START
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9306631

June 29, 1993

Steven H. Wisness
Tri-Party Agreement Manager
Department of Energy
Richland Operations Office
P.O. Box 550
Richland, WA 99352

Re: Environmental Restoration Storage and Disposal Facility Site Characterization Plan Comments

Dear Mr. Wisness

The Environmental Protection Agency (EPA) and the US Geological Survey (USGS) have completed the review of the Environmental Restoration Storage and Disposal Facility Site Characterization Plan (WHC-SD-EN-AP-128, Rev. 0). Enclosed are the combined comments on the technical and regulatory content of this report.

A Word Perfect 5.1 diskette is enclosed for your convenience.

If you have any questions or concerns regarding these comments, please contact me at (509) 376-4919.

Sincerely,

Pamela S. Innis
Unit Manager

enc.

cc: D.R. Jansen, Ecology
R. Hibbard, Ecology
D. Teel, Ecology
B.L. Foley, DOE
B.A. Austin, WHC
A. DeAngeles, PRC
B. Lumm, USGS
Administrative Record, ERSDF

The U.S. Environmental Protection Agency (EPA) has completed the review of the Site Characterization Plan for the Environmental Restoration Storage and Disposal Facility (ERSDF [WHC-SD-EN-128]). The document is dated May 21, 1993 and was prepared by the Westinghouse Hanford Company (WHC) for the U.S. Department of Energy (DOE).

SPECIFIC COMMENTS

1. **Section 1, page 1-1, first paragraph, second sentence**
The estimate of 14.4 million m^3 is a maximum value. The sentence should read that the units are "expected to hold up to 14.4 million m^3."

2. **Section 1, page 1-1, third paragraph**
Second sentence: Other factors that should be characterized for the site include the areal extent of contamination in the groundwater beneath the proposed resulting from past operations.

Last sentence: This plan should also satisfy any federal requirements for characterization of a proposed disposal site noted in 40 CFR 264, Subpart N, 40 CFR 265, Subpart N, and in the CAMU rule. In general, these requirements state that hydrogeologic and other relevant environmental conditions of the facility should be well defined in order for the Regional Administrator to make decisions concerning alternate disposal designs.

3. **Section 3.1, page 3-2, second paragraph, fourth sentence**
The sentence references information gained using the hard tool method of cable tool drilling. Typically, especially in gravels, little information is gained concerning grain size using this method. The mineralogy of the formation may be evident from the retrieved sample. This information may add value in determining the lithologies.

4. **Section 6.0, page 6-1 and 6-2**
On a recent tour of the proposed ERSDF site a representative of the Washington Department of Wildlife characterized the site as "one of the least impacted short-grass communities on the Hanford site. The ecological survey should go beyond determining the presence of rare or endangered species. An evaluation of the potential environmental impact form activities associated with this project should be completed.

This section does not mention threatened mammals. The Pygmy rabbit inhabits sagebrush areas typical of the proposed location for the ERSDF.

The second to last sentence in this section needs clarification. If the sage grouse still resides within the vicinity of the Hanford Site there is a potential that this species may re-inhabit the area once significant human activity is eliminated. The impact of eliminating the habitat in this area should be examined.

5. **Section 9.1, page 9-1**
The need to determine the spatial arrangement of clastic dikes is noted, but we find no specific data collection tasks to meet this need. We agree that this is an important data need and suggest that the appropriate field investigation using aerial photos and surface geophysical techniques be described in this report and carried out in the site characterization investigation.

6. **Section 9.2, page 9-2**
The list of new data needed for site characterization should include determination of the amount of recharge from precipitation.
We also recommend adding radionuclides to the list of ground-water quality constituents to be determined.

7. **Section 9.2, page 9-3**
The last sentence on the page indicates that "Geophysical surveys will be performed to note any changes in near surface geology." We do not see how the borehole geophysical techniques that are currently tested for the Hanford site can provide this information and we see no further mention of surface geophysical techniques to meet this need.

8. **Table 9-2, page 9-5**
Soil matric potential is an important property controlling moisture migration in the soil. Direct measurement of matric potential can be achieved using the filter paper technique, and this information is useful in estimating infiltration and recharge and is needed as an initial condition for vadose zone modelling.
We recommend adding soil matric potential to the list of physical properties to be measured in the vadose zone, and recommend using the technique described in section 25-4 of the Methods of Soil Analyses published by the American Society of Agronomy, or equivalent. The WHC soil physical properties lab is equipped to conduct such analyses.

9. **Section 9.3.2, page 9-7**
This section should be expanded to include details and justification of target properties or solutes as in Section 9.3.1 which deals with sediments. Radionuclides should also be addressed here.

10. **Section 10.6, page 10-3, last sentence**
It would seem prudent to notify the Department of Energy and the regulatory agencies of any major deviations from the approved work plan.

11. **Section 11.0, page 11-1**
No surface sampling task is identified in this section. It is apparent from information provided in Section 8.1 that there are areas within the proposed site that potentially have surface contamination. Surface sampling should be included in the characterization task or justification should be give for not including this task.

12. **Section 11.3, page 11-2**
Among other data, boreholes 6-SDF-2 and 6-SDF-3 will provide needed water level information for the basalt interbed. Are there nearby wells finished in the unconfined sediments to help determine the ground-water gradient (between the unconfined and confined ground water) in this area? The gradient data will allow a more detailed understanding of the ground-water-flow system in the ERSDF area and will help in determining travel times in the saturated materials to the accessible environment.

13. **Section 11.3.4, page 11-5**
The EPA should also be informed of any changes in well design or location.

14. **Section 11.4.5, page 11-7**
Many questions remain concerning the characteristics of these materials, to allow for future analysis of the earth materials at least one well should have a continuous core collected from it. The part of the core that is not used for immediate analysis should be archived for future analysis.

15. **Section 11.4.5, page 11-7, second paragraph, fifth sentence**
Chemical analyses are to be taken at 3 meters. Justification should be given for choosing this interval.

16. **Section 11.4.5, page 11-8, first full paragraph, second sentence**
In order to collect a core representing the interface of the confining stratum and the overlying soils continuous coring would be required in potential areas. It is unclear if continuous coring is planned. It would be possible to retrieve the closest core to that interface if a confining stratum is encountered without continuous coring. Please clarify this sentence.

17. **Section 11.4.7, page 11-9**
Gamma-gamma and neutron borehole geophysical logging are described as a site characterization task. These geophysical techniques should provide valuable information on the hydrogeologic framework of the ERSDF site. However, we understand that current Hanford Site technology is not suitable for providing defensible data for these types of logs. Also, to the best of our knowledge, there is no ongoing effort to develop or modify these geophysical techniques for use in the Hanford environment. We suggest that either development and application of these techniques be identified as a specific task in this site characterization plan or the use of these techniques be deleted from the plan.

18. **Section 11.4.7, second paragraph**
Please identify some of the criteria used by the well-site geologist in determining whether the starter casing should be logged. It is apparent if field screening methods indicate a presence of gamma-emitting radionuclides, geophysical logging should occur.

19. **Section 11.6.3, second paragraph, last sentence**
This sentence indicates that no hydraulic properties will be determined if data from the observation well is not useable. Single well tests are being performed on all boreholes except 6-32-72B. These tests will produce useable data to aid in determining hydraulic properties. Please correct this last sentence.

Editorial Comments

Section 3.1.1, page 3-2, last two sentences
Measurements should be given in meters and in feet.

Section 4.2.1, page 4-2
It would be more accurate to state that "the information presented by Skaggs and Walters reasonably justify that it is unlikely...". It is doubtful that a document written in 1981 references the location of the ERSDF.

Section 4.2.3, page 4-3, third paragraph, third sentence
This sentence is incomplete. Add the word "occurred" before "from 1950" and change "where" to "when".

Section 7.0, page 7-1, fifth sentence
The average annual temperature should also be given in degrees Fahrenheit.

Section 8.1, page 8-3
Measurements should be given in meters <u>and</u> in feet.

Section 11.3.5
For consistency throughout the report, metric measurements should be given first.

Section 11.4.5, page 11-8, first full paragraph, last sentence
Delete the word "present". If the unit is not present it will not be possible to collect a core. Including "and present" is confusing and redundant.

CORRESPONDENCE DISTRIBUTION COVERSHEET

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