



Oregon

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Oregon Department of Energy Comments on Washington Ecology's Proposed Class 2 Permit Modification to Improve Methods Addressing WTP Byproduct Material at the Hanford Site

Thank you for the opportunity to comment on the above-referenced Class 2 Permit Modification at the Hanford Site. The Effluent Management Facility's (EMF) role is to receive liquid effluents from the Low Activity Waste (LAW) Waste Treatment Plant (WTP) facility's off-gas treatment system, evaporate these liquids to reduce volume, and manage the resulting concentrates and condensates. The concentration process produces "still bottoms," a highly concentrated briny liquid waste stream containing residual radionuclides and chemicals. The February 2026 reissuance of the Class 2 permit¹ for EMF evaporator authorizes and sets protocols for loading EMF evaporator concentrate brines into Department of Transportation (DOT) approved containers for off-site shipment. The U.S. Department of Energy (USDOE) has indicated² that these still bottoms will be targeted for treatment by grouting at the Permaxfix Northwest facility in Richland, and subsequent disposal at commercial facilities offsite, which will likely result in transport on highways through Oregon.

The ability to load and transfer brines for grouting rather than return to the AP tank farm for recycling is expected to add significant efficiencies to WTP - enabling the production of more vitrified waste with greater waste loading, which will allow DOE to treat a higher volume of tank waste in a shorter span of time, an important benefit. Additionally, Oregon continues to strongly support solidification of radioactive waste before transport into Oregon as the preferred risk-reduction strategy to transform a mobile, high-consequence hazard into a stable form. We are encouraged to hear this proposal will solidify EMF bottoms at Permaxfix Northwest in Richland. However, we strongly encourage Ecology to insert a specific permit condition requiring that EMF bottoms are solidified in proximity to the Hanford site prior to shipments. Without this specific permit condition, Oregon is concerned that conditions may change in the future and DOE may attempt to ship liquid EMF bottoms through Oregon. We also offer additional proposed technical comments to reduce risk and improve performance of the process.

¹ <https://pdw.hanford.gov/document/AR-39398>

² <https://www.youtube.com/watch?v=9Ad2dYfCziM> (EMF Concentrate Pathway Public Meeting - 3/24/26)

Oregon offers the following specific comments on the draft permit.

1) Ecology must include a permit condition requiring local solidification of EMF bottoms:

US DOE presenters have referenced transport of the EMF still bottoms to Permafix Northwest in Richland for grouting before transportation for out of state disposal. However, there is no condition within the permit that would mandate this. The Supplemental Analysis (SA-3) of Secondary Wastes (DOE-EIS-0391-SA-3)³ analyzed liquid transport of this waste stream. Oregon holds that solidification before transportation out of state is the most effective risk mitigation method available for public and environmental safety. The Effluent Treatment Facility (ETF), a separate facility with related functions at Hanford, also produces a brine that must be solidified or absorbed to meet Land Disposal Restrictions (LDR) and Waste Acceptance Criteria (WAC) for final disposal.⁴ There is a long history of utilizing local facilities in Richland for waste treatment when available; treatment of the approximately 87,000 gallons at issue here appears to be well within the permitted capacity of Permafix Northwest.⁵ Adding a condition for on-site or near-site solidification in the EMF permit would further alleviate the concerns of partners along the transportation corridor.

Oregon is concerned that the proposed permit allows for the treatment of 332 m³ or 87,705 gallons of still bottoms a year - exactly the volume of "Group 3" waste analyzed in SA-3. This environmental review evaluated the environmental impacts of treating and disposing of Group 3 Secondary Waste at off-site facilities as they cannot be disposed of at the Hanford landfills. This numerical precision strongly indicates that the 332 m³ limit was not derived from an assessment of actual facility needs but rather was selected to avoid new environmental analysis. An entire subset of Group 3 waste - the Solid Secondary Waste like the High-Efficiency Particulate Air (HEPA) filters used in the off-gas system - appears to no longer have any disposal volume assigned. The still bottoms consume 100% of the analyzed Group 3 volumes.

US DOE representatives have stated that the volumes will need to be reassessed as WTP comes into full production and will produce significantly more than 332 m³. Washington Ecology included permit condition III.10.M.3.d.iv which allows another modification once a new mass balance is received. Meanwhile, significant uncertainties such as lack of surge capacity, the hidden "volumeless" HEPA waste stream, and the continued viability of SA-3 quantities have been introduced.

Ensuring that the EMF bottoms volume fits perfectly within the existing Group 3 volume envelope analyzed in SA-3, U.S. DOE argues that the environmental impacts - specifically the transportation risks and disposal impacts - remain "bounded" by previous analyses that did not account for the nature of the hazard nor the disposal pathways.⁶ This continues U.S. DOE's reliance on older or outdated analysis like the 1997 WM PEIS. Every new or modified project is being included under an aging compliance umbrella that grows increasingly tenuous.

The modification to cementitious solidification from recycling and vitrification of Secondary Waste has changed both the volume and nature of the hazard – as well as the venue in which the hazard occurs. It modifies the environmental and human impact of treatment. Providing

³ [https://www.hanford.gov/files.cfm/Final_SA_Offsite_Secondary_Waste_Treatment_and_Disposal-\(DOE-EIS-0391-SA-3\).pdf](https://www.hanford.gov/files.cfm/Final_SA_Offsite_Secondary_Waste_Treatment_and_Disposal-(DOE-EIS-0391-SA-3).pdf)

⁴ https://fortress.wa.gov/ecy/nwp/permitting/hdwp/rev/8c/LERF-ETF/LERF-ETF_ADD_c_process_info.pdf

⁵ https://fortress.wa.gov/ecy/nwp/permitting/pfnw/files/Fact_Sheet.pdf

⁶ <https://www.oregon.gov/energy/safety-resiliency/Documents/2025-05-22-Oregon-Comments-on-200W-SA.pdf>

accurate, up to date environmental documentation is key to protecting human health and environmental safety. We encourage Washington Ecology to thoroughly evaluate the adequacy of Hanford NEPA documentation as U.S. DOE continue to expand disposal volumes and modify waste disposal forms and location, and at the very least, to include the requested permit condition requiring solidification of EMF still bottoms at or near the Hanford site prior to shipment.

2) Halide impacted vessel integrity checks:

Permit Condition III.10.M.17.a requires periodic integrity assessments over the life of the system - based on factors like the age of the system, materials of construction, and waste characteristics. Halides such as those being concentrated in the brine still bottoms have been linked to increases in the risk of stress corrosion cracking in steel vessels at the Hanford facility.⁷ While standard integrity assessments might be performed every five years, the concentration of halides in the still bottoms justifies more frequent non-destructive testing such as ultrasonic thickness measurements. We suggest considering a "corrosion-accelerated" inspection schedule on the system as a whole or on critical areas such as welds.

3) Reconsider batch sampling events:

Condition III.10.C.3.e.ii defines a "new batch" as waste that has been sampled and analyzed and has received no further additions. This is logical for incoming tank waste, but it will challenge the EMF concentrates as the facility continuously receives effluent from the LAW vitrification process. Permit conditions in Table 3C-5 indicate only 3 batch samples followed by an annual confirmation which may not be sufficient to prove compliance for EMF due to continuously processing waste that contains variable contaminant loads. Perhaps the sampling can be tied to batch loading in the truck bay, increasing sampling coverage, but that may not provide enough time to receive results from the associated WTP lab verifying Waste Acceptance Criteria (WAC). If WAC criterion samplings are performed at the receiving facility and found out of compliance, this would presumably trigger the "return for recycling" conditions in the permit, which is in no one's benefit. This could even create an 'orphan' waste that cannot be disposed of offsite but if solidified, cannot be recycled back into the DFLAW facility nor be permanently disposed at Hanford. Allowing time to hold and verify would avoid potential difficulties with WAC testing but would require appropriate temporary storage such as a 5000-gallon International Organization for Standardization (ISO) tank container. Clarification on where and how temporary storage is allowable in relation to compliance testing or condition III.10.M.3.d.ii.C, on-site storage, is warranted. Additionally, the permit should include more specific details regarding the process that would occur should a shipment be rejected at the disposal facilities and returned to Hanford.

Conclusion

Oregon again reiterates our call for a cumulative impact analysis that integrates the expanding list of potential radioactive waste streams moving through the region to inform and prepare all affected parties on upcoming waste disposal campaigns and specific risks. The addition of EMF still bottoms, perhaps 10 truckloads of solidified material a month, to the upcoming 6,250 projected TRU waste shipments and the eventual massive shipment of 32

⁷ <https://onepetro.org/amppcorr/proceedings-abstract/AMPP23/AMPP23/AMPP-2023-18830/526757>

million gallons of 200 West waste creates a cumulative volume that has not been sufficiently analyzed for transportation safety risk. Compartmentalizing individual Hanford waste disposal and transportation processes prevents the public from understanding the total radiological burden on the transit corridor and the associated risk of accident. Current analyses do not reflect the "real-world" change for an Oregonian living in Baker City or Hermiston, on the Confederated Tribes of The Umatilla Indian Reservation, or elsewhere in our state, who in coming years will see a near-constant stream of radioactive waste cargo. Completing this analysis will benefit residents along the transit corridor in other states, tribal nations, and is a practical, responsible action to help our communities understand their risk and appropriately plan for the upcoming shipment campaigns. At a minimum, Ecology should include the requested permit condition requiring grouting of EMF still bottoms prior to shipment for disposal.

Please contact me (matt.hendrickson@energy.oregon.gov or 503-806-7476) if you have any questions or would like to meet to discuss these comments.

Thank you for your attention to this matter,

A handwritten signature in black ink, appearing to read "Matt Hendrickson". The signature is fluid and cursive, with the first name "Matt" being more prominent than the last name.

Matt Hendrickson
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Oregon Department of Energy

CC

Mason Murphy, Confederated Tribes of the Umatilla Indian Reservation
Laurene Contreras, Confederated Tribes and Bands of the Yakama Nation
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