

My View: DEQ takes reasonable dredging position

by Timothy Carpenter

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Regarding your April 21 editorial: "Dredging delays hurt," your frustration with the interaction between the state Department of Environmental Quality, the U.S. Army Corps of Engineers and Saginaw County certainly has merit.

Even delays in starting the work can affect the health of the local economy, let alone threats to defund the project. However, your editorial would have been much more enlightening if you had considered the rationale for the DEQ's argument for a protective slurry wall.

You should have learned that the clay formation is not impervious to water flow but is virtually always found with vertical fissures (cracks), often extending more than 18 to 20 feet beneath the surface. This condition has been studied extensively in Michigan, Ohio and Ontario and is well documented (e.g., Ohio Journal of Science, June 2000 and April 2006). Such fissures promote rapid migration of groundwater (and contaminants) along continuously branching pathways. Under these conditions, the chances of monitoring wells intercepting contaminant flow are practically nil.

The clay formations also contain more-or-less discontinuous horizontal seams and layers of sand that often are not revealed by test borings (see boring logs in the report cited below).

The Army Corps' report, "Upper Saginaw River Dredged Material Management Plan Study, July 2004," is available on the Internet. The report embodies a geotechnical (soils) report in Appendix A. There, while describing the natural clay, it states: "... Mottled and fractured silty clay was encountered within the silty clay ..." (emphasis added).

The fissures (fractures) were found at depths from 8 to 15 feet beneath the surface in six of 16 borings drilled at and in the general vicinity of the site. Due to the physics involved, the number of fissures diminish with increasing depth -- making it less likely that they would be encountered by individual borings at advanced depths. Accordingly, it is highly likely that fissures extend well below the depth where last encountered in any given boring.

Considering this information, you should be very interested in learning the technical facts the Corps uses to defend its argument that slurry walls are unnecessary. If the "proof" is by way of groundwater modeling programs, then you should be very interested in the input parameters

and how they account for the fissures and sand seams. Perhaps a serious review of the Corps' calculations and interpretations by outside experts would serve to enlighten the discussion.

Unless there has been a much more comprehensive geotechnical investigation that debunks the information in the Corps' report and demonstrates that the on-site soils have behaved completely different than the norm, the DEQ position appears to be to be the most responsible -- that is, there should be some form of positive containment.

The most effective choice would be a composite liner system (not just compacted clay) similar to that used in solid-waste landfills. Although not providing the certainty of an internal composite liner, a perimeter slurry cut-off wall extending to a depth below the potential limits of the fissures and the influence of sand layers, appears to be a reasonable alternate.

The way to get the dispute off dead-center is to resolve the matter with facts -- research the literature, contact experts and insist on a plan that is not burdened with excessive risk. It may well take the involvement of politicians to facilitate a resolution by bringing in outside experts.

But demonizing the DEQ for taking a responsible position is at best counterproductive.

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