Maple Road Interim Response (MRIR)

Work Plan for Maple-Allison Pipeline

November 3, 2008

Introduction

Pall Life Sciences (PLS) is proposing to install a pipeline to connect groundwater extraction well TW-19, located at the Maple Village Shopping Center, to the Evergreen System transmission line. The Evergreen System transmission line currently conveys groundwater extracted from the Evergreen purge wells to the PLS Wagner Road facility for treatment/disposal. The proposed pipeline would allow groundwater extracted from TW-19 to be transferred to the PLS Wagner Road facility as well. The details of the proposed pipeline and the conditions that must be met before it is utilized are discussed below.

Purpose and Intended Use of the Proposed Pipeline

The primary purpose of installing the Maple-Allison pipeline is to provide a more reliable method to extract and manage groundwater from TW-19. Groundwater from TW-19 is currently extracted, transferred to the Mobile Ozone Treatment Unit (MOTU) for treatment, and then injected back into the same aquifer via two injection wells. The existing injection wells are susceptible to plugging and have required considerable rehabilitation to maintain injection capacity. The periodic unavailability of the injection wells has compromised PLS' ability to operate the Maple Road Interim Response (MRIR) groundwater extraction/treatment system on a continuous basis. To date, these difficulties have not affected PLS' ability to meet the court-ordered objective of containing 2,800 micrograms per liter (µg/L) of 1,4-dioxane since the plume has not reached Maple Road. PLS has thus far operated TW-19 primarily for the purpose of reducing mass in the plume. Providing an alternative means of managing water from TW-19 will provide a more reliable management approach for the MRIR should continuous operation become necessary to meet the cleanup objective.

The Court's July 17, 2000 Remediation and Enforcement Order (REO) currently requires PLS to extract 200 gallons per minute (gpm) from the Evergreen System purge wells. This is also the capacity of the Evergreen System transmission line. Consequently, PLS' ability to use the proposed pipeline to convey groundwater from TW-19 to the Wagner Road facility is contingent upon approval of certain modifications that would allow PLS to reduce the volume of water extracted from the Evergreen System. Once these modifications are approved, and to the extent that transmission line capacity is available, PLS will optimize the extraction rates of TW-19 and the Evergreen System wells in order to meet the approved objectives of each system. PLS will give priority to meeting the cleanup objectives of the Evergreen System when allocating the transmission pipeline's

capacity (200 gpm) in the unlikely event that more than 200 gpm is required to meet the cleanup objectives of both systems. In that event, PLS would reemploy the MOTU and associated injection wells as necessary to meet the Maple Road objective. Even in this scenario, the availability of the proposed pipeline would increase system reliability by providing PLS with a temporary disposal method for groundwater extracted from TW-19 when the injection wells are unavailable due to maintenance/rehabilitation. (Such a short term diversion would not compromise PLS' ability to meet the Evergreen cleanup objectives.)

PLS understands that final DEQ approval to utilize the proposed pipeline, and the extent to which it can be utilized, are contingent on approval of the modifications to the Evergreen System objectives currently under discussion. PLS is seeking the DEQ's approval to install the proposed pipeline at this time so that PLS can approach the City of Ann Arbor to seek the necessary City approvals/permits.

Pipeline Description/Operation and Leak Prevention/Detection

PLS will install an underground pipeline to connect extraction well TW-19 to the existing Evergreen System pipeline. The connection point will be near Dexter Road and Allison Street.

Currently, a double-walled pipeline exists from TW-19 to the MOTU at the corner of Dexter and Maple Roads. The new segment of pipeline will connect from the MOTU to Manhole No. 2, located on the northeast corner of Allison Street. The pipeline will be installed on the north side of Dexter Road. The length of the proposed transmission pipeline from the MOTU to Manhole No. 2 is approximately 750 linear feet.

The pipeline (carrier pipe) will be 4-inch-diameter high-density polyethylene pipe (HDPE) The carrier pipe will be installed inside an 8-inch-diameter HDPE pipe (containment pipe) designed to contain any leakage from the carrier pipe. The carrier pipe pipeline will have a capacity of at least 200 gpm.

The pipeline will be placed approximately 4.5 feet below ground surface to prevent freezing. All major crossing of existing utilities, trees, or other obstacles will be done by use of directional boring.

A manhole will be installed at or near the MOTU (MOTU Manhole). If needed, another manhole will be installed somewhere between the MOTU Manhole and Manhole No. 2.

All construction work procedures and materials will be in compliance with City of Ann Arbor requirements. The pipeline system will be pressure tested prior to use.

During operation, the Maple-Allison transmission pipelines will be monitored for flow at the Evergreen pump house. As a result of any variation beyond the set points, an alarm will be activated. If the flow drops by 3 gpm, the central processor will shut down the flow to the pipelines.