H2M

BETHPAGE WATER DISTRICT

PLANT 4 VOC CONTAMINATION

STRATEGIC ACTION PLAN

Recent Background:

In April 2008, Arcadis on behalf of Northrop Grumman Corp. (NGC) provided the District with results from vertical profile boring (VPB) 116 which revealed approximately 1,900 ppb TCE at the same depth as the two supply wells at Plant 4. As this location was directly upgradient of the public supply wells and is of significant threat, NGC felt compelled to provide the data to the District prior to the completion of the OU-3 remedial investigation. The District increased monitoring frequency and limited the site to one well in operation to the extent practical.

In early 2009, the District proceeded with the engineering study and design for VOC treatment upgrade based on the VPB 116 data results. A second air stripping facility was planned such that one tower treated one well. The preliminary capital cost of the project was estimated at $3.7 million. The District did not have the funds available, so this project was included in the 2009 capital improvement plan which is currently in the process of obtaining municipal bonding.

At a meeting dated November 16, 2009, H2M and the District met with Arcadis and NGC. The purpose of the meeting was for NGC to present the comprehensive data that was included in the October 22, 2009 OU-3 remedial investigation report. Previously, the District had only seen data from VPB 116 in April 2008 and VPB 104 in June 2007. The data revealed that a significant contamination plume, with TVOC concentrations in groundwater at approximately 10,000 ppb,

was directly upgradient of the supply wells and had a path towards the wells. NGC and Arcadis indicated that immediate action was necessary and upgrades had to be in place this upcoming summer to address the threat and minimize the risk of losing the facility to contamination.

Action Items

The previous engineering study approved by the NCDH is no longer valid, as the design influent is woefully inadequate. H2M needs to revise the engineering study and obtain new NCDH approval. Preliminary data shows that a GAC polishing system is required in addition to the second air stripping system.

In the interest of expediting the air stripping project, H2M met with industry contractors on November 23, 2009 to review the current design documents and seek pricing to perform demolition, excavation and concrete work immediately in an attempt to complete the clearwell and foundation work prior to the winter weather and limitation of proceeding with this type of work. With this effort, having the treatment system operational by the summer 2010 pumping season is unlikely.

With the long term requirement for GAC polishing, the District should proceed with the polishing system immediately to provide adequate wellhead protection in the short term. A GAC polishing system can be up and running by this summer.

The second air stripping facility can be constructed concurrently and be ready for operation by the end of 2010.

The level of threat by this excessive contamination will likely result in the long term loss of this facility as a public drinking water facility. The replacement of lost capacity will be necessary. The District should undertake a study now for the replacement of Plant 4. Preliminarily, the replacement of lost capacity could be achieved through a well at South Park Drive, of which the District is currently negotiating access from NYS Parks, a second well at BGD, a ground storage tank and booster pumping facility at BGD, and transmission improvements to facilitate the required distribution capacity of the system. The replacement of the lost capacity from Plant 4 will be a 3 to 5 year process.

Once replacement capacity is achieved, the District would have a treatment system in place at Plant 4 that would serve a great purpose for remediating the groundwater contamination plume at the leading edge. The District could reach agreement with NGC to lease the site for the period necessary to completely remediate the plume, with the site then being returned to the District. This would save NGC $10+ million in not having to construct its own pump and treat groundwater remediation system, which it otherwise will have to do to restore the aquifer.

Preliminary Capital Cost Opinions

Although a study and analysis must be performed to determine the feasibility of implementing the strategy to address the contamination and loss of Plant 4, we have conducted a preliminary review of the action items available to the District, which can be implemented over the next 3 to 5 years.

Emergency GAC polishing system w/o enclosure	$1,700,000
GAC building for year-round use	$1,000,000
Air stripping treatment facility	$3,700,000
Acquire access to South Park Drive property (replace lost capacity)	$ 600,000
New well at South Park Drive (replace lost capacity)	$3,000,000
Second well at BGD (replace lost capacity)	$2,500,000
Ground storage tank and booster station at BGD (replace lost capacity)	$3,500,000
Transmission improvements (replace lost capacity)	$2,000,000
TOTAL	$19,000,000

These costs are the responsibility of NGC as the result of the groundwater contamination threatening Plant 4. NGC must be approached to provide the initial funding for the immediate work at Plant 4 of either GAC, concrete clearwell/foundation, or both, and an agreement reached for the funding of all work associated with the treatment of the plant in the short term and the replacement of lost capacity in the long term. Discussion of the leased takeover of the plant for NGC remediation purposes should also take place.