



Groveland Wells No. 1 & 2 Superfund Site

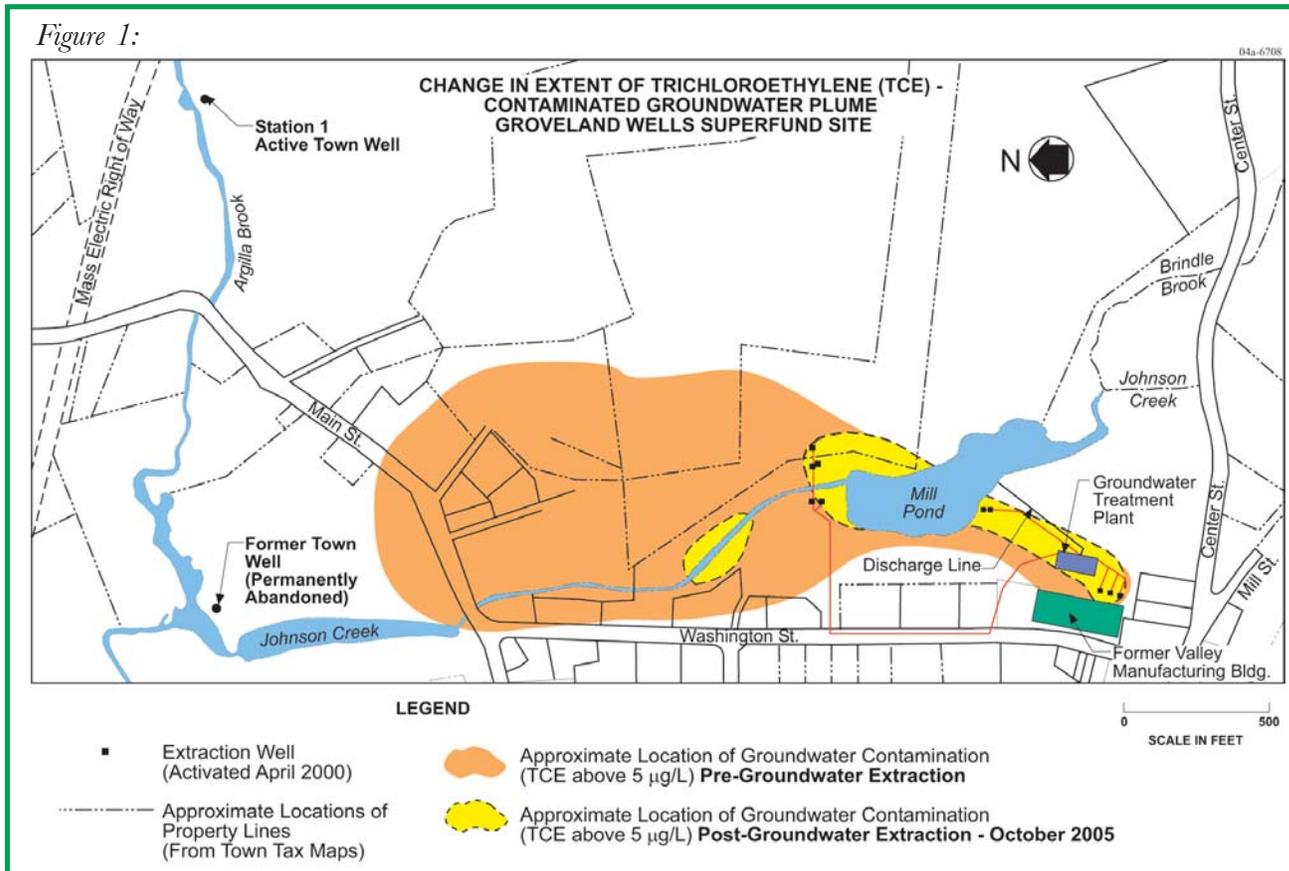
April ❖ 2006

Groundwater Plume Shrinks & Investigation Starts on Valley Property

Groundwater Extraction & Treatment Progress

Since the US Environmental Protection Agency (EPA) began groundwater extraction and treatment in May of 2000, there has been a continual decrease in the levels and extent of contaminated groundwater in both the overburden (shallow) and bedrock (deep) aquifer. TCE contaminated groundwater is extracted through both shallow and deep wells, then pumped to the groundwater treatment plant where the TCE is destroyed by ultraviolet lamps. The clean water is discharged back into the aquifer via Mill Pond. As of January 2006, the groundwater treatment plant has extracted and treated over 288 million gallons of contaminated groundwater and has removed approximately 1,035 pounds of contamination

(see Figure 1). EPA will continue to fund, operate and maintain the groundwater treatment system until 2011. Afterward, the Massachusetts Department of Environmental Protection (MassDEP) will assume the responsibility until the remaining risks from the contamination are within an acceptable (protective) range.



Contamination Source Remains

In 1992, EPA issued Valley Manufacturing Products Company (VMPC) a legal order requiring them to design, build and operate a soil vapor extraction system to clean up soil contamination underneath and next to the building. The soil vapor extraction system operated from December 1992 until April 2002 when the company ceased all manufacturing operations and abandoned the property. In addition to the groundwater treatment underway, EPA is now addressing the contaminated soil on the VMPC property.

Although the soil vapor extraction system was somewhat effective, TCE levels remain higher than acceptable in the soil at the southern end of the VMPC building. As groundwater slowly moves through contaminated soil, it too becomes contaminated. Contaminated groundwater is captured by the groundwater extraction wells and piped underground to the groundwater plant for treatment. EPA's groundwater treatment system is effective in preventing the groundwater contamination from moving beyond the extraction well system. However, until the remaining contaminated soil around and underneath the VMPC building is addressed, it may continue to be a contamination source.

Previous Soil Investigations (July 2004)

In order to identify the full extent and location of this contamination source, as well as possible cleanup options, EPA performed numerous subsurface sampling investigations inside and around the VMPC building in July 2004.

The 2004 investigation included:

1. Over 105 subsurface soil samples;
2. Over 33 groundwater samples from various monitoring wells;
3. Measurements from the former soil vapor extraction system points;
4. Installation of two additional bedrock groundwater monitoring wells and repair of one monitoring well;
5. Preparation of a *Draft Source Area Evaluation Report*.

The investigation provided a better understanding of the remaining contamination source; however data gaps still remain.

Filling Data Gaps: May 2006 Soil Investigations and Site Work

Starting in May and lasting until early September 2006, EPA and its contractors will be conducting field investigations and other site work on the VMPC property in order to better define how much contamination (horizontally and vertically) remains in the soil underneath and next to the VMPC building and what the best approach may be to clean up the remaining contamination source.



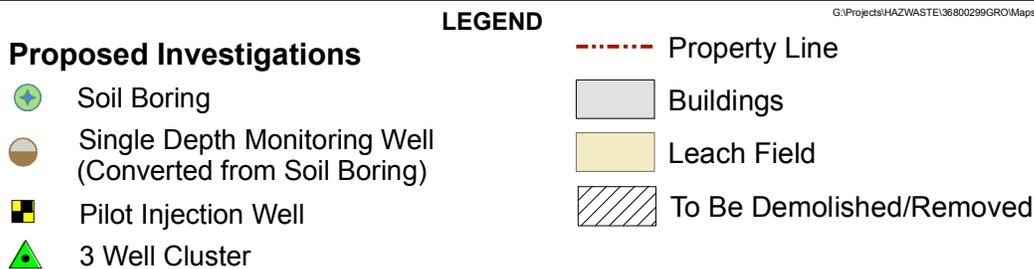
Field activities will include:

1. A ground penetrating radar (GPR) survey: Prior to drilling into the subsurface, the survey will locate potential underground obstructions and the approximate location of the former six storage tanks buried underneath the concrete slab inside the “porch area” of the VMPC building. These tanks prevent soil borings from being properly located and may have contaminated soil under and around them.

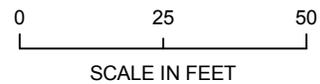
2. Demolition and removal activities: The demolition, removal and the proper disposal of the “porch area” of the VMPC building will allow access for deep subsurface investigations and the removal and proper disposal of underground storage tanks. The underground disposal system known as “The Brite Dip Leach Field” is located off of the southeast corner of the porch area and also will be removed (see Figure 2). This leach field accepted rinse water and waste from degreasing operations until 1984.

Figure 2:

GROVELAND WELLS SUPERFUND SITE PROPOSED SAMPLE LOCATIONS



Note: Locations are approximate.
Final locations will be determined in the field.



3. **Approximately 20 deep subsurface soil borings** will be installed in the former porch area and throughout areas within the main portion of the VMPC building to gather information on remaining soil contamination.
4. **Five new groundwater monitoring wells and one injection well** also will be installed. See Figure 2. As the borings are being drilled, samples will be continuously collected and analyzed at the EPA on-site mobile lab which will be temporarily located at the site for 2-3 weeks.
5. **A soil gas survey** will be conducted through the concrete slab of the VMPC building and within the southeastern area of the VMPC property. This survey will evaluate the levels (if any) of TCE vapors which

may be volatilizing up through the soil or into the VMPC building. It also will determine if there are unacceptable risks to nearby residences.

- 6. Two types of pilot tests** will be conducted from mid-July until September 2006 on both the shallow and deep contaminated soil underneath and adjacent to the VMPC building. These small scale tests will: 1) determine whether the technologies (described below) can meet the expected cleanup goals; 2) gather cost information in order to estimate full scale cleanup costs.

The shallow soil pilot test will involve the excavation of the contaminated source soil above the groundwater table. This soil will be placed into a large mixing unit where oxidants are added to destroy the contamination. The cleaned soil can then be used as backfill.

The deep soil pilot will leave the contaminated source soil in place and will involve injecting an oxidant (potassium permanganate) into the subsurface. Injection wells will be drilled at different depths within the contaminated area to pump the oxidants into the ground. Once injected, the oxidant will mix with the contamination and causes it to break down into water and other harmless chemicals.

What Happens After the Additional Investigations and Work is Completed?

The information collected during 2004 and 2006 will be compiled, evaluated and presented in a *Final Source Area Re-evaluation Report* by the fall of 2006. The report, based on the two pilot test results, also will provide recommendations on potential cleanup options for the source area. EPA will evaluate this report and decide what further cleanup actions to take. EPA will continue to keep the public informed about the investigation work and cleanup decisions.

Site Background

The 850-acre Groveland Wells Nos. 1 & 2 Superfund is located off of Washington Street in the southwestern part of the Town of Groveland, Massachusetts. The site includes the watershed and aquifer which recharge Groveland's Town Well No. 1. Groundwater in this area is mainly contaminated with trichloroethylene (TCE), a man-made chemical which was used at the former Valley Manufacturing Products Company to degrease screws and metal parts. At least 3,000 gallons of waste oil and TCE were released and other accidental spills occurred as a result of activities at the Valley Manufacturing Products Company (VMPC). In 1979, the Town shut down two wells with TCE contamination. A new well drawing from a different aquifer was developed. Of the original two wells, EPA treated and reopened Well No. 1 and permanently abandoned the other. The Town of Groveland continues to provide safe drinking water to residents and confirms these safe levels are met through quarterly sampling of the Town wells and by testing upgradient monitoring wells for groundwater quality. EPA's groundwater and treatment facility began operating in 2000. VMPC, in 2002, ceased all manufacturing operations and vacated the former Washington Street facility.

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