STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
JACKSON DISTRICT OFFICE

JENNIFER M. GRANHOLM
GOVERNOR

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September 12, 2007

VIA ELECTRONIC AND US MAIL

Mr. Farsad Fotouhi
Corporate Vice President
Environmental Engineering
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Ann Arbor, MI 48103-9019

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Mr. Michael L. Caldwell
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31700 Middlebelt Road,
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Farmington Hills, MI 48334

Dear Sirs:

SUBJECT: Gelman Sciences, Inc. Remedial Action
Performance Review - Wagner Road Interim Response dated March 2007

This letter is intended to replace our September 10, 2007 letter on the same subject. We have revised the first bullet point on page two. No other changes have been made. This revision does not materially change our response to the subject report.

The Department of Environmental Quality (DEQ) has reviewed the above referenced submittal from Pall Life Sciences, Inc. (PLS), which supplements the August 2006 report of the same name. The August 2006 report did not include data from two sets of monitoring well clusters (MW-105s, MW-105d, MW-106s and MW-106d) that had been installed shortly before the August 2006 report was submitted. These monitoring wells were installed to help determine the effectiveness of extraction well TW-18 in meeting the objective of capturing all of the Unit E contamination above the generic residential cleanup criterion for 1,4-dioxane of 85 parts per billion (ppb).

As expected, the data collected from these monitoring wells, has helped to increase our understanding of the contamination and hydrogeology in the Wagner Road area. However, the data has also raised many questions that need to be addressed to have a complete understanding of the conditions in the area and to develop an effective remedial approach. This letter identifies those areas of concern and the DEQ's proposed approach to address those concerns.

In response to the suggestion in our March 7, 2006 letter that an additional extraction well be installed to capture the Unit D_2 contamination at Wagner Road, PLS indicates that it is not obligated to do so and that extraction for that purpose would provide little benefit. We disagree that there would be little benefit from such extraction. Further, we believe it is appropriate to consider new approaches that rely on detailed technical analysis to guide the remediation, rather than legal arguments that will likely require the interpretation of the court. We recently avoided such action when PLS agreed to install an additional monitoring well cluster to gather additional data to test its hypothesis that the Evergreen System extraction wells are pulling in 1,4-dioxane from the Unit E plume to the south. Although the DEQ does not necessarily agree with that hypothesis, given the complexity of the hydrogeological setting, and the fact that investigations over the past three years have shown that there are connections between the two water bearing formations in which these plumes of contamination are located, near Maple Road

and Valley Street, it is possible. Similar connections have been documented in the Wagner Road area.

In between Wagner Road and Maple Road, at the west end of Valley Street, there is no separation between the Unit D_2 and Unit E water bearing formations, as demonstrated by the GSI-96-01 test boring, which was drilled in 1996 with the intention of installing a reinjection well to replace IW-1. The confining layer that was expected to be found at this location was not found, and the boring was plugged. No groundwater quality data was collected. This area is immediately north of where PLS draws the "Transition Area" on recent maps. PLS apparently believes that the Unit E plume has turned east before reaching the Evergreen Subdivision, but provides no data to support that belief. To address this data gap, we believe it is important to vertically profile the water bearing formations at the GSI-96-01 location to determine if 1,4-dioxane is present, and if so, at what concentrations. This information can then be used to assist with decision-making to optimize the remediation strategy for the site.

In our response to the Evergreen System Review, we requested installation of a monitoring well west of the Dupont Circle area, to investigate the increasing concentration of 1,4-dioxane that is found at depths more consistent with the Unit E water bearing formation. PLS's response to this request was submittal of the Dupont Work Plan, which proposes only to collect static water measurements. We still think this requested monitoring well is necessary; however, we believe it should be moved south, to the immediate vicinity of the GSI-96-01 boring, where the water bearing formation is more than 120 feet thick. To provide the necessary information, a cluster of more than one monitoring well needs to be installed.

PLS's continued assertions that it has a full understanding of the widespread groundwater contamination found in this highly complex hydrogeological setting have been proven wrong before (most notably the existence of the Unit E plume). Each discovery has resulted in the application of significant PLS and DEQ resources to address problems that may have been resolved with fewer resources had a more methodical and objective approach to investigating this area been followed initially. An honest assessment of this site should lead PLS to acknowledge that additional investigation is needed, starting with installation of the monitoring well cluster near GSI-96-01, during the same mobilization planned for the Evergreen Subdivision Area in the next few weeks.

Rather than recommending specific actions that must be taken regarding the Wagner Road interim response and associated performance monitoring, we are outlining our major concerns below, with the suggestion that we schedule an intensive technical review meeting to reach consensus on the next steps:

- The northern extent of the Unit E plume west of MW-100 has not been adequately defined.
- Data from extraction wells cannot be relied upon to determine the nature and extent of the Unit E plume (TW-11 and TW-17).
- It has not been demonstrated that the entire width of the Unit E plume, either north or south of TW-18, is being captured.
- If it is not feasible to distinguish between the Unit D_2 and Unit E plumes along Wagner Road, then some or all of the Unit D_2 plume must also be captured.

We intend to provide more detailed comments about these concerns prior to the proposed meeting. Please inform us of your intent and schedule for installing the monitoring well cluster near GSI-96-01. I intend to contact Mr. Fotouhi later this week to set up the requested technical meeting. If PLS is not willing to attend such a meeting, please provide us with your response to this letter by September 24, 2007. Please contact me if you have any questions.

Sincerely,

Sybil Kolon
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Gelman Sciences Project Coordinator
Remediation and Redevelopment Division
517-780-7937

SK/KJ

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