



Heart of America Northwest

The Public's Voice for Hanford Cleanup

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Comments of Heart of America Northwest and Heart of America Northwest Research Center on the Proposed Final Cleanup Plan for the 100-F Reactor Area along the Columbia River

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Synopsis of our Comments and Failure to Meet Expectations for Public Information, Involvement and Comment:

On behalf of our 16,000 members and on behalf of future generations who will seek to use the Columbia River Corridor we object most strongly to the USDOE's and EPA's "Preferred Alternative" Plan which would deprive the public of unrestricted use of the Columbia River shoreline areas for hundreds of years.

The 100-F/IU Area is where the U.S. Department of Energy's shutdown and "cocooned" F-Reactor sits alongside the Columbia River. The F Reactor produced plutonium for nuclear weapons. The F Area along the River "has a groundwater plume of spent fuel-related contaminants beneath it. ... (There are) 16 (deep soil) sites that contain ...cesium-137, cobalt-60, europium-152 and -154, nickel-63 and strontium-90 contamination at levels considered dangerous to human health."

Now, there are scores of contaminated soil areas grouped into 5 "operating units" and contaminated groundwater.

The importance of this cleanup plan was summarized by The Hanford Advisory Board (HAB), whose [advice](#) we have participated in drafting and support:

"Final Hanford River Corridor cleanup decisions are important because inadequate cleanup actions could potentially impact the Columbia River. The (100 Area cleanup) Plan will provide a template for subsequent River Corridor decisions that follow. It is important to the Board that these decisions are dependable, protective, defensible, and well supported."

How Long Should it Take to Clean Up the Contamination – or, How Long Can USDOE Prevent People From Using the Area and Water?

150 to 264 Years??? That is NOT Reasonable and, indeed, is illegal.

USDOE's Preferred Proposed Plan for the groundwater is not a plan to actively clean up the groundwater. Instead Option "GW-2" would rely on "natural attenuation" and "institutional controls" "to reduce contaminants of concern, and "prevent exposure." The period of restriction to prevent all use of the groundwater is proposed to be 150 years. For soil sites, the Proposed Plan includes restricting use of soil areas for up to 264 years.

USDOE has adopted a strategic plan which it repeatedly touts in public that cleanup of the Columbia River Corridor, the 100 (9 reactor areas) and 300 (fuel fabrication and testing areas), will be completed by 2016.

This has always been an impossibility and a deliberate misleading of the public and Congress as to what constitutes cleanup being completed. USDOE wants to say it is done, but the areas are not cleaned up if unrestricted public uses are forbidden and dangerous for hundreds of years.

If USDOE and EPA adopt the Preferred Alternative for the F Area, under which access to, use of, and exposure to groundwater and shoreline resources will have to be restricted for hundreds of years, such claims will be exposed as meaningless public relation lies. Worse, if USDOE invites the public to use the River Corridor, while these risks remain in place – ultimately leading to likely exposures due to the predictable failure of paper plans to prevent use and exposure ("institutional controls") – the agencies will again be imposing cancer and illness on both the general public and Native Americans seeking to exercise their Treaty Rights to use the Corridor to fish, live along, gather resources and engage in both religious and cultural practices. As such, this Plan will have a demonstrable "disparate impact" in violation of Treaty Rights and anti-discrimination statutes.

This Plan and Preferred Alternative do not meet the EPA's rules for public acceptance, balancing of cost versus long term restrictions, disparate impacts on minority populations, the requirement to restore groundwater to beneficial uses within reasonable timeframes, and numerous other standards.

Nor do the Plan and Preferred Alternative meet Washington State's standards (which EPA must ensure are met), including that permanent cleanup measures must be preferred over engineered barriers, much less institutional control plans. Cost is not allowed to change the allowable risk. The Agencies have ignored the requirement that the risk be measured based on the reasonable likelihood of failure of institutional controls, not based on the unfounded, public relations based claim that the USDOE can prevent exposures to contamination which is not deeply buried and is in the incredibly valuable groundwater resource.

The Plan has absolutely zero public acceptability, which is a part of EPA's mandate for Plan review and approval. For example, at the February, 2014 Hanford Advisory Board Meeting, following a briefing from the TPA agencies, the Board held an impromptu Sounding Board on the 100-F Proposed Plan. Each Board member expressed their expectations for clean-up and repeatedly voiced their concern about the extremely lengthy time that Institutional Controls will have to be maintained and enforced.

At the public meeting on the Plan, not one member of the public agreed that preventing public use and exposure for 175 years was reasonable.

Neither the USDOE materials provided the public nor the presentations at the public meetings revealed that public and Tribal use of Columbia River shoreline areas under the Plan would have to be prevented for 264 years, not the 175 years previously discussed, or the 150 years presented to the public in the public summary of the Plan and hearing presentation. For 264 year restriction requirement, see *Remedial Investigation/Feasibility Study and Proposed Plan for the 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2 and 100-IU-6 Operable Units; DOE/RL -2012-41, Rev. 0*).

The TPA agencies' F Area fact sheet for public notice and comment was factually inaccurate and misleading. The fact sheet presented the "timeline" for alternative plans with a maximum timeframe of 150 years for Strontium 90 to reach today's standards from "monitored natural attenuation" for the groundwater alternatives. The fact sheet stated that the preferred alternative for soil sites was retrieval, treatment and disposal (RTD), with NO MENTION THAT THE CONTAMINATION LEVELS PROPOSED TO BE LEFT IN THE NEAR SURFACE AREAS, particularly 118-F-8, WOULD REQUIRE 264 YEARS OF RESTRICTIONS ON PUBLIC USE.

The Hanford Advisory Board already issued advice that the 175 year period was unreasonable and unacceptable, and is poised to issue stronger advice at its September meeting.

The public notice and materials for comment on the Plan were misleading in failing to disclose the 264 year period for institutional controls.

The "webinar" format for regional public participation in the one public meeting and hearing, held at Hood River in July, was a total failure and misleading to the public and citizen groups.

Had the agencies informed us honestly that no members from the public listening on the phone or web based application would be able to offer public comment, we would never have agreed to the agencies holding just one public meeting on this important Plan. This Plan is so important to the public because it is the first of many "final" cleanup plans to be proposed for the Columbia River Corridor, and because of the Plan's clash with public values for resources, shorelines and groundwater to be cleaned up for unrestricted public use in a reasonable timeframe.

We agreed not to insist on additional meetings based on the expectation that anyone who could not attend the one hearing in person would be able to not only hear and see the presentations, but to fully participate, ask questions and give comments. No one on the phone or webinar was invited to, or enabled to, provide comments.

Not only did the technology fail some people who could not hear, but *the agencies never intended to enable the public to comment on the phone or via web messages to be shared with all hearing attendees during the meeting.*

The detailed comments given by our organizational representatives and members, as well as from all members of the public, should be recorded for the record and properly summarized and responded to. Without recording, we have no assurance that our comments were actually incorporated into the administrative record. All comments by our representatives and members are hereby incorporated into our formal comments. We expect that they will be in the record and responded to.

The comment period should not be closed. Instead, a new Plan should be produced which meets public values for cleanup in a reasonable timeframe, and new public meetings around the region should be held on a new Plan.

150 Years, 264 Years, Indeed 50 Years, are NOT Reasonable Timelines for Cleanup – USDOE has no ability to prevent reasonably foreseeable exposures during such long time frames:

150 years is not a reasonable timeline for cleanup, particularly along the Columbia River shorelines. Leaving contamination in soil sites requiring restricted use for decades, such as 118-F-8:3, with contamination requiring controls to prevent public and Tribal use for 264 years, and relying on institutional controls to prevent exposure to groundwater instead of cleaning up to enable drinking and domestic uses, are not compatible with, and conflict with:

- the designation of the Hanford Reach National Monument;
- CERCLA public acceptance criteria;
- CERCLA standards for when institutional controls can be relied upon;
- Treaty Rights for the three Nations with rights to fish and utilize resources along the Columbia;
- Washington State’s substantive standards¹ requiring cleanup to utilize permanent remedies to the extent practicable – with use of institutional controls as the lowest priority²;
- Washington State standards for use of a reasonable maximum exposure scenario (in this case, the scenario is one that involves full exercise of Treaty rights and unrestricted uses of resources based on the reasonable expectation that institutional controls will fail within decades)³;
- EPA’s own guidance and standards for exposure to residual contamination, including radionuclides and the foreseeable failure of institutional controls, including that the risk level must not exceed one additional cancer for every ten thousand exposed individuals (1E-4) with every effort to prefer plans that prevent exposure below one in one hundred thousand (1E-5);
- Washington State’s risk based cleanup standard for carcinogens – that the risk from residual contamination, summing all carcinogens, including radionuclides, must not exceed one additional cancer for every one hundred thousand exposed individuals under the reasonable maximum exposure scenario (1E-5)⁴⁵;

¹ Under CERCLA, EPA and USDOE must ensure that Washington State standards are met as well as federal standards. Under CERCLA, if any state environmental law establishes a more stringent cleanup standard than Federal law with respect to hazardous substances, and it is “legally applicable or relevant and appropriate” standard, then the CERCLA cleanup must attain the more stringent state standard. *42 U.S.C. § 9621(2)(A)*. Washington law definitively states that MTCA’s cleanup standards, set forth in WAC 173-340-700 to 173-340-760, are “legally applicable” under this section of CERCLA. *WAC 173-340-702* (“When evaluating cleanup actions performed under the federal cleanup law, the department shall consider . . . WAC 173-340-700 through 173-340-760 . . . to be legally applicable requirements under Section 121(d) of the Federal Cleanup Law.”)

² The agencies have failed to even analyze engineering alternatives for this and other contaminated sites with contamination below fifteen feet. This is a per se violation of the standard, since the alternatives were not even considered, such as placing subsurface caps in conjunction with further excavation and use of apatite and phosphates to prevent further migration. The alternatives considered simply go from RTD to institutional controls. As discussed further, the Plan also fails to analyze the reasonable likelihood of failure of the institutional and engineering controls. Standards must be met, under WAC 173-340, based on the reasonably foreseeable failure of such controls. Instead, this Plan illegally and unreasonably assumes that the controls will not fail over decades and hundreds of years.

³ WAC 173-340-708(3):

(a) Cleanup levels and remediation levels shall be based on estimates of current and future resource uses and reasonable maximum exposures expected to occur under both current and potential future site use conditions, as specified further in this chapter.

(b) The reasonable maximum exposure is defined as the highest exposure that is reasonably expected to occur at a site under current and potential future site use. WAC [173-340-720](#) through [173-340-760](#) define the reasonable maximum exposures for groundwater, surface water, soil, and air. These reasonable maximum exposures will apply to most sites where individuals or groups of individuals are or could be exposed to hazardous substances. For example, the reasonable maximum exposure for most groundwater is defined as exposure to hazardous substances in drinking water and other domestic uses.

The reasonable maximum exposure scenario, in accord with this standard, must include exposure to the groundwater and its use in drinking water and other domestic uses – including culturally significant uses, in accord with Treaty Rights to live seasonally along the Columbia River under the Treaties of 1854 for the Yakama, CTUIR and Nez Perce Tribes.

⁴ The Department of Ecology (Ecology) has formally stated that MTCA applies to sites contaminated with radionuclides. See *Department of Ecology Toxics Cleanup Program, Concise Explanatory Statement for the Amendments to the Model Toxics Control Act Cleanup Regulation Chapter 173-340 WAC (Publication Number 01-09-043), 117–18 (Feb. 21, 2001)*. In its official explanatory statement accompanying a MTCA rules update, Ecology clearly and unambiguously stated its position that the law applies to radionuclides: “Ecology believes that MTCA

- The designation of the F Area groundwater and soil sites proposed for over a hundred years of exclusion as part of the legally designated “Shorelines of State Significance”.

The TPA Agencies should, at the least, remove, treat and dispose (RTD) the contamination under waste sites 118-F-8:3 and 116-F-14 for example – in combination with engineered measures, including excavation followed by application of binding chemicals to reduce migration and the unreasonable time period now proposed for exclusion from the area. Monitored Natural Attenuation is NOT reasonable for the Shorelines of State Significance and areas designated for the Hanford Reach National Monument.

The TPA agencies’ response to HAB Advice 268, that “when evaluating all of the balancing criteria, the proposed Alternative (GW-2) is similar to GW-4 in long-term effectiveness and permanence and short term effectiveness,” does not comport with the data and analyses in the agencies’ own RIFS and analyses of alternatives. Use of Pump and Treat technologies is shown as reducing the time period needed to reach standards in every alternative. Further, the analyses failed to consider engineered alternatives for soil sites, which would also reduce groundwater contamination, e.g., use of deeper excavations, followed by injection of binding chemicals, and, then, placing a cap to prevent both water infiltration and inadvertent intrusions.

We agree with, and reiterate, the proposed draft Hanford Advisory Board advice stating that: “Pump-and-treat alternatives, as soon as they are applied, are better at reducing contaminants, better at reducing the overall time needed until cleanup is attained and because they actually remove contaminants from the aquifer, are better at permanence. The 100-F Area alternative evaluation by balancing criteria appeared to be driven, for the most part, by cost. Cost of remediation should not be a criteria which denies their ability to attain unrestricted use of the river corridor, a core Board value. “The RI/FS and Proposed Plan fail to analyze the likely failure of institutional controls over this extended time period, and do not present the resultant exposures and risks resulting from failure. Presenting this information and adopting a Plan which prevents excess risk due to reasonably foreseeable failures of institutional controls, as with engineered remedies, is a substantive requirement from both CERCLA and Washington State’s MTCA.”

The RI/FS and Proposed Plan do not meet requirements to discuss the likelihood of failures of institutional controls over the hundreds of years proposed, and the agencies should adopt a Plan which meets risk based standards for the populations likely to be exposed following the reasonably foreseeable failures of institutional controls.

The Plan must meet the requirements of WAC 173-340-708(3):

- (a) Cleanup levels and remediation levels shall be based on estimates of current and future resource uses and reasonable maximum exposures expected to occur under both current and potential future site use conditions.

applies to the cleanup of radionuclide contaminated sites.” *Id.* at 118. The agency described its reasons for that conclusion. First, the “statutory definition of hazardous substances in RCW 70.105D.020 includes a reference to CERCLA and other laws that address radionuclides.” *Id.* Second, Ecology’s rules already contain “several definitions and Method A table values pertaining to radionuclides.”

⁵ MTCA requires any “known or suspected carcinogens” to be cleaned up to an estimated cancer risk of no less than one in one million (1×10^{-6}). WAC 173-340-705(2)(c)(ii). This cleanup standard may be reduced to one in one-hundred thousand (1×10^{-5}) when there are multiple hazardous substances present at the site, WAC 173-340-705(4), but under no circumstances can it fall below that risk level.

1. The reasonable maximum exposure scenario must reflect substantive compliance with Treaty Rights within a reasonable time period. This includes the Tribal exposure scenarios, which include exposure to groundwater from multiple sources, including drinking, sweat lodges, showers, eating plants and fish...
2. The groundwater under Hanford is the last major water resource in Eastern Washington. The flows of the Columbia River and other surface waters from the Cascades to eastern Washington are projected to drop significantly. This will lead to increased pressures for use of Hanford's groundwater – making the restriction on use for 150 years even more unreasonable and increasing the conflict with the reasonable maximum exposure scenario standards which require planning for the use of the groundwater.
3. The TPA agencies have repeatedly failed to consider in reliance on institutional controls to prevent exposure to groundwater for the 100 F Area and, previously for the 300 Area, that water withdrawals from the Columbia River are illegal. Yet, the USDOE's plans are based on water withdrawals from the River, rather than from groundwater.
4. On the other hand, USDOE proposes to rely on undefined, and unworkable, institutional controls to prevent use of groundwater. The Plan and analyses fail to consider that Washington State has no restrictions or permits required for installation of groundwater withdrawal wells for fairly large numbers of users. Thus, there is no regime under which restrictions on groundwater use would be enforceable or applied.

The Proposed Plan does not meet legal standards, is entirely unreasonable and violates public values in relying on institutional controls to prevent exposures for hundreds of years, and should be rejected. The agencies should adopt a plan that analyzes and includes engineering alternatives in conjunction with much greater retrieval and removal of contamination from soil sites. For groundwater, the sit back and watch the contamination approach, called "monitored natural attenuation" by the agencies to add lipstick to the mask, is unacceptable. We urge adoption of a new variation of Alternative 4 of active groundwater cleanup, plus technologies to remove strontium. Active cleanup measures must be adopted for cleanup and restoration of the precious groundwater resource alongside the Columbia River within a reasonable time period.

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