DATE: December 20, 1994

SUBJECT: Comments on Need for additional data to complete the ecological risk assessment for Fields Brook, December 1, 1994, Prepared by EA Engineering, Science, and Technology (EA)

FROM: Brenda R. Jones, Ecologist
Technical Support Section

TO: Ed Hanlon, OH/MN RRB

Thank you for the opportunity to review the above mentioned document. My comments are listed below. Also attached are comments made by David Charters, EPA-ERT on the same document. Additionally, in your memo to me entitled Request for Review: Fields Brook Superfund Site, dated December 5, 1994, you posed some questions. The responses to these questions are also presented below.

Memo Comments:

1. Question: Did EPA make it clear that no further sampling was considered necessary to complete the risk assessment?

Answer: Yes, I remember that we made it clear at the September 8 meeting that no further sampling was required to adequately respond to the comments we made on the ecological risk assessment.

2. Question: EPA's human risk assessment guidance provides that ... if the 95% upper confidence level (UCL) for the data is above the maximum concentration in the exposure area ..., then the maximum concentration should be used to conduct the risk assessment using that information (this assumes that the samples were taken in an unbiased manner).

Answer: EPA's guidance does state that when the 95% UCL exceeds the maximum measured values, the maximum value could be used. There is still a question in my mind whether the ecological samples were taken in an unbiased manner. They were taken from areas that Phase I results indicated contained contamination, and therefore, may be considered biased. Regardless, this may not effect whether calculation of the 95% UCL is appropriate. The samples do not have to be unbiased to calculate a 95% UCL, although it is preferred that they be unbiased.
MEMORANDUM

SUBJECT: Review of the Ecological Risk Assessment for the Fields Brook Site

FROM: David W. Charters, Ph.D.
Environmental Response Team

TO: Brenda Jones
EPA, Region V

I have reviewed the document submitted by EA Engineering, Science and Technology (EA) on the ecological risk assessment for the Fields Brook site and have some specific comments. The discussions note that because of the "uncertainty" associated with the results that they should not be construed as clean-up goals but may need some risk management decision. The change from an assumption of no action to this discussion is very constructive. I feel that we are now in a much better situation.

Hexachlorobenzene (HCB) continues to be a contaminant of concern (COC) and should be addressed. The chemical analysis conducted showed significant levels of HCB, but the results were confounded by the polychlorinated biphenyls (PCBs). Until new results are submitted for review, HCB should remain on the list of COCs. A literature based risk assessment at this time would be acceptable. Environmental Response Team (ERT) calculations show HQs exceeding one.

The study cited in the mercury lowest observed adverse effects levels (LOAEL) for medium mammals is incorrect. Instead of Borg et al., I believe that it should be Aulerich et al., 1974. The calculation of the no observed adverse effect level (NOAEL) is cited in units of mg/kg-day, however, the 5mg/kg value needs to be converted to units of mg/kg-day by incorporating the ingestion rate and dividing by body weight. The conversion results in a change of the NOAEL from the cited 0.05 mg/kg-day to 0.0075 gm/kg-day (one Kg body weight and ingestion rate of 0.15 kg/day). This changes the HQ from 1, 13.52; Zone 2, 17.15; Zone 3, 59.25; Zone 4, 40.98.

The toxicity reference values (TRV) derived for Aroclor 1248 are not acceptable. We suggest the use of Barsotti et al., 1976 which showed adverse reproductive effects in monkeys at 2.5 mg/Kg.

The assumption that the Barium on site is barium chloride and not barium acetate should not be accepted. In the absence of site specific data the more conservative assumption should be made (it
really has no effect on the RA). The discussion that EA followed the work plan and therefore missed the metals, including barium, is incorrect. They followed the chemistry table and ignored the part which said they should analyze for the other metals which are not on the priority pollutant scan.

All said this is a large improvement over the first document and should result in an acceptable risk assessment. Our document will follow in the near future.

cc: File


