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OU#2 ISA
U.S. DOE FERNALD
OH6 890 008 976

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USEPA/DOE-FMPC
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LETTER



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

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REPLY TO ATTENTION OF:

June 20, 1991

Mr. Jack R. Craig
U.S. Department of Energy
Feed Materials Production Center
P.O. Box 398705
Cincinnati, Ohio 45239-8705

5HR-12

Re: OU#2 ISA
U.S. DOE Fernald
OH6 890 008 976

Dear Mr. Craig:

On April 17, 1991,, the United States Department of Energy (U.S. DOE) submitted a revised Initial Screening of Alternatives (ISA) Report for Operable Unit (OU) #2. Comments provided on thre previous draft of the ISA report are in three general categories:

- (1) Remedial action objectives (RAOs);
- (2) Point of compliance; and
- (3) Inconsistencies in the ISA Report

U.S. DOE adequately addressed the deficiencies identified by U.S. EPA and presented the approach regarding RAOs that was identified in the resolution of the dispute regarding the ISA Report.

U.S. EPA is approving the revised ISA Report, but is also providing the following comments as guidance for preparation of subsequent primary documents for this OU (particularly the FS Report).

1. Comment Response Number 1: The response is adequate, but calendar dates must be provided in revised work plans or work plan addenda.
2. Comment Response Number 4: It is necessary that U.S. DOE determine if the Site can support a engineering disposal facility prior to the completion of the detailed analysis of alternatives.
3. Comment Response Number 5: It will be necessary to complete the mobility evaluation required in the National Contingency

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Plan (NCP) (55 FR 8721) prior to completing the detailed analysis of alternatives.

4. Comment Response Number 6: The collection and treatment of surface water would likely increase the costs presented in the revised draft; however, it is likely that capital costs decrease.
5. Comment Response Number 7: The response does not comply with the intent of the NCP. The NCP requires that the point of compliance be established early in the FS process. Secondly, the NCP does not require that the point of compliance depend on the potential use of groundwater for human consumption. Instead, the NCP states that remediation goal should be attained throughout the contaminant plume (53 FR 51426).
6. Comment Response Number 10: Deletion of the discussion of "Fate and Transport" and "Baseline Risk Assessment" does not relieve U.S. DOE from the obligation to consider potential remediation of the reaches of Paddys Run and the storm sewer outfall ditch.
7. Comment Response Number 12: A point of compliance for sediment must be established in the detailed analysis of alternatives.
8. Comment Response Number 23: The 100 mrem/year dose limit is not consistent with the 25 mrem/year dose limit.
9. Comment Response Number 24: U.S. DOE must address RAOs for sediment and surface water.
10. Comment Response Number 29: Children are at a greater risk for noncarcinogens because of their lower body weight. This issue must be addressed in future RI and FS work plan addenda, along with the RAO issues.
11. The Baseline Risk Assessment chemicals of concern are identified, the concentrations of these chemicals is presented, the pathways of exposure are developed and risk calculations to determine potential cumulative risks to the identified sensitive populations are made. The document under review includes a half-page summary of the chemicals of concern (section 1.5.4.I) with no data presentation or indication of the media in which the contaminants were identified; the summary is inconsistent with the contaminants listed for each solid waste unit within this operable unit in section 1.5.2 (i.e., what happened to the PCBs, PAHs, VOCs, SOCs, etc. found in each unit?)
12. Section 1.5.4.2 discusses the use of measured concentrations and modeled concentrations to determine exposure point concentrations without presenting any data, defining the fate and transport models used or explaining which

contaminant concentrations were measured and which were modeled. The use of transport models to predict exposure point concentrations under the future land use scenario is referred to, but no models are presented. The elimination of all units except the Active Fly Ash Pile from evaluation for transport in surface water does not take into account the transport of soluble forms; no explanation is given for the latter omission.

13. A number of exposure pathways, for both the current and future land uses, are also described in this section. No equation or parameter values, which would indicate how the exposure point concentrations were determined, were given.

In the current land-use scenario, the surface water pathway considers only the modeled chemical concentrations in the Great Miami River. Suggested pathways include ingestion of irrigated food crops and ingestion of beef and milk from cattle that ingest water from the River and forage irrigated by river water. It is more likely that cattle receive a higher exposure from drinking water in Paddys Run and foraging in the Creek; these pathways must also be modeled also. Surface water exposure to children who play in Paddys Run is not included.

In the current land-use scenario, the exposure to sediments in Paddys Run by children, the selected sensitive subpopulation, was limited to 6 years; which six years of a child's life were considered? Why is the child exposure limited to six years? What ingestion rate was used? What about absorption of organic chemicals?

In the future land-use scenario, the groundwater pathway is based on the excess radionuclide concentration in the water (background concentrations are subtracted from the concentrations in the given source). This is incorrect as it assumes that receptors are exposed to only the excess concentration, while in fact, they are exposed to the total burden and the risks are actually higher than calculated. The models used, STID and STRIPB, have not been approved for this site. A scenario (Scenario 1) which assumes that institutional controls are active at the FMPC was used to model groundwater contamination; CERCLA does not allow the use of risk calculations based on institutional controls. One cannot usually predict trespassing or land use at any site, especially for 100 years. Farming and grazing of cattle is already a reality at the FMPC with the security controls in place. The use of this scenario is invalid, and it should be eliminated from the risk assessment.

14. Vertical movement of contaminants to the Great Miami Aquifer from the Lime Sludge Ponds, the Active Fly Ash Pile, the Inactive Fly Ash Disposal Area, and the Southfield has been predicted using contaminant retardation factors and

transport modeling. The model was not submitted for approval, and the assumptions inherent in the model are unknown - i.e., is only porous media flow considered, is the till layer assumed to be homogeneous, etc. No justification or source for the contaminant retardation factors is given.

Contact me (312/FTS) 886-4436, if there are any questions.

Sincerely,

Catherine The Cord
by M. Butts

Catherine A. McCord
Remedial Project Manager

cc: Thomas Winston, OEPA - CO
Graham Mitchell, OEPA - SWDO
Pat Whitfield, U.S. DOE - HDQ