

# HANFORD COMMUNITIES

SUMMER 2022 NEWSLETTER

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## FEATURED



*Commissioning Technician Alex Flint briefs Energy Secretary Jennifer Granholm on the equipment and systems he monitors, manages and operates from his watch station at the Low-Activity Waste Facility at the Waste Treatment and Immobilization Plant.*

## SECRETARY GRANHOLM VIEWS HANFORD PROGRESS, DISCUSSES BRIGHT FUTURE FOR TRIBES, COMMUNITY

OFFICE OF ENVIRONMENTAL MANAGEMENT | Published August 16, 2022

RICHLAND, Wash. – During a visit to the Hanford Site last week, Energy Secretary Jennifer Granholm highlighted DOE's commitment to addressing the environmental legacy near communities such as the Tri-Cities, Washington, that supported national defense programs for many decades.

In addition to visiting cleanup projects underway at Hanford, Granholm met with area tribal leaders and participated in a community forum at DOE's Pacific Northwest National Laboratory.

"My first visit to Hanford provided me with a deeper appreciation for the magnitude of the mission as well as the considerable progress in cleaning up the environment and protecting workers, the community and the Columbia River," said Granholm.

In recognition of DOE's "safety first" approach to Hanford cleanup, Granholm's tour began at the Volpentest HAMMER Federal Training Center. A unique partnership that

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# TWELVE AGENCIES AND ORGANIZATIONS CALL ON PRES. BIDEN TO INCREASE HANFORD FUNDING

At least \$3.76 billion in funding is needed in Fiscal Year 2024.



*Hanford's B Tank farm under construction during World War II. There are a total of 177 single-shell and double-shell tanks at Hanford, well past their design life and holding 56 million gallons of radioactive and chemical waste.*

RICHLAND – The states of Washington and Oregon, and a coalition of organizations, joined together to send a letter to President Joe Biden Tuesday calling for increased funding at the Hanford Nuclear Reservation.

The letter asks Pres. Biden and Congress to request and allocate adequate funding for Hanford now and in years to come, starting with \$3.76 billion in Fiscal Year 2024.

Signees of the letter include Washington Gov. Jay Inslee, Oregon Gov. Kate Brown, Confederated Tribes of the Umatilla Indian Reservation, Washington Department of Ecology, Washington State Commission on Hispanic Affairs, Tri-Cities Development Council, Tri-Cities Hispanic Chamber of Commerce, Hanford Communities, Hanford Challenge, Columbia Riverkeeper, Central Washington Building Trades Council, and the UA Local Union 598 Plumbers and Steamfitters.

The Confederated Tribes and Bands of the Yakama Nation also sent its own letter to Pres. Biden Tuesday.

The Hanford Site in southeast Washington State produced two-thirds of the nation's plutonium stockpile during World War II and the Cold War, leaving behind one of the most contaminated nuclear cleanup sites in the world.

Continued underfunding at Hanford will exponentially balloon the overall cost of cleanup, delay work by decades, and increase the risk of a catastrophic infrastructure failure or release of contamination.

To read the full letter, see Ecology's news release [HERE](#).

## ENERGY SECRETARY AGREES TRI-CITIES ASSETS 'IRRESISTIBLE' FOR GROWING A CLEAN ENERGY HUB

**Tri-City Herald** Published August 14, 2022 | By Annette Cary, senior staff writer

Richland, WA – The Tri-Cities is well positioned to move from “cleanup to clean energy,” said Energy Secretary Jennifer Granholm on her first visit to the Tri-Cities.

Leaders representing Tri-Cities economic and other interests pitched the concept to her at a roundtable discussion, with their message bolstered by Granholm's tours of the Hanford site and Pacific Northwest National Laboratory in Richland Thursday and Friday.

Tri-Cities residents have always been good at innovating, said David Reeploeg, vice president of federal programs for the Tri-City Development Council during the discussion.

Hanford's historic B Reactor ushering in the atomic age was followed by such projects as the first detection of gravitational waves at the Laser Interferometer Gravitational-Wave Observatory, LIGO, on Hanford land and PNNL's frequent advancements in science and technology developed, said Tri-Cities leaders.

The next step, they said, is using the assets — including those developed at Hanford, where PNNL got its start — to transition from Hanford environmental cleanup to expand the Tri-Cities' role as a clean energy hub.

> [Read the full story on Tri-City Herald's website](#) [HERE](#)





*Vit Plant electrician Edi Sanchez assembles temporary heaters that will start up the first melter inside the plant's Low-Activity Waste Facility at the Hanford Site.*

# VIT PLANT PREPARES FOR MELTER HEATUP, BEGINS INSTALLING STARTUP HEATERS

**BECHTEL NATIONAL, INC | Published August 3, 2022**

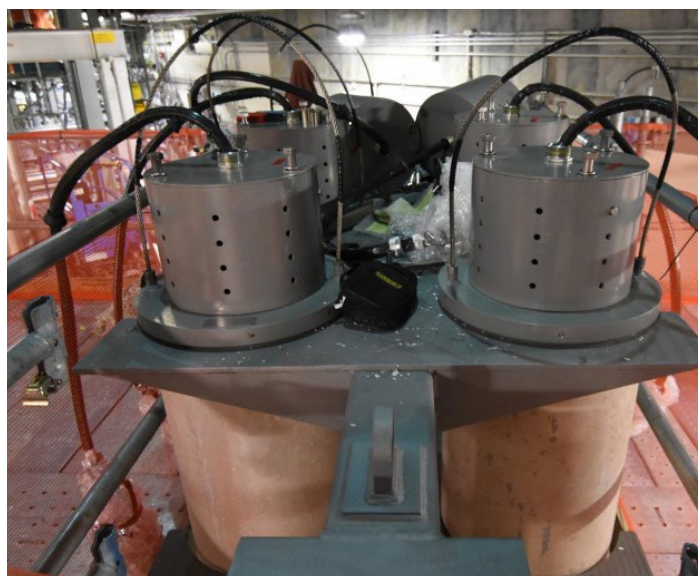
The weather isn't the only thing heating up at the Hanford Site this summer, as staff at the Low-Activity Waste (LAW) Facility at the Vit Plant are preparing to install 18 temporary heaters to start up the first of the facility's two 300-ton glass melters.

The startup heaters will be installed through ports in the lid of the melter and will raise the melter's internal operating temperature to 2,100 degrees Fahrenheit — hot enough to sustain the pool of molten glass to be used to start the waste vitrification process.

"This is an exciting and important step for our team as we drive toward melter heatup," said Vit Plant Project Director Valerie McCain. "The melters are the heart of the Direct-Feed Low-Activity Waste (DFLAW) Program and bringing Melter 1 online is a significant milestone on our journey to begin treating tank waste."

Heating up the melter is a complex process, consisting of a series of activities to prepare for and establish the pool of molten glass. After the startup heaters raise the melter to operating temperature, small glass beads called frit will be added until the pool covers the heating electrodes inside the melter.

After melter heatup, the startup heaters will be removed and replaced with bubblers to mix the molten glass pool and help maintain an even temperature. Finally, more frit will be added to the melter to bring the pool up to operating level. The melter will then be ready to receive simulated materials to test the system before processing tank waste.



*Temporary startup heaters rest in a storage rack as they are prepared for installation into a melter.*

**“The melters are the heart of the Direct-Feed Low-Activity Waste (DFLAW) Program and bringing Melter 1 online is a significant milestone on our journey to begin treating tank waste.”**

During DFLAW operations, waste from Hanford's large underground tanks that has been treated to remove radioactive cesium and solids will be fed directly to the LAW Facility's melters. The waste and glass-forming materials will be mixed and heated in the melters, then poured into specially designed stainless-steel containers for permanent disposal at the site's Integrated Disposal Facility. ■



*A look at the inside of B-109 in February 2021.*

# ECOLOGY AND ENERGY REACH AGREEMENT TO ADDRESS HANFORD'S LEAKING UNDERGROUND TANKS

WASHINGTON STATE DEPARTMENT OF ECOLOGY | Published August 25, 2022

RICHLAND – The Washington State Department of Ecology and the U.S. Department of Energy have agreed on a plan for how to respond to two underground tanks that are leaking radioactive waste as well as any future tank leaks at the Hanford Site.

Energy announced in April 2021, following a year-long leak assessment, that Tank B-109 is leaking waste into the surrounding soil. Tank T-111 was discovered to be leaking in 2013.

To address these environmental concerns, Ecology and Energy worked collaboratively and developed a legally binding Agreed Order.

“It’s been a priority for the state of Washington to address leaking tanks in way that protects nearby communities and the Columbia River,” said Ecology Director Laura Watson. “We know that ongoing vigilance and commitment will be needed to fully address these risks, but I appreciate the work put in by both teams to agree on a plan that prioritizes safety and environmental protection.”

“I appreciate the effective collaboration with the Ecology team in reaching an agreement that supports our continued focus on safe, efficient, and effective stewardship, treatment, and disposition of tank waste,” said Brian Vance, manager of the U.S. Department of Energy’s Office of River Protection and Richland Operations Office.

Under the agreed order, Energy will:

- Cover the T and B tank farms with surface barriers to prevent rain or snowmelt from seeping into the tanks, and to slow the migration of leaked waste toward the groundwater.
- Develop a response plan for future leaks from single-shell tanks.
- Evaluate the viability of installing a ventilation system to evaporate liquid waste in Tank B-109.
- Evaluate conditions in and around tanks B-109 and T-111 to determine if additional work is needed to prevent liquids from getting in.
- Explore ways to accelerate the schedule to retrieve waste from tanks T-111 and B-109.

As Ecology and Energy implement the new agreement, opportunities for public input during the permitting process include the following:

- The Single-Shell Tank System Leak Response Plan
- The leak response actions selected for implementation
- The Intrusion Response Work Plan for tanks T-111 and B-109 if deemed necessary
- The design of the interim surface barriers for T-Farm and B-Farm

The full Agreed Order and more information can be read on [Ecology’s Nuclear Waste Program website](#) or [Energy’s Hanford website](#). ■





## “SECRETARY GRANHOLM” – CONTINUED

includes DOE, union leaders, contractors, tribes, the state of Washington and others, the center provides hands-on training to keep Hanford workers safe on the job. HAMMER stands for Hazardous Materials Management and Emergency Response.

Granholm visited key elements of the mission underway to treat radioactive and chemical waste stored in underground tanks at Hanford. Stops included the Low-Activity Waste Facility, where preparations are underway to begin heating up the first 300-ton melter that will vitrify, or immobilize in glass, tank waste once treatment operations begin; and the High-Level Waste Facility, where design and procurement work has resumed.

“This has been a valuable opportunity to get an up-close look at the facilities that will treat Hanford tank waste for disposal,” said Granholm. “This tour illustrated the progress that is possible with DOE and the state of Washington driving toward our shared goal of turning Hanford tank waste into glass via the Direct-Feed Low-Activity Waste Program.”

A key part of that program, the Tank-Side Cesium Removal System, has treated 390,000 gallons of tank waste so far this year. The treated waste will be fed to the Low-Activity Waste Facility when treatment operations begin.

Advancements in the tank waste cleanup mission coupled with progress in key risk-reduction efforts such as transferring radioactive capsules to dry storage, remediating a highly radioactive area under the 324 Building and treating contaminated groundwater, are leading to a safer Hanford Site.



*Energy Secretary Jennifer Granholm is briefed by Tom Fletcher, EM assistant manager of the Waste Treatment and Immobilization Plant at the Hanford Site, in the control room of the Low-Activity Waste Facility on monitors that display the status of equipment and the facilities to technicians who manage the plant.*

Before leaving the site, Granholm visited Hanford's historic B Reactor, which is part of the Manhattan Project National Historical Park. Granholm noted that the same determination and ingenuity it took to construct the first full-scale plutonium production reactor is demonstrated today by the men and women of Hanford who are cleaning up the environmental legacy of producing plutonium for national defense.

While in the Tri-Cities, Granholm participated in a dinner with leaders from the Confederated Tribes of the Umatilla Indian Reservation, the Nez Perce Tribal Nation, the Yakama Tribal Nation and the Wanapum Band of Indians.

“With a diverse community and tribal nations, the level of local expertise, knowledge and capabilities here in the Tri-Cities is unparalleled,” said Granholm. “DOE is committed to ensuring that those most affected by Hanford's environmental legacy have a voice as we look to the future. DOE will continue working with unions, tribal nations, the local community and the state of Washington to complete Hanford cleanup, as well as pave a path to a clean, safe and vibrant future.” ■

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# HANFORD TANK WASTE EVAPORATOR GETS NEW TRANSFER LINES

RICHLAND, Wash. – As the Hanford Site gears up to treat tank waste for disposal through the Direct-Feed Low-Activity Waste (DFLAW) Program, workers are upgrading many site facilities to support 24/7 operations. One of those facilities is the 242-A Evaporator.

Field crews with EM Office of River Protection (ORP) tank operations contractor Washington River Protection Solutions (WRPS) recently finished installing about 1,300 feet of new waste transfer lines between the evaporator and a nearby tank storage area, called a tank farm.

Waste is pumped from the tank farm to the evaporator, which removes water to create more storage space in the site's double-shell tanks. EM and WRPS manage that capacity for retrieving waste from older single-shell tanks, another important component of the tank waste mission.

"These new transfer lines allow us to continue using the evaporator to strategically stage waste for treatment through DFLAW," said Ricky Bang, ORP Tank Farms Program Division director.

Design of the transfer line replacement project started in December 2018, but work stopped when COVID-19 hit in early 2020. Fieldwork began in October 2020 with the removal of older contaminated equipment at the tank farm that feeds chemical and radiological waste to the evaporator.

Turnover of the new waste transfer lines to operations is scheduled to be complete by early December, before the evaporator begins a series of tests using noncontaminated liquids, called "cold runs," over several months.

"We have a hardworking and dedicated team that has tackled the challenges of this project, knowing the critical roles the transfer lines and the evaporator play in the tank waste mission," said Dustin May, WRPS project manager.

The evaporator has also undergone a series of repairs and upgrades since June 2019. This includes a safety system



*This aerial photo shows trenches dug for the replacement of approximately 1,300 feet of piping between the 242-A Evaporator and an adjacent tank waste storage area near the center of the Hanford Site.*



*Crews installed double-walled pipes on the Hanford Site as part of the project to replace older transfer lines between waste storage tanks and the 242-A Evaporator.*

upgrade to increase the efficiency of equipment testing required prior to an evaporator campaign.

The evaporator has removed more than 81 million gallons of liquid from the site's tank waste volume over the past four decades. With these upgrades, the next campaign is scheduled to begin next year. ■



# ADDITIONAL BASIN TO SUPPORT HANFORD TANK WASTE TREATMENT NEARLY COMPLETE

RICHLAND, Wash. – Workers are nearing completion of a fourth basin needed to ensure adequate storage for wastewater during tank waste treatment on the Hanford Site.

Crews with EM Office of River Protection tank operations contractor Washington River Protection Solutions (WRPS) have made significant progress on Basin 41 at the Liquid Effluent Retention Facility (LERF) since concrete was first poured for the perimeter one year ago.

**Watch this time-lapse video** of the LERF Basin 41 construction.

*Liquid Effluent Retention Facility Basin 41 on the Hanford Site is one of four basins, each capable of holding nearly 8 million gallons of wastewater.*



LERF stores wastewater generated from several site sources, including the 242-A Evaporator, which evaporates water from tank waste, solid waste disposal facilities and various site cleanup activities. The wastewater is eventually processed through the Effluent Treatment Facility, and treated water is sent to Hanford's State-Approved Land Disposal Site.

The fourth basin will add capacity to support treating additional wastewater generated when tank waste treatment begins. Each basin is roughly the length of a football field and nearly twice as wide, and can hold nearly 8 million gallons of wastewater.

"The LERF basins are an essential part of the Direct-Feed Low-Activity Waste Program to treat tank waste," said Bibek Tamang, EM LERF program manager. "Once started, the



*The four retention basins at the Liquid Effluent Retention Facility on the Hanford Site, as seen in September 2021, at top, and July 2022, with the nearly completed Basin 41 on the far left.*



*Crews with Washington River Protection Solutions work on the second of two liner systems at Liquid Effluent Retention Facility Basin 41 on the Hanford Site.*

Waste Treatment and Immobilization Plant (WTP) is expected to transfer an estimated 4.5 million gallons of wastewater a year to LERF, while the Integrated Disposal Facility will add another 1.3 million gallons annually."

The bottom of the basin has multiple liners on top of drainage gravel. Crews are installing a floating cover, which is resistant to chemicals, contamination, temperature extremes and ultraviolet light. Once the cover is in place, hardware will be installed around the perimeter to allow the floating cover to move as it floats on the surface of the stored wastewater.

"We understand the important role the LERF basins play in the tank waste treatment mission, and it gives the workforce great pride to safely deliver this project," said Scott Anderson, WRPS project manager.

Construction and operational testing will follow completion of fieldwork on the new basin this fall. ■