



JENNIFER M. GRANHOLM  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
JACKSON DISTRICT OFFICE



STEVEN E. CHESTER  
DIRECTOR

October 31, 2007

VIA ELECTRONIC AND US MAIL

Mr. Farsad Fotouhi  
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Mr. Michael L. Caldwell  
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Dear Sirs:

SUBJECT: Gelman Sciences, Inc. Remedial Action  
Wagner Road Interim Response

In a letter dated September 12, 2007, we provided a general response to the August 2006 and March 2007 Performance Reviews - Wagner Road Interim Response, submitted by Pall Life Sciences, Inc. (PLS). That letter also outlined our concerns about the known connections between the Unit D<sub>2</sub> and Unit E aquifers. Enclosed is our detailed review in an Interoffice Communication from Mr. James Coger, dated October 31, 2007.

Mr. Caldwell provided a response on behalf of PLS in a letter dated September 20, 2007, in which PLS acknowledged the need for a meeting to discuss technical issues. However, PLS expressed little interest in approaches that it considers to be outside of the requirements of the Consent Judgment and the Court's Orders despite the complexities of this site discovered since the entry of the Consent Judgment. We believe a more flexible approach could be beneficial to PLS and the overall objective of timely remediation of this site, and that the court would agree to modification of the current legal requirements if mutually supported by the Department of Environmental Quality (DEQ) and PLS.

PLS goes on to say that determining the source of contamination at 465 Dupont Circle is academic, and that as long as it is captured by the Evergreen System extraction wells, how the contamination reaches the Dupont Circle area is not important. We disagree. It is not possible to know if all of the groundwater contamination is being captured by the Evergreen System if we do not know where the contamination is located. We question PLS's depiction of the groundwater contamination in the Dupont Circle area for several reasons:

- the concentration of 1,4-dioxane at 465 Dupont Circle is continuing to increase (from 424 parts per billion [ppb] in July 2006 to 750 ppb in August 2007);
- no satisfactory explanation has been provided about the source of this contamination;
- there are no monitoring wells or borings that were vertically profiled to bedrock north or west of 465 Dupont Circle to support PLS's depiction of the 85 ppb contour line for 1,4-dioxane;
- the deeper contamination at 465 Dupont Circle (181 feet) is more consistent with the Unit E plume than it is with the Unit D<sub>2</sub> plume in the Evergreen Subdivision;
- PLS's own representation of the limited groundwater flow direction data appears to indicate that the groundwater flow in this area is from the southwest, an area where PLS maps indicate there is no contamination.

Based on the points raised above, we believe it is possible that there are concentrations of 1,4-dioxane in groundwater above the generic residential criterion of 85 ppb to the north of the capture zone of the Evergreen System extraction wells. Additional investigation is required to determine if groundwater north or west of 465 Dupont Circle is contaminated above 85 ppb, and if it is being captured by the Evergreen System extraction wells.

In the September 12, 2007 letter, we requested the installation of a monitoring well cluster near the GSI 96-01 boring. PLS has not formally responded to this request; however, Mr. Fotouhi has indicated there were problems with the drilling of GSI 96-01. The nature of these problems was not specified. Upon further review, Mr. Cogger is recommending additional monitoring well clusters to define the northern extent of the Unit E plume. It may be appropriate to install the monitoring wells recommended by Mr. Cogger prior to reaching a decision about additional investigation of the Dupont Circle area.

A review of the December 2004 Opinion and Order Regarding Remediation of the Contamination of the "Unit E" Aquifer (December 2004 Order) indicates the Court supported the DEQ's position that the entire width of the Unit E plume above 85 ppb should be captured at Wagner Road "to the maximum extent feasible." (See page 9.) A determination on the practicality of meeting the DEQ goal was deferred until after completion of an aquifer performance test, which was a preliminary step to such a determination. Additional monitoring wells were installed in May 2006 (MW-105d, MW-106s, and MW-106d) to assist in determining if the TW-18 purge well could meet the objective of capturing the entire width of the Unit E plume at Wagner Road.

Mr. Cogger's review indicates that the northern extent of the Unit E plume along Wagner Road north of TW-18 (and elsewhere) has not been determined, and that 1,4-dioxane above 85 ppb at MW-105d (932 ppb in July 2007) is not being captured by TW-18. We do not believe it is possible to evaluate if it is practical to capture the entire width of the Unit E plume at Wagner Road until the entire extent of the Unit E plume is determined.

The investigation and monitoring in the area of MW-105d indicates that the southern portion of the Unit E plume at Wagner Road is migrating into, and staying within, the Prohibition Zone that restricts the use of groundwater. Therefore, the DEQ believes that continued monitoring will be protective of public health until the practicality of capturing the contamination in this area can be determined.

The conditions north of TW-18, however, raise significant concerns. As indicated in Mr. Cogger's review, we do not believe the northern extent of the Unit E plume has been defined. We are concerned that a portion of the Unit E plume may be migrating north of the Prohibition Zone, and possibly outside of the capture zone of the Evergreen System extraction wells. In addition, PLS has acknowledged that the Unit D<sub>2</sub> plume and the Unit E plume cannot be distinguished in the area of MW-94s. Any additional loading from the Unit E plume into the Unit D<sub>2</sub> plume will lengthen the amount of time required to remediate the Unit D<sub>2</sub> plume in the Evergreen System. The lifetime of the transmission pipeline that transports the contamination from the Evergreen System extraction wells is limited, as shown by the failure of the original pipeline in 2005. The DEQ believes that any groundwater contamination at Wagner Road that is migrating toward the Evergreen Subdivision should be captured at Wagner Road, and that the feasibility of doing so should be examined. We recognize that PLS may disagree with this premise, but we believe

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that frank discussions about the benefits of this approach may forestall the need to have the Court rule on this issue.

The December 2004 Order supports the DEQ's position that the contamination in the Unit E aquifer should be controlled at the source, west of Wagner Road, if feasible. To the extent that any Unit E contamination is migrating outside of the Prohibition Zone, controlling that contamination at the source is even more imperative.

Mr. Cogger has recommended installation of several more monitoring well clusters to define the northern extent of the Unit E plume. As with any investigation, results must be interpreted as they are received, and may result in changes to these recommendations.

As previously agreed, we would like to schedule a technical meeting to discuss these issues in more detail. As suggested by Mr. Caldwell, we acknowledge that legal counsel should also attend this meeting. I will be contacting Mr. Fotouhi within the next week to schedule such a meeting, preferably during the week of November 26. Please contact me if you have any questions.

Sincerely,

Sybil Kolon  
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Gelman Sciences Project Coordinator  
Remediation and Redevelopment Division  
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SK/KJ

Enclosure

cc/enc: Ms. Celeste Gill, Department of Attorney General  
Mr. Mitchell Adelman, DEQ/Gelman File  
Mr. James Cogger, DEQ