

## Steam Enhanced Extraction in Danville, PA

Steam Enhanced Extraction (SEE) operations began at a former manufacturing facility in PA in December 2007. Contaminated soil at the site is being remediated using SEE. The treatment area consists of an approximately 7,500 cubic yard fill unit and an approximately 38,500 cubic yard sand/gravel unit. The vertical extent of the treatment area extends to a maximum of 42 feet below ground surface (bgs). A portion of the treatment area is underneath an existing building.



The contaminants of concern are chlorinated volatile organic compounds (CVOCs). The remedial objectives for the site were removal of NAPL within the shallow fill and deep sand/gravel unit, removal of sorbed phase CVOC mass, elimination of CVOC mass flux to groundwater, shut down of existing pump and treat system, and to expedite site closure under the former manufacturing facility includes the following design features: a) average target temperature of 90°C; b) 30 ft spacing between steam injection points; c) 89 steam injection wells, 31 extraction wells, 10 water monitoring wells, and 25 temperature monitoring wells.

Although originally scheduled for completion by the end of June 2008, the period of operation under full heated conditions has been extended due to better than expected mass removal rates and discovery of a source area outside the original foot-print. Operations are currently scheduled to be complete by May 2009.