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Date: August 11, 1999  
 Refer to: E/ER:99-213



Mr. John Kieling  
 NMED-HRMB  
 P.O. Box 26110  
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**SUBJECT: POSITION PAPERS ON RISK-BASED REMEDIATION OF PCBs AT RCRA CORRECTIVE ACTION SITES AND ON ASSESSING HUMAN HEALTH RISKS POSED BY CHEMICALS: SCREENING-LEVEL RISK ASSESSMENT**

Dear Mr. Kieling:

On July 12, 1999 our office received copies of the above referenced draft position papers, which were transmitted to the U. S. Department of Energy by way of letter from James P. Bearzi, Hazardous and Radioactive Materials Bureau (HRMB) Chief, dated July 5, 1999. The letter invited comments on the draft position papers within 30 days of receipt, and we are responding to this invitation with comments as provided below. We wish to express our thanks to HRMB for allowing us the opportunity to provide input on these important guidance documents. We have disseminated this document to a number of Laboratory staff or contractors who work in programs potentially affected by the draft position papers. The comments below represent a compilation of their responses based on a review of the papers.

Our comments on the Draft Position Paper on Risk-Based Remediation of Polychlorinated Biphenyls (PCBs) at the Resource Conservation and Recovery Act Corrective Action Sites are as follows:

1. General Comment: The remediation of PCBs is also governed by the federal Toxic Substances Control Act, 15 U.S.C. Sections 2601-2629, which allow greater flexibility in clean-up levels than the Draft Paper appears to provide. The 1mg/kg default provision contained in Section 7, the second paragraph, requires additional steps, including evaluation or monitoring, when the Environmental Protection Agency has historically allowed a higher concentration based on land uses that are less intense than residential. It is suggested that HRMB consider adding greater flexibility into its approach.



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2. General Comment: At the beginning of the paper, the association of PCBs with cancer is carefully spelled out. (See p. 2, third paragraph, wherein it is stated that PCBs are classified as Group B2, probable human carcinogens, based on sufficient evidence of carcinogenicity in experimental animals and inadequate yet suggestive evidence of excess risk of liver cancer in humans). Later statements in the paper are not so carefully worded and reach conclusions that are not warranted by the scientific evidence. See, for example, Section 6.a. on page 6, wherein it is stated: "Since PCBs cause both carcinogenic adverse human health effects ..." and Section 7 on page 17, wherein it is stated: "PCBs cause both carcinogenic and non-carcinogenic adverse health effects." It is suggested that HRMB utilize statements that more carefully comport with the scientific evidence.
3. General Comment: The entire premise of this approach is based on the assumption that those performing a remedial investigation will have the financial resources to pay for congener-specific PCB analysis. This premise is highly suspect as many responsible parties will find such analysis cost-prohibitive.
4. Sections 3, 4 and 6, pp. 3-4, 6-17: The text is highly technical but incomplete. Some knowledge of PCB chemistry is required to understand the proposed approach and many readers will not understand such concepts as isomerism and coplanar stereo chemistry. The text would be much improved by addition of PCB structural model. One for polychlorinated dibenzo-p-dioxin/polychlorinated debenzofuran would be helpful as well.
5. Section 5, pp. 4-5: It is encouraging that HRMB accepts erosion control as a means of mitigating soil migration (with adsorbed PCBs) to surface water, and will accept runoff control structures as a contingency should mass removal fail to reach clean-up levels. Certainly runoff control is a more cost effective, less intrusive contingency than capping. The trigger levels for compliance, based on total suspended solids (TSS), are still very low and may be difficult to achieve. We suggest that HRMB exercise flexibility in the application of TSS "pass/fail numbers," and weigh site-specific factors, geo-chemical conditions, and surface water modeling results..
6. Section 7 (Conclusions), last paragraph on p. 17 contains the following statement: "Risk-based media-specific PCB concentrations may be back-calculated from equations presented in the section entitled 'Risk Evaluation.'" This statement is misleading, as such an exercise can be done, but only for the specific Arochlors, thereby defeating the purpose of the approach taken in the paper. Otherwise, complex assumptions must be made regarding the nature of the PCB mixture of concern. It is suggested that HRMB provide examples of such calculations.

Our comments on the Draft Position Paper on Assessing Human Health Risks Posed by Chemicals: Screening-Level Risk Assessment are as follows:

1. Section 1.a., second full paragraph, last sentence, page 2: The sentence states: "However, if industrial land use can be demonstrated as the only possible current and projected land use scenario, industrial risk values may be applicable for screening the sites." The burden on making such a demonstration is extremely high, if not impossible to meet, based on the "only possible" wording. It is suggested that the sentence be revised to create a more reasonable criterion for industrial land use scenario. We would propose: "However, if industrial land use can be demonstrated to be the current and most probable projected future land use scenario, industrial risk values may be applicable for screening the sites."
2. Section 1.b., third bullet, page 3: The text states: "Delineate the nature, rate, and horizontal and vertical extent of contamination," An alternative approach to this delineation should be considered. For example, screening could be done against maximum if only maximums are known, i.e. limited data set focused on the area most likely to show release.
3. Section 1.b., footnote to Table, page 4: In part the text states "...exposure pathways considered in the screening-level human health risk assessment." There ought to be some mention about the appropriateness of inclusion of groundwater/surface water in all screens, i.e., where exposure to groundwater/surface water could potentially exist, these pathways would be included.
4. Section 3.a., sentence after third bullet, page 6: It is suggested that the sentence as it currently reads have added at the end the following underlined text: "If any of these three site conditions exist at a given site, the exposure scenarios and pathways covered by the screen should be adjusted to reflect these conditions or move to a more complete pathway analysis and risk assessment."
5. Section 3.c., first full paragraph on p. 9: This paragraph discusses route-to-route extrapolations for toxicity values. It is suggested that HRMB consider addressing the use of surrogate analogy for toxicity values.
6. Section 5, in the paragraph at the end of the third step on p. 18: There appears to be an inconsistency in the statements contained in this paragraph for when the hazard quotient (HQ) is exactly 1. The first sentence states: "Generally, HQs of 1 or less are considered "safe" or "acceptable." The third sentence states: "A ratio equal to or greater than 1 suggests that further evaluation, investigation, or remediation, but not necessarily cleanup, may be necessary." For consistency sake, it is suggested that the third sentence be revised to read as follows: "A ratio greater than 1 suggests that further evaluation, investigation, or remediation, but not necessarily cleanup, may be necessary."

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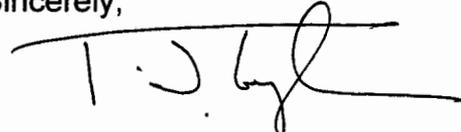
We thank you for the opportunity to provide these comments and hope that you will find them helpful.

Sincerely,



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Sincerely,



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