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REMOVAL #3, OU#3 APPROVAL WITH MODIFICATIONS OF SOUTH GROUNDWATER PLUME WORK PLAN

07/03/91

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[redacted]

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

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July 3, 1991

REPLY TO ATTENTION OF:

5HR-12

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

RE: Removal #3, OU #3
Approval with Modifications of
South Groundwater Plume Workplan

Dear Mr. Craig:

The United States Environmental Protection Agency (U.S. EPA) has completed its review of the Removal Action #3 Workplan for the South Groundwater Comtamination Plume. U.S. EPA, hereby approves the Workplan pending incorporation of the enclosed modifications.

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

Date Rec'd JUL 15 1991
E-3954
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SPECIFIC COMMENT

1. Page 1, Paragraph 3: The work plan should document how an increase in uranium loading to the Great Miami River, resulting from the relocation of the extraction wells to the proposed northern location, can be offset by a equivalent mass of uranium removal from the production area.

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2. Page 9, Paragraph 1: The work plan should state which laboratory will conduct the inorganic analysis. In addition, the work plan should clearly state that samples will be analyzed for inorganic parameters listed on page 33 of 34 in Section 3 of the RI/FS sampling plan. The list of inorganic parameters listed in the RI/FS sampling plan is larger than the HSL inorganic list and will more accurately define the contaminants from the Albright and Wilson facility.

3. Page 9, Paragraph 2: The criteria to determine whether ground-water samples should be sent to a laboratory for volatile organic compound (VOC) analysis appear to be too loose, considering the objectives of the study as stated on page 5. The 5 parts per million (PPM) selection criterion may lead investigators to underestimate the extent of the eastern and northern edges of the plume. For example, under ideal equilibrium conditions there would have to be a concentration of approximately 375 $\mu g/L$ of benzene in the ground water to result in a 5 PPM concentration in the air. Because field conditions rarely exhibit ideal equilibrium conditions, it is likely that the benzene concentration in the ground water would have to be higher than those calculated for the ideal equilibrium condition. It is suggested that water samples be collected for all wells south of the northern boundary of the Ruetgers-Nease property for field headspace analysis. This procedure can easily be accomplished with readily available field screening equipment, such as an organic vapor analyzer (OVA). Using the OVA in gas chromatographic mode can provide quantitative results in the part per billion (PPB) range.

4. Page 10, Paragraph 3: The work plan should state that ground-water samples collected from the multiple depth Hydro-punch sampling will also be measured for specific conductance in the field.

5. Page 10, Paragraph 4: See comment 3 concerning the field screening of ground-water samples to determine if off-site laboratory analysis is required.

6. Page 11, Paragraph 1: When the source of contaminants in the soil gas is contaminated ground water (as in this case), contaminant concentrations should be expected to increase as the probe is driven closer to the water table. Therefore, advancing the soil gas probe 2.5 feet below the land surface does not seem appropriate with a water table greater than 9 feet below the land surface. Advancing the soil gas probe only 2.5 feet below the land surface may result in false negatives, and could lead to the investigators to underestimate the extent of the VOC contaminated ground-water.

7. Page 11, Paragraph 1: The proposed sampling approach may present two obstacles to the successful sampling and analysis of the soil gas. First, if the soil is "tight" and cannot sustain more than a 1 liter per minute pumping rate, the OVA will "flame out". Second, if oxygen levels are below 11 percent the OVA will again "flame out." Both of these conditions can be avoided if the sample is brought to the surface, collected in an appropriate sample container (such as a Tedlar gas sampling bag) and then introduced into the OVA.

8. Page 11, Paragraph 1: The sampling approach does not allow for purging the soil gas probe. Several published articles discuss the need to purge the soil gas probe to obtain stable and accurate soil gas concentrations. The method of soil gas probe purging and documentation should be discussed.

9. Page 11, Paragraph 3: In addition to testing the soil gas sampling approach in an area which has shown high VOC ground-water contamination (well 2701), the soil gas sampling approach should also be tested in an area that has shown relatively low VOC contamination. This will demonstrate that the soil gas sampling approach is adequate to define the approximate limit of the VOC ground-water contamination.