



December 10, 2021

Comments submitted electronically: <https://nw.ecology.commentinput.com/?id=B6ikH>

Washington State Department of Ecology
3100 Port of Benton Boulevard
Richland, WA 99354

RE: Public Comment Period for Class 2 Permit Modification to LERF and ETF Dangerous Waste Permit, Decontamination

To Whom It May Concern,

Thank you for the opportunity to submit comments on the Class 2 Permit Modification for Liquid Effluent Retention Facility and 200 Area Effluent Treatment Facility Decontamination.

Hanford Challenge is a non-profit, public interest, environmental and worker advocacy organization located in Seattle, WA.¹ Hanford Challenge is an independent 501(c)(3) membership organization incorporated in the State of Washington with a mission to create a future for the Hanford Nuclear Site that secures human health and safety, advances accountability, and promotes a sustainable environmental legacy. Hanford Challenge has members who work at the Hanford Site. Other members of Hanford Challenge work and/or recreate near Hanford, where they may also be affected by hazardous materials emitted into the environment by Hanford. All members have a strong interest in ensuring the safe and effective cleanup of the nation's most toxic nuclear site for themselves and for current and future generations, and who are therefore affected by conditions that endanger human health and the environment.

As the Waste Treatment Plant prepares to start treating tank waste, LERF and ETF will play a more prominent role in storing and treating liquid waste on the Hanford site. For example, two of the four LERF Basins are reserved for WTP liquid effluent. This permit modification highlights the preparations LERF and ETF must undergo to get ready for increased operations. Liquid waste will be arriving to LERF and ETF from various areas of the Hanford site. A robust decontamination process is needed to ensure that certain types of hazardous contaminants are kept separate from one another.

The safe and effective storage of Hanford's high-level tank waste is essential to the protection of human health and the environment as we wait for safe immobilization of Hanford's high-level tank waste in glass. All facilities that are a part of managing, storing, and treating this waste are a top concern of Hanford Challenge.

¹ Hanford Challenge mailing address: P.O. Box 28989 Seattle, WA 98118.

It is important to our organization that the assumptions used in DOE and its contractors mass balance flow are clear and publicly accessible. The mass balance is needed to predict the types and quantities of contaminants in different waste streams during the treatment of Hanford's tank waste. It is very important that the tank waste treatment system is prepared for the different waste streams that will be generated during treatment and that there are no "orphaned waste streams" – waste that has no pathway for further treatment or disposal.

The Liquid Effluent Retention Facility (LERF) and Effluent Treatment Facility (ETF) will be accepting some of the least contaminated liquids from the tank waste treatment process, however it is important that we know what is in these "least contaminated liquids." The concentrations of contamination may be lower, but the liquids could contain things like technicium-99 or ammonia. We won't know the concentrations or types of contaminants DOE and its contractors are predicting will be in these liquids without the mass balance and the assumptions they used to produce that document.

Specific Comments include:

- **Increase Accessibility and Transparency of Public-Facing Materials:** U.S. DOE's virtual public meeting and materials were confusing and explanations were full of jargon and unclear terminology. Please design your meetings to be accessible to the public. Provide clear, plain language explanations including synonyms or multiple descriptions to describe something in basic terminology. The goal of a public meeting is to engage the public and provide a clear explanation of the comment period. For example: At the meeting on 11/30/21 it took multiple rounds of Q&A to translate and understand what was meant by "decontamination means removing waste codes."
- **Sample the Liquid Waste "Heel" after Decontaminating the Basin:** A 550,000 gallon heel of liquid waste is left in the LERF Basins after each decontamination cycle. The amount of flushing water is calculated ahead of time to ensure the types of waste are adequately removed. Instead of relying solely on the amount of flushing water, U.S. DOE should also test the heel after cleaning the basin to validate that remaining waste concentrations meet the standard to be able to introduce new types of waste to the basin.
- **Don't Send ETF Brine to Perma-Fix Northwest:** Per addendum page B.8, ETF products now include brine as well as powder. Brine is intended for "treatment at an authorized dangerous waste facility." DOE should identify the facility and verify this is acceptable under the "authorized facility's" permits. If there is no facility with active valid permits, DOE will have an orphan waste. Is the brine stream affected by the new grout skid that is in design, according to the monthly reports? Can it grout this brine? Please do not send, as was previously identified, ETF brine to Perma-Fix Northwest in Richland. The brine can generate toxic gases when the pH is adjusted, and, without a mass balance, no one can tell how much ammonia or technetium, or tritium, or NOx sources will be included. High concentrations of ammonia pose a fire and explosion hazard, especially in confined spaces. Sending brine to Perma-Fix Northwest, a facility with a history of worker overexposures and safety issues including fires, puts nearby communities at risk and is a major concern. Safety and regulatory problems at Perma-Fix

Northwest are identified in detail in a 2020 Hanford Challenge report.²

- **Require Submittal of Integrated Mass Balance Flow as a Single Secondary Document:** Please ensure that the U.S. Department of Energy meets its requirement to submit a Mass Balance Flow as a single secondary document, as part of the milestone M-62-46, that states: *Submit to Ecology as a secondary document a Mass Balance Flow from Tank Farms to Low Activity Waste Pretreatment Capability to Low Activity Waste to Effluent Management Facility to Recycle to Tank Farms and to ETF/LERF.* (Note that this milestone number was changed to M-62-50).

Thank you for considering our comments.



Tom Carpenter, Executive Director

² "Risky Business at Perma-Fix Northwest, The Inside Story on Hanford's Off-Site Radioactive Treatment Facility," Updated December 4, 2020, Located at: <https://static1.squarespace.com/static/568adf4125981deb769d96b2/t/5fce533274a40730fbc928bf/1607357241336/2020+12.04+PermaFix+Report+updated.pdf>