

Oregon

John A. Kitzhaber, M.D., Governor



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Mr. Matt McCormick, Manager
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Richland, WA, 99352

Mr. Dennis Faulk
U.S. Environmental Protection Agency
Hanford Project Office
309 Bradley Landing, Suite 115
Richland, WA 99352

Ms. Jane Hedges
Washington Department of Ecology
3100 Port of Benton Boulevard
Richland, WA 99354

Dear Mr. McCormick, Mr. Faulk and Ms. Hedges:

Oregon appreciates the opportunity to review and comment on the *Draft Proposed Plan for the Remediation of the 200-CW-5, 200-PW-1, 200-PW-3, and 200-PW-6 Operable Units*, DOE/RL-2009-117, Revision 0. Oregon has provided formal comments related to these waste sites for the past four and a half years, beginning with the *Remedial Investigation Report* (Draft A and Rev. 0) on December 14, 2006 and November 15, 2007, and continuing with the *Feasibility Study* (Draft B, Reissue) on July 10, 2009. Our previous comments focused in large part on objections to the U.S. Department of Energy's (DOE) findings that leaving all wastes in these waste sites beneath engineered caps would be protective. Oregon was and is joined by many stakeholders in this view. We urge the Tri-Parties to revisit and consider our earlier written comments as the Tri-Parties finalize the *Proposed Plan* and develop a Record of Decision.

Oregon Position on Preferred Remedial Alternatives

High-Salt Waste Group

We are pleased that the Tri-Party agencies have taken previous comments into consideration and the *draft Proposed Plan* includes proposals to excavate contaminated soil and debris from a number of the waste sites. In the case of the "High-Salt Waste Group," limiting the proposed

excavation to “up to two feet” is inadequate and insufficient to ensure long-term protectiveness. In addition, the logic that the Tri-Party agencies provide in the *draft Proposed Plan* to support this proposed action is flawed. Further comments on this waste group are provided below.

Z-Ditches and the Low-Salt Waste Groups.

We support the Tri-Parties’ preferred remedial alternatives for the “Z-Ditches Waste Group” (Remove-Treat-Dispose (RTD)) and the “Low-Salt Waste Group” (RTD Option C).

Settling Tanks Waste Group

For the “Settling Tanks Waste Group,” we support the preferred remedial alternative, but request clarification. The preferred alternative indicates only removal of the sludge, followed by stabilization of the tanks. No mention is made of the 210 gallons of contaminated plutonium-laden liquid waste in the Z-361 Settling Tank. We presume the liquid would be removed and treated with the sludge (especially since it would not be possible to stabilize the tank if it contained liquid). The *final Proposed Plan* should specifically detail the proposed removal, processing and disposition of this liquid.

Pipelines Waste Group

We support the preferred alternative (RTD) for the “Pipelines Waste Group,” provided this includes the entire extent of the pipelines from the originating facilities to termination. The preferred alternative says that pipelines “outside the footprint of the selected remedy” would be excavated and disposed. The Tri-Parties should clarify the language in the *final Proposed Plan* to encompass all of the pipelines as indicated above.

Cesium-137 Waste Group

For the “Cesium 137 Waste Group,” the *draft Proposed Plan* proposes adding additional soil to achieve a 15-foot thick “cap” with the intent for it to be protective of human health for 300-400 years of institutional control. We acknowledge that barriers and caps will have an important role in isolating wastes from workers, the public and the environment at a number of locations at Hanford (as examples, at the Environmental Restoration Disposal Facility (ERDF), the Canyon facilities and the two licensed mixed low-level waste disposal trenches). For liquid waste disposal sites, capping alone is not an approach that Oregon would typically support as it is not a substitute for actual cleanup.

Oregon has long argued that the chemical interactions between contaminants and Hanford's soil are a key factor that needs to be considered when deciding on a remedy. In the case of plutonium, as we have explained many times in the past, we believe that Hanford's soil chemistry can and does result in mobility of certain forms of plutonium. Conversely, cesium generally binds well to Hanford's soil, so we therefore believe the cesium waste sites are unlikely to threaten Hanford groundwater.

The 15-foot barrier and a DOE presence at the Central Plateau for the next several hundred years would likely provide adequate protection from surface intrusion. If DOE cannot commit to a continuing presence within the Central Plateau until the cesium sites have decayed to a safe level, then RTD should be the option selected. The remedy design should include specific detailed provisions to prevent the future application of irrigation and most especially the use of fertilizers. These could mobilize the cesium, invalidate the remedial decision, and threaten the groundwater.

We note that the projected cost differences for the RTD options for these waste sites are not significant, especially if complete life-cycle costs are included as part of the "barrier" option.

Further Discussion of the High-Salt Waste Group

By proposing to remove up to two feet of contaminated soil at the bottom of these waste sites, the Tri-Parties acknowledge that large amounts of plutonium in the near surface pose a risk that must be addressed. The *draft Proposed Plan* points out that "because (plutonium) wastes have longer half-lives, it is disposed of more cautiously than other radioactive wastes," a reference to deep geologic disposal at the Waste Isolation Pilot Plant (WIPP).

The Tri-Parties presume that an arbitrary depth of two additional feet will excavate the "highest concentrations of contaminated soils." The *draft Proposed Plan* does not provide sufficient characterization data to support that assertion. The *Feasibility Study* points out that plutonium was detected up to 121 feet below both the Z-9 Trench and the Z-1 A Tile Field and in significant concentrations well below the two foot mark. We believe that excavating as little as two additional feet within these waste sites, as well as in the Z-18 Crib, will leave substantial amounts of plutonium in relatively shallow burial (the *Feasibility Study* estimates as much as 128 kilograms of plutonium remain in these three waste sites).

The *draft Proposed Plan* provides no assurances or explanation for what criteria would be used to assess whether the proposed cleanup action in these waste sites is protective. For the "Z Ditches," the *draft Proposed Plan* proposes that "sampling would be conducted to verify the remediation meets cleanup standards." There is no comparable language or explanation for the "High-Salt Waste Group." Depth alone – a physical measurement – neither defines nor provides an assessment of risk or compliance with cleanup standards. Depth in inches or feet is an

inadequate way to gauge risk reduction or adequacy of cleanup. The remedial plan should be based instead on specific contaminant concentrations as measures of when additional removal is – or is not – required.

Oregon's disagreements with DOE's position that plutonium does not move in the Hanford subsurface have been long documented through correspondence and meetings over the past several years. We will not repeat those arguments here, other than to point out that even if DOE's position was accurate, given the very long 24,000 year half-life of plutonium 239, there is no way to ensure that soil conditions, climatic conditions, and future surface land use will not change such that it might remobilize the plutonium or move the plutonium containing soil to the surface. Removing the plutonium and disposing of it in WIPP, one-half mile below the surface in an ancient salt formation, does provide that long-term protectiveness.

Oregon strongly advises the Tri-Parties to implement an Observational Approach (as has been applied elsewhere at Hanford) for the "High-Salt Waste Group" sites. We do not know what the sufficient depth of retrieval would be to ensure the bulk of the plutonium is removed, but the Observational Approach will help to answer that question.

The Observational Approach method should be used as the waste sites are exposed to determine the locations of plutonium deposits that require RTD. The adaptive nature of this RTD approach will allow for identification and removal of higher concentrations of plutonium in some soil locations, as well as identification of insignificant contamination in other parts of the waste sites. It appears from the *draft Proposed Plan* that characterization of the trench and crib floors is incomplete, although it has been reported that more concentrated "pockets" of plutonium deposition did occur. The Observational Approach of RTD provides a more effective and efficient process than conducting more extensive characterization prior to remediation.

Excavation of each of the waste sites should continue until cleanup verification data show that the plutonium concentrations in remaining soils are below the concentrations necessary to define transuranic waste and are at a permissibly low level in terms of risk, as has been routinely done for other contaminants at 100-Area and 300-Area waste sites.

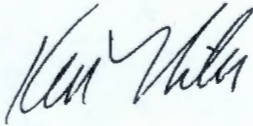
The *draft Proposed Plan* proposes to apply the RTD approach through ordinary excavation methods which would, as a part of these methods, mix (or blend) clean adjacent soil with layers containing concentrated plutonium such that the waste may qualify for disposal at ERDF rather than at WIPP. Oregon strongly recommends that DOE utilize a more "surgical removal" methodology, being careful to avoid dilution of the plutonium deposited layer. This would maximize the amount of plutonium shipped to WIPP, while minimizing the amount of material that needs to be disposed. Placing this waste in geologic disposal is consistent with WIPP's mission and would permanently remove it from the near-surface environment. We do not believe that WIPP's statutory limitations on waste volume and curie content will limit acceptance of additional waste excavated from the "High-Salt Waste Group." In addition, DOE

should work with WIPP to gain approval on classifying this waste stream as "homogenous," to reduce characterization and documentation costs related to disposal at WIPP. *

We support continued operation of the soil vapor extraction system to treat carbon tetrachloride contaminated soils within these Operable Units.

Oregon shares the goal of protective and cost effective cleanup of Hanford, and welcomes the opportunity to help craft this important plan with our comments. Please contact Dale Engstrom, of my staff (503-378-5584), with any questions or comments.

Sincerely,



Ken Niles
Nuclear Safety Division Administrator

c.c. Stuart Harris, Confederated Tribes of the Umatilla Indian Reservation
Russell Jim, Yakama Nation
Gabriel Bohnee, Nez Perce Tribe
Max Power, Chair, Oregon Hanford Cleanup Board
Susan Leckband, Chair, Hanford Advisory Board
Hanford Natural Resource Trustee Council