



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10 HANFORD/INL PROJECT OFFICE**

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March 27, 2008

Matthew S. McCormick, Assistant Manager
for Central Plateau
U.S. Department of Energy
Richland Operations Office
P.O. Box 550, A5-11
Richland, Washington 99352

Re: U.S. Environmental Protection Agency (EPA) Comments on Feasibility Study Report for the 200-ZP-1 Groundwater Operable Unit, DOE/RL-2007-28, Draft B, and Proposed Plan for Remediation of the 200-ZP-1 Groundwater Operable Unit, DOE/RL-2007-33, Draft B, and Response to DOE's Proposal to Conduct Public Outreach of 200-PW-1, 3 & 6 Operable Unit ⁰⁰⁷⁶³⁶⁸ ⁰⁰⁷⁶³⁶⁹

Dear Mr. McCormick:

Enclosed are comments on Draft B of the subject documents. In addition, based on these comments EPA has provided a redline/strikeout version of the 200-ZP-1 Proposed Plan to you electronically.

EPA also concurs with DOE's proposal to conduct public outreach on the cleanup alternatives for the 200-PW-1,3, & 6 operable units prior to revising Draft B of the Feasibility Study and Proposed Plan. EPA's goal is to conduct these outreach efforts this spring and have DOE revise the documents and deliver a Draft B to EPA by August 1, 2008.

Sincerely,

Dennis Faulk
Project Manager

Enclosure

cc: Arlene Tortoso, DOE
John Price, Ecology
Ken Niles, ODOE
Gabe Bohnee, NPT
Stuart Harris, CTUIR
Russell Jim, YN
Admin. Record: 200-ZP-1

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**Comments on Feasibility Study Report for the 200-ZP-1 Groundwater Operable Unit,
DOE/RL-2007-28, Draft B, and Proposed Plan for Remediation of the 200-ZP-1
Groundwater Operable Unit, DOE/RL-2007-33, Draft B**

1. EPA does not agree with DOE's response citing land use as a reason that the Model Toxics Control Act (MTCA) is not relevant and appropriate. EPA believes given the circumstance MTCA should be evaluated as part of this cleanup and the proposed plan should address State ARARs. Also it is not clear why uranium is not a contaminant of concern. Please clarify.
2. The proposed remedy includes a groundwater extraction and treatment system to address groundwater contamination. The preferred remedy included two groundwater extraction rates; however, no clear rationale was presented for how a final flow rate decision would be made. The two options were for groundwater extraction at 840 gallons per minute (GPM) and 1615 GPM with associated present worth costs of \$93 M and \$180 M, respectively. The stated benefit of the larger system is to reduce the time to achieve cleanup goals from about 50 years to 25 years. Based on information presented it is not clear which pumping rate should be considered the preferred alternative. The document needs to select a groundwater extraction rate, and the associated system capacity, and provide the rationale in the proposed plan. In addition, the proposed plan should clarify whether 90 or 95 percent is the target for mass removal, because the FS cites both values.
3. EPA suggests DOE review the guidance document that discusses a systematic approach to capture zone analysis, EPA 600/R-08/003, Jan. 2008.
4. The preferred remedial alternative assumes that DNAPL is not present in the saturated zone and is not present in significant quantities, if at all, in the vadose zone. The preferred alternative includes a contingency to address DNAPL material in the saturated and vadose zone, if found. The two options presented were electric heating and biological treatment. The cost for the heating option is \$175M compared to \$25 M for anaerobic biodegradation. The contingent alternatives for DNAPL contamination have not been fully developed, and their potential for effectiveness has not been adequately evaluated. Further, no criteria were presented for invoking the contingency or deciding between the two options. EPA recommends that the contingencies should not be included in the proposed plan at this time.
5. The preferred alternative includes reinjection of treated groundwater to control plume migration and speed up groundwater restoration. However, it appears that extracted groundwater would not be treated for all contaminants (e.g., tritium, iodine 129) before reinjection. EPA recommends that DOE review the reinjection strategy, which then should be discussed in the proposed plan, along with standards developed for reinjected groundwater.
6. Monitored natural attenuation (MNA) is proposed as a remedial alternative to treat the groundwater contamination in the distal portion of the plume for carbon tetrachloride at the Hanford 200-ZP-1 site. Based on the information provided in the FS, MNA has not been evaluated to the degree necessary to consider it an appropriate remedy for the site. The FS should provide supporting evidence for natural attenuation (e.g., site-specific attenuation mechanisms) and should provide estimates for attenuation rates and timeframes for achieving groundwater cleanup criteria consistent with EPA guidance on MNA. (e.g., Use Of Monitored

Natural Attenuation At Superfund, RCRA Corrective Action, and Underground Storage Tank Sites, OSWER Directive 9200.4-17P April 21, 1999).

7. The FS and proposed plan included a remedial action objective (RAO) to prevent or mitigate risks in groundwater where concentrations exceed ARARs or a 1×10^{-4} cancer risk level. This approach is inconsistent with the NCP's point of departure of 10^{-6} §300.430(e)(2)(i)(A)(2). While a remedial action can be selected that does not meet the point of departure (55 FR 8718), the rationale for doing so should be described in the site decision documents. In particular, the NCP preamble states: "Preliminary remediation goals for carcinogens are set at a 10^{-6} excess cancer risk as a point of departure, but may be revised to a different risk level within the acceptable risk range based on the consideration of appropriate factors including, but not limited to: exposure factors, uncertainty factors, and technical factors." (55 FR 8717, March 8, 1990). Furthermore, the decision documents need to be clear whether the cleanup is based on a risk based number or an ARAR. Risk based radionuclide cleanup levels may be developed using Agency guidance (e.g., electronic calculator entitled: "Radionuclide Preliminary Remediation Goals (PRGs) for Superfund" (<http://epa-prgs.ornl.gov/radionuclides/>)).

8. The FS and proposed plan indicate that five-year review will stop when the 1×10^{-4} cancer risk level based on industrial risk is met. This is inconsistent with the NCP. The NCP requires five-year reviews whenever the selected remedy leaves hazardous wastes, pollutants, or contaminants on site above levels that allow for unlimited use and unrestricted exposure. Exposures associated with industrial land use are not considered unlimited nor unrestricted and such sites would be under some form of institutional control (see "Institutional Controls: A Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups," OSWER Directive 9355.0-74FS-P, September 2000).

9. The proposed plan includes an RAO to "prevent or mitigate occupational health risks to workers performing remedial action." While EPA believes that worker health and safety is extremely important, we note that this issue seems to have been incorrectly identified as a RAO. RAOs specify contaminants and media of concern, potential exposure pathways and remediation goals (i.e., acceptable exposure levels that are protective of human health and the environment (§300.430(e)(2)(i))), but do not typically specify how those goals are met. Worker safety may be addressed under short-term effectiveness as part of the nine criteria analysis, where "potential impacts on workers during remedial action and the effectiveness and reliability of protective measures" is explicitly considered (§300.430(e)(9)(iii)(E)).