

3.10 SOIL AND GROUNDWATER

3.10.1 Existing Conditions

Existing conditions at the site are based on the Pre-Design Groundwater Investigation Report and supplemental subsurface investigation reports prepared by Shaw Environmental, Inc. (Shaw) (formerly The IT Group, Inc.) during 2001-2003, and other reports prepared to document the remedial actions completed at the site during 2005-2007.

Groundwater resides at approximately 60-70 feet below ground surface (bgs) at the Site. The groundwater surface corresponds to the top of a predominantly sand and gravel aquifer of glacial origin. The aquifer is approximately 100 feet thick, is unconfined, and occurs as a regional formation over much of Queens and adjacent areas. The bottom of the aquifer corresponding to a depth of approximately 150 feet bgs is bounded by a gray clay, which also occurs regionally. Groundwater flow direction was confirmed to be in a southerly direction, with a gradient of 0.002 ft./ft.

The groundwater at the Site has historically been contaminated with 1,1,1-trichloroethane (TCA) and tetrachloroethene (PCE). The on-site source of TCA and PCE was contaminated soil at the northern end of the former Heinz warehouse building as a result of an apparent leak in the building's drain system. The majority of contaminated soil was removed through excavations performed by the property owner in August 2000.

Based on the NYSDEC approved Remedial Action Workplan (RAWP) prepared by Shaw in 2002, a remedial system to clean up the groundwater contamination was designed and constructed. The remedial system comprised of air sparging/soil vapor extraction began operation in April 2005 and has run continuously until March 2007. Monitoring of soil gas and groundwater has been conducted during the operation of the remedial system.

The following conclusions were drawn from a review of the above referenced documents and an evaluation of other available information:

- The highest concentrations of TCA and PCE in groundwater historically observed at the Site were in the immediate vicinity of the former source.
- Following operation of the AS/SVE system from April 2005-March 2007, the groundwater analytical data demonstrate that from a Site-wide perspective, concentrations of TCA and PCE within the source area and downgradient have been non detect or at concentrations below the groundwater quality standards. Low levels of PCE and TCA have been documented in upgradient wells, and in

the few occasions where groundwater quality standards have been exceeded, the detected concentrations have been below or comparable to background concentrations.

- Historical information from NYSDEC files associated with PCE contamination of groundwater at upgradient properties indicate that remedial actions have been implemented to clean up the historical contamination observed in these areas. TCA has not been detected in groundwater migrating onto the Site during recent sampling events. Based on the review of the available information it is not anticipated that contamination from these upgradient properties will adversely impact current groundwater quality conditions beneath the Site.

3.10.2 The Future Without the Project

Since remediation has been implemented at this Site, Future No-Action Conditions are not applicable.

3.10.3 Probable Impacts of the Proposed Project

The remedial system was shut down on an interim basis in March 2007 and post-remediation monitoring will be completed to verify that operation of the treatment system has achieved the cleanup goals. The post-remediation monitoring will be performed on a monthly basis from March 2007 through July 2007, at which time construction of the new school will begin and a petition for the permanent removal of the AS/SVE system will be submitted to NYSDEC.

A vapor barrier and active sub slab depressurization system have been proposed for the school and will be installed to mitigate the potential for residual vapors to impact indoor air quality at the school. A vapor barrier and active sub slab depressurization system are recognized by the NYSDEC and by the NYSDOH Final Guidance Document (October 2006) as effective measures to address potential exposure pathways from subsurface vapors. The incorporation of these engineering controls into the construction of the school will assure that residual onsite contaminant levels do not pose an unacceptable risk to school occupants.

Upon completion of the aforementioned remedial activities, the Site will be suitable for construction of a New York City Public School.