 2,130 ppm. A total of 2,000 gallons of water and sludge were pumped out and disposed from this septic tank area. Approximately 100 tons of contaminated soil from around the septic system, in addition to the 1,440 tons previously removed, were excavated and removed off site. The back yard of the residence is being restored to its original condition.

Ground water contamination will be addressed by injecting nano-sized particles of iron or another reducing agent to remediate the contaminated ground water. Reducing agents can aid in the degradation of carbon tetrachloride to a mixture of relatively harmless products. NJDEP will monitor ground water for approximately seven years and will establish a Classification Exception Area (CEA) for the ground water. A ground water CEA serves as an institutional

control by providing notice that there is ground water pollution in a localized area caused by a discharge at a contaminated site.