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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

7601 W. Clearwater, Suite 102 • Kennewick, Washington 99336 • (509) 546-2990

August 6, 1993

Mr. Paul Pak
U.S. Department of Energy
Richland Operations
P.O. Box 550
Richland, WA 99352

Dear Mr. Pak:

Re: Comments on 200-UP-2 Description of Work for Vadose Borings 30584

Enclosed are our comments on the draft description of work for the vadose borings in support of the 200-U-2 Operable Unit.

If you have any questions or comments, please contact me at 736-3014.

Sincerely,

A handwritten signature in cursive script that reads "Nancy Uziemblo".

Nancy Uziemblo
Nuclear and Mixed Waste Management Program

NU:sl
Enclosures

cc: Dave Einan, EPA
Michael Galgoul, WHC
George Kely, WHC
Administrative Record (200-UP-2)
Darci Teel, Ecology



**COMMENTS ON DRAFT DOW FOR VADOSE BORINGS IN SUPPORT OF THE
200-UP-2 OPERABLE UNIT**

1. Section 1.1.1, page 1
Compare the drilling depths for each boring to those listed in Table 4. Some do not match.
2. Section 1.1.1, page 1
List the expected drilling depth for boring 299-W19-97.
3. Section 1.1.1, page 1, first paragraph
The word "form" should be changed to "from."
4. Section 1.1.1, page 1, third paragraph
The text states that the purpose of the boring is "to determine if perched water carried uranium **up dip** on the caliche layer." Define "up dip." Is this a proper term?
5. Section 1.1.3, page 2, second paragraph
The text states that there is no collapse potential because it is a gravel filled trench "with out" timbered structures. "Without" would correct the sentence.

Why can't the boring go through the trench. Is the purpose of the boring also to define the lateral extent of contamination? Is drilling outside the trench deliberate?
6. Section 1.1.4, page 2, third paragraph
How will you be able to differentiate between plumes? Will we want to attribute contaminants to a specific source?
7. Section 1.1.4, page 2, third paragraph
List here the drilling depth or the top of the caliche layer for boring 299-W19-98.
8. Section 1.2, page 3
Consider adding a stratigraphic column for additional clarification.
9. Section 1.2, page 3, fourth paragraph
What are the anticipated reactions between the disposed acids and the calcium carbonate horizons.
10. Section 3.1, page 6, first paragraph
Change to read "The action level for volatile organic screening is 5ppm.

11. Section 3.1, pages 5-6, first paragraph
Clarify how "Readings of less than twice the average...presence of anthropogenic radionuclides" was selected as acceptable. What source documented determined this activity?
12. Section 3.1, page 6, second paragraph
Elaborate on how the one time background level for radiation will be established.
13. Section 3.1, page 6, second paragraph, third sentence
"Near surface soil" may better describe the excavated material to be used for background determination.
14. Section 3.3, page 6, general comment
This section is very complex and detailed. Is there any way that the section could be made easier to read (i.e., with bullets)?
15. Section 3.3, page 6, first paragraph
State where the Touchet member fits into stratigraphy.
16. Section 3.3, page 6, second paragraph
Table 4 indicates that 2 wells will be drilled to 162 feet (< caliche layer) and 4 wells will be drilled to 182-190 feet (> caliche layer). The text in this section states that 3 boring will be drilled to the top of the caliche layer and 3 boring drilled through the caliche layer. Please clarify.
17. Section 3.3, page 7, third paragraph
Are you discussing the caliche layer with the Plio-Pleistocene or within the Hanford formation? If a caliche layer is encountered within the Hanford Formation will casing be downsized?
18. Section 3.4.2, page 8, second paragraph
The second sentence states that field screening will be used to ensure that the most contaminated material will be submitted to analysis. How? Additional text should be provided to clarify how field screening will determine which samples will be sent for analysis.
19. Section 6.0, page 11, first paragraph
The acronym for "As Low As Reasonably Achievable" (ALAR) is not correct.
20. Section 6.0, page 11, second paragraph
The second sentence should be changed to read "Copies will be submitted to the regulatory agencies and the appropriate field personnel within 10 working days."

21. Figs. 1 and 2
The proposed borehole locations do not quite match on these two figures.
22. Table 5
Consider adding to "Analytical Methods for Radionuclide....Specific," and must meet QC requirements to support Level 3.
23. Table 5
Ruthenium-106 is a beta emitter as ^{106}Rh but is listed as being analyzed by gamma spectrometry
24. Chart labelled 216-U-1 Crib, at 160 depth marking
The physical sample should be taken at 162 instead of 142.
25. Chart labeled Boring at 2607-W-5 Drain Field
Table 4 states that this boring goes to 162' but this chart shows sampling to 202'.
Please clarify.
26. Chart labeled Boring South of Cribs
Table 4 states that this boring goes to 162' but this chart shows sampling to 202'.
Please clarify.
27. Chart labeled Borehole at the 216-U-12 Crib
Will uranium and nitrates be sampled at this borehole? See Table 5-7 of the Work Plan.
28. Why isn't 216-U-12 crib marked as a boring in Table 5-2 (page 5T-2a) in the Work Plan?