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Heart of America Northwest Summary Advance Testimony July 14, 2010 to the "Blue Ribbon Commission on America's Nuclear Future"

Thank you for touring Hanford, the most contaminated area in the Western Hemisphere and our nation's most daunting and expensive cleanup challenge. We believe there are many important lessons to learn from Hanford's nuclear waste legacy for our nation to plan responsibly in regard to nuclear waste. Those lessons and challenges for accommodation start with the legacy of reprocessing: Hanford's 54 million gallons of High-Level Nuclear Waste in aging tanks, from which over a million gallons have leaked from at least 67 Single Shell Tanks. But, the lessons and needs for accommodating disposal in deep geologic repositories also extend to the vast quantities of Plutonium, Transuranic (TRU), remote handled and mixed wastes in Hanford's soil, which threaten the Columbia River and health of generations for ten thousand years. USDOE's "baselines" fail to address these needs. It is time to examine which waste currently proposed to remain in Hanford's soil, or proposed to be disposed at Hanford, must be retrieved, treated and properly disposed. Disposing of wastes next to rivers or in near surface landfills above drinkable groundwater is not "proper disposal."

1) Due to legislative limits on the capacity of Yucca Mt. as a national High-Level Nuclear Waste Repository, for fifteen years we have urged consideration of, and planning for, the reality that *all of Hanford's projected vitrified High Activity Wastes and Spent Nuclear Fuel would NOT have been able to be disposed at Yucca Mt, even if it were to be opened and licensed as planned.*

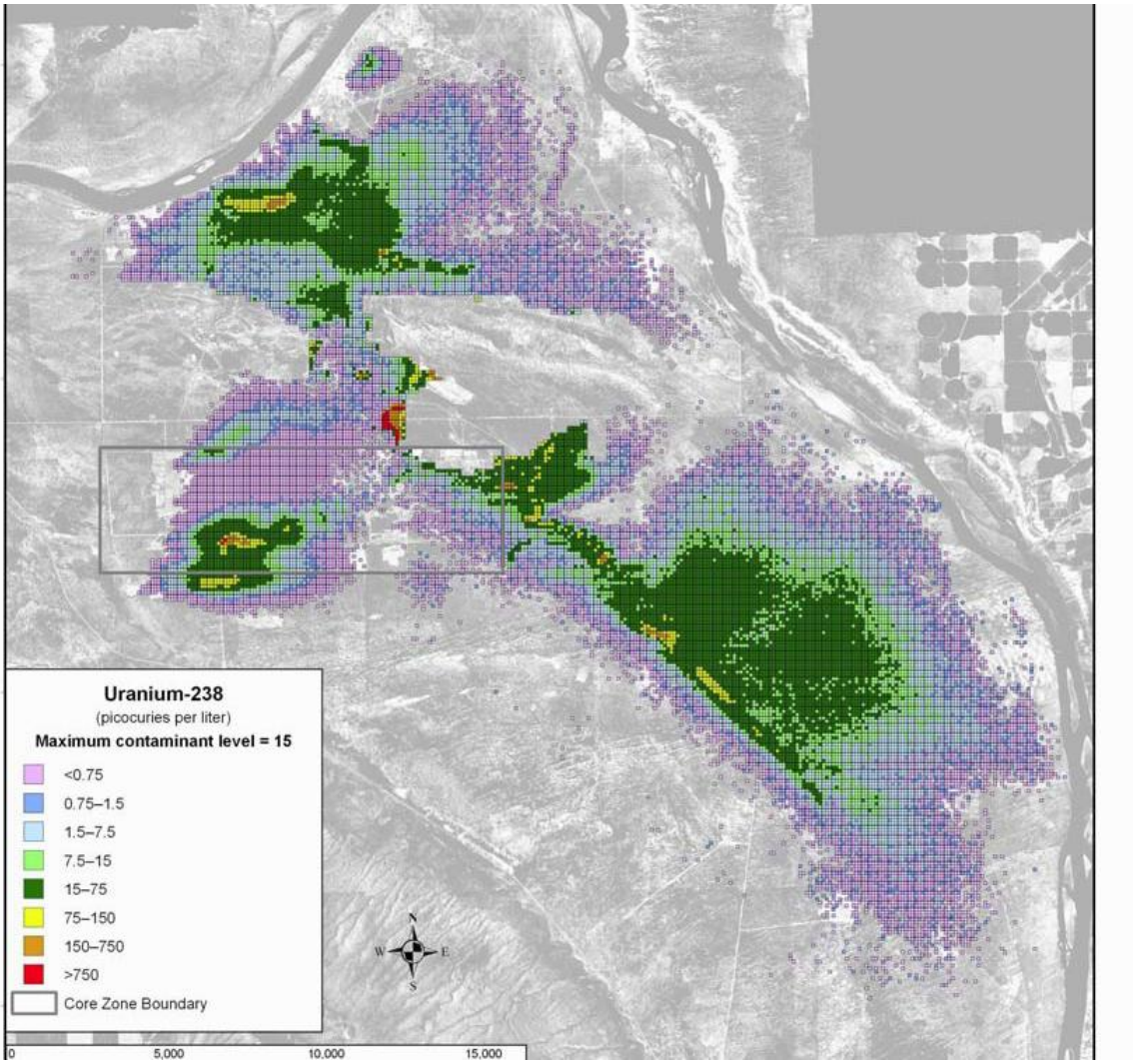
- Therefore, long-term on-site storage capacity for vitrified wastes has always been needed, along with a second deep geologic repository for High-Level Nuclear Wastes. However, USDOE has not historically included such capacity in the site's "baselines".
- Cancellation of Yucca Mt., or withdrawal of the licensing application, does not, by itself, create any greater risk or threat to our Columbia River, groundwater and health since canister storage is relatively straightforward and will be required regardless of Yucca Mt..
- Simply put, USDOE must be required to plan for on-site *storage* of vitrified wastes for decades.
- USDOE's planning basis, which seeks to minimize waste to be sent to an oversubscribed Yucca Mt. repository, has led to poor decisions, excessive costs and delays. USDOE's vitrification technology planning has been driven by avoiding the hypothetical costs of disposal in a hypothetical repository -- leading to extensive, expensive and still unresolved technical obstacles as USDOE seeks to minimize the number of High Activity vitrified glass canisters for disposal.
- Washington State went on record in the early 1980's passing a formal Memorial urging that the federal government conduct a geologic based search for a repository focusing on homogenous deep granite formations of the North American Granite Shield – our Washington State "Granite Memorial."

2) Hanford's Vitrification Plant is $8 billion over budget and not slated to open until 2019; and, will only have capacity to vitrify half of the 54 million gallons of wastes in Hanford's High-Level Nuclear Waste tanks. The "supplemental treatment" debate – whether to vitrify the remaining Low Activity Wastes from tanks ("lLAW") – is one that must be considered by the Commission. USDOE recently issued its draft Tank Closure and Waste Management Environmental Impact Statement (TCWMEIS). The TCWMEIS disclosed:

- If LAW waste is vitrified and disposed in an on-site landfill, along with secondary wastes and the vitrification project wastes, as in USDOE's "preferred alternative", the releases will greatly exceed groundwater, drinking water and cancer risk standards – for thousands of years.
- If the LAW is not vitrified, using USDOE's alternatives, the releases and cancer risks increase by a magnitude or more.

3) There is sixteen times more Plutonium and Transuranic waste in Hanford's unlined "burial grounds" and liquid waste disposal sites than in the "retrievably" stored post-1970 TRU which USDOE is obligated to retrieve and dispose in the deep geologic WIPP repository in New Mexico. There are also large quantities of Remote-Handled wastes needing exhumation and disposal in a deep geologic repository.

- USDOE is driven by its efforts to avoid deep geologic disposal to endless disputes over whether it will characterize and retrieve these wastes from Hanford's soils
- Failure to retrieve and dispose of these wastes in a deep geologic repository will result, as USDOE's own TCWMEIS and other studies show, in severe contamination of groundwater and cancer risks running higher than 5% for Native Americans exercising treaty rights to live along and fish the Columbia River and utilize their treaty rights for inland resources. It is inevitable that the groundwater under Hanford – a vast reservoir of a valuable resource getting scarcer by the year – will be used. And, if used, the cancers and other health impacts will be severe, unless these wastes are retrieved and sent to a yet to be planned deep geologic repository.



USDOE's own projection of Uranium 238 in Groundwater in Year 2135 under its Preferred Alternatives – under which contaminated areas from tank leaks and discharges are capped rather than retrieved. Dark red >50x Drinking Water Standard.

Uranium 238 contamination of groundwater is projected to increase on Central Plateau to 100 x DWS in 1,000 years. Sources include tank residues, leaks, and billions of gallons discharged to cribs.[1]

The Drinking Water Standard is set at a level at which one adult in every ten thousand who drink the water die of cancer. Children are three to ten times more susceptible to cancer than adults from the same dose. This is risk from just one contaminant. Uranium releases in pulses from different sources. Thus, the commercial landfill is projected to release Uranium causing doses of 22 mrem/year and 107 mrem/year to Native American residents in several thousand years, with risk of adult fatal cancer reaching over 50/10,000 (5E-3) from one landfill's Uranium releases alone (source: FEIS Addendum US Ecology, April 28, 2010) Shown: USDOE Tank Closure & Waste Management EIS Figure 6–65.

- **Simply put, the risk budget or carrying capacity of Hanford's soil has been far exceeded. Yet, USDOE persists in its pursuit of using Hanford as a national radioactive waste dump.** USDOE insists that it will implement its 2004 Record of Decision to add another nearly three million cubic feet (82,000 cubic meters) of radioactive and mixed radioactive hazardous wastes to Hanford's soil, despite USDOE's own studies showing that releases from existing wastes and planned landfills will greatly exceed standards.

[1] USDOE Draft TCWMEIS Figure 6-78.

Cumulative Impacts Projected From Existing Wastes Under USDOE Baselines Without Adding More Waste or Considering Tank Wastes

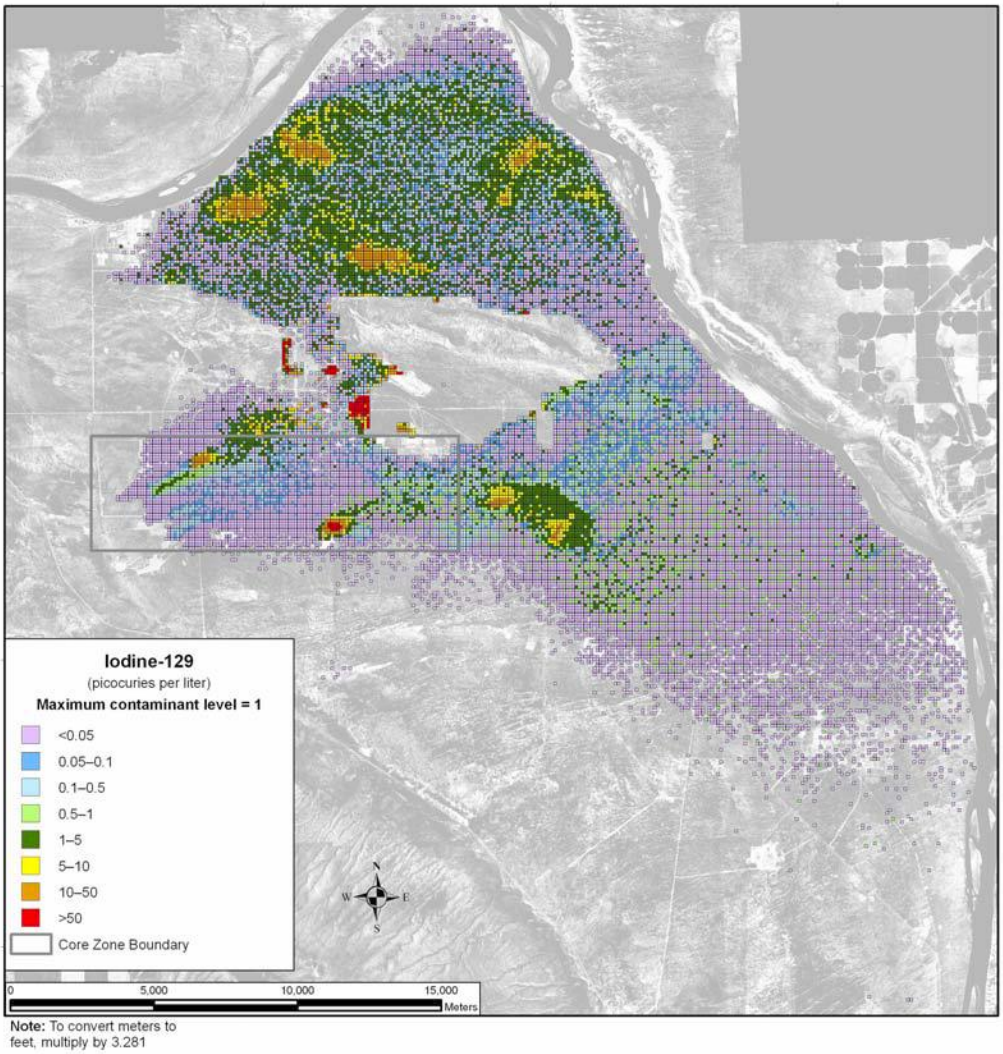
Maximum Peak Year Concentrations of the COPCs from Non–*TC & WM EIS* Sources at the Core Zone Boundary and the Columbia River Nearshore
Top line is concentration; (Peak Year) is in parentheses.

Contaminant	Max concentration Central Plateau Inner (year)	Max concentration River shore (year)	DW Standard or benchmark
Pu (inc 239, 240)	2,660 (11,848)	4,250 (2983)	15 pCi/L
I-129 Iodine	50.9 (4043)	9.1 (4540)	1. pCi/L
Chromium	2540 (2216)	16,100 (1978)	100

USDOE, Draft TC & WMEIS Table U-2

Plutonium concentration in groundwater is projected to be 300 times the Drinking Water Standard along the River shore in the year 2983, and over 160 times the Drinking Water Standard at the Central Plateau Boundary in the year 11,848. this is about the same time period in which peak concentrations of Uranium are projected from the unlined, leaking commercial radioactive waste landfill, for which capping instead of retrieving wastes is proposed. Total cancer risk requires adding the risks from each contaminant.

Using the 200 East IDF landfill at Hanford as a national radioactive waste dump for the wastes analyzed will increase radioactive contamination and cancer risk levels over the next thousand years by tenfold – to 100x WA State's cancer risk standards for toxic cleanup sites.[2]



Iodine in Groundwater in Year 3890: Under USDOE Preferred Alternative, including use of IDF landfill as national waste dump.

- **Tank residues and leaks are not cleaned up (landfill closure);** 200 East IDF landfill only
- Darkest red is >50x DWS
- Table 6-45

[2] TCWMEIS Figure S-21. page S-100. Peak risk shown from inclusion of off-site waste disposed in 200 E IDF is 1E-4 (one additional fatal cancer for every ten thousand adults exposed). WM Alt 3 has a peak fatal cancer risk greater than 1E-3 (one in one thousand) at the Core Zone Boundary. WM Alt 3 includes disposal of offsite waste in IDF West. Neither of these risk estimates includes the additional risks from proposed disposal of River Protection Project Disposal Facility releases, which add between 1E-5 and 1E-4 of additional risk at peak periods. See Figure S-22, page S-101. Nor do these risk estimates include impacts from the disposal of GTCC wastes from other sites, which USDOE is improperly considering in a separate EIS, rather than disclosing and considering in this EIS.

- We have filed suit against USDOE for planning to implement this 2004 decision to use Hanford as a national radioactive and mixed radioactive hazardous landfill. Instead of considering in the draft TCWMEIS alternatives for deep geologic disposal and disposal where there is no potable water underlying shallow landfills, USDOE insisted it would only consider where the shallow landfill at Hanford should be for these wastes.
- USDOE's planning and decision making are blinded by its lack of willingness to see what is so obvious: additional deep geologic repositories are needed. This lesson in terms of USDOE's governance and self regulation of waste disposal is not just seen at Hanford: USDOE insists on continuing to utilize unlined landfills for disposal of radioactive wastes at other sites. ***Self-regulation of radioactive waste disposal by USDOE is a practice that must end.*** The same cancer and health risk standards applied under RCRA, CERCLA and state laws must be applied to USDOE's disposal decisions, instead of far less protective self-set standards under DOE Order 435.1.
- *A new national review is needed to examine the total quantities of all wastes which should be removed from USDOE's soil sites; and, determine the size and scope of deep geologic repositories for these wastes.* USDOE has proven that it will not take that look ahead and change its baselines from "covering up" (capping) vast quantities of wastes (e.g., High-Level Nuclear Waste tank leaks and discharges, unlined burial grounds…) to cleaning up and properly disposing of those wastes.

4) The 54 million gallons of High-Level Nuclear Waste sitting in Hanford's tanks with no treatment in sight are the result of **"reprocessing".**

Rebranding reprocessing as "recycling" can not avoid the lesson from Hanford: **reprocessing creates vast amounts of liquid High-Level Nuclear Wastes.** Those wastes require storage and vitrification, which creates more High-Level Nuclear Waste…. All of which still require deep geologic repositories. Shallow land disposal of these wastes, as proposed in USDOE's 2008 draft GNEP EIS, will contaminate large areas and cause untold illness.

Reprocessing of Spent Nuclear Fuel is not a "solution" for High-Level Nuclear Waste. Repositories are still needed.

The nation needs to search for several deep geologic repositories for several types of radioactive wastes. Projections of the quantities of highly radioactive "GTCC" and "Remote Handled" wastes needing disposal show a need for additional repositories. USDOE's current plans to bury an additional 3 million cubic feet of waste at Hanford, and USDOE's pending proposal in the GTCC EIS for shallow land disposal at Hanford or another USDOE site, will, as shown above, greatly increase contamination and risks. The risks and contamination levels from existing wastes are already projected to be unacceptable for 10,000 years unless a great deal more waste is exhumed from Hanford for disposal in repositories and sites that are not above drinkable groundwater.

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Heart of America Northwest is the region's premiere Hanford Clean-Up watchdog group with 16,000 members in Washington and Oregon. Board members represent concerned citizens across the region, including Spokane City Council members Bob Apple and Amber Waldref. The organization is responsible for the majority of public notice and comment at meetings around the region regarding Hanford, and spearheaded the 2004 Washington State ballot initiative to require cleanup and compliance for existing wastes before more waste is added to contaminated sites. Heart of America Northwest is the recipient of the 2010 University of Washington School of Public Health Community Service award. Extensive comments and powerpoint presentation on USDOE's draft TCWMEIS along with reports and Citizens' Guides are available at www.hoanw.org (click on publications and presentations).