M E M O

Date: August 9, 2004

To: Wayne Davies, Hopkinton Board of Appeals

From: Jesse Schwalbaum, Earth Tech

CC: Dick Jubinville, Earth Tech

Subject: Westborough Sampling Results

Earth Tech received the results from the first round of water quality sampling at the Westborough Landfill from Brown & Caldwell, consultants for E.L. Harvey and Sons. The data is included in a letter report to the Department of Environmental Protection from Brown & Caldwell dated July 19, 2004. Portions of Westborough landfill and most of the monitoring sites are within Hopkinton and near the former Hopkinton Landfill property. At the request of the Board, we reviewed these results in order to determine if there is any need to revise our recommendations with regard to long term groundwater monitoring at the site. I summarized our conclusions at the Board of Appeals meeting on July 20. The purpose of this memo is to provide a written record of our review. Attached with this memo is a spreadsheet that summarizes the results of surface water, groundwater and soil analyses.

In general, the groundwater quality results are similar to results that have previously been documented at the Hopkinton landfill. There are elevated levels of ammonia, iron, manganese, sodium, chloride and other parameters typical of landfill leachate. There are also low levels of volatile organic compounds (VOCs) in the groundwater. There were, however, some new VOCs that were not previously detected near the Hopkinton landfill including dichloroethene, ethyl ether, naphthalene, MTBE and vinyl chloride. Although none of these chemicals have been detected at levels that exceed primary drinking water standards, the level of vinyl chloride at well MW-5S (1.4 ug/l) was close to the drinking water limit of 2.0 ug/l. This is a constituent that should be monitored carefully over time. Vinyl chloride is a known human carcinogen.

The surface water samples collected in Picadilly Brook show possible indications of contamination from landfill leachate. Some contaminants exceeded USEPA National Recommended Water Quality Criteria (NRWQC), including iron, manganese, chloride and alkalinity. No contaminants were detected in Picadilly Brook that exceeded primary drinking water standards.

The primary environmental problem associated with the landfill appears to be elevated levels of contamination in sediments. Elevated levels of metals include arsenic, cadmium, chromium, copper, lead, and mercury. In addition, numerous VOCs have been detected. These metals and some of the VOCs exceed the Massachusetts Recommended Freshwater Sediment Screening Values (MRFSSV).

The full extent of potential sediment contamination and the potential impacts on the surrounding ecological system are not known. Nor is it known whether these contaminants could potentially migrate beyond the site. Brown & Caldwell has proposed an extended Scope of Work aimed at addressing these issues. This Scope of Work includes additional sampling sites and identification of potential contaminant pathways and impacts. All of this work will be overseen by the Department of Environmental Protection's Division of Solid Waste Management.

As we have stated at the hearing, we do not believe that it is necessary to revise the groundwater monitoring plan for this site (as summarized in a memo from Earth Tech dated July 12, 2004) at this time. However, we strongly recommend that the Town review the monitoring plan for this site once the additional site investigations and the four rounds of sampling are completed.