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**CONDITIONAL APPROVAL O.U. 2 TREATABILITY
WORK PLAN**

11-07-91

**OEPA/DOE-FO
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LETTER**



State of Ohio Environmental Protection Agency

Southwest District Office

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George V. Voinovich
Governor

November 7, 1991

RE: **CONDITIONAL APPROVAL
O.U. 2 TREATABILITY W.P.**

Mr. Jack R. Craig
Project Manager
U.S. DOE FEMP
P.O. Box 398705
Cincinnati, Ohio 45239

Dear Mr. Craig:

The purpose of this letter is to conditionally approve the O.U. 2 Treatability Study Work Plan. The conditions for approval are that DOE address, to Ohio EPA's satisfaction, the comments listed below. This approval does not extend to Appendix C since it is Ohio EPA policy not to approve Health and Safety Plans.

1. Original comment #7, #9, and #43: The work plan may now document where numbers for background concentrations were obtained; however, as stated in previous Ohio EPA comments and letters, DOE has failed to adequately determine background concentrations of radionuclides and other naturally occurring inorganics at the site. On November 1, 1991, Ohio EPA received the Background Sampling Plan (Work Plan Addendum) which will hopefully address this issue.
2. Original comment #14: Durability tests should be run during the advanced phase testing for the stabilization of untreated material. The following is the justification for these tests:
 - a. Through failure mechanisms such as: desiccation cracks, slope instability, settlement, piping, penetration, erosion, cold climate, earthquakes and construction errors, water can permeate through the facility. Therefore, the waste can become saturated, causing the stabilized waste to erode and possibly contaminate the surrounding area. Therefore, to determine what waste matrix is the most durable (erosion resistant), a wetting and drying test is needed.

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- b. This radioactive waste has a life expectancy over 1,000 years. There is no data available on the structural longevity of the low level radioactive waste facility. Since this remediation is to be a permanent solution, a durability test would provide data to help choose the most durable solidified waste matrix.
- c. From the technical document: Stabilization/ Solidification of CERCLA and RCRA Wastes; Physical Tests, Chemical Testing Procedures, Technology Screening, and Field Activities (EPA/625/6-89/02). In Section 4, Physical Tests to Characterize Waste Before and After Stabilization/ Solidification, recommends to use of five physical tests: index property, density, permeability, strength, and durability tests. Durability tests are the following:
 1. Freezing and Thawing Test of Solid Waste (ASTM D4842)
 2. Wetting and Drying Tests of Solid Wastes (ASTM) D4843)
3. Original comment #17: The work plan does not include any discussion on how fly ash would be addressed in the advanced phase-optional if the reagent mixtures using flyash prove to be ineffective. A general description of activities that might be performed in the advance phase-optional should be included in the work plan. All tests to be performed during an optional phase should be submitted to the EPAs for review and approval.

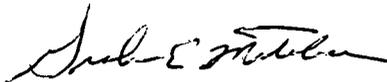
REVISED WORK PLAN

1. Section 1.2.6, Page 10, Figure 1-2: In addition to MCLs as Remedial Action Objectives, non-zero MCLGs should be included. The NCP's support of MCLGs has been previously emphasized by Ohio EPA in our comments on a number of documents.
2. Section 3.0, Page 3, Table 3-1: Include Myrick, T.E., et al. (1983) in the list of references.
3. Section 3.0, Page 7, Table 3-3: DOE should provide justification for the limited number of constituents listed in this table.

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If you have any questions about these comments, please contact me.

Sincerely,



Graham Mitchell
Project Manager

GM/klj

cc: Kathy Davidson, Ohio EPA
Jim Saric, U.S. EPA
Lisa August, Geotrans
Ed Schuessler, PRC
Robert Owen, ODH