

Contaminated Sediment Remediation Guidance for Hazardous Waste Sites

March, 2007

MDEQ has reported that during a meeting on March 13th, Dow stated that interim measures for contaminated sediments (and MDEQ's proposed decision tree) are inconsistent with EPA's 2005 sediment remediation guidance (presumably Contaminated Sediment Remediation Guidance for Hazardous Waste Sites EPA-540-R-05-012, 2005). Dow stated that this inconsistency was reported to Dow by Steven C. Nadeau (Honigman Miller Schwartz and Cohn) who is the coordinator of the industry Sediment Management Work Group. Dow and its major consultants are all members or sponsors of the Sediment management Work Group. Dow expressed concern that a decision tree for interim measures would set a precedent for removal prior to characterization. Dow indicated that they would prefer to use more general criteria (the need to protect human health and the environment) to trigger interim response actions. Dow suggested that MDEQ seek EPA's input on the decision tree, and suggested Bonnie Eleder as a contact. EPA's understanding is that Dow would like to discuss this issue during the March 23rd meeting between Dow, MDEQ, and EPA.

CONTAMINATED SEDIMENT GUIDANCE EXCERPTS CONCERNING INTERIM MEASURES

Section 2.7

Even before the sediment at a site is well characterized, if risk is obvious, it may be very important to begin to control significant ongoing land-based sources. It also may be appropriate to take other early or interim actions, followed by a period of monitoring, before deciding on a final remedy. Highlight 2-7 provides examples of early actions taken to control sources, minimize human exposure, control sediment migration, or reduce risk from sediment hot spots at contaminated sediment sites. Early or interim actions are frequently used to prevent human exposure to contaminants or to control sources of sediment contamination. However, such actions for sediment are less frequent. Factors for determining which response components may be suitable for early or interim actions include the time frame needed to attain specific objectives, the relative urgency posed by potential or actual exposure, the degree to which an action may reduce site risks, and compatibility with likely long-term actions (U.S. EPA 1992b).

Highlight 2-7: Potential Examples of Early Actions at Contaminated Sediment Sites

Actions to prevent releases of contaminants from sources:

- Excavation or containment of floodplain soils or other source materials in the floodplain
- Engineering controls (e.g., sheet piling, slurry walls, grout curtains, and extraction) to prevent highly contaminated ground water, NAPL, or leachate from reaching surface water and sediment
- Engineering controls to prevent contaminated runoff from reaching surface water and sediment

Actions to minimize human exposure to contaminants (coordinated with other appropriate agencies):

- Access restrictions
- Fish consumption advisories
- Use restrictions and advisories for water bodies

Actions to protect downstream drinking water supplies Actions to minimize further migration of contaminated sediment:

- Boating controls (e.g., vessel draft or wake restrictions to prevent propeller wash, anchoring restrictions)
- Excavating, dredging, capping, or otherwise isolating contaminated sediment hot spots

Actions taken to reduce risk from highly contaminated sediment hot spots:

- Capping, excavation, or dredging of localized areas of contaminated sediment that pose a very high risk

Section 3.0

Although this chapter focuses on remedial alternatives for managing contaminated sediment, project managers beginning this stage of site management should keep in mind the first step at almost every sediment site should be to implement measures to control any significant ongoing sources and to evaluate the effectiveness of those controls. Until this is done, appropriately evaluating alternatives for sediment may be difficult. However, it may be appropriate to evaluate implementation of interim sediment cleanup measures prior to completing source control to control further dispersal of sediment hot spots or reduce risks to human health and the environment due to sediment contamination.

ISSUES

Although Dow's specific concerns are unknown, we are not aware of any statements in the 2005 sediment remediation guidance which would preclude the removal of sediments with elevated concentrations of contaminants as an interim measure. In the River reaches downstream from the Midland facility, sediment removal is being conducted on sediment accumulations associated with dioxin concentrations three-orders-of-magnitude above the cleanup standard in the State of Michigan. Without removal, these sediments will act as an in-stream dioxin source for further downstream contamination in the river, the floodplain, and Lake Huron.