



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
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REPLY TO THE ATTENTION OF

Mr. Johnny W. Reising  
United States Department of Energy  
Feed Materials Production Center  
P.O. Box 398705  
Cincinnati, Ohio 45239-8705

RE: OU 1 RA Package  
Disapproval

Dear Mr. Reising:

The United States Environmental Protection Agency (U.S. EPA) has completed its review of the United States Department of Energy's (U.S. DOE) draft Remedial Action (RA) documents package for Operable Unit (OU) 1.

The document package consists of the following six documents: (1) an operation and maintenance (O&M) plan for remediation facilities, (2) an operations environmental control plan, (3) a sampling and analysis plan (SAP), (4) performance test criteria, (5) a storm water and wastewater management plan, and (6) a remedial action health and safety plan.

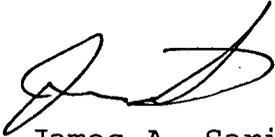
U.S. EPA's review focused on all of these documents except the health and safety plan. Overall, the O&M plan and SAP require major revisions and the performance test criteria and storm water and wastewater management plan require some modifications.

Therefore, U.S. EPA disapproves the RA document package pending receipt and incorporation of adequate responses to comments into a revised RA document. U.S. DOE must submit responses to comments and a revised document within thirty (30) days receipt of this letter.

Given the significance of the comments and the need for the RA document package to be approved before first waste shipment activities begin on March 1, 1999, U.S. EPA recommends U.S. DOE schedule a meeting to discuss the attached comments.

Please contact me at (312) 886-0992 if you have any questions regarding this matter.

Sincerely,



James A. Saric  
Remedial Project Manager  
Federal Facilities Section  
SFD Remedial Response Branch #2

Enclosure

cc: Tom Schneider, OEPA-SWDO  
Bill Murphie, U.S. DOE-HDQ  
John Bradburne, FERMCO  
Terry Hagen, FERMCO  
Tom Walsh, FERMCO







Comment: The conclusion that three waste samples are adequate to characterize uranium 235 levels as depleted, natural, or enriched (as detailed in Section 1.3.5.7) is not technically justified as discussed in Original Specific Comment 12. The text should be revised to clearly justify this conclusion.

Commenting Organization: U.S. EPA Commentor: Saric  
 Section #: NA Page #: NA Line #: NA  
 Original General Comment #: 6

Comment: The SAP does not include any contingencies to address the possibility of encountering RCRA-listed waste that may be present in the waste pits. The SAP should be revised to include sampling and analysis procedures for mixed waste that is potentially present.

Commenting Organization: U.S. EPA Commentor: Saric  
 Section #: Analytical Abbreviations Page #: vi Line #: NA  
 Original General Comment #: 7

Comment: The list of abbreviations and acronyms is incomplete and confusing. The many omissions from the list impede and sometimes prevent comprehension of the text and statistics. Examples of omissions include the data source "CIS," the term "A<sub>2</sub>" (sometimes presented as "A2"), and most of the statistical terms and labels such as "RT" and "Sxs." The list should be revised to completely identify all terms used in the text and statistics.

Commenting Organization: U.S. EPA Commentor: Saric  
 Appendix #: A Page #: NA Line #: NA  
 Original General Comment #: 8

Comment: This appendix is essentially a series of spreadsheets with no footnotes or explanations of the meaning of the numbers presented. Therefore, the appendix is very difficult to follow. The appendix should be revised to (1) define the field names and symbols, (2) define (or reference) the data sets and their sources, and (3) include the formulas for all calculations except standard spreadsheet functions. Because of the reviewer's difficulties in comprehending the spreadsheets, only limited attempts were made to verify that the data presented supports the conclusions stated in the SAP.

#### SPECIFIC COMMENTS

Commenting Organization: U.S. EPA Commentor: Saric  
 Section #: 1.2.2 Page #: 2 Line #: NA  
 Original Specific Comment #: 1

Comment: Section 1.2.2 is intended to address "process wastewater" and "contaminated storm water." However, Line 2 on Page 2 cites a somewhat different group of aqueous





Commenting Organization: U.S. EPA Commentor: Saric  
 Section #: 1.3.5.6 Page #: 8 Line #: 19  
 Original Specific Comment #: 8  
 Comment: Section 1.3.5.6 discusses determining attainment of the LSA-I criteria. However, the definition of LSA-I material in 49 Code of Federal Regulations (CFR) Section 173.403 includes a requirement that the "radioactive material is essentially uniformly distributed." Previous analytical results for the waste pits show that the radionuclides are not uniformly distributed; an activity difference of more than three orders of magnitude exists for some radionuclides within a single waste unit. If the waste does not meet the LSA-I criteria, covered railcars cannot be used to transport the waste to the disposal site. The text should be revised to clearly state that the LSA-I criteria are the ones that the waste is least likely to meet. In addition, the text should emphasize that both adequate mixing and testing to verify that adequate mixing has occurred are essential to attainment of LSA-I criteria.

Commenting Organization: U.S. EPA Commentor: Saric  
 Section #: 1.3.5.6 Page #: 8 Line #: 25 and 26  
 Original Specific Comment #: 9  
 Comment: The text concludes that certain radionuclides do not impact calculations of whether blended waste meets LSA-I criteria. The plutonium isotopes identified in the text have very low  $A_2$  values (activities as defined by DOT regulations), so the calculations used to reach this conclusion should be presented or cited in the text.

Commenting Organization: U.S. EPA Commentor: Saric  
 Section #: 1.3.5.6 Page #: 8 Line #: 36  
 Original Specific Comment #: 10  
 Comment: The text states that five blended waste samples will be needed to demonstrate compliance with LSA-I criteria. However, the calculation used to determine this number of samples could not be replicated. The procedure used to calculate this number should be presented in the text or a cited appendix. Furthermore, Line 37 states that 6 to 10 samples will be collected from each train, but other text, such as Line 16 on Page 8 and Line 6 on Page 9, states that 6 to 15 samples will be collected from each train. The text should be revised to resolve these inconsistencies.

Commenting Organization: U.S. EPA Commentor: Saric  
 Section #: 1.3.5.7 Page #: 9 Line #: NA  
 Original Specific Comment #: 11  
 Comment: According to the text, the "CIS" and RI/FS data indicates that the uranium present in the waste pits may be slightly enriched. The text further indicates that the





Commenting Organization: U.S. EPA  
Appendix #: A Page #: 16  
Original Specific Comment #: 17

Commentor: Saric  
Line #: NA

Comment: This table shows a calculation used to estimate whether the blended waste meets the LSA-I criteria based on weighted mean activities. Such a calculation obscures variations within the waste, as noted in Original Specific Comment 8. If one considers the 90th percentile activities (obtained by adding 1.28 standard deviation units to the mean), one finds that the 90th percentile activity of thorium 230 alone is 1.45 times the A<sub>2</sub> criterion for LSA-I waste. If the overall standard deviation for thorium 230 is underestimated (as is the case for arsenic; see Original Specific Comment 16), the exceedance of the criterion will be even greater. The table should be revised to include an uncertainty analysis of the problems caused by the heterogeneity of the waste.

**"WASTE PITS REMEDIAL ACTION PROJECT  
PERFORMANCE TEST CRITERIA"**

**GENERAL COMMENT**

Commenting Organization: U.S. EPA  
Section #: NA Page #: NA  
Original General Comment #: 1

Commentor: Saric  
Line #: NA

Comment: The text indicates that performance testing will be conducted only once at the beginning of dryer operations. Considering that the dryers will operate for several years and that the concentrations of contaminants in soil entering the dryers will change over time, testing the performance of the dryers' emission control system only once is not adequate. The text should be revised to propose performance testing (1) at regular intervals and (2) when high concentrations of contaminants are suspected to be present in the soil being dried.

**"WASTE PITS REMEDIAL ACTION PROJECT  
STORM WATER/WASTEWATER MANAGEMENT PLAN"**

**GENERAL COMMENT**

Commenting Organization: U.S. EPA  
Section #: 7 Page #: 20 through 22  
Original General Comment #: 1

Commentor: Saric  
Line #: NA

Comment: The text presents various contingencies and ways to deal with them. However, the text does not discuss the contingency in which a spill from a ditch or pond containing contact water contaminates nearby soil. The text should be revised to discuss ways to (1) characterize the nature and

extent of soil contamination resulting from spill of contact water and (2) remediate the contaminated soil.

**REFERENCES**

Lehmann, E. L. 1975. *Nonparametrics*. Holden-Day, Inc. San Francisco.

Steel, Robert G. D., and James H. Torrie. 1980. *Principles and Procedures of Statistics*. McGraw-Hill Book Company. New York.