

Pall Life Sciences' Supplemental Filing In Support Of Pall Life Sciences' Remedial Alternative

I. Introduction

On June 1, 2004, Pall Life Sciences (“PLS”) submitted its Final Feasibility Study (“FS”) to the DEQ. The FS was intended to provide a framework for evaluating the need for, and the potential benefit of, various response action alternatives for addressing the Unit E contamination. PLS’ analysis revealed a number of significant factors that PLS considered in designing its preferred remedy. These factors included:

- All available groundwater data indicate that the Unit E plume will migrate to the Huron River at a point that is well downstream of the City’s Barton Pond water intake.
- There are no private drinking water wells between the leading edge of the Unit E plume and the Huron River. The entire area is already serviced by the City of Ann Arbor’s municipal water system, which obtains the majority of its water from the Huron River, well upstream from the Unit E plume.
- The only municipal drinking water well in the vicinity of the plume – the Northwest Supply Well – has already been taken out of service due to “water quality concerns” either because of the trace levels of 1,4-dioxane detected in the well in February 2001 or because arsenic is also present in the well at levels almost twice the legal limit.
- Arsenic has also been detected in other areas of the Unit E at levels far above the legally permissible level, calling into question the usefulness of this aquifer as a source of drinking water.
- The recently adopted Washtenaw County Rules and Regulations for the Protection of Groundwater (“Washtenaw County Rules”) effectively prevent the installation of any new drinking water wells in the migration pathway of the plume.
- The “groundwater/surface water interface” (“GSI”) criterion of 2,800 ppb is the next most restrictive cleanup criterion once the drinking water pathway is eliminated.
- Even without any active remediation, it is extremely unlikely that concentrations in the plume would even approach the GSI criterion by the time the plume reaches the Huron River.
- Any attempt to capture the entire width of the Unit E plume, either at the leading edge or another location, would require the installation of miles of pipeline, which would disrupt the congested residential neighborhoods and retail businesses in the area.
- The incredible disruption associated with capturing the plume would serve no purpose because the water is “unsafe” only if it is going to be consumed, and it is already illegal to do so.

Based on these considerations, PLS identified a remedy that was both protective of human and environmental receptors and respectful of the community. PLS’ remedy

focused on reducing concentrations at two locations so that the plume will pose no threat to receptors by the time it reaches the Huron River. In PLS' judgment, the location of this plume makes it inappropriate to blindly adhere to Part 201's default prohibition on allowing the plume to expand. PLS' focus on protecting receptors through mass reduction rather than containment allowed PLS to minimize the infrastructure associated with the remedial system and to locate the reduced infrastructure away from congested residential areas.

After reviewing the FS, the DEQ submitted its Decision Document to this Court on September 1, 2004. While the formality of the document and the excessive use of mandatory language can give the impression that the parties are at loggerheads, the reality is not so dire. The DEQ concluded that, as a legal matter, it could not approve PLS' alternative as a *final remedy* based on the current state of affairs. But the DEQ agreed that PLS' remedy could be a legal, approvable, and protective final remedy if six identified conditions could be met. The most significant issues that prevented the DEQ from approving PLS' remedy are legal in nature rather than technical. The DEQ gave PLS one year to resolve these issues. In the event PLS was unable to satisfy these conditions, the DEQ concluded that PLS should be required to implement the much more invasive and controversial remedy described in the Decision Document.¹

After reviewing the DEQ Decision Document and PLS' status report, this Court indicated that it did not believe that it was appropriate to wait a year before determining what would be done as a final response for addressing the Unit E. This Court indicated that it would modify its REO to address the Unit E contamination within 60 days of the September 8, 2004 hearing. The Court invited the parties to submit additional materials if they wished, particularly to address the questions raised by the Court during the hearing. PLS appreciates the opportunity to submit the following report and attached materials.

II. Questions Raised by the Court.

This Court asked the parties to address four specific questions raised during the September 8, 2004 Status Conference. The first three inquires relate to several of the six conditions that the DEQ indicated PLS would have to satisfy before PLS' remedy could be approved. The fourth concerns the parties' respective positions regarding the work at Wagner Road. PLS' response to each is indicated below.

A. What is the Technical Basis for the DEQ's Concerns Regarding PLS' Plan to Reinject Treated Groundwater near Maple Road?

¹ PLS has submitted detailed comments on DEQ's plan, and has provided in Attachment A a list of disputed conclusions in the Decision Document along with explanations as appropriate. As noted in Attachment A, DEQ's contingency is subject to several significant unknowns, which it should also have identified as conditions to its own plan. These include the layout of the pipelines, the limits of an NPDES permit to the Huron River, and the feasibility of siting, constructing and operating a 1300 gpm treatment system in the Maple Road area.

PLS is proposing to reinject the purged groundwater after treatment via two injection wells located to the north and to the south of the extraction well along Wagner Road. The DEQ has responded that PLS must provide “sufficient hydrogeological information to resolve **concerns** about reinjection” and that PLS must identify an acceptable method of disposing of the treated groundwater.

During the recent status hearing, the Court asked the DEQ to identify the technical basis for its concerns. PLS has met twice with DEQ’s technical staff, once in person just prior to the status conference and once after the conference via a conference call. The DEQ has been unable to identify what additional information it wants PLS to submit in this regard.

PLS strongly believes that it is not necessary to “study this to death” and that the available information provides a sufficient basis for approving this disposal method. PLS has numerous monitoring wells in the Maple Village area and has conducted two aquifer pump tests to determine aquifer characteristics in this area. PLS has submitted all of this data to DEQ. PLS has also submitted its Modeling Report (Exhibit 1) that addresses the DEQ’s original concerns and demonstrates that the proposed reinjection will not adversely affect the plume. The modeling also shows that the proposed extraction will significantly reduce the contaminant levels that might otherwise migrate past Maple Road. PLS agrees with the DEQ that, given the size of the plume, it would be very problematic and likely impossible to reliably reinject the volume of water needed to capture the entire width of the plume, let alone the volume needed to capture it twice as the DEQ has proposed. The existing information, however, demonstrates that PLS’ more realistic plan is technically feasible. Therefore, PLS believes this condition has already been met.

PLS’ work plan for implementing its proposed interim response is ready to be submitted to the DEQ for approval. PLS is simply waiting for DEQ to identify what additional information it needs in order to satisfy DEQ’s unarticulated technical concerns in this regard. If necessary, PLS will attempt to address any reasonable data requests, but PLS believes that its work plan is currently approvable.

B. Can a Judicial Order be Used to Satisfy the DEQ’s Institutional Control Requirement?

The DEQ contends that in order for PLS’ remedy to be protective, an institutional control must be in place that would prevent use of the groundwater in the “relevant areas” of the site.² To the extent an institutional control under Section 18 of Part 201 (MCL 324.20118) is required in order for the DEQ to approve PLS’ remedy, the current Washtenaw County Rules already substantively accomplish this. The Washtenaw County Rules already reliably restrict the installation of new water supply wells in the areas affected by the Unit E plume under the following provisions:

² As set forth in PLS’ FS, the DEQ has authority under Section 18 to waive its aquifer control rules without the need for institutional controls. PLS attempted to demonstrate how this could be done in its FS, but the DEQ has declined to use that authority.

- No one can construct or drill any well (including a drinking water well) without first obtaining a permit from the County Health Officer (Sec. 2:1);
- No municipality within the county may issue a building permit where a well is necessary or allow construction to commence on any land where an approved public or private water supply is not available until issuance of a permit by the Health Officer (Sec. 2:4);
- No permit can be issued by the Health Officer if it is not in compliance with the Rules or if it would create a dangerous or unsafe condition (Sec. 2:5);
- It is unlawful for any person to occupy or permit to be occupied any premise in Washtenaw County not equipped with an adequate supply of potable water as determined by the Health Officer (Sec. 6:1);
- The rules apply to all non-community and private groundwater supplies within Washtenaw County (Sec. 6:2);
- Water supplies intended for human consumption that are not “potable” must either be abandoned, identified at the outlet as unfit for human consumption, or treated by methods approved by DEQ or the County Health Officer so as to make the water potable (Secs. 6:2, 6:3). “Potable” water is defined as water that is free of contaminants in concentrations that may cause disease or harmful physiological effects, is safe for human consumption and meets the State drinking water standards set forth in the Michigan Safe Drinking Water Act (Sec. 1:15);
- Newly drilled wells cannot be used for human consumption until approved by the Health Officer and after they have been tested for bacteriological or chemical contaminants (Sec. 6:6); and
- No well can be located within at least 100 feet of a source of contamination, or within such increased distance as determined necessary by the Health Officer (Sec. 6:7).

This existing institutional control already prohibits the installation of water wells in the affected areas. The DEQ acknowledges that the County Rules already prohibit property owners between the plume and the river from installing new water supply wells.³

³ DEQ staff explained the issues they have with the ordinance in a memorandum attached as Appendix C to DEQ’s Decision Document. DEQ staff acknowledged, however, that many of the specific issues appear to be easily addressed (*e.g.*, provide a map, limit variances to isolation zones, provide more clarity in decision standards). The primary concern expressed in the memo arises from the author’s understanding that there are existing drinking water wells that would be in the area threatened or impacted by “the PLS plumes.” DEQ district staff members more familiar with the site agree that this is not the case with Unit E,

To the extent it is necessary to supplement the existing institutional control, PLS has suggested that this Court could issue an order that would address the minor deficiencies in the existing Washtenaw County Rules. Such an order could also constitute a stand alone institutional control that would meet the requirements of Part 201.

As was acknowledged during the status hearing, Part 201 does not preclude such an order from serving as an acceptable form of institutional control. Part 201 provides, in relevant part:

If the department determines that exposure to hazardous substances may be reliably restricted by an institutional control in lieu of a restrictive covenant, and that imposition of land use or resource use restrictions through restrictive covenants is impractical, the department may approve of a remedial action plan under section 20120a(1)(f) to (j) or (2) that relies on such institutional control. 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.

MCL 324.20120b(5) (emphasis added). Similarly, the Part 201 rules define “institutional control” as a “measure” that reliably prevents unacceptable exposures to contamination:

(j) “Institutional control” means a measure which is approved by the department, which takes a form other than a restrictive covenant, and which limits or prohibits certain activities that may interfere with the integrity or effectiveness of a remedial action or result in exposure to hazardous substances at a facility, or which provides notice about the presence of a hazardous substance at a facility in concentrations that exceed only an aesthetic-based cleanup criterion.

Mich Adm Code R. 299.5101(j). Thus, under both Part 201 and the Part 201 rules, a judicial order could be an institutional control provided it was crafted in such a way that it satisfies the identified requirements.

Issuance of such a judicial institutional control is well within this Court’s authority to enforce its judgments. The Michigan Revised Judicature Act provides that “[c]ircuit

and indicated that the staff person who reviewed the ordinance may have also been looking at other portions of the site that do not need the institutional control.

courts have jurisdiction and power to make any order proper to fully effectuate the circuit courts' jurisdiction and judgments." MCL 600.611. Michigan case law provides that courts possess inherent authority to enforce their own directives. See Cohen v Cohen, 125 Mich App 206 (1983). In addition, courts have stated that circuit courts have broad powers, including the power to make an order to fully effectuate their jurisdiction and judgments. See Spurling v Battista, 76 Mich App 350 (1977).

This Court's authority under the RJA is analogous to the authority granted to federal courts under the federal All Writs Act, 28 USC 1651, which states that "courts established by Act of Congress may issue all writs necessary or appropriate in aid of their respective jurisdictions and agreeable to the usages and principles of law." Federal case law has held that "the All Writs Act provides district courts with the authority to bind nonparties in order to prevent the frustration of consent decrees that determine parties' obligations under the law." United States v City of Detroit, 329 F 3d 515 (CA 6 2003); see also Grand Traverse Band of Ottawa & Chippewa Indians v Director, Michigan Dep't of Natural Resources, 141 F 3d 635 (CA 6 1998) (affirming district court order barring non-parties from interfering with consent judgment). In City of Detroit, the Sixth Circuit held that the district court acted properly in ordering the United States Army Corps of Engineers to accept dredged sediment in connection with a consent judgment between the United States and the City of Detroit requiring the City of Detroit to bring its wastewater treatment system into compliance with its NPDES permit. Id.

Thus, this Court has authority to bind third parties as part of a enforceable judicial institutional control. Based on a review of these requirements and comments made by DEQ staff on the Washtenaw County Rules, PLS recommends that the following elements be included as part of an order imposing institutional controls:

1. The requirement that the parties confer and submit to the Court within a specified period of time a map that identifies the agreed upon area that would be covered by the judicial institutional control, including a buffer zone (the "Protected Area"), or if agreement cannot be reached, the parties' respective positions.
2. A prohibition against the installation of new water supply wells for drinking, irrigation, or commercial or industrial use, within the Protected Zone shown on the map.
3. Service of the Order on the Washtenaw County Health Department with the instruction prohibiting the County Health Officer from issuing permits for well construction in the Protected Zone. It should be noted that this prohibition is completely consistent with the existing County Rules governing issuance of permits.
4. A prohibition against consumption or use of groundwater from within the Protected Zone.

5. A requirement that PLS provide, at its expense, connection to the City of Ann Arbor municipal water supply for any existing private drinking water wells within the Protected Zone.
6. A requirement that the Order be published and maintained in the same manner as a zoning ordinance.
7. A provision that the Order shall remain in effect until such time as it is amended or rescinded by further Order of the Court, with a minimum 30 days notice to all parties, including specifically DEQ.
8. A provision to allow either party to move to amend the boundaries of the prohibition zone to reflect material changes in the boundaries or fate of the plume as determined by future hydrogeological investigations and/or monitoring.

An order that contains these elements would appear to be sufficient to reliably restrict groundwater use consistent with PLS's proposed response.

C. What Water Supply Wells Should PLS be Required to Monitor?

PLS agrees that its remedy should include a monitoring plan for any water supply wells outside the area covered by the institutional control that are conceivably threatened with contamination. The number and location of the wells that would need to be monitored would be dependant on the area to be covered by the judicial institutional control. PLS would anticipate, however, that wells on the east side (and in the vicinity of) the Huron River would eventually be monitored. PLS' monitoring plan would also include "sentinel wells" near the Huron River. PLS also anticipates that the Northwest Supply Well would be monitored (as it would be under the DEQ's contingent remedy). PLS' remedy includes a contingency plan to prevent unacceptable exposures if any such water supply wells are threatened. PLS has also, consistent with its proposal (and with one of DEQ's conditions), submitted a work plan for a downgradient investigation of the Unit E plume. (Exhibit 2). These wells may also be available for monitoring as a way of confirming the boundaries of an institutional control.

D. What Should be Done at Wagner Road?

The one aspect of PLS' proposed remedy on which the parties are in clear disagreement is the Wagner Road element. PLS has proposed to continue its on-site purging and to conduct an investigation in the Wagner Road area to determine if concentrations in this area are high enough to justify an additional purge well. PLS is not proposing to capture the entire width of the plume at this location because it serves no useful purpose to do so. Rather, PLS has proposed to reduce concentrations at this location, depending on the results of the pending investigation. The DEQ initially approved this mass reduction objective, but later asserted that PLS should attempt to capture the entire width of the plume at this location.

Capturing the width of the plume using conventional pump and treat technologies is, according to DEQ, a preferable remedy because DEQ “believes” it will accelerate groundwater cleanup horizons. As will be explained in more detail below, pump and treat technologies are not suitable for this objective. There is no basis for DEQ’s assumption that its proposal would result in attaining the cleanup criteria any sooner than PLS’ proposal. The most efficient mid-plume remedial technique is mass reduction in areas of high concentration, not containment. This is what PLS is doing in the C3/D2 plume (*e.g.*, the horizontal well).

PLS also is very concerned that a “capture” objective cannot be directly verified. Currently, hydraulic capture at other areas of the site is enforced through minimum purge rates and by monitoring verification wells to show that the plume is not “escaping” hydraulic capture. Monitoring downgradient of the barrier, however, cannot be used to verify compliance for Wagner Road. This is because there are significant concentrations of 1,4-dioxane in the ground on both sides of the hypothetical barrier. Monitoring wells installed ahead of the barrier will not be able to verify that the barrier is operating as designed. This puts PLS in a perilous position if capture becomes an enforceable objective. Relying only on minimum purge rates is really no different than mass reduction, which is what PLS has proposed.

The unilateral change in performance objectives would also directly conflict with PLS’ obligations under this Court’s REO. Although the exact capture volume is unknown, it will undoubtedly exceed the available capacity under the NPDES permit unless more capacity is diverted from the D2/C3 cleanup effort. PLS has already allocated approximately 180 gpm of the 1300 gpm capacity allowed under the permit to its on-site extraction wells. Because of decreasing water levels in the C3 and D2 aquifers (and resulting decrease in purge rates), there is still a small amount of capacity that can be allocated to mass removal at Wagner Road if concentrations in this area justify that response. What the DEQ has proposed, however, will greatly exceed the available capacity and would require PLS to choose between attempting to comply with the Court’s REO and complying with the DEQ’s proposed interim response.

PLS urges the Court to allow PLS to move forward with its groundwater quality investigation. If concentrations justify additional mass removal, PLS will install an additional well and connect it to the existing treatment system. There is, however, no basis for the DEQ’s plume capture performance objective.

III. Satisfaction of DEQ Conditions.

PLS urges this Court to address the most problematic prerequisite to approval of PLS’ remedy – the institutional control requirement (Condition 3). Issuance of a judicial institutional control would greatly benefit the community as a whole and spare residents the disruption and safety concerns associated with any other plan. If this condition is satisfied judicially, PLS’ plan is readily approvable now, not a year from now. PLS has already agreed to Condition 2 (containment of 2800 ppb contour at Maple Road as a

performance objective) and Conditions 4 and 5 (monitoring of potential receptors and contingency plans). As discussed above, PLS believes that Condition 6 (acceptable disposal option for treated water at Maple Road) has already been met and is willing to attempt to address any reasonable requests for additional data to confirm that reinjection is feasible at this location. The only remaining condition, then, is the DEQ's insistence that the Northwest Supply Well be abandoned (Condition 1).

PLS strongly disagrees with DEQ's conclusion that formal abandonment of the Northwest Supply Well is a legal barrier to approval of PLS' proposed remedy. This condition arises from the DEQ's unpromulgated internal policy against allowing expansion of the plume within a designated wellhead protection area. This should not be considered a condition of approving PLS' plan for the simple reason that the City has effectively abandoned the well already. The City discontinued operation of this well in February 2001 when it detected concentrations of 2 ppb of 1,4-dioxane. Given the City's very public position that any detectable levels of 1,4-dioxane are not acceptable, it cannot reasonably be expected that the City will ever use that well. Moreover, the well is independently contaminated with naturally occurring arsenic at levels above the allowable limit of 10 ppb. The City's own sampling data from 2002 confirms that the well contained 18 ppb of arsenic. (Exhibit 3). The City claims to have abandoned its well because it detected 1,4-dioxane – a “suspected carcinogen” – at levels 40 times lower than the cleanup standard. It necessarily follows that the presence of arsenic – a “known carcinogen” – at levels well above the cleanup standard would independently cause the City to abandon its well.⁴ Under these circumstances, the DEQ's internal policy is irrelevant and should not drive remedial decisions.

In addition, the City has already sued PLS and is contending that PLS must pay to replace the well because it is no longer useable. The issue of proper compensation, if any, will be resolved shortly in that litigation. It would be inappropriate to reject a proposed remedial alternative that is otherwise protective based on the existence of a well that has in fact been abandoned. Certainly, PLS would urge the Court to refrain from ordering PLS to implement the DEQ's draconian and unsafe remedial alternative before the significance of this well is decided in the pending litigation.

IV. Additional Factors that Militate in Favor of PLS' Suggested Remedy.

PLS would ask the Court to also consider the factors discussed below when determining the proper course of action.

A. Timeliness

PLS' plan has the advantage of being timely. In addition to avoiding the multi-year effort needed to build pipelines three to four miles long, PLS' proposed plan incorporates the only discharge method that would not require a discharge permit and that

⁴ The City's sampling arsenic result is consistent with preliminary sampling PLS conducted in other monitoring wells in the Unit E aquifer, which showed elevated arsenic levels well above the federal MCL at multiple locations.

can be implemented without requiring access to significant numbers of properties. PLS' proposed groundwater reinjection is authorized under Mich Adm Code R. 323.2210(u)(ii) and does not require a NPDES, deepwell injection, or groundwater discharge permit. DEQ's proposal, and any other discharge scenario, requires issuance of a permit that can and, given the history of this site, will be challenged in a contested case proceeding.

Once access for the treatment system and the limited amount of necessary infrastructure is obtained, PLS can install its Maple Road purge system within 4-6 months. PLS' ability to promptly address the Maple Road area is important because it allows PLS to prevent the much higher concentrations west of Maple Road from migrating into the congested residential areas to the east.

Moreover, it is unlikely that the DEQ's contingent plan would achieve the applicable cleanup criterion any sooner than PLS' plan. The DEQ claims that by segmenting the plume, its plan will shorten the cleanup horizon. This theoretical advantage has been repudiated by the experience of experts in the field. It is 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 phenomena 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, which involves multilayered heterogenous geology, frustrate any cleanup goal for Unit E that is based on attaining criteria throughout the aquifer. Thus, there is no basis for DEQ's assertion that more pumping at the interior of the plume will attain criteria "faster" than PLS' plan.

B. The DEQ's Contingent Remedy is Not Legally Required or Feasible.

1. There is no legal basis for DEQ's Plan.

The DEQ has taken the position that PLS is required to remediate the Unit E under the 1992 Consent Judgment. Specifically, the DEQ asserts that PLS is required to remediate the Unit E plume, which has migrated *east* from the Wagner Road facility under the Consent Judgment provisions regarding the *Western* System, which provide:

Western Plume System

(hereinafter AWestern System@)

1. Objectives. The objectives of the Western System are: (a) to contain downgradient migration of any plume(s) of groundwater contamination emanating from the GSI Property that are located outside the Core Area and to the northwest, west, or southwest of the GSI facility; (b) to remove groundwater contaminants from the affected aquifer(s); and (c) to remove all groundwater contaminants from the

affected aquifer or upgradient aquifers within the Site that are not otherwise removed by the Core System provided in Section V.B. or the GSI Property Remediation Systems provided in Section IV.

Consent Judgment, Section V.C.1 (emphasis added).

PLS does not concede that the Consent Judgment requires PLS to remediate the Unit E. To this point, PLS has been willing to move forward with the investigation and remediation of the Unit E without engaging a legal effort to contest responsibility.⁵ But even if the Consent Judgment was applied to this new area of contamination, it provides no support for a plan that requires three separate capture zones. The only interim response/source control required by the Consent Judgment is contained in Section V.B.1, which relates to the “Core Area” – the portion of the shallow C₃ aquifer that contains contamination above 500 ppb. The Consent Judgment contains no interim response requirements that could possibly apply to the Unit E. There is no remedial objective or other requirement in the Consent Judgment that could be construed to require the type of program envisioned by DEQ. The most the Consent Judgment could be interpreted to require would be containment of the leading edge – a remedial objective that neither the City of Ann Arbor nor its citizens want implemented.

DEQ also claims that its proposal is supported by Part 201.⁶ To the extent it applies, Part 201 does not require interim response on the grand scale suggested by DEQ. The releases at issue all took place well before 1995. Therefore, the source control measures suggested by DEQ would not be required by Section 14(1)(d), MCL 324.20114(1)(d), even if they were “technically practical, cost effective, and [protective of] the environment.”⁷ This is particularly true where PLS has already proposed appropriate interim response measures.

Moreover, PLS cannot be required to undertake *any* response activity under Part 201 because the releases that are alleged to have caused the Unit E contamination were “permitted releases.” Part 201 defines a “permitted release” as “a release in compliance with an applicable, legally enforceable permit issued under state law.” MCL 324.20101(aa)(i). After a six-month long trial, this Court’s predecessor, Hon. Patrick J. Conlin, determined that the state authorized the very releases currently at issue pursuant to a series of state-issued wastewater discharge permits. His July 25, 1991 Opinion is attached as Exhibit 4. Therefore, the “permitted release” issue has already been adjudicated as between the parties in favor of PLS. That decision would be binding on

⁵ PLS reserves the right to contest the applicability of the Consent Judgment to the Unit E in the event the DEQ or a Court attempts to compel PLS to implement the DEQ’s proposed remedy.

⁶ PLS notes that Part 201 gives a party to a consent judgment entered prior to the 1995 amendments the right to proceed under the consent judgment or under Part 201. MCL 324.20102a(3). Thus, Part 201 would only be relevant to the extent the Consent Judgment does not apply to the Unit E or, if it does, only to the extent PLS chooses to proceed under that statute.

⁷ As PLS explained in its FS, interim response activities beyond what PLS has proposed would not satisfy any of these criteria.

the parties under the doctrines of *res judicata* and *collateral estoppel*. Dart v Dart, 460 Mich 573 (1999) (res judicata); Hawkins v Murphy, 222 Mich App 664 (1997) (collateral estoppel).

Part 201 does not require PLS to undertake any response activities to address such permitted releases:

A person shall not be required under this part to undertake response activity for a permitted release. Recovery by any person for response activity costs or damages resulting from a permitted release shall be pursuant to other applicable law, in lieu of this part.

MCL 324.20126a(5) (emphasis added).

Thus the DEQ cannot compel PLS to implement the response activities that it asserts must be undertaken in the event PLS is unable to obtain approval of PLS' proposed remedy.

2. DEQ's plan is not feasible.

PLS has gone to great lengths and expense to avoid embroiling this community in a legal battle over the responsibility for the Unit E. Despite strong legal arguments in its favor, PLS has proposed a responsible and protective remedial alternative and is committed to implement it. What PLS is unwilling to do is to spend tens of millions of dollars to prove what should be clear on its face: the DEQ's contingent remedy is neither feasible nor appropriate.

a. Treatment System

DEQ's contingent remedy would require a Maple Road-based treatment system approximately the same size as the one PLS operates at its facility. To give the Court some perspective on the scale of operation the DEQ's proposal would require, the operational requirements of PLS' current system are instructive.

At the PLS facility, the UV-H2O2 system occupies a dedicated building that is 60 x 115 ft. and can treat 1300 gpm of groundwater contaminated with 1,4-dioxane. It receives shipments via tanker truck every three to four days of sulfuric acid, sodium bisulfite, caustic, and hydrogen peroxide in approximately 20-ton lots. The facility has its own transformer, which consumes approximately 530,000-kilowatt hours of electricity every month. PLS utilizes two 1,000,000-gallon equalization ponds to insure continuous operation and compliance with its stringent NPDES permit requirements. While an ozone/H2O2 system would consume a somewhat smaller volume of chemicals, a system sized to meet DEQ's requirements can be expected to be on a scale of the one that is located already at PLS and, in any event, to be far larger and to consume far more raw materials than the system proposed by PLS for its more realistic Maple Road purging

program.⁸

It is not feasible to place a treatment system large enough to accommodate 1150 gpm required by DEQ's plan in a commercial area. Installing and operating a system that could accommodate 1150 gpm anywhere in the vicinity of Maple Road is not feasible primarily because of three factors: i) the significant health and safety issues associated with liquid oxygen; ii) the physical size of the system; and iii) the absence of any properties in the area that are available and properly zoned for this type of industrial operation.

i. It is Not Safe to Site a Liquid Oxygen-Based Treatment Unit in the Maple Road Area.

A treatment system of this size would require liquid oxygen. PLS does not believe that it is safe to use and store the volume of liquid oxygen that would be needed to treat 1150 gpm of contaminated groundwater in the Maple Road area.⁹ PLS estimates that such a treatment unit would require 40,000 cubic feet of liquid oxygen per day. This usage would require construction of a large liquid oxygen storage tank and frequent refilling by a liquid oxygen tanker truck. This use is not appropriate for a highly utilized retail commercial area. That is precisely why PLS designed the mobile ozone treatment unit to utilize a oxygen generator rather than liquid oxygen. Mr. Fotouhi convinced PLS management to adopt this design even though it would have been much cheaper to implement its proposed interim response with a liquid oxygen-based treatment system. (Compare the FS unit cost of treating 1000 gallons for the mobile unit (\$2.64/1000gallons) with the on-site liquid oxygen-based treatment costs (\$0.91/1000 gallons)).

Nor is it feasible to generate enough oxygen (with an oxygen generator) from the atmosphere to reliably treat 1150 gpm. PLS' current **200 gpm** system already utilizes the second biggest oxygen generator on the market. It is not technically feasible to string together six or seven of these units to generate the oxygen needed to treat 1150 gpm. Each oxygen generator would require its own compressor, air dryers, and other associated equipment. From an engineering standpoint, it is not possible to reliably operate such a system on anything approaching a continuous basis.

⁸ DEQ's consultant estimated that their system would be of similar size. The "footprint" for the packaged system and supply equipment was estimated to be a total of 640 square feet, plus a large liquid oxygen tank with vaporizers (which will need containment and security) plus sufficient ground space for trucks to make chemical deliveries and additional ground space to secure the system (fencing, on-site security). (Email from Anne Turne to Mike Pozniak, August 25, 2004, attached as part of Appendix B, Attachment B, to DEQ's Decision Document). This is actually somewhat larger than PLS' facility.

⁹ DEQ's vendor acknowledged that liquid oxygen presents significant health and safety issues, but claimed the concerns could be managed by securing the site and following proper liquid oxygen handling procedures. PLS submits this is an appropriate response only if the land is industrial. Zoning prohibits, for health and safety reasons, the location of this type of storage unit in a retail area.

ii. The Treatment System, Including Ponds, Required by the DEQ's Remedy is Too Large to be Accommodated by any Properties in the Wagner Road Area.

For a host of engineering reasons, a system sized to accomplish DEQ's proposed remedial objectives would require the construction of both an equalization ("Red") pond and a discharge ("Green") pond. Without such ponds it is PLS judgment that it would not be able to continuously purge the groundwater (as required to capture) or to meet the stringent discharge requirements of a NPDES permit. Again, this point is driven home by the fact that the treatment system would be essentially the same size as the system PLS operates on site. PLS currently utilizes two 1,000,000-gallon ponds. While it would not be absolutely necessary to have ponds with that volume at an off-site location, it would be prudent to have ponds with a volume of at least 500,000 gallons to accommodate a treatment volume of 1150 gpm. If the performance objective is to capture the entire width of the plume, ponds of this size would be needed to allow for continuous purging during maintenance of the treatment system. Even ponds this large would only provide storage capacity for approximately six hours of continuous operation.

These ponds would be necessary to meet the technical challenges associated with operating a treatment system that would have to meet NPDES discharge limits, 24 hours a day, 7 days a week, and 365 days a year – challenges with which PLS is well familiar. For example, the equalization or "Red" pond would be required so that the entity operating the system could precipitate out the iron in the water. If the iron is not removed prior to treatment, the treatment process would cause the iron to precipitate. In that condition, the iron would readily adhere to the interior of the lengthy pipelines associated with DEQ's proposal. Because of the extreme length of pipeline contemplated, it would not be practical to clean the iron residue from the pipeline to the River. The only practical way to address the iron issue is to precipitate the iron out prior to treatment, and that requires a pond.¹⁰

Moreover, much of PLS' success in operating a continuous purging/treatment operation is achieved because of the stability its on-site ponds provide. With such ponds, it is possible to maintain the steady volume of water needed to avoid constantly readjusting the calibration of the system, which would prevent the operator from meeting the discharge criteria. An equalization pond is particularly necessary under DEQ's proposal since water will be purged from multiple locations with varying concentrations and water chemistry.

It would also be necessary to have a discharge or "Green" pond to provide assurance that stringent NPDES permit requirements could be met by the treatment system. If effluent sampling shows that limit not satisfied, the operator would be able to re-circulate through the treatment system. Consistent compliance with a hypothetical

¹⁰ DEQ's vendor acknowledged it had not field-tested its equipment where there is high iron, although it claimed it should not interfere with functioning of its unit. Even if this claim holds true, the iron would still have to be removed to control discharge to the Huron River through a long pipeline.

NPDES permit could not be achieved without such a pond. The Green pond also allows for further iron removal prior to being placed in a three-mile long pipeline.

Under DEQ's proposal, the resulting footprint of the required 1150 gpm treatment system would be far too large to be placed on any property in the vicinity of Maple Road. The treatment unit (even if it was feasible to configure a system that could generate the required amount of oxygen from the atmosphere) would at a minimum replicate PLS' current treatment building, which is approximately 60 X 115 ft. Treatment ponds would require an area of at least 120 X 140 ft. Therefore, even if it was safe to locate a system big enough to accommodate DEQ's remedial objectives it would not be possible to do so in the congested commercial area available.

iii. The DEQ's Proposed Remedy is Not Consistent with Existing Zoning.

Part of DEQ's response plan requires PLS to construct and operate a treatment plant of approximately 1300 gpm capacity in the vicinity of Maple Village Shopping Center ("MVSC") in Ann Arbor. A plant of this size would be an industrial use under Chapter 55 of the Ordinances of the City of Ann Arbor. Attached as Exhibit 5 are maps of the zoning above the Unit E plume from PLS' facility through the leading edge of the plume and beyond. These maps show that no property within the vicinity of MVSC (approximately 1000 foot radius from the proposed capture areas) is properly zoned for the DEQ's treatment plant. Even if one were to expand a search to cover more of the West Side of Ann Arbor, only two small parcels (near Liberty) have an industrial zoning classification. Both properties are too far away to be of practical use, are developed, occupied, and not for sale, and both are too small for a treatment plant that would meet DEQ's requirements. (See Map of Section 930).

Part 201 of NREPA requires that remedies selected by DEQ be consistent with zoning. This question most often arises when a response activity is intended to attain a criterion other than the most restrictive (residential) criterion. However, it is also a significant issue here, where in order to attain residential criteria, DEQ is ordering that property be put to non-residential use for a treatment plant, inconsistent with local zoning and current activity patterns. In this case, it is patently inconsistent for DEQ to insist that local ordinances controlling groundwater use must be made consistent with PLS' remedy, while ignoring zoning ordinances of these same local units of government in the case of its own remedy. Land use controls, including zoning and groundwater use ordinances, must both be examined in evaluating the appropriateness of a response activity plan, both in concept and in attaining cleanup objectives.

Section 20a of Part 201, MCL 324.20120a(6), provides in pertinent part that "the department shall not grant final approval for a remedial action plan that relies on a change in zoning designation until a final determination of that zoning change has been made by the local unit of government." That section also requires that a remedial action plan include documentation that the current property use is consistent with the current zoning or is a legal nonconforming use. While the shopping center use is consistent with

the current zoning, the DEQ's plan is manifestly not, and cannot be legally approved as a final remedy for the site unless and until there is a zoning change approved by the local unit of government. DEQ's administrative rules similarly emphasize that zoning must be consistent with the selected response activity. See Mich Adm Code R. 299.526(6)(b) (final interim responses must be consistent with zoning and land use activity patterns); R. 299.522(7)(d) (requiring DEQ to consider comments from neighbors or the local unit of government that a proposed response activity is inconsistent with current zoning); R. 299.532(8)(b) (a remedial action plan must contain statements and representations regarding current zoning to show consistency with proposed response actions).

DEQ's "Decision Document", its "Public Comment Responsiveness Summary" and the "Executive Summary" say nothing about zoning. The only comments regarding land-use that it responded to were in connection with PLS's plan, where DEQ did not dispute the relevance of this factor but only said it was "premature" with respect to evaluating PLS' contingency plan along the river. (Decision Document at 9). The record is otherwise devoid of any consideration of this issue.

b. Pipelines

Given the history of this site, it is capricious for DEQ to assume that PLS could implement a remedial alternative that requires construction of three to four miles of pipeline (about 1.5 miles of which would be installed within congested neighborhoods). As documented in the FS, these pipelines would cause tremendous disruption in the community, without any corresponding environmental or human health benefit. Recent public hearings/meetings have made clear that there is no public support for such construction among the affected homeowners (to the extent they even received notice of the project). Over 500 homeowners signed declarations and petitions opposing the disruption of their neighborhoods that would be caused by attempting to implement the DEQ's contingent remedy. These petitions were only from persons mobilized by DEQ's incomplete conceptual pipeline map. DEQ acknowledges that it is in fact not possible to know the extent of opposition or disruption until a complete design (all the way to the River) is proposed.

In the Evergreen subdivision, PLS sued the City to obtain access to City right-of-ways to install approximately 1000 feet of pipe. Even though this took place in a situation that demanded the utmost urgency, and even with this Court's intervention, it took over a year to get that 1000 feet of pipe installed. DEQ's proposal would require approximately 16,000 feet of pipeline to be installed in front of hundreds of homes and businesses, through right-of-ways owned by at least three different governmental units. The contemplated pipeline construction would not be feasible or even remotely timely. Even if such a series of pipelines were feasible and access to pipelines voluntarily granted, the construction would take years to complete.

LIST OF ATTACHMENTS AND EXHIBITS

- Exhibit 1 Modeling Report for ReInjection
- Exhibit 2 Work Plan for Downgradient Investigation
- Exhibit 3 Arsenic data for Northwest Supply Well
- Exhibit 4 Opinion and Order of Judge Conlin
- Exhibit 5 Zoning Maps

Attachment A: PLS Response to MDEQ September 1, 2004 Decision Document

Attachment B: Decision Matrix