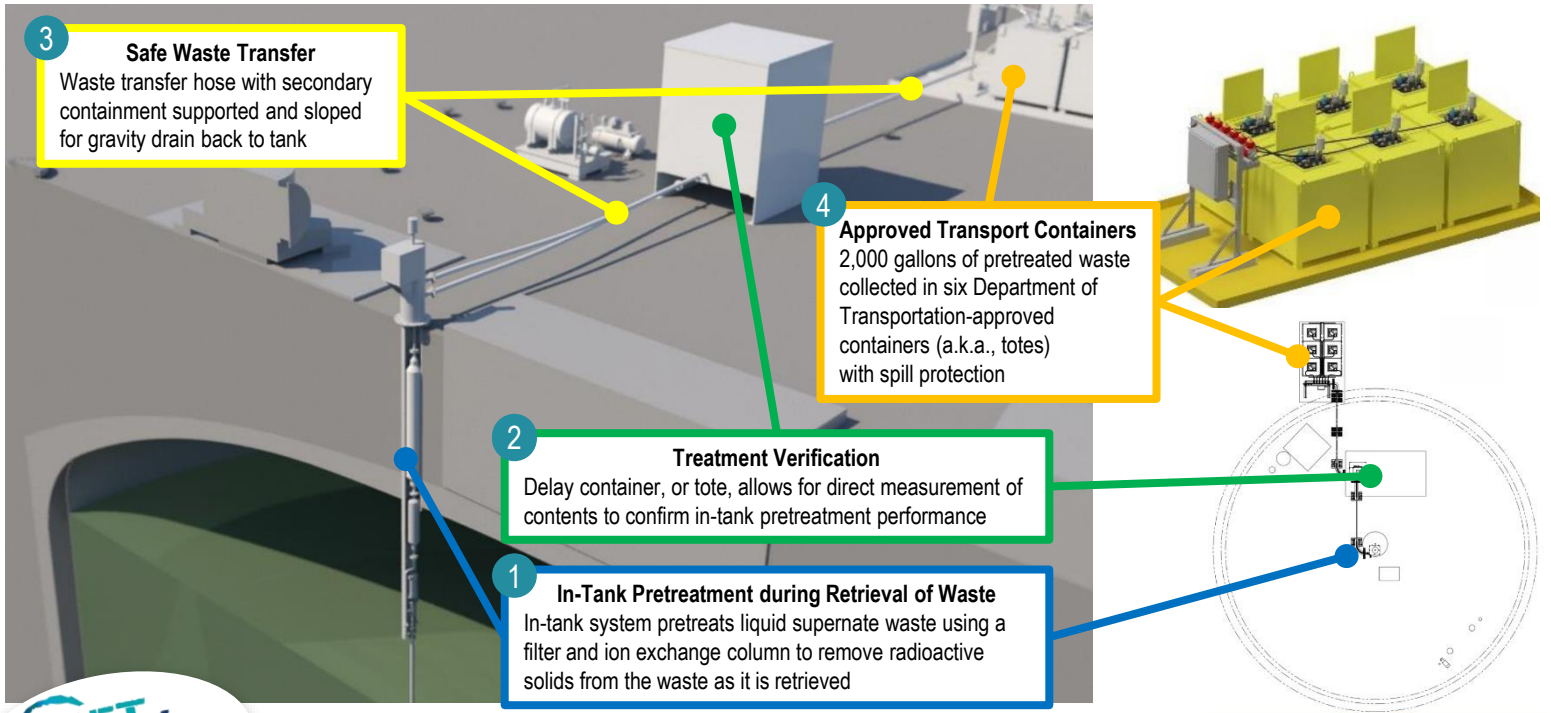


Concept for Proposed Test Bed Initiative Demonstration at Tank SY-101



Hanford Site Background

The 580-square-mile Hanford Site in southeastern Washington state was created in 1943 as part of the Manhattan Project to produce plutonium for the nation’s defense program. Today, treating tank waste and reducing risks through cleanup are Hanford’s primary missions.

Fast Facts

- After decades of support from the local community, Congress and the Hanford workforce, the Site is expecting to begin tank waste treatment at the Waste Treatment Plant (WTP) via the Direct-Feed Low-Activity Waste (DFLAW) Program.
- The WTP alone will not treat all low-activity tank waste at Hanford.
- In parallel with DFLAW preparations, the Department of Energy (DOE) is working with the state of Washington to consider additional options like those examined under the proposed Test Bed Initiative (TBI) Demonstration.
- If DOE undertakes the proposed TBI Demonstration, approximately 2,000 gallons of liquid waste from Tank SY-101 would be treated, transported to an offsite commercial facility for solidification and disposed of as mixed low-level radioactive waste in a licensed and permitted facility outside of Washington state.
- Commencement of the proposed TBI Demonstration is contingent upon DOE completing a Final Waste Incidental to Reprocessing (WIR) Evaluation, a WIR Determination, and analysis and documentation required by the National Environmental Policy Act (NEPA).
- The Department is consulting with the Nuclear Regulatory Commission (NRC) and has sent the Draft WIR Evaluation to the NRC for technical review.
- On November 5, 2021, the Department published a Federal Register Notice to make the Draft WIR Evaluation available to the public and began a 90-day comment period.

COMMENT PERIOD
Nov. 5, 2021 – Feb. 2, 2022

VIRTUAL PUBLIC MEETING
Nov. 18, 2021
1 to 4 p.m. PT
(see details on page 3)

Draft WIR Evaluation for TBI
<https://go.usa.gov/xerS8>

Send comments by
Feb. 2, 2022

Email:
TBIWIR@rl.gov

Mail:
U.S. Department Energy
Attn: Jennifer Colborn
P.O. Box 450, MSIN H6-60
Richland, WA 99354

QUESTIONS?
Email TBIWIR@rl.gov



Draft Waste Incidental to Reprocessing Evaluation for Test Bed Initiative Demonstration, also known as Low-Level Waste Offsite Disposal Project, at the Hanford Site

Draft WIR Evaluation

The Draft WIR Evaluation for the Test Bed Initiative Demonstration specifies that the following criteria will be met:

- Key radionuclides will be removed to the maximum extent practical during pretreatment.
- The pretreated waste will be incorporated in a solid form and not exceed Class C low-level radioactive waste concentrations.
- NRC and DOE performance objectives for safe disposal of the treated waste form will be met.

TBI Demonstration

The demonstration will include the following actions:

- Pretreating approximately 2,000 gallons of waste as it is retrieved from double-shell Tank SY-101 at the Hanford Site to produce a low-activity waste liquid safe for transport.
- Solidifying the pretreated liquid into a grout form at an offsite facility.
- Dispose of the solid, treated waste form in a licensed, permitted, commercial, disposal facility in either Texas or Utah.

Potential Benefits of TBI

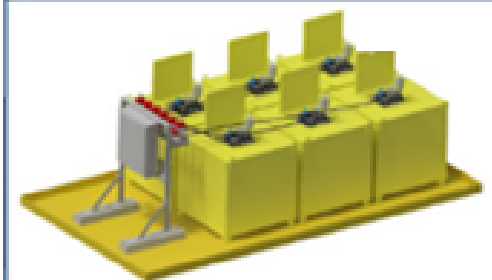
- Provides information to better inform ongoing conversations between DOE and the state of Washington on a safe, viable path forward for Hanford tank waste
- Could lead to significant cost savings that could help accelerate other Hanford tank waste priorities
- Could demonstrate the viability of shipping a waste form out of the state of Washington for safe disposal in licensed and permitted commercial facilities
- Would add double-shell (full secondary containment) tank space.
- Would address independent recommendations by the GAO, Energy Communities Alliance and others to further study the potential cost, safety, and environmental performance of treatment and disposal alternatives.
- If the Project is completed successfully, DOE could evaluate the results and benefits for further implementation of the technology on an industrial scale – driving down risks to workers, the public and the environment.

In-Tank Pretreatment System Design Concept



1. NucFil[®] filter for hydrogen venting contamination control
2. 12" riser adaptor with line out to transport totes and line in for backflush and venting loaded IX column
3. Decontamination spray ring reduces contamination/dose in decommissioning
4. Ion exchange column w/CST resin separates 175 Ci Cs-137. Designed for decoupling and interim storage or disposal
5. Back-flushable cartridge filter to remove actinides and protect IX column
6. DC progressive cavity pump feeding system at approximately 1 gpm
7. Inlet strainer set 1-2 feet into waste

SY Tank Farm



Containers called totes are approved by the Department of Transportation and would be used to ship pretreated liquid waste to offsite treatment, disposal facilities



DOE is Committed to an Open and Transparent Process

Fiscal Year 2022

Comment Period and
First Public Meeting
on TBI WIR

Fiscal Year 2022

NRC Consultation
PLANNED Second and Third public
Meetings on TBI WIR
PLANNED

Fiscal Year 2022

DOE Issues Final WIR
Evaluation and Potential WIR
Determination
PLANNED

Conduct Test
Bed Initiative
Demonstration

Consultation with the Nuclear Regulatory Commission

DOE is consulting with the NRC on the Draft WIR Evaluation. The NRC is expected to provide a Technical Evaluation that will help inform a final WIR evaluation.

Public Involvement

The DOE is committed to an open and transparent process and looks forward to input from states, Tribal Nations, stakeholders, and the public.

A 90-day comment period will begin Nov. 5, 2021, and will continue through Feb. 2, 2022. Comments received after that time will be considered to the extent practical. A virtual public meeting will be held on Nov. 18, 2021, from 1 to 4 p.m. PT. To participate via Microsoft Teams, please follow the instructions below:

Join on your computer or mobile app

[Click here to join the meeting](#) or
<https://bit.ly/3hATkHm>

Join with a video conferencing device

197920091@teams.bjn.vc

Video Conference ID: 119 939 149 6

[Alternate VTC instructions](#)

Or call in (audio only)

[+1 509-931-1284](tel:+15099311284) United States, Spokane
[+1 \(833\) 633-0875](tel:+18336330875) United States (Toll-free)

Phone Conference ID: 803 557 595#

There are several opportunities to learn more about this Draft WIR Evaluation.

- Review the Draft WIR Evaluation online at the Hanford website at <https://go.usa.gov/xerS8>.
- Participate in the public meeting. Presenters from DOE, federal contractors and the NRC will provide briefings and answer questions.
- Provide comments via email or mail during the comment period.

All comments should be submitted by Feb. 2, 2022, to TBIWIR@rl.gov (preferred) or in writing to:



U.S. Department of Energy
Attn: Jennifer Colborn
P.O. Box 450, MSIN H6-60
Richland, WA 99354

For more information on the Draft WIR Evaluation, please visit the [Hanford website](#). Questions? Please email TBIWIR@rl.gov.

Contact Jennifer Colborn, [Jennifer M. Colborn@rl.gov](mailto:Jennifer_M.Colborn@rl.gov), (509) 376-5840, prior to the event to request disability accommodation.

FREQUENTLY ASKED QUESTIONS



Q: How will this impact work on the Direct-Feed Low-Activity Waste program?

A: The proposed TBI Demonstration would not affect the Direct-Feed Low-Activity Waste program. Tank SY-101 was selected as the source for tank waste for the proposed TBI Demonstration because, among other things, Tank SY-101 is not associated with DFLAW operations.

Q: Will DOE be applying the high-level waste interpretation to this Test Bed Initiative waste?

A: No, this is unrelated to the high-level waste interpretation.

Q: Where would this waste be disposed?

A: If, based on the final WIR Evaluation, DOE determines (in a WIR determination) that the waste is incidental to reprocessing, is not high-level radioactive waste and is to be managed as low-level radioactive waste; and if DOE decides to pursue the TBI Demonstration, the pretreated and solidified (grouted) waste would be disposed of as mixed low-level radioactive waste at a licensed and permitted disposal facility, either EnergySolutions in Utah or the Waste Control Specialists Federal Waste Facility in Texas.

Q: Why is DOE moving forward with this now?

A: As the Direct-Feed Low-Activity Waste program ramps up, DOE continues working with the state of Washington to evaluate additional treatment technologies to augment and accelerate the tank waste cleanup mission, initiate ways to reduce cleanup costs and maximize public-private partnerships.

Q: Does this mean DOE is now planning to use media other than glass as a treatment option for Hanford tank waste?

A: If the Test Bed Initiative Low-Level Waste Offsite Disposal Project is conducted, it would provide DOE additional information to evaluate other treatment options for Hanford's low-activity waste.





PUBLIC INVOLVEMENT OPPORTUNITY
Draft Waste Incidental to Reprocessing Evaluation
for Test Bed Initiative Demonstration, also known
as Low-Level Waste Offsite Disposal Project at the
Hanford Site, Washington

Public Involvement Opportunity

We want to hear your comments on the
Draft Waste Incidental to Reprocessing Evaluation for the
Test Bed Initiative Demonstration, also known as Low-Level Waste Offsite
Disposal Project at the Hanford Site, Washington



Comment Period:

Nov. 5, 2021 – Feb. 2, 2022

Draft WIR Evaluation for TBI Comment Period
U.S. Department of Energy
P.O. Box 450, H6-60
Richland, WA 99352