

ATTACHMENT A  
Pall Life Sciences Response to  
DEQ's September 1, 2004 Decision Document

**Introduction**

DEQ issued its Decision Document on September 1, 2004. To the extent this document represents a final decision of DEQ, PLS is disputing that decision. This document lists conclusions set forth in DEQ's decision document which PLS disputes, the reason for the dispute, and additional supporting materials.

**Cover Letter, Robert Reichel to Honorable Donald E. Shelton, September 1, 2004**

- PLS disputes the conclusion that its proposed remedy as outlined in the FS "cannot be approved by DEQ, based upon the requirements of Part 201 of the Natural Resources and Environmental Protection Act." (Par. No. 1).
- PLS disputes (for the reasons stated below) the remedial alternative suggested by DEQ if PLS cannot meet the six specified conditions within one year. (Par. No. 3).
- PLS disputes (for the reasons stated below) that it must concurrently with pursuing its proposal begin to implement DEQ's alternative. (Par. No. 5).

**Gelman Site Enforcement Activities**

- PLS disagrees with DEQ's characterization of the disposition by this Court of the February 2000 motion by the Michigan Department of Attorney General ("DAG"). (Decision Document, at 3). PLS incorporates by reference its responsive pleadings and testimony in court in connection with its defense of the motion. PLS specifically denies, for the reasons set forth in the referenced documents, the statement in the Decision Document that PLS had not complied with the Consent Judgment. It is not appropriate to present this as a fact when it was contested and this Court did not decide the underlying contentions.

**Unit E Plume**

- PLS disagrees with the DEQ's characterization of the historic data regarding Unit E. Specifically, there is an implication that PLS or other parties knew of, but did not disclose, Unit E contamination before it was found in May, 2001. (Decision Document, at 4). This is not accurate.
- PLS does not agree that the test it conducted on in-situ treatment at MVSC proved that the technology was infeasible. (Decision Document, at 5). PLS agrees the results of the test ruled out use of the technology in the MVSC area based on the conditions of the test. PLS is

still reviewing the potential for in-situ to work in other locations, for other applications at the site, and under different conditions than those imposed by DEQ for the MVSC test.

### **DEQ Analysis of PLS's Proposed Response Action**

- PLS disputes DEQ's characterization of the time that it would take PLS to achieve cleanup criteria using its proposed method. (Decision Document, at 9). Any remedy that involves pump and treat technology to address the Unit E suffers from the same uncertainty in predicting cleanup horizons due to the phenomenon of tailing and rebound. (See note 2). The statute and rules do not require DEQ to balance estimated cleanup times in evaluating options, nor is it possible to do so where both options involve pump and treat. It is arbitrary to rely on guesses as to cleanup horizons as a basis for selecting an option in this context.
- PLS disputes DEQ's conclusion that the WCRRPG is not adequate under Part 201. (Decision Document, at 9). The contours of the Unit E contamination (as defined by the 85 ppb iso-concentration line) are fairly well established. No one has identified existing drinking water supply wells in this zone. There are also no industrial wells within this zone. The "deficiencies" identified by DEQ are, therefore, speculative and should not disqualify an otherwise useable institutional control.
- PLS disagrees with DEQ's analysis of the viability of the Northwest Supply Well. (Decision Document, at 9). The analysis arbitrarily ignores the fact that the City of Ann Arbor has publically stated it will not turn on that well, and that it has sued PLS for, among other things, the replacement value of the well. Use of the well would be inconsistent with the City's lawsuit. Moreover, there is nothing in the record or the Decision Document that suggests that the City needs the well for water supply or otherwise intends to use the well under any circumstances.
- DEQ's application of its "policy" (Decision Document, at 9) to deny a waiver request when a plume is in a wellhead protection area is arbitrary and capricious and not supported by the record. No such written policy has, in fact, been produced. There is no way for PLS to comment upon, or for the Court to determine if the rationale for that policy (if it indeed exists independent of this particular site) applies to the circumstances of the Northwest Supply Well.
- DEQ's determination that the WCRRPG does not meet the requirements for acceptable institutional controls is also arbitrary and not supported by the record. There are no rules or written guidance that elaborate on the elements of an institutional control. Section 18 of Part 201 provides only that an institutional control that is proposed as part of a remedy be adequate "to prevent unacceptable risk from exposure to the hazardous substances, as defined by the cleanup criteria approved as part of the remedial action plan." Section 20b of Part 201 provides: "mechanisms that may be considered under this subsection include, but are not

limited to, an ordinance that prohibits the use of groundwater or an aquifer in a manner and to a degree that protects against unacceptable exposures as defined by the cleanup criteria approved as part of the remedial action plan. An ordinance that serves as an exposure control pursuant to this subsection shall be published and maintained in the same manner as zoning ordinances and shall include a requirement that the local unit of government notify the department at least 30 days prior to adopting a modification to the ordinance, or to the lapsing or revocation of the ordinance.” It should be noted that neither statute prohibits exposure to *any* risk. The ordinance must be sufficient to prevent *unacceptable* exposure. With the exception of the Northwest Supply Well (discussed above) there are no water supply wells currently in the Unit E. While other Unit E wells exist, they are not near the plume and are located either cross-gradient or very far downgradient from the leading edge of the plume. There is, therefore, no basis in the record for concluding that the WCRRPG is insufficient merely because it does not require abandon of wells that actually do not exist within the plume boundaries or within any area that the plume could reasonably reach for many years.<sup>1</sup>

DEQ’s observation that the WCRRPG does not restrict operation of industrial wells (Record of Decision, at 9) is also misplaced. Current zoning does not allow industrial uses along the projected flow path, except in limited areas adjacent to the Huron River that is far downgradient of the leading edge. Also, the basis for this objection is stated to be that an industrial well “could change the configuration of the plume.” DEQ fails to explain why it matters if the configuration of the plume changes, provided the plume remains subject to the WCRRPG. Finally, while it is “possible” that zoning may change, that land uses may change in Ann Arbor, that a heretofore non-existent hypothetical industrial user might then move to Ann Arbor and want to install a well notwithstanding that its due diligence should show that the Unit E is contaminated, this is not a risk that is significant enough to be a basis for rejecting PLS’s plan. The statute only requires protection against unacceptable risk.

PLS rejects as inaccurate and misleading DEQ’s contention that there is no provision to monitor or protect existing private water supply wells east of the Huron River if the plume does underflow the Huron River. (Decision Document, at 9). The nearest such well is *three miles away*. PLS has already proposed a downgradient investigation that will answer DEQ’s concern many years before the plume could ever reach that well, even assuming it took a bee-line under the river. In addition, as DEQ elsewhere acknowledges but omits in its analysis, PLS has proposed a contingency plan to intercept contaminated groundwater *before* the water

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<sup>1</sup> The wells generally downgradient are in Ann Arbor Township. As part of its proposal, DEQ acknowledges that PLS has agreed to further demonstrate through investigation that these wells are not threatened by continued migration of a portion of the Unit E plume. In the interim, the WCRRPG is more than adequate to control actual exposures within the current plume boundaries and projected flowpath for the foreseeable future.

reaches receptors. There is, therefore, no basis in fact for DEQ's suggestion that PLS's plan would allow downgradient wells to become contaminated. One other observation – PLS is aware of one well, three miles away, that is on the other side of the river along the projected flow path. All other residential wells in that general direction are four miles away. While PLS, this Court, and DEQ all share in a goal to get started in addressing Unit E, there is no imminent threat to the public health or safety. The Decision Document is flawed to the extent it suggests that DEQ must reject PLS's proposal as inadequate to protect the public health and safety.

DEQ also rejects PLS's proposal on the basis that there is a substantial degree of long-term uncertainty associated with assumptions about groundwater flow and that there is currently not enough information to predict the exact route the plume will follow. (Decision Document, at 9). PLS disagrees with this assessment. PLS' projected the plume flow path using available geologic information and analysis. The projection was not a mere "assumption." Nothing in the record shows that DEQ has in any way attempted to quantify the "uncertainty" it references, and DEQ ignores the WCRRPG, the current flowpaths delineated in the DEQ-approved wellhead protection report, the available hydrogeologic information, and logic. PLS submitted information to support its proposed flow path, including model runs that show the dramatic decline in concentrations in the projected plume as PLS's mass removal strategy is implemented. While it is always possible to claim, as DEQ does here, that there is not enough information to determine "exactly" where the plume goes, there is nothing in the record that suggests it is necessary to know this to such a degree of certainty. To the contrary, the record evidence suggests that concentrations will be low enough to not present an unacceptable risk, even if the exact flowpath is not yet known. Moreover, DEQ's finding ignores three components of PLS's plan: (1) collection of additional information downgradient to verify the information PLS has submitted (which will provide more certainty, even if not "exact"); (2) the WCRRPG, which controls risk of exposure; and (3) PLS's contingency plan to intercept the plume near the river should (1) and (2) prove inadequate to control risks.

PLS acknowledges that a hydrogeologic study is necessary to add certainty to its plan. It has submitted a work plan to accomplish this to DEQ. PLS disputes that the current uncertainty is any more significant than the uncertainty in DEQ's alternative proposal. If and until an NPDES permit is issued, for example, neither PLS nor DEQ can know if it is feasible to discharge to the river or to treat extracted water at MVSC.

PLS disagrees with DEQ's position that it need not evaluate "as premature" the claim made by PLS that its proposal would be more compatible with existing land uses than the leading edge alternatives. (Decision Document, at 9). It is not premature to make this evaluation. PLS has submitted information to DEQ, as have other commentators, regarding these issues.

## **Public Involvement – Responsiveness Summary**

*Comment 28 (Responsiveness Summary at 7):* PLS strongly objects to and disputes statements made by DEQ to the public that suggests PLS is responsible to third parties in any respect. This statement is inappropriate in the context of the Decision Document and is not accurate as a matter of law.

*Comment 29 (Responsiveness Summary at 7):* PLS disputes that a pipeline to the Huron River is the only feasible method of discharge for treated groundwater from the Unit E.

*Comments 31 and 32 (Responsiveness Summary at 7):* PLS disputes the technical objections DEQ has interposed to reinjection as proposed by PLS.

### **DEQ's Preliminary (July 2004) Proposed Remedial Alternative and Evaluation**

This section of the Decision Document (Page 11 to 17) reiterates the position taken in July 2004. PLS has already submitted comments on that document which is part of the record here, and PLS incorporates by reference those comments.

In addition, PLS disputes that it is necessary to design a conveyance system to transport water downstream of the City's water intake in the Huron River. (Decision Document, at 13). PLS has operated a 1300 gpm groundwater treatment system at its facility for years without any incident that threatens the City's water supply. There are numerous controlled and uncontrolled industrial, agricultural and residential discharges to the Huron River upstream of the water supply intake that in comparison are far greater threats than the strictly controlled discharge from PLS. In fact, PLS has added significant volumes of clean water to the Huron River. There is no basis on the record for designating a location downstream of the intake as the only acceptable surface water discharge point into the Huron River.

### **DEQ's September 1, 2004 Selected Remedial Alternative for the Unit E Plume**

- PLS does not agree with the conclusion of DEQ that its proposed plan "is necessary to comply with Part 201 and the CJ." (Decision Document, at 13). This is not correct as a matter of law. The CJ does not require capture of the width of any of the identified plumes, except at the leading edge.
- PLS disputes that the balance of the criteria favor DEQ's alternative over PLS's selected remedial action. (Decision Document, at 13). A matrix comparing PLS's remedial action with DEQ's alternative is included as Attachment B. As shown on that matrix, none of the factors favor DEQ's alternative, and several factors favor PLS's remedial action.
- PLS also disputes the viability of verifying compliance with DEQ's approach. DEQ would require at each location the prevention of further migration at each location of concentration of 1,4-dioxane above 85 ppb in the downgradient or easterly direction. No method is suggested by DEQ, nor does PLS know of one, that can verify that this performance objective is being met, even if such a system were installed. That is because it is expected

that interior concentrations of the plume will continue to be at levels above 85 ppb for an undetermined time following initiation of DEQ's response. It does not appear feasible to directly verify whether the hydraulic barrier actually functions. Since PLS can be subject to penalties for failing to meet this directive, it is impermissible for the DEQ to establish an unattainable (or at least an unverifiable) performance objective. To the extent DEQ specifies some indirect measurement (such as purge rate) as the only way to document performance, DEQ's remedy in effect becomes only a more vigorous mass reduction strategy. DEQ cannot, and has not attempted to, justify their proposal on that basis.

PLS disputes DEQ's conclusion that a new 1300 gpm groundwater treatment facility can be located at or near the MVSC. (Decision Document at 14). PLS submitted significant information on the needs and risks of such a system in support of its contention that it is not feasible to build nor safe to operate at that location. DEQ, without any contrary information on specifications, research into existing property uses, or available property in the area, has dismissed PLS's information and simply stated it "believes" such a system to be feasible. This is patently insufficient. There is no support in the record for the DEQ's belief. Belief will not change zoning requirements; it will not create vacant land where there is none; it will not force owners of property to give up ownership for a cleanup; nor it will make a project feasible that is not. The very fact that DEQ suggests that alternative locations be explored illustrates that a suitable location may, in fact, not exist at all. Additionally, this decision is arbitrary. There is no legal distinction between the type of uncertainty associated with the groundwater plume direction and the uncertainty associated with whether the DEQ's treatment plant could be sited and constructed. On the contrary, PLS has made a record in support of its plan and explaining in detail the infeasibility of DEQ's treatment system. Yet DEQ has rejected the former as unacceptable (for the time being) because of lack of precision, while accepting the uncertainty of its own proposal on the basis of "belief."

PLS disputes DEQ's assertion that its plan would "significantly reduce" the amount of time needed to clean up the contaminated aquifer, and that this time difference (if it exists) reduces the threat to the public health, safety and welfare. (Decision Document, at 14, 15). There is no record on this. DEQ's position is once again based on belief instead of data. More importantly, there is no identified threat to the public health, safety and welfare presented by the Unit E that is time sensitive so there is absolutely no basis for the conclusion that a faster remedy is somehow a better one, even if DEQ's remedy could be

faster.<sup>2</sup>

- PLS disputes that DEQ need not consider balancing costs of PLS and DEQ's proposals because PLS's proposal is not protective. (Decision Document, at 14). The response actions are both protective and this balancing should occur.
- PLS disputes DEQ's conclusion that there is a need for a stochastic groundwater model. (Decision Document, at 15). This model is wholly unnecessary for DEQ's proposed remedy because the leading edge of the plume (not to mention two other locations) will have to be contained, leaving no need to do anything other than conventional performance monitoring outside of the plume and no need to do anything at all interior to the plume using a model.
- PLS disputes DEQ's assertion that its proposal reduces uncertainties associated with PLS proposal (Decision Document, at 14). As stated here and in earlier comments, the record shows that the uncertainties regarding risk are comparable for each remedy. The uncertainties regarding implementation are, however, far greater for DEQ's proposal.
- PLS disputes DEQ's conclusion that its remedy is "more readily implementable" than PLS's proposed remedy. (Decision Document, at 15). PLS and other commentators provided significant information to DEQ calling into question the implementability of its remedy. There is no substantive record response to these concerns. DEQ has, instead, dismissed them. Without limitation, DEQ has not responded substantively to the following facts regarding implementation of their remedy: (1) no available proximate property, suitable zoned and sized for DEQ's treatment system; (2) resistance expressed by the citizens of Ann Arbor, and even the City itself, to DEQ's plan to the extent it involves bringing contaminated groundwater to the surface in residential neighborhoods and disrupting those neighborhoods with infrastructure; (3) no NPDES permit has been issued for discharge to the Huron River; and (4) no transmission pipeline routes have been proposed by DEQ, making it impossible to

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<sup>2</sup> It has been well known in the professional community that pump and treat approaches in all but very simple situations typically cannot fully attain groundwater restoration (health based goals) throughout a plume no matter how long the system is operated. The main reason is the phenomenon of "tailing" and "rebound." This is described in guidance for pump and treat systems put out by USEPA for superfund sites. *Pump and Treat Groundwater Remediation, A Guide for Decisionmakers*, USEPA, July 6, 1996 (EPA/625/R-95/005), available at <http://www.epa.gov/ORD/NRMRL/pubs/625r95005/625r95005.pdf>. Tailing and rebound will, in situations such as this one, involving multilayered heterogenous geology, frustrate any cleanup of Unit E that is based on attaining criteria throughout the aquifer. There is no basis for DEQ's assertion that more pumping at the interior of the plume will attain criteria "faster."

know if a feasible route in fact exists at this time.

- PLS disputes DEQ's "recommendation" that it pursue use of the sanitary and/or storm sewer for disposal of treated groundwater from the Maple Road area. (Decision Document at 14). The record shows that the City cannot accept enough capacity to make this worthwhile, and has imposed conditions that make effective use of the sanitary impossible. The treatment system operational records at the Wagner Road facility show that it cannot be reliably switched on and off in response to weather conditions and still attain treatment limits. The calibration needed to assure that the right combination of energy, oxidants, contaminants, and balancing chemicals are maintained to meet cleanup limits is upset when the system is brought up and down.
- PLS disputes that it has not already met with its proposal, conditions 2, 3, 4, and 6 as outlined by DEQ in its Decision Document at 15-16. PLS also maintains, for the reasons discussed above, that condition 1 (Northwest Supply well elimination) is moot, unnecessary, and hence arbitrary.
- PLS disputes all of the elements of DEQ's proposal. (Decision Document, at 16).

#### **Appendix B, Attachment A: Response to Summary Comments (Weston)**

- PLS disputes Weston's response to PLS's comments regarding construction of pipelines. Based on the record and this response, Weston acknowledges that the full extent of the difficulties that will be encountered during the construction of the pipelines along the final pathway can only be determined as the design of the proposed alternative is refined. It is arbitrary and capricious, then, to make a judgment that the difficulties would be acceptable or surmountable without a final design. DEQ's solution, which is also arbitrary, is to make this PLS' problem. This is a further example of how DEQ is prepared to make judgements on inadequate information (or none at all) in support of its proposal, but requires PLS to make additional demonstrations as a condition to approval PLS's response action. So, for example, if there is not enough information to make decisions on the feasibility of reinjection (despite information provided in support to DEQ), then there is also not enough information to determine the feasibility of lengthy pipelines until a design is put forward.
- PLS disputes Weston's conclusions about the feasibility of treating 1300 gpm at Maple Village. In order to answer PLS's comments, Weston went back to a system vendor and asked for additional information. This information does not support DEQ's or Weston's conclusion as to feasibility, however. The record shows that the vendor acknowledged that it did not have data related to iron content or other characteristics of area groundwater, making their conclusions regarding the necessity of detention ponds unreliable. The record shows that the vendor acknowledged that "there are potentially significant health and safety issues associated with the handling and storage of liquid oxygen." The record shows that the neither DEQ nor the vendor can say reliably that treatment ponds would not be necessary



because the NPDES limits are not known. In particular, background concentrations of iron, bromide and arsenic may all create significant problems for the vendor's system.

PLS also disputes Weston's conclusion that ponds will not be needed to assist the treatment system. First, it is not disputed that PLS's existing UV-H2O2 system does use and need such ponds. DEQ stated in its decision document that PLS might have to use this system at MVSC if the proposed hydrogen-peroxide and ozone system will not meet (as yet undetermined) NPDES permit requirements. (Decision Document, at 14). While PLS is confident that it will be able to switch technologies DEQ apparently does not share that view and so cannot, as a basis of its decision, assume that UV-H2O2 will not be used. Second, until NPDES permit limits are known and a large scale H2O2/ozone system can be field tested using the Unit E water chemistry it cannot be said that ponds will not be necessary. There may be other engineering solutions to water quality problems, but these may involve additional cost, additional space, and may have other unintended or unforeseen consequences that preclude reliably selecting a treatment location that does not have room for ponds. This is particularly true where past experience has shown that these ponds are very useful in managing treatment efficiency and compliance with permit limits at the PLS plant.