

MEETING MINUTES

Subject: DISPOSITION OF REGULATORY COMMENTS ON THE QUALITATIVE RISK ASSESSMENT FOR THE 100-KR-4 GROUNDWATER OPERABLE UNIT

TO: N. K. Lane

MSIN: H6-01

FROM: S. W. Clark

CHAIRMAN: E. D. Goller

Department	Meeting Date	Number Attending
Risk Assessment Group	4/26/94	8

Participants*:

Eric Goller	A5-19	DOE-RL-ERD	376-7326
Alan Krug	H6-02	WHC	376-5634
Steve Clark	H6-01	WHC	376-1513
Larry Gadbois	B5-01	EPA	376-9884
Wayne Soper	B5-18	Ecology	736-3049
Pam Doctor	K6-98	PNL	376-4436
John Hall	K6-63	WDFW	372-1189
Dave Myers		IT	943-6728

EPIC **H6-08**
 (See page 2 for Summary of meeting minutes)

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SUMMARY:

Participants in the writing and review of the 100-KR-4 groundwater operable unit Qualitative Risk Assessment (QRA) and Limited Field Investigation report (LFI) met in the EPA Hanford Project Office conference room on April 26, 1994, to disposition regulatory comments on the 100-KR-4 QRA and LFI. Dispositions to all regulatory comments on the QRA were agreed upon. Decisions to finalize revisions to the QRA were deferred. Dispositions to individual comments are discussed in the following narrative.

DISPOSITIONS TO REGULATORY COMMENTS ON THE 100-KR-4 QRA:

Comments Q1 and Q2: Responses okay.

Comment Q3; parts A, B, C: Responses to parts A and B are okay. Regulatory representatives requested that special attention be taken to include the response to part C in any errata sheet or revisions to the QRA.

Comment Q4: Response okay.

Comment Q5: Regulatory representatives agree with the response but requested that the inability to combine risks from non-radiological and radiological stressors be identified as an uncertainty.

Comment Q6: Regulatory representatives requested that the second sentence of the response be applied to discussions of the frequent and occasional use scenarios throughout the document: "The QRA makes reasonable maximum exposure (RME) estimates under frequent-use and occasional-use exposure scenarios."

Comments Q7 and Q8: Responses okay.

Comment Q9: Regulatory representatives request that the response be consistent with the response to Comment Q6.

Comment Q10: Response okay.

Comment Q11: A revised response will be prepared, eliminating the reference to 100-FR-3. It was agreed that the revised response will note that the drinking water pathway is the dominant pathway but that other pathways do exist. Why other pathways are subordinate to the drinking water pathway will be discussed. Do a brief example calculation as part of the response to demonstrate the dominance of the drinking water pathway.

What the uncertainties are and what conservative things we do to account for uncertainty should not be mixed - conservative actions should be distinct from uncertainty. For Revision 3 of the Hanford Site Risk Assessment Methodology (HSRAM) it is requested that an example calculation be included comparing the drinking water pathway to other pathways and the exposure obtained from each. Discussion of the uncertainty associated with exposure pathways should be presented in the HSRAM so the QRAs for the individual operable units only include uncertainty discussions of data and other operable unit specific topics.

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Comments Q12, Q13, and Q14: Responses okay.

Comment Q15: Replace "intruder scenario" with "current use conditions."

Comment Q16: Response is okay. While it is clear that the agreements being discussed in the 5th paragraph of page 1-1 are common to other 100 Area operable units it is true that agreements made between 100-KR-4 unit managers are not binding on other unit managers, and vice versa.

Comment Q17: Do the substitution as agreed in the response to the comment.

Comment Q18: Put "fish rearing activities" into the sentence for the errata sheet or document revision.

Comment Q19: Refer to the response to Comment Q6 and to the example calculation of Comment Q11.

Comments Q20, Q21, and Q22: Responses are okay.

Comment Q23: Add the response to the errata sheet or document revision to clearly state what analyses were used in the 100-KR-4 QRA.

Comments Q24 through Q31: Responses are okay.

Comment Q32: The document is okay, just change the response to the comment. Eliminate the discussion of elimination of inorganics as eco-nutrients. Just say "screened against background," dropping the reference to "screened for eco-nutrients." For Revision 3 of the HSRAM identify eco-nutrients and the levels at which they are acceptable (what is background for eco-nutrients). Agreement must be obtained on what are eco-nutrients.

Comment Q33: Include the clarification provided by the comment response in the errata sheets or revision to the document.

Comments Q34, Q35, and Q36: Responses are okay.

Comment Q37: Clarify the discussion in the response. Add that chloroform could not be eliminated as a lab contaminant because of the fact that blanks do not exist to determine if chloroform was truly a lab contaminant. Refer to the LFI for application of the 5x, 10x rule for blanks (Section 2.5.1 in the LFI).

Comment Q38: Response is okay.

Comment Q39: Update the table in the errata sheets or revision to the document.

Comment Q40: Put the one-paragraph response into the errata sheet or document revision.

Comment Q41, Q42, and Q43: Responses are okay.

Comment Q44: Note that sediment sampling and analysis occurred and no contamination was found (reference DOE/RL-92-12). Use a response similar to the response for Comment Q11 modified to deal with ecosystems. Note that the pathway which was evaluated was evaluated in

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a conservative manner but that other pathways exist. Pam Doctor is to prepare a revised comment response and finalize acceptable language with Larry Gadbois.

Comment Q45: (1) Make it clear that we are not measuring adverse effects but are comparing against benchmarks to indicate effects which could occur. Adverse effects relate to benchmarks which infer a toxic effect which could occur. All we are doing is comparing our measurements to the benchmark. The benchmarks are based on DOE orders. The distinction that we are not measuring adverse effects but are only comparing against benchmarks must be made clear. Possible language: "calculated measurement endpoint" or "inferred measurement endpoint."

(2) We are not using assessment endpoints but water quality criteria that are protective of most wildlife at the population level. In the errata sheet or document revision make it clear that we are not making biota measurements but are inferring possible effects based on benchmarks.

Comment Q46: Again: Water quality criteria are protective of most species at the population level.

Comments Q47 and Q48: Responses are okay.

Comment Q49: Recite the scientific basis for the 1 rad/day benchmark - use NCRP and IAEP references. Add the discussion provided in the comment to the errata sheet or document revision.

Comment Q50: The response is okay but the comment should be corrected by adding the word "certain" between "For" and "priority" in the first sentence and eliminating the second sentence of the comment.

Comment Q51: Response is okay.

Comment Q52: Revise the comment response using the verbage exactly from the revised LFI, Section 4.1.10: "Although Carbon 14 is a naturally occurring element it is a contaminant in this operable unit."

Comments Q53, Q54, Q55, and Q56: Responses are okay.

Comment Q57: Any changes based upon checking of Table 4-2 will be provided in the errata sheet or document revision. Steve Friant of PNL is supposed to make sure that the hardness formulas from the State of Washington were applied. Unfortunately, the print of the hardness formulas in the copy of the regulations available to the Ecology Kennewick office is so fine that they cannot be read. Originals of the documents stating the hardness formulas must be obtained.

Comment Q58: Response is okay.

Comment Q59: The text in question is to be revised so the statement cannot be taken out of context.

Comments Q60, Q61, Q62, Q63, and Q64: Responses are okay.

Comment Q65: The second sentence of the response is to be provided in the errata sheet or document revision.

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Comment Q66: Provide input to the errata sheet or document revision based upon the comment and the two sentences of the response. Representatives of the regulatory agencies requested that DOE-RL obtain appropriate references to include chromium assays at the City of Richland's water intake in the groundwater QRAs.

Comments Q67, Q68, Q69, Q70, Q71, Q72, and Q73: Responses are okay.

Comment Q74: Refer to the response to Comment Q6 to complete the response to Comment Q74.

Comment Q75: Refer to the response to Comment Q11 to rewrite the response to Comment Q75.

Comment Q76: Response is okay.

Comment Q77: Rename Appendix A to "Human Health Toxicological Information" and refer to HSRAM Revision 3 for all ecological information.

Comments Q78, Q79, Q80, and Q81: Responses are okay.

Comment Q82: The response is okay. However, the second and third words of the fifth sentence "methodology" and "suggested" should be reversed.

Comment Q83: Refer to the response to Comment Q11 to rewrite the response to Comment Q83, being sure to include both human and ecological receptors.

Comment Q84: In the second paragraph of the response clarify that not all values are LOELs.

Comment Q85: The response should note that any ecological contaminant above background should be evaluated against an appropriate benchmark.

Comment Q86: The response should note that the chemical toxicity of radionuclides will be addressed in Revision 3 of the HSRAM.

Comment Q87: Response is okay.

Comment Q88: Change the response to note that the concept of the warning level will be addressed in Revision 3 of the HSRAM.

Comment Q89: Response is okay.

Comment Q90: Representatives of the regulatory agencies requested that references to "relative risk" be removed from the QRA by providing appropriate input to the errata sheet or document revision.

Comments Q91 and Q92: Responses are okay.

Comment Q93: Clarify why 16 and 11 micrograms per liter are used rather than 16/11 for acute/chronic LOELs for hexavalent chromium. Provide appropriate input to the errata sheet or document revision.

Comment Q94: Instead of using the term "weighting" just state why the values were adjusted. For strontium 90 (the regulatory representatives main concern) the factors are the same regardless of weighting. Revise the

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second sentence of the response to Comment Q94 to drop the first four words: "~~The weighting done in...~~"

DISCUSSION OF COMMENTS ON CHAPTER 3 OF THE LFI (QRA RELATED COMMENTS):

- LFI Comment 85: The regulatory representatives agreed to drop this comment.
- LFI Comments 86 through 95: Responses are okay.
- LFI Comments 96 and 97: Clarify that "ducks" refers to two different kinds of receptors: plant-eating and fish-eating.
- LFI Comment 97, part (2): Is the receptor a fish?
- LFI Comment 98: Response is okay.
- LFI Comment 99: Use the language of the response to Comment Q6 in response to this comment: "The QRA makes RME estimates under frequent-use and occasional-use exposure scenarios."
- LFI Comment 100: Change from "adverse effect levels" to "appropriate ecological benchmarks" (for aluminum, chromium, and silver).
- LFI Comments 101 through 105: Responses are okay.
- LFI Comment 106: Response is okay.
- LFI Comment 107: If it is true that we are using LOELs for all contaminants the response is correct (it is correct for aluminum and silver).
- LFI Comments 108 and 109: Responses are okay.
- LFI Comment 110 (and 133): Revises the ongoing arsenic-background-pesticide-fly ash issue. For the comment response this wording was agreed upon with the regulatory representatives: "Beyond possible fly ash disposal there is no known source of arsenic due to Hanford operations."
- LFI Comment 111: Use the response agreed upon for Comment Q6 and LFI Comment 99.
- LFI Comments 112 through 117: Responses are okay.
- LFI Comment 118: The regulatory representatives agreed to drop this comment.
- LFI Comment 119: It was agreed that the response would be changed to replace "less" with "most likely to be less than."
- LFI Comments 120 and 121: Responses are okay.
- LFI Comment 122: It was agreed that Footnote b of Table 3-3 will be removed.
- LFI Comment 123: The regulatory representatives agreed accept the response.

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