

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

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TO: Sybil Kolon, Project Manager
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SUBJECT: Gelman Sciences, Inc. (GSI) - Evergreen Area - Groundwater Capture Analysis

According to the groundwater capture zone analysis (CZA) provided by Pall, the current purge wells in the Evergreen Area are adequate for capturing the D2 plume. Sample results and groundwater levels from existing domestic wells and monitoring wells support the CZA. Richard Mandle, the groundwater modeling specialist for RRD, has expressed some concern about the ability of the groundwater monitoring in the Evergreen Area to monitor the adequacy of the CZA. This concern, in part, has led to a reevaluation of the D2 plume monitoring in the Evergreen Area.

Due to the original requirements of the Consent Judgment, we have often treated parts of the contamination problem as distinct from other parts. The Consent Judgment was based on our then current understanding of the geology, groundwater flow and extent of contamination. Since that time, our understanding of all these things has changed. Not the least of these changes is the discovery of the E1 and E2 contamination plumes.

Due to this practice of treating the contamination problem in parts, sometimes it is overlooked that data obtained from one part of the problem area is relevant to another part of the problem area. One example of this is the D2 potentiometric map. There is potentiometric data available from the E1 plume area that is relevant to the D2 potentiometric map, but is not used. It is important that when potentiometric and other maps are produced that all of the relevant data is used.

It is important that we balance the concerns about the ability of the current monitoring system to demonstrate capture of the D2 plume in Evergreen with the reality that the purging in the Evergreen Area is most likely having an effect on the flow of the E1 plume. The extent to which the pumping in Evergreen is affecting the E1 plume may require further study as part of the remedial response for the E1 plume.

There is currently no evidence that the D2 plume is escaping the purge wells in Evergreen. However, the only wells installed specifically for groundwater monitoring near the leading edge of the plume are directly east of AE-1. Although this is the most likely direction of groundwater flow, it is possible that there could be flow to the northeast or southeast. Any additional monitoring wells to the southeast of the D2 plume in Evergreen would be of limited value for verifying the containment of the D2 plume. Based on the CZA, the current pumping in the Evergreen Area is potentially pulling contaminated groundwater from the E1 plume into the Evergreen Area. If dioxane were detected in monitoring wells installed to the southeast of the D2 plume, it would be difficult to determine if it originated from the D2 or E1 plumes. However, monitoring wells installed northeast of AE-1 would be useful.

An additional monitoring well nest should be installed northeast of AE-1 just east of the intersection of Allison and Hollywood. During the drilling for the wells, groundwater samples should be obtained every ten feet through the thickness of the D2 aquifer. Two monitoring wells should be installed at this location. If dioxane is detected during the vertical aquifer sampling, the wells should be screened in the zones of highest concentration. If dioxane is not detected, one well should be screened within the first ten feet of the aquifer and the second should be screened between 25 and 30 feet into the aquifer. As always, the details of the well installation may need to change if the geologic conditions encountered differ significantly from what is expected.

LL/KJ