Heart of America Northwest
Comments to Washington Department of Ecology on
Proposed Permit for US Department of Energy Hanford Site's Test Bed Initiative
April 24, 2024
Submitted via Ecology comment form:
https://nw.ecology.commentinput.com/?id=tNePGUiA5
Respond to gerry@hoanw.org and office@hoanw.org
Heart of America Northwest submits these comments on behalf of our thousands of members across the Northwest.

Overview:

The Test Bed Initiative (TBI) is the only proposal that may prevent further High Level Waste tank leaks by speeding removal of leakable wastes from tanks. TBI is also the only option to reduce the total amount of waste disposed in landfills at Hanford, which will otherwise leak and contaminate groundwater which flows to the Columbia River:

The US Government Accountability Office (GAO) recently published an excellent brief summary report on the opportunities to greatly lower costs and speed up treatment of the "low activity" radiation liquid waste in Hanford's high level waste tanks by treating and disposing of some of the waste **offsite**. ***The waste would be disposed of at licensed sites in either Utah or West Texas where – unlike Hanford – disposal would not pose any threat to groundwater.***

This **applies only to the "low activity waste" (LAW)** which comprises about 95% of the volume in Hanford's tanks but only about 3% of the radioactivity. It is also the liquid driver for leaks. The "high-activity waste" is required to be vitrified for disposal in a deep geologic repository. The current plan for LAW is vitrification and disposal in a landfill at Hanford, but the vitrification plant does not have the capacity to treat much of the LAW waste and the cost to build another "is currently cost prohibitive."

The GAO estimates that this alternative of grouting and disposing of the waste offsite, referred to as the "Test Bed Initiative," could save tens of billions of dollars and speed removal of waste from tanks by decades. https://www.gao.gov/products/gao-23-106880

Liquid waste from Hanford's High-Level Nuclear Waste tanks should not be trucked through Spokane! Trucking liquid waste through Spokane and for 900 to 1,900 miles creates an unnecessary risk. Ecology has a duty under the State Environmental Policy Act (SEPA) and the HEAL Act (environmental justice) to avoid and mitigate this risk by requiring USDOE utilize the readily available alternative that would allow for the Test Bed Initiative (TBI) to proceed on the same timeline and with the same outcomes by treating and solidifying the waste at the licensed Perma-Fix NW facility adjacent to Hanford before it is trucked for disposal.

Hanford's leaking High Level Nuclear Waste tanks cannot continue to be ignored. The Test Bed Initiative (TBI) offers the opportunity to remove leakable liquids from tanks that are leaking today or are likely to start leaking soon.

We strongly support proceeding with TBI, but SEPA must be followed. Performing SEPA review and adding required mitigation should not cause a delay in the demonstration.

There is no SEPA documentation accompanying the permit and permit documents. We have reviewed USDOE's Determination of Nonsignificance in anticipation that Ecology will respond that it is relying on /adopting that Determination. However, as we discuss that is not adequate because SEPA – unlike NEPA – requires consideration and adoption of mitigation measures.

We are willing to discuss having Ecology apply its SEPA requirements and apply required mitigation measures for a further authorization of TBI beyond demonstration for the 2,000 gallons (if the demonstration is successful) if Ecology commits to meeting its SEPA obligations for a full program to speed removal of liquids from tanks with the In-Tank Pretreatment System (ITPS) followed by offsite disposal through adoption of required mitigation measures to reduce transportation risks for the full program.

Hanford's groundwater and the Columbia River will be contaminated for thousands of years if all the "low activity" waste that is currently planned to be removed from Hanford's tanks is disposed in landfills onsite.

The "Test Bed Initiative" (TBI) offers the first hope for speeding up removal of leakable liquids from tanks decades ahead of current plans for vitrification (glassification) and for reducing how much waste is disposed in landfills along our Columbia River at Hanford.

TBI will test if 2,000 gallons can be removed from a High Level Waste Tank[1], solidified and treated to be disposed at sites where there is no drinkable groundwater at risk of being contaminated from leachate (the sites are in West Texas or Utah).

The US Department of Energy (USDOE) can solidify and treat the waste at a licensed facility next to Hanford so that there is no risk from spilling liquid waste in a truck accident in Spokane on I-90.

Instead, USDOE wants to ship the waste as a liquid through Spokane for either 900 or 1,900 miles to be treated in Utah or Texas. USDOE's decision to not truck the liquid waste through

---

[1] Other commenters appear unaware that the waste being removed from SY-101 is low activity supernatant representative of the liquids which drive releases from tanks after tanks develop leaks. The In-Tank Pretreatment System can be utilized for either supernatant or with (TPA approved document recommendation to utilize) enhanced salt well pumping for leaking tanks to remove leakable liquids. The waste must be treated to waste acceptance criteria and to meet RCRA LDR requirements. Each waste stream from subsequent tanks will undergo sampling prior to treatment to adjust the treatment to ensure both sets of standards are met. This is the standard operational procedure under RCRA.
Further, numerous commenters appear to not have been informed that current plans would result in tremendous quantities of secondary and other wastes which originate from Hanford's tanks being disposed in landfills without being vitrified. Full scale implementation of TBI would greatly reduce the waste streams which would be disposed onsite at Hanford without vitrification. The choice is not between vitrifying all wastes being disposed onsite versus offsite disposal. Rather the choice is offsite disposal versus large amounts of waste which is not vitrified being disposed onsite in addition to the vitrified LAW.

Oregon and the reservation of the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) is an applaudable recognition of the risks from trucking liquid waste from Hanford's High Level Nuclear Waste tanks.

But **USDOE's decision not to truck the waste through Oregon adds hundreds of miles to the transportation routes to Utah or Texas, requires trucking through Spokane, and significantly increases risks. Neither USDOE nor Ecology has considered the increased risks. The risk of a "crash" on the longer route to Texas is one in every 730 trips.**

As we document in the detailed portion of our comments, **USDOE also failed to consider the chemical hazardous waste constituents of the untreated liquid wastes in regard to trucking accidents.**

The Umatilla Tribe (CTUIR) objects strongly to shipping the liquid wastes through their Reservation or through Spokane:

> "The current plan to transport waste in liquid form poses for us an unacceptable risk of spills and harm to the environment, First Foods, and our citizens. The current proposal is especially disappointing given that shipping waste in a grouted, immobile, solid form is a viable and much safer option.
>
> **"To be clear, the CTUIR requests the following:**
>
> 1. Do NOT ship liquid Hanford tank waste across the Columbia Basin. Only ship this waste in GROUTED/SOLID form.
> 2. Move forward with large-scale grouting and out-of-state disposal as soon as reasonably allowable to decrease the risk of leaking Hanford tanks on the CTUIR's treaty-protected resources."

CTUIR Board of Trustees Chair Kathryn Brigham to Energy Secretary Granholm, October 2023.

We agree with the CTUIR. Ecology and Washington State should as well.

Ecology and Washington have not attempted to meet our state's obligations to protect residents in Spokane and address the concerns of Tribes in regard to trucking the wastes through ceded lands to which Tribes have Treaty rights to utilize resources.

Heart of America Northwest spent decades fighting USDOE's plans to truck more waste to be dumped at Hanford, including successfully stopping shipments through Spokane. Washington state joined us in that legal effort – which included holdings that USDOE had an obligation to do route specific risk and impact analyses.

The TBI is our first hope to remove waste from Hanford, instead of adding more risk to Hanford's groundwater and the Columbia River,

To be clean: TBI does not involve disposing of grouted waste at Hanford.[2]

[2] Numerous comments submitted appear to be based on an assumption that all wastes originating from the tanks will be vitrified, and the commentors appear to not have been informed that current plans would result in tremendous quantities of secondary and other wastes which originate from Hanford's tanks being disposed in landfills without being vitrified. Full scale implementation of TBI would greatly reduce the

We urge that Ecology act promptly on the TBI R&D permit and authorize TBI to proceed with the 2,000 gallon demonstration. But this must be done safely by only trucking solid, treated waste with very low radioactivity – not trucking untreated liquids through Spokane and other vulnerable communities and Indian Reservations.

More detailed comments on the TBI R&D permit:

- Ecology has failed to consider and minimize transportation risks. In particular, Ecology has not considered that the transportation risk will increase by magnitudes if, as we hope, TBI demonstrates that offsite treatment and disposal can succeed.
- Ecology has a duty under SEPA and the HEAL Act to reduce / mitigate the risks from transporting liquid radioactive wastes from Hanford' High Level Nuclear Waste tanks and potential significant impacts from such liquid transportation on Spokane residents, including overburdened communities and highly impacted populations. This duty to mitigate has not been addressed.
- If the permit required treatment at the closest licensed facility offering to accept the waste to be treated to meet the applicable LDR standards for disposal (following any EPA variance), then there would be no need to have conditions in regard to the waste being returned to Hanford.

  These three key comments are addressed in depth with documentation below.

- The Permit should allow for reuse of ITPS pump arm installation in the same tank (SY-101) by maintaining it in place while awaiting final review of the 2,000 gallon test and potential permitting of pumping additional wastes from the tank or another tank with In-Tank Pretreatment System.
    - Rather than requiring removal and disposal of the pump arm and equipment - wasting funds and time - the permit should allow for removal and installation in another tank for removal of supernatant or in a leaking tank (e.g., T-111 or B-109) with appropriate lengthening of the pump column.
    - The current permit calls for "closure" with removal of the ITPS and storage of the ion exchange column (IXC) on the IXC storage pad permitted for the Tank Side Cesium Removal program. Section II.H.[3]
    - If the ion exchange column in the ITPS is not at, or close to, capacity, removal for storage and disposal is wasteful since the ion exchange column (IXC) can continue to be utilized for further extraction of cesium from low activity liquid waste withdrawal from SY-102 if the test succeeds and further use of ITPS is permitted for removal and offsite disposal of ITPS treated low activity waste from tanks

---

waste streams which would be disposed onsite at Hanford without vitrification. The choice is not between vitrifying all wastes being disposed onsite versus offsite disposal. Rather the choice is offsite disposal versus large amounts of waste which is not vitrified being disposed onsite in addition to the vitrified LAW.

[3] The EA for TBI only considered removal of the equipment following removal of the 2,000 gallons from Tank SY-101: "After the completion of the TBI Demonstration, aboveground pieces of equipment would be removed, and, although the DOE has not yet determined the disposition of the ITPS," EA page 3-23.

- Allowing for continued use of the ITPS arm and resin column (if not saturated) is consistent with Ecology's own waste management prioritization requirements. Waste reduction is the highest priority of Ecology solid and hazardous waste management plans, as required by RCW Chapters 70A.300 and 70A.205. RCW 70A.300.260 mandates that waste reduction is the top priority for "management and regulation" of hazardous waste.
    - If SEPA was properly complied with, Ecology and the applicant would have considered and the public would have an evaluation of the potential to reduce waste generation through reuse of the arm and equipment, rather than mandating disposal without the potential for reuse. Reuse not only reduces the cost for procurement of new equipment but reduces the disposal of High-Level Waste in the ERDF landfill.
        - If TBI sets a precedent that ITPS equipment is disposed in ERDF without reuse, this would result in the potential for many sets of ITPS pump arm installations being disposed.
- The draft permit requires adequate "leak tightness" and installation integrity assessment in Section IV.A to be confident that keeping the pump arm and associated equipment in place will be safe for the period of time in which the results would be validated, and additional permitting would occur.
- Closure can be required in accord with all conditions when either: a) all ITPS retrievable pumpable liquids have been removed from SY-101 following additional permitting; or, b) it is determined that the TBI test was not successful and will not continue or have new permits issued.

- USDOE identified two hazardous organic constituents in the small grab sample taken from SY-101 for purposes of the Environmental Assessment:
    - benzyl butyl phthalate (BBP)
    - bis(2-ethylhexyl) phthalate (DEHP or Di(2-ethylhexyl)phthalate)

  USDOE identified two hazardous wastes identified as "characteristic wastes": chromium and selenium. USDOE NEPA Environmental Assessment (EA) for TBI, March 2023 at 2-3.

  The grab sample was small and not likely to represent the full universe of hazardous constituents in the waste which would be trucked as a liquid for hundreds or thousands of miles under the proposal. This poses significant risks which have not been analyzed at all for purposes of NEPA and SEPA, including the route specific risks from transport through the city of Spokane.

Transportation Risks have not been considered and Ecology has a duty under SEPA to mitigate those risks by ensuring that liquid waste is not trucked through Spokane because there is a mitigation alternative that eliminates that risk:

USDOE intends to truck the liquid wastes removed from Hanford's High Level Nuclear Waste tanks to treatment facilities in either Utah or Texas. USDOE's Environmental Assessment falsely presents the transportation distances as 640 miles and 1,800 miles, respectively.[4]

As we document below, USDOE's decision to not truck the liquid wastes through Oregon adds hundreds of miles to the route and requires trucking the liquid wastes through the center of Spokane, and over major tributaries of the Spokane River, on I-90.

While the probability of an accident causing a release are low, the consequences or impacts of a release could be very high, particularly from an accident in Spokane (downtown or in low income "overburdened" or "highly impacted" communities), on a bridge over a stream, or on a Reservation.

> USDOE has previously been required to consider route specific risks for transportation of mixed radioactive hazardous wastes to Hanford, specifically involving routes through Spokane, Washington. Spokane poses unique transportation risks due to geography and transport routes (by truck or rail, although rail is not currently considered) requiring descent over the Spokane River into and through downtown Spokane within a few hundred feet of the region's major hospitals and a high school, along with other regional economic infrastructure and communities which Ecology and the state Department of Health have identified as being amongst the most "overburdened" and "highly impacted" communities in Washington pursuant to Washington's environmental justice legislation, the HEAL Act.

- There has been no consideration in the record of the potential additional harm to overburdened communities from a transportation accident involving liquid wastes from Hanford. Ecology has a duty to consider the environmental justice aspects of the proposed major action of permitting as part of the transportation analysis.

- Even if radiological risk from a spill in Spokane involving the licensed liquid waste totes or containers is extremely low, and the likelihood is low, the harm done to overburdened communities, required evaluations, and economic activity in Spokane would be severe. The origin of the liquid wastes is Hanford's High Level Nuclear Waste tanks. Reports regarding a spill will include that source and are likely to cause reasonable evacuations, disruption and long-term reputational and other harm.

- There is no meaningful distinction in risk between transportation to or from Hanford. Nonetheless, the permit requires return to Hanford of any wastes for which a LDR variance is not granted for disposal, any wastes failing to meet LDR disposal requirements or disposal site waste acceptance criteria, and any waste that is not treated for any reason. This may include untreated liquid wastes. Thus, the analysis should include route specific risks to and from Hanford.

---

[4] USDOE NEPA EA for TBI at 3-26.

- USDOE's analyses failed to consider any of the potential health, environmental and economic effects from a spill of the untreated liquid wastes due to their chemical hazardous waste constituents. Above we report on the sampling from SY-101 which documented presence of benzyl butyl phthalate (BBP), bis(2-ethylhexyl) phthalate (DEHP or Di(2-ethylhexyl)phthalate) and two "characteristic wastes": chromium and selenium. USDOE NEPA Environmental Assessment (EA) for TBI, March 2023 at 2-3.

- Ecology has a duty under SEPA to consider the relative risks from the alternatives and to mitigate the risks. USDOE had no obligation to mitigate transportation risks under NEPA. Ecology does have such an obligation to mitigate risks and avoid or reduce potential impacts under SEPA, Thus, Ecology cannot simply adopt the USDOE EA for TBI, much less for any expanded program to treat and dispose of low activity tank waste removed from tanks with ITPS pretreatment.

  The USDOE EA found that the distance liquid wastes would be transported offsite under the three alternatives[5] would be:
  a. Perma-Fix NW: 1.2 miles (EA at 2.5)
  b. WCS, Andrews County, Texas: 1,800 miles (EA at 2-7)
  c. Envirocare, Utah: 650 miles (EA at 2-8)

  However, USDOE has publicly ruled out trucking the liquid wastes through the Confederate Tribes of the Umatilla Indian Reservation and state of Oregon on I-84 due to their objections over trucking liquid wastes.

  This means that the route that USDOE will utilize is I-90 through Spokane, increasing the distance to the Utah facility by 33% to 962 miles; and increasing the distance to WCS in Texas by approximately 300 miles. USDOE failed to present or discuss the risks and concomitant increase in likelihood of an accident due to the increased mileage from routing through Spokane and avoiding Oregon in the EA.

- **USDOE's own statistics reveal that the risk of an "accidental crash" involving a truck carrying liquid radioactive chemical waste from Hanford to WCS in Texas (via I-90 through Spokane) would be one in 730.**

  This is far from a tiny, hypothetical risk.

  > Source for the "crash" risk estimate: USDOE estimates "the probability that an accidental crash would occur during the 2,450-mile trip would be about 1 chance in 1,140 (FMCSA 2019)" for the route to the alternative utilizing a facility in Tennessee. EA at 3-30.

[5] The EA's fourth alternative of treatment at Perma-Fix Tennessee is moot since the company has offered to treat the waste at the licensed facility just 1.2 miles on public roads from the Hanford site. Perma-Fix NW is the facility that conducted the first successful demonstration of the treatment and solidification that preceded the proposal for TBI's 2,000 gallon demonstration.

Adjusting for two shipments at 1,900 miles for the route to Texas results in a risk of 1 "crash" in 729.6 trips if we accept all of USDOE's assumptions.

- The Test Bed Initiative is a test of a much larger program (which we wholeheartedly support) to remove waste from Hanford's leaking Single Shell Tanks for offsite treatment and disposal at a facility where there is no potable groundwater at risk of being contaminated if the waste leaches out of the landfill. For the first time, the total risk to groundwater from waste disposed at Hanford would be reduced. Waste disposed in Hanford's landfills will leach and contaminate groundwater that flows to the Columbia River. Contamination from solidified waste removed from Hanford's tanks and buried in Hanford's IDF landfill is projected to contaminate groundwater above today's Drinking Water Standards for thousands of years. Removing large amounts of waste from tanks which are leaking today or likely to leak in coming years is a tremendous benefit along with reducing the total contamination risk from treated waste put into the IDF landfill if the TBI demonstration succeeds.

  As one step in a larger program, NEPA and SEPA require that USDOE and Ecology both consider the potential impacts from the full possible program, not just a small test. "Piecemealing" the analysis is not appropriate.

  Thus, it is inadequate to consider in a piecemeal fashion the risk only from a couple of truckloads of liquid waste instead of the risks from thousands of truckloads going through Spokane.

At minimum, Ecology must commit to:

1. requiring mitigation of the potential risk from trucking thousands of shipments of liquid waste be requiring the waste to be solidified and treated at a licensed facility that has demonstrated it can perform the treatment with just 1.2 miles of transport on public roadway rather than thousands of truck shipments going 900 or 1,900 miles on public roads, including through Spokane;
2. Issue a Mitigated Determination of NonSignficance (MDNS) imposing conditions for the liquid waste to be solidified and treated at the closest licensed available facility, which is just 1.2 miles away from Hanford, rather than trucking liquids through Spokane for 900 or 1,900 miles;
3. analyze the potential impacts and risks from trucking mixed radioactive and chemical wastes through Spokane;
4. consider and avoid increasing the potential harm already imposed on the low income, overburdened and highly impacted communities in Spokane and on Tribal Reservations if liquid wastes are trucked through Spokane or the CTUIR Reservation, as required by the Washington HEAL Act and SEPA;
5. consider and mitigate the potential impacts from a truck accident involving the chemical hazardous wastes present in untreated tank waste liquids, which USDOE failed to consider in its Environmental Assessment;
6. revise the permit to allow for the ITPS pump arm to be used to extract liquid waste from Tank SY-101 or to be deployed in another tank rather than requiring it to be removed after only the 2,000 gallon test quantity is removed.

USDOE's Failures to meet requirements of NEPA cannot be ignored by Ecology and must be corrected with SEPA review by Ecology in permitting:

- In the EA for the TBI, USDOE failed to consider any risk to surface waters from accidental release during transportation. USDOE did not consider accident rates for descent into Spokane on Interstate 90 over the Spokane River. USDOE did not consider any release during transportation as a potential risk for "water resources." EA Table 3-1 "Resources Areas Eliminated from Detailed Analysis."

- USDOE failed to consider environmental justice and socioeconomic impacts from the program involving trucking liquid radioactive chemical wastes originating from Hanford's High Level Nuclear Waste tanks in the event of a reasonably foreseeable accident.

- USDOE's EA eliminated consideration of "Socioeconomics and Environmental Justice" issues. EA Table 3-1 "Resources Areas Eliminated from Detailed Analysis."

- Ecology has a duty to consider the potential effects from a reasonably foreseeable, low likelihood, accident (or deliberate act) releasing liquids during a trucking accident with wastes originating from Hanford's High Level Nuclear Waste tanks.

- Ecology also has a higher duty to consider the environmental justice issues raised by the potential for a truck accident (even without a release) in overburdened and highly impacted communities. Ecology has a duty to consider those impacts specifically during permitting for a project or program that would occur within or impact the overburdened or highly impacted communities.

  The HEAL Act requires consideration of the potential impact on Tribes and reservations amongst overburdened and highly impacted communities. This duty of care and avoidance / mitigation extends to the reservation of the Confederated Tribes of the Umatilla Indian Reservation (CTUIR). If liquid wastes are moved via the most direct trucking route from Hanford to the Utah and Texas facilities, the wastes would be trucked through the reservation of the CTUIR in Oregon – including a highly dangerous pass.

  The CTUIR have ceded lands to which they retain extensive treaty rights in Washington, including at Hanford. Ecology must consider and mitigate against trucking of liquid radioactive wastes through the CTUIR reservation and ceded lands.

  USDOE has apparently committed to avoiding use of I-84 through the CTUIR reservation and Oregon for trucking the liquid wastes from TBI.

  The CTUIR have forcefully written USDOE and Washington State objecting to trucking liquid wastes through Spokane. Unselfishly, the CTUIR wrote USDOE urging not only that liquid wastes should not be transported through their Reservation but that liquid wastes should not be trucked through ceded lands to which they or other Tribes retain treaty rights, including through Spokane:

  > "The Confederated tribes of the Umatilla Indian Reservation (CTUIR) call on the US Department of Energy (DOE) to grout liquid hazardous waste from the Hanford Test

Bed Initiative into a solid cementitious form before it is transported to an out-of-state permitted disposal facility.

"Ensuring this waste' s safe transportation off Hanford and across Tribal ceded lands in the Columbia Basin is critical. The current plan to transport waste in liquid form poses for us an unacceptable risk of spills and harm to the environment, First Foods, and our citizens. The current proposal is especially disappointing given that shipping waste in a grouted, immobile, solid form is a viable and much safer option.

"To be clear, the CTUIR requests the following:

1. Do NOT ship liquid Hanford tank waste across the Columbia Basin. Only ship this waste in GROUTED/SOLID form.

2. Move forward with large-scale grouting and out-of-state disposal as soon as reasonably allowable to decrease the risk of leaking Hanford tanks on the CTUIR's treaty-protected resources.

The DOE must fulfill its Trust obligation to protect Tribal lands and interests. The risks posed by transporting liquid waste through sacred ancestral lands are unacceptable to the CTUIR."

Confederated Tribes of the Umatilla Indian Reservation (CTUIR), Board of Trustees Chair Kathryn Brigham to Secretary of Energy Granholm, October 30, 2023.

Ecology has a duty under SEPA to mitigate those potential impacts from transportation and potential impacts on Tribes and overburdened or highly impacted communities.

Ecology's duty to mitigate extends to both overall transportation impacts (such as a release into a stream or the Spokane River or the impacts of a closure of I-90 in downtown Spokane along with evacuation) and to mitigate or avoid the potential for adding impacts in overburdened and highly impacted communities or to Tribes.

Ecology and USDOE have an obligation under SEPA and NEPA, respectively, to consider alternatives to the proposal. **The alternative which reflects the best possible mitigation for the transportation risks and avoiding risks to overburdened or highly impacted communities is treating and solidifying the waste utilizing a licensed and proven facility offering its services requiring trucking for just 1.2 miles of public road from the Hanford site – a route used hundreds of times a year for more highly radioactive and hazardous wastes brought to Perma-Fix NW for treatment.**

The other alternatives require trucking liquid mixed radioactive and hazardous wastes 650 or 1,800 miles in liquid form instead of applying legally required mitigation to truck the waste in solid form. Trucking these wastes for disposal in solid form after treatment reduces the risk to levels that do not require specific analyses.

Trucking the waste as an untreated liquid with a mixture of toxic chemical waste constituents and radionuclides also requires consideration of the potential for doubling

the mileage shipped as a liquid if the waste is not treated at either Envirocare or WCS due to permitting or technical challenges. Thus, the potential risks from trucking the wastes doubles.

This was never considered by USDOE or Ecology.

Without any analysis, USDOE dismissed and eliminated consideration of environmental justice and socioeconomic impacts (EA Table 3-1) stating:

> "There would be no disproportionately high and adverse impacts on minority or low-income populations. Transportation routes would be expected to follow the most efficient routes from Hanford to the MLLW treatment or disposal facilities and would maximize use of the U.S. Interstate highways."

The most elementary analysis of truck routes following "the most efficient routes" to Texas or Utah facilities, however, would reveal that the routes do go through either the CTUIR Reservation or one of the lowest income and most overburdened communities in Washington in Spokane.

USDOE has eliminated trucking through Oregon – leaving only I-90 through Spokane.

Ecology has a duty to require analysis of the risks from trucking liquid waste through Spokane and to impose mitigation. The available mitigation is the solidification and treatment of the wastes – at a licensed and available facility just one mile from Hanford - before being trucked 650 or 1,800 miles to be disposed in Utah or Texas, as urged by the Confederated Tribes of the Umatilla Indian Reservation.

Chromium VI (which the EA assumes is 100% of the chromium in the waste) and phthalates (BPP) are toxic to aquatic organisms. The potential harm from a spill from a truck accident into a River, stream or wetland have not been analyzed.

The EU classifies BPP as a reproductive toxicant[6] and California classifies it as a developmental toxicant.

DEHP is both a reproductive toxin and carcinogen.[7] Both pose inhalation irritation hazards which would require evacuation or restriction in an urban release setting.

USDOE's EA only considered radiological risks from trucking the waste for treatment and disposal, and ignored potential impacts from the chemical hazardous waste constituents:

> "Because only MLLW would be transported off the Hanford Site, this EA focuses on LLW transportation, which accounts for the radiological portion of the MLLW. Transportation of LLW (including MLLW) is strictly regulated."

---

[6] See European Chemicals Agency, 2010, "EVALUATION OF NEW SCIENTIFIC EVIDENCE CONCERNING THE RESTRICTIONS CONTAINED IN ANNEX XVII TO REGULATION (EC) NO 1907/2006 (REACH) REVIEW OF NEW AVAILABLE INFORMATION FOR benzyl butyl phthalate (BBP) CAS NO 85-68-7 EINECS NO 201-622-7"

[7] National Institutes of Health, PubChem.

USDOE's analysis of transportation risks in Section 3.7.2 of the NEPA EA only discusses radiological risks. USDOE failed to consider any risks from the chemical dangerous waste constituents in the liquid in the event of an accident.

Ecology has a duty to consider and require full disclosure of an analysis of the chemical risks from transportation UNLESS, in a Mitigated Determination of Nonsignificance (MDNS) issued pursuant to SEPA, Ecology mitigates the transportation risks by requiring that the wastes be solidified and treated at the nearest licensed and available facility, which involves only 1.2 miles of public road use.

USDOE's NEPA Environmental Assessment for the Test Bed Initiative acknowledges that trucking waste after it is solidified and treated at Perma-Fix NW (requiring only 1.2 miles of public roadway transportation prior to solidification and treatment) significantly reduces the radiological dose to both public along the truck route and driver.

The Research and Development permit is not categorically exempt for purposes of a threshold determination or Ecology's authority to require mitigation pursuant to SEPA in order for Ecology to issue a Determination of Nonsignificance.

> WAC 197-11-800(17) provides for an exemption for research which is clearly limited to research and information gathering. The current permit is to authorize removal of waste from a hazardous waste tank, treatment and transportation followed by disposal. This is far outside the scope of the exemption:
>
> > (17) **Information collection and research.** Basic data collection, research, resource evaluation, requests for proposals (RFPs), and the conceptual planning of proposals shall be exempt. These may be strictly for information-gathering, or as part of a study leading to a proposal that has not yet been approved, adopted or funded; this exemption does not include any agency action that commits the agency to proceed with such a proposal. (Also see WAC **197-11-070**.)
>
> The "demonstration" portion of the permit's authorization places this far outside the scope of the categorical exclusion.
>
> **A Mitigated Determination of Nonsignificance would be appropriate** so that a full environmental impact statement need not be prepared unless the demonstration succeeds and USDOE proceeds to propose large scale use of ITPS and offsite treatment and disposal. **The mitigation necessary to avoid a DNS is minimization of the offsite trucking of liquid waste that originated from Hanford's High Level Nuclear Waste tanks.**

The National Academy of Sciences (NASEM) review of USDOE's alternatives for Hanford supplemental tank waste treatment provides strong documentation and support for Ecology being required to mitigate the risks from trucking liquid wastes as part of TBI:

The National Academy of Sciences, Engineering and Medicine (NASEM) has been charged by Congress with reviewing and advising on USDOE's "FFRDC" analysis of options for "supplemental treatment" of Hanford's High Level Waste tanks' "Low Activity Wastes (LAW). As we note in our overview, the GAO and USDOE agree that the current plan for retrieval of LAW tank wastes and vitrification will take at least five decades and require a second LAW vitrification plant – at a cost of tens of billions. During that time, many more tanks will leak.

NASEM found in very strong language that legitimate concerns over the transportation of liquid wastes from Hanford's High Level Waste tanks have not been analyzed under NEPA and have been inappropriately discounted by USDOE. National Academies of Sciences, Engineering, and Medicine. 2023. *Review of the Continued Analysis of Supplemental Treatment Approaches of Low-Activity Waste at the Hanford Nuclear Reservation: Review #3*. Washington, DC: The National Academies Press. https://doi.org/10.17226/26872.

Ecology has a legal duty under SEPA to fully consider these potential impacts, especially route specific impacts in Washington and along the entire truck route corridor, which USDOE has made a decision to increase by proposing to take a truck route through Spokane, Washington. This adds hundreds of miles to the truck routes by avoiding the most direct route through Oregon and the reservation of the Confederated Tribes of the Umatilla Indian Reservation (CTUIR). USDOE's consideration of the legitimate concerns of Oregon and the CTUIR should prompt Washington State to realize that Washington Ecology has a duty to ensure full analysis of potential impacts along a longer truck route that goes through downtown Spokane, through communities that Ecology and DoH have designated as "overburdened" and "highly Impacted" through environmental justice analyses, and through lands and across streams and rivers where numerous Tribes retain Treaty rights to resources.

We applaud that Oregon and the CTUIR have said the same consideration of the risks of trucking wastes through Oregon and the CTUIR Reservation should apply to avoiding Spokane and other communities – calling for the waste to be solidified and treated at the closest permitted facility, which is just 1.2 miles of public roadway from Hanford.

The NASEM review pointedly finds that the rationale that other radioactive wastes are shipped to the Utah and Texas sites on a regular basis has serious shortcomings in meeting USDOE's obligations under NEPA for considering transportation impacts. NASEM was presented with information that liquid waste would be shipped largely by train, which is significantly safer than trucks. Yet, **Ecology has failed to utilize its SEPA mitigation authority and duty to require use of trains for shipping liquid wastes in addition to Ecology considering and adopting mitigation requiring that the risks of transporting liquid wastes must be avoided entirely by adopting mitigation conditions requiring the waste to be solidified and treated at the closest available permitted facility capable of performing treatment to meet standards.**

Perma-Fix NW is just 1.2 public road miles from the Hanford site, whereas the Utah and Texas facilities are 900 and 1,900 public road miles from Hanford (under the Spokane route that USDOE committed to utilize for trucking the liquid to be treated).

Excerpt from the National Academy of Sciences (NASEM) report finding:

- There are potential significant impacts from transporting the liquid wastes from Hanford's tanks that USDOE has not considered
    - Those impacts are greater for trucking the liquids rather than rail (see highlighted section of excerpt below – emphases added).
    - USDOE focused on rail transportation, which is not proposed and which USDOE found not to be available for waste from SY-101 or 200 West tanks
- USDOE has not taken into account that any accident involving liquid wastes from Hanford's High Level Nuclear Waste tanks will have greater potential impact than waste from other sources
    - "transportation of large quantities of liquid SLAW off the Hanford site will meet with heightened scrutiny and concern."

"The report also presents a rather positive and even optimistic view of the logistics associated with rail transport of wastes—whether grouted before transport or being transported for grouting—than was reflected in the view of the previous National Academies committee report (NASEM, 2022a, Finding 13, Recommendation J) and the WA Ecology public response (Bates et al., 2023, Vol. II, Appendix J). With respect to the source, constituents, and campaign duration of the waste shipments, previous experience is only a partial guide to SLAW's regulatory approval and public acceptance.

"The FFRDC's confidence that off-site transportation of liquid SLAW for treatment and/or disposal is based almost entirely on the fact that this is accepted practice for similar and more hazardous liquid and solid low-level waste (LLW), the off-site facilities have advised the FFRDC they anticipate no serious objections to the transport of liquid SLAW, the facilities having prior experience accepting large volumes of waste, and the SLAW liquids meeting (and complying with) all the applicable regulatory requirements for transport. The committee has less confidence than was presented by the FFRDC team, and similar concerns were expressed by others from affected communities.

"The concern being that the transport issues are not conventional, potentially constitute a major hurdle, and this is more so for out-of-state transport. **Transport will be even more challenging if the waste is transported as liquid rather than grout**. While it may well be that waste similar to SLAW can be and has been transported safely by rail with little or no public concern, even a single salient event, such as the recent derailment of a train carrying hazardous chemicals in East Palestine, Ohio, can create a level of public awareness and concern leading to impediments to SLAW transportation, and possibly expose weaknesses in rail safety. Despite transport of liquid and solid low-level waste by rail and truck long distances being an accepted practice, decision makers might need to expect that transportation of large quantities of liquid SLAW off the Hanford site will meet with heightened scrutiny and concern by transportation corridor and recipient state regulators and citizens.

"Limitations concerning transportation of SLAW are considered in the FFRDC report (Bates et al., 2023, Vol. I, Sect. B.1.3; Vol. II, Sect. D.2.12). Moreover, the report states through much of Vol. I, Sect. B, and Vol. II, Sect. D that off-site transportation risks are

> moderate and risks from off-site spills are low. This also seems optimistic given the length of the campaign (Niles, 2014). The report indicates that there will be a National Environmental Policy Act (NEPA) assessment and environmental impact statement, and transportation risks will need to be considered in that analysis (Bates et al., 2023,Vol I, Appendix D.3.7)."

Review of the Continued Analysis of Supplemental Treatment Approaches of Low-Activity Waste at the Hanford Nuclear Reservation: Review #3. Washington, DC: The National Academies Press Chapter 4, Finding 16 (page 23 of prepublication copy) (emphases added).

USDOE's rationale for not utilizing the readily available licensed treatment facility does not offer a rationale that Ecology can accept under SEPA or the HEAL Act for either failing to analyze the potential impacts or for not adopting mitigation measures that require the waste to be solidified at the nearest available permitted facility prior to being trucked through Spokane and for 900 to 1,900 miles.

USDOE has said that it wants to obtain competitive cost benefits from having the Utah and Texas sites treat all or 50% each of the liquid waste from Hanford under TBI. Ecology's duty under SEPA, however, is to consider and mitigate risks to human health and the environment, including potential impacts to overburdened or highly impacted communities and economic disruption.

Ecology's duties and authority under RCRA, SEPA and HEAL do not include consideration of whether USDOE will gain competitive cost benefits by trucking liquid wastes to other potential bidders for this test or for the longer term program that would follow if the demonstration is successful.

If the demonstration is successful, and USDOE seeks to proceed with large scale removal of LAW liquids from tanks to be treated and disposed offsite, the potential for significant impacts from trucking liquid wastes will be thousands of times higher than for this current test and will require SEPA analysis and MITIGATION. The mitigation required will be the use of a readily available treatment facility which is permitted by Ecology and WA DoH, which is capable of solidifying and treating the waste to meet disposal standards prior to being trucked over any significant distance and is just 1.2 road miles from the Hanford site (and which USDOE uses for treating Hanford wastes every month as required by Ecology pursuant to the TPA and RCRA permits).

Thus, even testing 2,000 gallons with transport of the liquid waste for 900 to 1,900 miles through Spokane should be subject to mitigation of risks by Ecology requiring that the waste is treated at the closest licensed facility in order to reduce trucking risks.

There is no point in demonstrating and seeking to determine if USDOE can obtain competitive advantage through trucking liquid radioactive chemical hazardous wastes for 900 to 1,900 miles for treatment since Ecology can not permit use of those facilities with the significant added risks that Ecology will have a duty to mitigate by requiring use of the adjacent facility for treatment prior to trucking for disposal..

In sum, at minimum, Ecology must commit to:

1. requiring mitigation of the potential risk from trucking thousands of shipments of liquid waste be requiring the waste to be solidified and treated at a licensed facility that has demonstrated it can perform the treatment with just 1.2 miles of transport on public roadway rather than thousands of truck shipments going 900 or 1,900 miles on public roads, including through Spokane;
2. issue a Mitigated Determination of Non Significance (MDNS) imposing conditions for the liquid waste to be solidified and treated at the closest licensed available facility, which is just 1.2 miles away from Hanford, rather than trucking liquids through Spokane for 900 or 1,900 miles;
3. analyze the potential impacts and risks from trucking mixed radioactive and chemical wastes through Spokane;
4. consider and avoid increasing the potential harm already imposed on the low income, overburdened and highly impacted communities in Spokane and on Tribal Reservations if liquid wastes are trucked through Spokane or the CTUIR Reservation, as required by the Washington HEAL Act and SEPA;
5. consider and mitigate the potential impacts from a truck accident involving the chemical hazardous wastes present in untreated tank waste liquids, which USDOE failed to consider in its Environmental Assessment;

   We are willing to discuss having Ecology apply its SEPA requirements and apply required mitigation measures for a further authorization of TBI beyond demonstration for the 2,000 gallons (if the demonstration is successful) if Ecology commits to meeting its SEPA obligations for a full program to speed removal of liquids from tanks with the In-Tank Pretreatment System (ITPS) followed by offsite disposal through adoption of required mitigation measures to reduce transportation risks for the full program.

6. revise the permit to allow for the ITPS pump arm to be used to extract liquid waste from Tank SY-101 or to be deployed in another tank rather than requiring it to be removed after only the 2,000 gallon test quantity is removed.