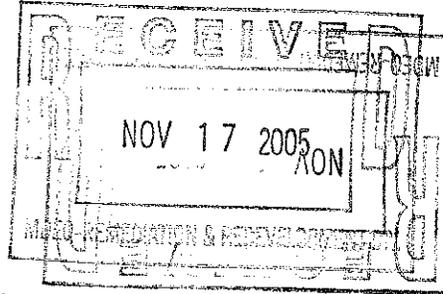


Pall Corporation  
600 South Wagner Road  
Ann Arbor, MI 48103-9019 USA

734.665.0651 phone  
734.913.6114 fax

November 14, 2005

Ms. Sybil Kolon  
Environmental Quality Analyst  
Department of Environmental Quality  
Jackson State Office Building  
301 E. Louis Glick Highway  
Jackson, MI 49201-1556



RE: Response to August 12, 2005 Correspondence regarding June 17, 2005 Workplan for Replacement of Certain Private Water Supply Wells

Dear Ms. Kolon:

This correspondence is in response to yours of August 12, 2005 regarding PLS' June 17, 2005 Workplan for Replacement of Certain Private Water Supply Wells. Our response follows your comments, which are quoted in italics.

Section I – Identification of Existing Private Drinking Water Wells Within the PZ

*This section of the work plan should be intended to identify any current or former water supply wells within the PZ that have not been abandoned. Because new heat pump wells that are not part of a closed loop system may not be installed without Department of Environmental Quality (DEQ) approval, as outlined in 5c of the Order, it is appropriate that this section should also include an effort to locate any such heat pump wells to determine if such wells need to be abandoned.*

PLS does not agree that it is necessary or appropriate to locate and identify open loop heat pump wells. The Groundwater Prohibition Zone Order prohibits the installation of such wells, but does not require PLS to abandon such wells. As explained below, the remote possibility that such wells might exist does not detract from the protectiveness of the prohibition zone or pose any public health concerns.

PLS has reviewed the basic engineering behind heat pump wells. Water is pumped from a well, circulates through the heat pump and is discharged to the surface. Open loops require good quality well water at a reasonable pumping depth. The well must have enough capacity to provide a continuous flow of 1.5 gallons per minute per ton of heat pump capacity during peak operation. The typical for a family residence is between 2 and 5 tons. An approved discharge system must be available. Ditches, field tiles, ponds, streams and dry wells are the most common methods, although local regulations may

limit the use of this approach. Open loop systems are usually less expensive than other configurations, but restrictions on the way water is discharged and concern about the large quantity of water used make them unattractive to many people.

The low capacity of such wells, the fact that the water does not come into contact with people, and the need for an approved discharge system all strongly suggest that there is no need to identify the presence or absence of such wells. Even if people came into contact with the water, there is no health concern associated with this "use" of groundwater since the levels in the aquifer are orders of magnitude below the direct contact criterion. Moreover, multiple legal constraints make it very unlikely that such systems exist. Water from heat pumps (and any water, other than stormwater), is not permitted to be discharged to the City of Ann Arbor storm sewers unless a permit is issued by the City for such use.<sup>1</sup> Water from heat pumps would be considered groundwater, which cannot be discharged to the sanitary sewer either.<sup>2</sup> Private disposal of groundwater to any natural watercourse is also not permitted.<sup>3</sup> These constraints make it unlikely that any open loop heat pump wells exist within the City. If they do, the owners are required to have either permission from the City or an NPDES permit (or both) for a legal discharge. PLS will submit an FOIA request to the City of Ann Arbor to determine if the City has any such records regarding non-closed loop system heat pump wells, and will identify any such wells to DEQ. It must be emphasized that PLS will not, and cannot, force homeowners to abandoned heating or air conditioning systems that use heat pump wells. The Order was intended only to prohibit future installation of open-loop systems within the prohibition zone, which, as discussed earlier, is highly unlikely.

*It is our position that it is PLS's responsibility to abandon any wells identified within the PZ, subject to the exception allowed for in 5e of the Order.*

The Order does not require PLS to identify or abandon non-drinking water supply wells. The Order certainly does not require PLS to identify wells that have already been taken out of service, nor would that effort serve any remedial or public health purpose. Any well that is not currently in use or temporarily not in use is already "abandoned" under Michigan law. For purposes of the work plan, PLS incorporates by reference the regulations defining abandoned wells as follows:

R 325.1601 Definitions; A.

Rule 101. (1) "Abandoned water well" means any of the following:

- (a) A well which has its use permanently discontinued.
- (b) A well which is in such disrepair that its continued use for the purpose of obtaining groundwater is impractical.
- (c) A well which has been left uncompleted.
- (d) A well which is a threat to groundwater resources.
- (e) A well which is or may be a health or safety hazard.

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<sup>1</sup> Ann Arbor City Code (AACC) Chapter 33, 2:209(2); 2:210.

<sup>2</sup> AACC Chapter 28, 2:42.3(8).

<sup>3</sup> AACC Chapter 28, 2:42.2(2).

It is the responsibility of the owner to physically decommission already out-of-service wells. PLS did not agree nor did the Court order PLS to assume this obligation.

Accordingly, it is not PLS's intention to identify wells which have not been already "abandoned" and which are covered under the Order. If PLS incidentally identifies currently abandoned wells, it proposes to notify DEQ so that it may take appropriate action (if needed) for the owner to abandon the unlawful well.

*Any written materials to be used in the survey methods described in Task 1 should be provided to this office for review and approval at least two weeks prior to their planned use.*

PLS does not understand the need for review and approval by DEQ of written materials PLS may choose to send as part of Task 1. The purpose and scope of the task is already set out in the work plan.

*There are eight properties listed in Table 1 that are known to have a connection to the city water supply, seven of which are west of Glendale Drive. These seven properties should be included in the first phase of Task 1 (Westover and Wagner Road properties), to determine if any wells exist that need to be provided with municipal water and/or abandoned.*

PLS does not believe a survey of these properties is necessary. As noted on Table 1, it has already been determined that these properties have been connected to municipal water, so no further action from PLS is required. Wells formerly used for drinking water (if any) remaining on these properties are "abandoned water wells" which the owners are required to close and abandon.

*The preliminary and final reports should include a copy of all abandoned well records for the period covered, whether abandoned before the PZ was instituted or as a result of the performance of this work plan.*

PLS agrees to provide well abandonment records for all wells abandoned by PLS as a result of performance of tasks in this work plan. PLS will also provide any other abandoned well records it may obtain in the course of performance of the work plan. However, PLS has not proposed to make a general search of government records for well abandonment documents anywhere within the PZ and anticipates it will only be acquiring records with respect to in-use wells it has specifically identified as covered under the Order.

### Section III – Connection to Municipal Water

*Regarding the water supply well at 2340 Dexter, we believe this well is in use for water supply. We understand that PLS did not include this well in its request for exceptions because PLS believed it had been connected to the municipal water supply. Mr. Fotouhi has indicated that PLS does intend to submit such an exception request. Please submit*

*this request to this office by August 29, 2005 or take immediate steps to connect this property to the municipal water supply.*

PLS does not at this time intend to request an exception. This well serves two auto repair buildings (commercial use) that are currently on "Ann Arbor Township" islands. The well has been sampled twice, and both times has shown ND for 1,4-dioxane.<sup>4</sup> PLS does not agree that there is an "immediate" need to provide municipal water.

This property is in Ann Arbor Township. Pursuant to an executed Policy Statement Between City of Ann Arbor and Ann Arbor Charter Township (1994), this property and all others in the City that are south of M-14 that are in Ann Arbor Township, are subject to annexation by the City on or before December 31, 2007. Properties annexed to the City have to be provided city water and sewer services under that memorandum and City ordinances. This agreement shows that before the establishment of the prohibition zone, the City and Ann Arbor Township had already agreed that the remaining township islands within the current PZ (and even east of the PZ along Geddes Road) were to subject to annexation by the City of Ann Arbor by December 31, 2007 (and in some cases earlier, if requested by property owners). This would include payment by the owner for connection to water, sewer, and property taxes. Based on this Agreement, PLS will initiate connections to water supplies before annexation of Ann Arbor Township properties only if it appears they are still using their water wells at the time 1,4-dioxane enters the well at unacceptable levels.

In the case of 2340 Dexter, the water supply well was last sampled on January 1, 2005, and was non-detect for 1,4-dioxane. However, a nearby monitoring well on the same property shows the presence of 1,4-dioxane above 85 ppb. The owner informed PLS that the City has already requested that he annex the property and he intends to do so next year (including connection to City utilities). PLS will monitor the well quarterly until the owner completes annexation or until the City forces annexation under its agreement with Ann Arbor Township. The owner also informed us that the tenants use bottled water for drinking, not the well water.

Due to the proximity of the known 1,4-dioxane contamination above 85 ppb, PLS agrees that this water supply well should be abandoned and a connection made to municipal water. The owner is already planning to do so next year, and in the interim there is no 1,4-dioxane in the well nor do the tenants consume the water, so there is no need to force the property into an earlier annexation than planned by the owner.

*We have also learned of three wells in the PZ that are not used as water supply wells, but that must be abandoned, as required by the Order, unless PLS submits information, and receives DEQ approval, for the exception allowed for in 5e of the Order. Two of these wells are in the Western PZ (an irrigation well at 3480 Jackson Road and a former water supply well at 2575 Valley) and one is in the Eastern PZ (an irrigation well at 960 Newport).*

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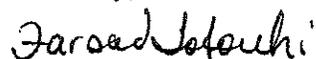
<sup>4</sup> Sample dates were on August 13, 2002 and January 21, 2005.

Again, PLS does not agree that the Order requires PLS to abandon such wells. Moreover, the circumstances associated with each of these wells demonstrate that abandonment is not appropriate. The former water supply well at 2575 Valley was retained as a monitoring well by PLS and is currently being used as part of the approved monitoring plan for semi-annual monitoring. The pump was removed from the well when it was converted, and cannot be used for water supply. It will be closed and abandoned by PLS at such time as the well is removed from the plan. The residence at that location has been connected to municipal water. We do not agree with DEQ's request for PLS to abandon the well at this time.

The irrigation well at 3480 Jackson Road is at Varsity Ford. They use it for watering their property. The facility is connected to municipal water for all other purposes. We have asked Varsity Ford if they would permit PLS to close and abandoned this well. They have refused permission. The concentration in that well is 3 ppb (as of July 26, 2005). The concentrations are very low and the well is in use but only seasonally for sprinkling. It is located above both the D2 and Unit E aquifers in areas where both already contain 1,4-dioxane. The water is not consumed, but is used only for irrigation. In light of these facts and the owner's refusal to allow PLS to enter its property, we do not believe any further action is necessary or even possible at the present time.

The 960 Newport well is located in the Eastern PZ and it is clear that the plume will not approach this well for many years, if ever. Even if PLS was responsible for abandoning this well, it is not possible at this time make the 5e demonstration because not enough data regarding the plume's future flow path is available. PLS will revisit the issues regarding this well after the downgradient investigation is completed.

Sincerely,



Farsad Fotouhi  
Vice President  
Corporate Environmental Engineering

cc: Robert Reichel, MDAG  
Alan Wasserman  
Michael Caldwell