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R-027-208.3

**RESPONSE TO USEPA COMMENTS ON
REMOVAL ACTION NO. 16 COLLECT
UNCONTROLLED PRODUCTION AREA
STORMWATER RUNOFF**

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General Comments

1. The removal action (RA) work plan references waste disposition protocol proposed in the RA No. 17 work plan. EPA notes that the RA No. 17 plan approach has not been finalized. It might be more appropriate to outline an approach for determining waste disposition in this revised work plan, parallel to the approach described in RA No. 17.

Response:

A parallel waste disposition approach has been outlined in Attachment 2.

Action:

The document has been revised as noted in the response.

2. The assumption in this document that the predominant dose derives from uranium isotopes may not be valid. The document's assumption that contaminants are in natural ratios makes the following information relevant.

Using a generic uranium ore found in EPA's background information document for the 40 CFR 192 standards (Final Environmental Impact Statement for Standards for the Control of Byproduct Materials from Uranium Ore Processing [40 CFR 192], Volume I, EPA 520/1-83-008-1) and dose conversion factors derived by Eckerman et al of Oak Ridge National Laboratory (Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion, Federal Guidance Report No. 11 EPA 520/1-88-020), relevant calculations can be made. The generic ore concentration is:

U-238 Series	490 pci/g
U-235 Series	23
Th-232 Series	2

In the two attached tables, derived using this ore (natural ratios), U-238+D represents a subseries of U-238 plus all its immediate decay products with half lives less than 1 year. Dose conversion factors are the sum of all the individual dose conversion factors for the subseries.

The attached tables demonstrate that for some lung classes a substantial fraction of the dose could originate from other than U-238, U-234, or U-235. Little of the ingestion dose originates from these uranium isotopes.

Consequently, dose assessments should be based upon the full contingent of radionuclides, not just a select few. Concentrations should be measured unless there is sufficient data to support the assumed ratios.

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Response:

This comment addresses the dose received from uranium and thorium ores where the short-lived daughters would be relatively abundant. This is not a concern at the FEMP because the primary materials handled had these short-lived nuclides removed. Ore was not processed here to any significant degree. Due to the half lives of the daughters of U-238, the only nuclides of significant abundance are Th-234 and Pa-234m. The primary contributors are the uranium isotopes.

Action:

No action taken.

Specific Comments

1. Section 1.0 Page 1 of 23, para. 4--Appendix L of the Site-Wide Quality Assurance Plan has been changed to Attachment I. The reference to Appendix L should be corrected.

Response:

Attachment L should be changed to Attachment I.

Action:

The document has been revised as noted in the response.

2. Section 2.0 Page 14 of 23, para. 1--Provide justification why the analysis methods for soil samples taken at the 38 sample locations did not include Radium-226.

Response:

Radium-226 was not one of the constituents analyzed for in the 1989 sampling because process knowledge indicated that this was not a concern in the areas sampled.

Action:

The document has been revised to include the justification statement noted in the response.

3. Section 2.3 Page 16 of 23, para. 1--The underlying groundwater has been determined to be contaminated with inorganic and organic chemical compounds. Have radionuclides been found to be part of the groundwater contamination via infiltration along the stream bed? If so, this should be discussed.

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Response:

Yes, radionuclides have been found to be part of the groundwater contamination via infiltration along the stream bed. A paragraph has been added to Section 2.3 to address this contamination.

Action:

The document has been revised as noted in the response.

4. Section 7.0 Page 22 of 23, para. 1--Data quality objectives for sampling and analysis activities should be presented in this section.

Response:

Data quality objectives have been added to Section 7.0.

Action:

The document has been revised as noted in the response.

5. Attachment 1 Page 3, para. 7--Indicate the number of trip and rinsate blanks that will be collected.

Response:

The number of trip and rinsate blanks have been added to this section.

Action:

The document has been revised as noted in the response.

6. Attachment 1 Page 3, para. 8--Appendix L of the Site-Wide CERCLA Quality Assurance Plan has been changed to Attachment I. The reference to Appendix L should be corrected.

Response:

The title of this appendix should be changed to Appendix I.

Action:

The document has been revised as noted in the text.

7. Attachment 2 Page 1, para.3--What measures will be taken to prevent and monitor radon emissions from the edges of the tarpaulins?

Response:

The concentration of radon gas in the soil stockpiles is expected to be as low as background levels. Therefore, no measures are planned for prevention and monitoring for radon gas at the edges of the tarpaulins.

Action:

No action taken.

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Technical Comments

Specific Previous Comments

Previous Comment No. 13

Attachment 1, Section 5.0, page 3. None of the randomly selected depths presented in Table 1 are below a depth of 3 feet. The work plan should describe how samples will be collected if the excavation is advanced below 3 feet.

Response:

Excavations for the installation of the trenches and curbs will not be advanced below 3 feet. Therefore, no samples will be required at depths greater than the 3 feet mentioned in Attachment 1.

Action:

No action taken.

Previous Comment No. 14

Attachment 1, Section 5.0, page 3. The installation of 12-inch-diameter reinforced concrete pipe (RCP) will require excavation; however, the work plan does not address soil sampling in these areas. The work plan should either add sampling in these areas or explain why no sampling is planned.

Response:

The addition of RCP and structures will be handled in the second portion of the project which is not a part of this removal action as detailed in Section 2.3, page 17, last paragraph. A separate sampling plan will be developed for this activity. Wording has been added to Section 4.0 to reflect this.

Action:

The document has been revised as noted in the response.

Previous Comment No. 15

Attachment 1, Table 2.0, page 6. The work plan does not provide specific rationale for selecting sample locations for hazardous substance list (HSL) analysis. The work plan should provide specific rationale for selecting some locations over others for HSL analysis.

Response:

The rationale for selecting certain sample locations for HSL analysis was given in Attachment 1, Section 4.0, page 3. It has been repeated in Table 2.

Action:

The document was revised as noted in the response.