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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

FERNALD
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REPLY TO THE ATTENTION OF:

AUG 04 1998

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

SRF-5J

RE: IEMP 1st QTR Comments

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) integrated environmental monitoring report for the first quarter of 1998. This document is designed to meet the site-wide environmental monitoring reporting requirements, pursuant to the Integrated Environmental Monitoring Plan (IEMP).

U.S. EPA has identified a few discrepancies which should be addressed in future quarterly reports.

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

1

TECHNICAL REVIEW COMMENTS ON "INTEGRATED ENVIRONMENTAL MONITORING STATUS REPORT FOR FIRST QUARTER 1998"

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

SPECIFIC COMMENTS

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 1.0 Page #: 1-2 Line #: 27 and 28
Original Specific Comment #: 1
Comment: The text cites Figures 1-19 and 1-20, which present the limits of the estimated groundwater capture zone. Because the extent of the capture zone is an estimate, its limits are open to interpretation. However, the line depicting the limit of the capture zone in the southeastern and southwestern portions of the plume (especially in Figure 1-20) is not perpendicular to the groundwater elevation contours as it should be. Therefore, as the figures are drawn, they slightly overestimate the extent of the capture zone. Although moving the line depicting the limit of the capture zone will not significantly affect the conclusions stated in the text, it would more accurately reflect the field data.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 1.0 Page #: 1-2 Line #: 30
Original Specific Comment #: 2
Comment: The text cites Figure 1-21, which presents the groundwater flow direction indicated by the borescope data. The groundwater flow direction indicated by these data is not consistent with the flow direction indicated by the groundwater elevation data for the area of groundwater monitoring wells 2552 and 3552. This discrepancy may be a result of measuring groundwater flow direction at a point as opposed to measuring it over a larger area. In any case, the reason for any such discrepancies should be clearly explained in future quarterly reports.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 1.0 Page #: 1-2 and 1-3 Line #: Not Applicable (NA)
Original Specific Comment #: 3
Comment: The discussion of the borescope data on these pages indicates that the borescope data for the shallow portion of the aquifer (less than 3 feet below the water table) are not representative of the bulk groundwater flow in the area. To ensure that the monitoring of the aquifer with the borescope yields usable data, the U.S. Department of Energy (DOE) should modify its monitoring scheme to collect borescope data at consistent shallow, medium, and greater depths

within the aquifer. This modification should be reflected in future quarterly reports.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.2 Page #: 3-1 Line #: 37 to 39
Original Specific Comment #: 4
Comment: The text states that "total uranium and total particulate concentrations...did not exhibit any increasing trends during first quarter 1998." This statement is not completely supported by data presented in Table 3-1. The average total uranium concentrations for five locations increased significantly (from 29 to 116 percent) during the first quarter of 1998 as compared to the 1997 average concentrations. These locations include AMS-5, AMS-22, AMS-25, AMS-26, and AMS-27. Except for AMS-22, these locations lie along the southern or western fenceline. If a similar trend is observed in the second quarter of 1998, the trend should be identified in the quarterly status report.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.2 Page #: 3-4 Line #: 8 to 10
Original Specific Comment #: 5
Comment: The text states that direct radiation monitoring data for the first quarter of 1998 "indicate a slight positive trend at the site fenceline, specifically at thermoluminescent dosimeter (TLD) location 6." This statement is not supported by data presented in Table 3-5. For 20 of the 21 fenceline locations represented in the table, the measured direct radiation values for the first quarter of 1998 are between 26 and 28 percent of the 1997 annual values rather than the expected 25 percent. Although the data suggest a very slight positive trend, there is no evidence that the trend for TLD location 6 is different than that for the 19 other fenceline locations. If the trend reflected in Table 5-3 continues during the second quarter of 1998, it should be reported as a general trend rather than as a specific observation for TLD location 6.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 3.2 Page #: 3-4 Line #: 30 to 33
Original Specific Comment #: 6
Comment: The text states that first-quarter emission monitoring results for the laboratory, laundry, and T-hopper stacks are "within historical ranges" or "within the expected range of results," but the report presents no data to support these statements. Future quarterly reports should include a numerical summary of the stack emission monitoring results.

Commenting Organization: U.S. EPA Commentor: Saric
Table #: 3-3 Page #: 3-7 Line #: NA
Original Specific Comment #: 7
Comment: Table 3-3 presents the analytical results for quarterly composite samples collected from the 16 fenceline monitoring locations that will be used to demonstrate compliance with National Emissions Standards for Hazardous Air Pollutants Subpart H beginning in 1998. The data in this table show that much of the measured dose is contributed by isotopes other than uranium. Specifically, at five of the 16 locations (AMS-4, AMS-22, AMS-24, AMS-25, and AMS-28), uranium isotopes contribute no more than 30 percent of the measured dose; most of the dose at these locations is contributed by radium and thorium isotopes. At five other locations, uranium isotopes contribute between 64 and 85 percent of the measured dose. At the remaining six locations, uranium isotopes account for between 97 and 100 percent of the measured dose. This trend appears to differ significantly from previous results presented in the 1997 annual report, which states on Page 87 that "on average, uranium isotopes contribute 94 percent of the dose." If this trend continues, it should be identified and discussed in future quarterly reports and in the 1998 annual report.

Commenting Organization: U.S. EPA Commentor: Saric
Figure #: 3-14 Page #: 3-24 Line #: NA
Original Specific Comment #: 8
Comment: The figure shows the silo headspace radon activities for January 1997 through March 1998. The curves look like a combination of an annual cycle, with lows in the second quarter and highs in the fourth quarter, and a secular trend upward. If later data, especially the second- and third-quarter 1998 data, confirm the cyclic effect, DOE should consider separating the effect of the annual cycle on the upward trend. The results of this effort would be very useful for predicting when mitigation action will be necessary and whether a new factor will affect the trend.

Commenting Organization: U.S. EPA Commentor: Saric
Figure #: 3-18 Page #: 3-28 Line #: NA
Original Specific Comment #: 9
Comment: Figure 3-18, which highlights data that will be presented in the second quarterly report for 1998, omits alpha track-etch cup data for radon monitoring. Although these data are used to evaluate compliance with annual on-site and fenceline limits, the "Integrated Environmental Monitoring Plan" states on Page 6-39 that basic statistics for alpha track-etch cup data "will be generated on a semi-annual basis." Alpha track-etch cup data for the first 6 months of 1998 should be summarized and included in the second quarterly report. If the data are not available when the second quarterly report is prepared, the omission of these data should be noted in the report.

4