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**DISAPPROVAL OF OU #5 WORK PLAN  
ADDENDA-OUTFALL LINE INVESTIGATION**

**11/25/92**

**USEPA/DOE-FN  
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LETTER**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

3968



NOV 25 1992

U-007-305.21

REPLY TO THE ATTENTION OF:

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

HRE-8J

RE: Disapproval of OU #5 Work Plan  
Addenda-Outfall Line  
Investigation

Dear Mr. Craig:

The United States Environmental Protection Agency (U.S. EPA) has completed its review of the Operable Unit (OU) 5 Remedial Investigation (RI)/Feasibility Study (FS) Work Plan Addenda, Outfall Line Investigation. The Addenda proposed additional groundwater characterization adjacent to the Outfall line between Manholes 179 and 180. The Addenda fails to adequately address contamination originating from the outfall line or from other potential sources in the area.

U.S. EPA hereby disapproves the Work Plan Addenda pending incorporation of the attached comments.

Please contact me at (312/FTS) 886-0992 if you have any questions.

Sincerely,

James A. Saric  
Remedial Project Manager

Enclosure

cc: Graham Mitchell, OEPA-SWDO  
Pat Whitfield, U.S. DOE-HDQ  
Dennis Carr, WMCO

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REMEDIAL INVESTIGATION AND FEASIBILITY STUDY WORK PLAN ADDENDUM FOR THE  
OPERABLE UNIT 5 OUTFALL LINE INVESTIGATION, GROUND-WATER SAMPLING PROGRAM

GENERAL TECHNICAL COMMENTS

1. The U.S. Department of Energy (DOE) has proposed installing one well based on the results of a vertical aquifer profiling study. The vertical aquifer profiling study is intended to evaluate potential ground-water contamination associated with the failure of the Outfall Line. Using one well to evaluate leakage from the section of the Outfall Line between Manholes 179 and 180, which is about 500 feet long is inadequate. It would be more appropriate to use a phased approach; first the presence of contamination near the suspected source should be evaluated; then the extent of contamination should be evaluated if a source is identified. Because no wells have been installed in this area, DOE should either consider installing a series of downgradient wells or use the Hydropunch to collect samples along the pipeline, downgradient of the area of suspected release and transverse to the principal direction of ground-water flow. If contamination is identified, further investigation should be conducted.
2. DOE has identified ground-water contamination at Well 2067. The two most recently collected samples indicate a trend of increasing uranium concentration. At least two potential sources of contamination should be investigated: (1) the production area and (2) the Sewage Treatment Plant Incinerator. The current approach will not adequately investigate these potential sources. In addition, the current approach does not adequately investigate the nature and the extent of the contaminant plume. These deficiencies result in a significant data gap considering the limited well coverage in this portion of Operable Unit (OU) 5. DOE must address these data gaps in the revised work plan addendum.

3. DOE conducted an investigation of the Outfall Line in July 1990. EPA had comments on data gaps for that study. While the study found that the section of the Outfall Line failed in the area between Manhole 179 and Manhole 180, DOE conducted no sampling in this area. Considering the fact that no sampling has been conducted in this area, the current study should include subsurface soil and ground-water sampling in the areas where the Outfall Line failed.

#### SPECIFIC TECHNICAL COMMENTS

1. Section 1.0, Page 1, Paragraph 2. DOE averages the results from thirteen samples consisting of two samples with elevated uranium concentrations and eleven samples in which uranium was not detected. The average concentration of uranium is not significant; what is important is that a trend of increasing concentration is apparent. Eleven rounds with no uranium detected was followed by two successive samples containing increasing concentrations of uranium. This trend suggests that the leading edge of a contaminant plume may have reached Well 2067. DOE should discuss the trend of increasing uranium concentration and its relevance to the proposed investigation.
2. Section 2.0, Page 2, Paragraph 2. DOE correlates the elevation of the Outfall Line with the Great Miami River. The purpose of this discussion is to identify potential factors contributing to failure of the Outfall Line. Although this may be important, DOE should also discuss the relative elevation of ground water to the base elevation of the Outfall Line. This information is critical in evaluating the migration pathway to ground water from the Outfall Line.
3. Section 2.1, Page 2, Paragraph 3. DOE discusses the Outfall Line and its failure here. DOE notes that the Outfall Line failed at pipe junctions in several locations; DOE also states that the time of the failure is unknown. Several issues should be discussed and investigated. First, the exact location of the failures should be identified. Second, the possible volume released to surrounding soils

from the Outfall Line should be discussed. Third, the construction details of the Outfall Line should be discussed in more detail. DOE should present this information and provide an approach to adequately investigate possible releases in the areas of Outfall Line failure.

4. Section 3.0, Page 5, Paragraph 1. DOE discusses the relationship of water level to possible contamination in the vadose zone and postulates that changing static water level may have desorbed contamination and resulted in the contamination of Well 2067. Well 2067 is over 1,000 feet upgradient of the Outfall Line failure; DOE does not present a viable transport mechanism to explain the migration of contaminants 1,000 feet upgradient. DOE should discuss the more likely potential sources of contamination of Well 2067, such as the Sewage Treatment Plant Incinerator and the production area, and propose an adequate investigation of these sources.
5. Section 4.1, Page 5, Paragraph 5 DOE proposes investigating the possible releases from the Outfall Line using the Hydropunch to vertically profile at one sampling location and then install a well. There are several problems shortcomings with this approach. First, installing one well to investigate release from several potential failure locations is inadequate. Second, the approach does not adequately investigate possible soil contamination. Third, because the time of release is unknown, it is likely that ground-water contamination may have migrated some distance from the source. DOE must propose an investigation that adequately evaluates the soil and ground water in the area of line failure and investigates the area downgradient of these line failures.
6. Section 4.1, Page 7, Paragraph 3 DOE proposes to conduct a vertical profile of ground-water contamination at one location to evaluate the vertical distribution of uranium concentration. EPA notes the approach does not assure adequate evaluation of the horizontal extent of contamination, which is necessary information before the vertical distribution is evaluated. If a vertical profile is conducted at the

proposed location, the central portion of the plume may not be encountered. DOE does not know the location of the plume, if it exists. Once the plume is horizontally characterized by profiling, a vertical profile conducted within the central portion of the plume may provide valuable information on possible contaminant sources.