MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

April 24, 1996

TO: Mr. Eric VanRiper
Shiawassee District Office
Environmental Response Division

FROM: Dr. Linda D. Larsen, Toxicologist
Special Services Section
Environmental Response Division

SUBJECT: Remedial Action Plan for the Linden Road Site, Flint Township, Michigan

I have reviewed the document referenced above and, in general, it is well done. I am concerned, however, that the remedial action plan (RAP) does not specify the land use category under which this facility will be closed. Given the elevated levels of soil constituents, a limited closure is clearly warranted in the absence of remedial action to reduce contaminants to acceptable levels. The consultants acknowledge that a limited closure is necessary but fail to specify the category of land use (i.e. residential, industrial, commercial, etc.). Lead has been detected in soils ranging from 2,130 to 414,000 mg/kg per Table 6-5. These extremely high levels of lead may pose unacceptable risks to children should the facility be developed in the future for residential or recreational use. The 2.5 foot of clean cover proposed in the RAP may not provide sufficient assurance that children will not make direct contact with the underlying contaminants. It would be preferable to know the intended future use of the site in order to assess the protectiveness of the proposed remedy.

Some section specific comments follow.

3.1.1 Average On-Site Soil Concentrations

It is not MDEQ's current protocol to "assume by default a lognormal distribution." ERD toxicologists recommend statistical analysis to determine the underlying distribution of a dataset before transformation of the data. Several "goodness of fit" tests such as the W-test are available to make this determination. ERD toxicologists also recommend plotting the detected concentrations on a site map to assess the possibility of spatial correlation of the data.

3.1.2 Comparison to Generic MDEQ Cleanup Criteria

I cannot locate a detailed statistical analysis of the data either in this section, the associated tables, or Appendix A. Specifically, information concerning standard deviations, coefficients of variance, etc. have not been presented. This information is necessary, in addition to that mentioned above, to determine the appropriateness of the statistical analysis.

3.1.3.1 Inhalation

It would be helpful to know the intended use of the facility in order to assess the possibility of unacceptable future risks due to the inhalation pathway. The RAP indicates that organic vapors were detected during excavation and soil boring activities. This suggests that vapor intrusion into buildings may be a concern

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should the property be developed in the future to include basements or other subsurface structures. This also indicates some concern for unacceptable exposures to construction workers during future development. If land use restriction will prevent these exposures, this should be stated in the RAP.

3.1.3.2 Dermal Toxicity

Calculation of soil saturation levels is appropriate only for compounds which are liquids under ambient conditions. Therefore, the argument that PCBs, PAHs and arsenic (all solids) do not pose dermal hazards because these compounds are present at levels which do not exceed soil saturation is not tenable. Please have the consultants address this issue.

3.2 Groundwater

ERD Toxicologists do not recommend statistical analysis of groundwater data in the absence of a demonstration that the wells sampled represent the center of the contaminant plume. In addition, as indicated above, there is the potential for vapor intrusion of volatile organic compounds present in the groundwater into future construction. Construction worker contact with the shallow groundwater is also a direct contact and inhalation concern. ERD toxicologists have recently developed interim guidance and criteria protective of these exposures. Please have the consultants address these issues. However, if land use restrictions will prevent these exposures, it should be stated in this section.

This concludes my comments. Please contact me at 517 (335-3161) if I can be of further assistance.

cc: Ms. Christine Flaga
Mr. Jeffrey A. Crum

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