



M² Associates Inc

Providers of Geologic, Environmental, & Groundwater Consulting Services

November 3, 2008

Paul Pogorzelski, PE
Township Administrator/Engineer
Hopewell Township
201 Washington Crossing-Pennington Rd
Titusville, 08560-1410

Re: Proposed Acquisition of Pennytown Site, Block 33 Lot 1, in Hopewell Township, Mercer County, New Jersey.

Dear Mr. Pogorzelski:

As you requested, we have evaluated the water-supply and wastewater treatment options for Block 33 Lot 1. It is our understanding that Hopewell Township is proposing to acquire this site formerly known as Pennytown, to meet a portion of the Township's affordable housing requirements. This site is unique in several ways from other portions of the township with respect to water-supply and wastewater options and therefore, is a favorable site for meeting some the Township's COAH requirements. The unique features are as follows:

1. The site is currently used for commercial purposes including an office building, two motels, two residences, a restaurant, and several retail stores.
2. New Jersey Department of Environmental Protection (NJDEP) lists three public water-supply wells as located on the property. These wells are used for meeting the existing commercial development's daily water demands. One well is located near the Stage Depot, a second near the restaurant and Quick Check, and a third by the motel. These wells have reported yields ranging from 10 to 18 gallons per minute. Based on these yields, each well could produce between 14,000 and 26,000 gallons per day.
3. The site is located in a highly fractured area of the township immediately south of the Hopewell Fault. As indicated in our March 2001 report, the Hopewell Fault is a significant groundwater resource. In addition to the proximity to the faults, the site is underlain by the Passaic Formation, which is the best water-supply aquifer within the township. Based on the presence of the faults and Passaic Formation, groundwater supplies sufficient to meet the residential demands can be developed.
4. It is our understanding that Hopewell Township plans to construct a maximum of 70 affordable housing units at the site. Assuming that these units have an average of two bedrooms each, daily water demands are likely less than 14,000 gallon per day. Even if the units were individual single-family homes, given the



Township's dwelling unit density as calculated in our March 2001 report, potable water-supply needs would not exceed 21,000 gallons per day. The existing site wells can meet these demands.

5. The site has an existing wastewater treatment plant capable of treating 14,000 gallons per day. Water from the treatment plant is discharged to the subsurface. The site is located within a portion of the township designated by NJDEP as a sewer service area.
6. Since wastewater will be treated, the need for dilution of contaminants such as nitrates is greatly reduced. Nitrate concentrations are effectively reduced below Federal and State drinking water standards with wastewater treatment plants. Contaminant concentrations in the effluent from the treatment facility are regulated by NJDEP through a site-specific New Jersey Pollutant Discharge Elimination System (NJPDES) permit.
7. If the water-supply demands of the affordable housing units exceed 14,000 gallons per day, several options exist for discharge of the additional treated effluent. Two examples are drip irrigation or recycling for non-potable uses.
8. Given the intensity and proximity of major bedrock fractures, the presence of the Passaic Formation beneath the site, and that these resources have been used to meet existing commercial demands, adequate groundwater resources are likely available for meeting demands imposed by the affordable housing units without adversely affecting surrounding properties or natural resources.
9. Existing wastewater treatment facilities have been permitted and satisfy NJDEP regulatory requirements. The existing commercial operations likely have very similar discharge characteristics to those expected from the housing units. The treatment plant likely has sufficient existing capacity to treat the discharges from the residential units. If wastewater discharges exceed 14,000 gallons per day, alternatives exist for disposal or reuse of treated effluent.
10. The Pennytown site has unique attributes with respect to water-supply and wastewater treatment that make this property favorable for converting from existing commercial operations to affordable housing.

If you have any questions, please call Matt Mulhall at (908) 238-0827.

Respectfully submitted,
M² Associates Inc.

A handwritten signature in blue ink, appearing to read 'Matthew J. Mulhall', is written over the typed name below.

Matthew J. Mulhall, P.G.