

HANFORD COMMUNITIES

FALL 2021 NEWSLETTER

RICHLAND • WEST RICHLAND • KENNEWICK • PASCO • FRANKLIN COUNTY • BENTON COUNTY • PORT OF BENTON



IN THIS ISSUE:

- 01 Hanford Leaders Engage Public to Shape Future Cleanup
- 02 Hanford Releases New Direct-Feed Low-Activity Waste Program Animation
- 03 Hanford Tank-Side Cesium Removal System Readied to Treat Tank Waste
- 04 Women Engineers at Hanford Guide Colleagues Toward Career Success
- 05 Hanford Treats More Than 2 Billion Gallons of Groundwater Seven Years in a Row
- 06 Hanford Plant Completes Startup Testing
- 07 Hanford Breaks Ground on Water Treatment Facility to Support Tank Waste Treatment

FEATURED



HANFORD LEADERS ENGAGE PUBLIC TO SHAPE FUTURE CLEANUP

OFFICE OF ENVIRONMENTAL MANAGEMENT

The Hanford Site's 5-Year Plan outlines cleanup work at the site, including waste vitrification at the Low-Activity Waste (LAW) Facility, pictured.

As part of a continuing commitment to public involvement, EM leaders at the Hanford Site are engaging the public to help shape cleanup priorities in the site's 5-Year Plan.

"The Department prioritizes projects based on assessed risk, legal requirements, and public priority input," EM Hanford Site Manager Brian Vance said. "Public input is vital to our prioritization process, reflecting the values of those living and working around the site, with vested interests in safe, effective, and timely cleanup progress. The goal of this approach is to engage more members of the public who are affected by our cleanup effort, and who are not currently participating in the process."

Hanford focuses on safe cleanup every day by delivering risk reduction, conducting environmental remediation, and preparing for the start of treating tank waste. While the 5-Year Plan outlines the cleanup work to be initiated or completed during fiscal years 2022 to 2026, the focus of public input is fiscal years 2024-2026, the three fiscal years in the 5-Year Plan in which budgets have not yet been formulated or submitted.

The EM Richland Operations Office (RL) and Office of River Protection (ORP) have implemented a dedicated website as part of their public involvement strategy for the Hanford Site. The website includes the draft 5-Year Plan update, fact sheets relevant

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to the priorities defined in the update, and a survey for input.

Through this engagement, RL and ORP are focused on increasing awareness of Hanford cleanup priorities and gathering input on priorities that can influence the budget formulation process for fiscal years 2024-2026. The budget for fiscal year 2022 is already in the appropriations process, and the budget for fiscal year 2023 is already in the formulation process.

RL and ORP leaders briefed Tribal Nation staff on the draft 5-Year Plan on Oct. 19. The following day, they briefed members of the Hanford Advisory Board and greater public. The Oct. 20 briefing was recorded and posted to the [5-Year Plan engagement website](#). In addition to establishing a dedicated website and using social media platforms and mailing lists to solicit input, RL and ORP also worked with community leaders and stakeholder organizations to expand their reach to more people. ■

HANFORD RELEASES NEW DIRECT-FEED LOW-ACTIVITY WASTE PROGRAM ANIMATION

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The process starts with tank retrievals and runs through final disposal in the Integrated Disposal Facility. This animation will be used to educate the public, stakeholders, and employees on how the process works from start to finish to treat tank waste safely and efficiently through the DFLAW Program. Hanford plans future animations that will dive deeper into the complex waste treatment and vitrification process.

A new animation of the Direct-Feed Low-Activity Waste (DFLAW) Program at the Hanford Site shows the integrated procedure that achieves tank waste treatment. That process is a key component of EM's strategic cleanup vision.

“Direct-feed” means Hanford’s tank waste will be separated at a tank farm to remove solids and cesium, then fed directly to the Waste Treatment and Immobilization Plant’s Low-Activity Waste Facility for a complex process called vitrification that will immobilize the waste in glass.

View the animation [here](#). ■



ECOLOGY'S "LET'S TALK ABOUT HANFORD" - A YEAR IN REVIEW

The sixth event in this series features some of Ecology's top Hanford experts to share a few highlights of recent Hanford Site cleanup, show a presentation on the most significant projects completed or underway, followed by a live Q&A.

When: Thursday, January 13, 5:30pm

Where: Online via [Facebook](#) & [WebEx](#)

HANFORD TANK-SIDE CESIUM REMOVAL SYSTEM READIED TO TREAT TANK WASTE

OFFICE OF ENVIRONMENTAL MANAGEMENT

The Hanford Site is on the verge of initial radioactive and chemical waste treatment.

Today, EM announced construction and readiness assessments are complete on the Tank-Side Cesium Removal (TSCR) system at Hanford, an EM 2021 priority.

Transitioning TSCR from the building and testing phase to operations is a major step toward treating tank waste.

To view the ceremony marking the completion of TSCR construction and readiness assessments, as well as additional TSCR information, click [here](#).

“Completing TSCR construction this year was a top priority for the Department of Energy’s Office of Environmental Management,” said Brian Vance, manager of the EM Office of River Protection (ORP) and Richland Operations Office. “For the first time, we will be able to treat a significant amount of Hanford’s tank waste. This is an exciting and historic time.”

The TSCR system will remove radioactive cesium and undissolved solids from waste currently stored in large underground tanks in preparation for vitrification — the process of immobilizing waste in glass.

The waste treated through TSCR will be stored in a double-shell tank until it is fed directly to the Waste Treatment and Immobilization Plant’s Low-Activity Waste (LAW) Facility. In the LAW Facility, the waste will be mixed with silica and other glass-forming materials. The mixture will be fed into melters and heated to 2,100 degrees Fahrenheit.



Brian Vance, manager of the Office of River Protection and Richland Operations Office, left, is given a tour of the Tank-Side Cesium Removal (TSCR) system ancillary enclosure by John Eschenberg, president and CEO of Washington River Protection Solutions.



Hanford Site leadership is handed a symbolic key from Washington River Protection Solutions (WRPS) to indicate construction and readiness assessments are complete on the Tank-Side Cesium Removal system.

“We expect to begin heating up the first melter inside the LAW Facility by the end of this year,” said Vance. “When each piece comes together, it’s a cause to celebrate, because we’ve come one step closer to our goal of treating tank waste.”

TSCR is critical to beginning the treatment process using Hanford’s Direct-Feed Low-Activity Waste (DFLAW) Program, a system of interdependent projects and infrastructure improvements, managed and highly integrated as a single program, that will operate together to vitrify the waste.

Click [here](#) to view an animation of the DFLAW Program process.

ORP tank operations contractor Washington River Protection Solutions designed the TSCR system and managed the construction and installation by subcontractors AVANTech, Atkins Nuclear Secured, Fowler General Construction, and Apollo.

“This is the culmination of nearly three years of coordinated work, from design, construction, and now operations, all done in the midst of a pandemic,” said John Eschenberg, WRPS president and CEO. “We are just weeks away from being able to operate TSCR. We are now transitioning our workforce from construction and testing activities to full-on 24/7 operations. This is an accomplishment that we all are very proud of.”

WRPS was able to complete the project on time, while keeping workers safe during the COVID-19 pandemic.

TSCR relies on a technology that was deployed successfully at several locations worldwide, including the Fukushima Daiichi nuclear power plant cleanup in Japan. It uses a design concept similar to that of a unit built for DOE’s Savannah River Site in South Carolina.

TSCR is targeted to begin treating waste in early 2022 in preparation for DFLAW operations to begin by the end of 2023.

WOMEN ENGINEERS AT HANFORD GUIDE COLLEAGUES TOWARD CAREER SUCCESS

FROM THE OFFICE OF ENVIRONMENTAL MANAGEMENT

A group of women engineers with EM Office of River Protection (ORP) tank operations contractor Washington River Protection Solutions (WRPS) has established a series of monthly lunchtime presentations aimed at empowering and mentoring woman engineers.

“Engineering is a very competitive field,” said Elaine Porcaro, chief engineer for ORP Tank Farms Projects. “It is inspiring to see that these women have taken the initiative to establish a forum to support and promote each other, sharing their successes and key learnings in order to pave the way for other women to be successful.”

During the most recent virtual presentation, former Air Force Cpt. Bree Smith shared some things she has learned as a military leader and engineer at the Hanford Site.



Bree Smith, a former Air Force captain, works as an engineer with EM Office of River Protection tank operations contractor Washington River Protection Solutions.

Smith and her husband, Greg, started working for WRPS as engineers after wrapping up successful careers in the Air Force.

“In the military we were 100 percent equal,” Smith said when asked whether she felt she and her husband were treated equally in their similar roles at WRPS. “Here, we have had different opportunities, but only because we’re in different groups and management opportunities opened up for him before they did for me.”

Smith admits that it took her a little longer to vocalize her

career goals. “When I first started at WRPS I was working on the 242-A Evaporator,” she said. “It didn’t take me long to realize that I don’t like pipes and valves. It was a different type of engineering than I had trained for, and I was timid because I felt inadequate in the mechanical engineering realm.”



Bree Smith and her husband, Greg, pictured, are former Air Force pilots who now support Hanford cleanup projects as engineers for Washington River Protection Solutions.

She dug in and was determined to learn everything she could about the facility that evaporates water from tank waste as well as tank operations. She was intentional about identifying her weaknesses, establishing a plan to overcome them, and then clarified her career goals for herself before sharing them with her manager and reaching out to other managers within WRPS.

“I had the opportunity to attend the Waste Management conference and met fellow WRPS engineers, and that’s when I learned about other aspects of engineering on the site that were more to my liking,” Smith said.

Smith now works in the engineering group for the waste feed delivery operations and planning group at WRPS. Her presentation as part of the monthly Women in Engineering Speaker Series outlined foundational elements women should consider while navigating their career paths:

Relationships: Establish workplace partnerships and mentorships with your co-workers and managers.

Engagement: Get involved in your company by volunteering for projects that may be outside of your normal scope or comfort zone.

Education and Growth: Be curious about other aspects of your project and other projects and departments; ask for feedback from all avenues and find ways to apply it.

Enthusiasm: Seek out responsibilities that will gain you experience and maturity; define your passions and correlate those to your professional goals.

Smith encourages women to be intentional about volunteering for leadership roles within their company. She also seeks out opportunities to reach out to others through programs like the Women in Engineering Speaker Series to provide encouragement to other engineers who are trying to navigate their own careers.

The speaker series, while led by and focusing on women engineers, is open to men and women in other career fields as well. ■

HANFORD TREATS MORE THAN 2 BILLION GALLONS OF GROUNDWATER SEVEN YEARS IN A ROW

The 200 West Pump-and-Treat Facility is the largest groundwater treatment plant at the Hanford Site.



The Hanford Site is closing in on treating 28 billion total gallons of groundwater to remove contamination since treatment began in the mid-1990s, significantly reducing risk to the Columbia River. That is a volume roughly equal to the amount of water that flows over Niagara Falls in 12 hours.

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Operators will treat nearly 2.4 billion gallons of groundwater in fiscal 2021 alone, which ends Sept. 30. This is the seventh consecutive year Hanford has treated more than 2 billion gallons of groundwater to remove contamination caused by decades of producing plutonium for the U.S. nuclear weapons program.

“Protecting the Columbia River was our primary goal when groundwater cleanup began more than 25 years ago, and it continues to drive our treatment efforts today,” said Mike Cline, EM Richland Operations Office (RL) project director for cleanup of soil and groundwater at Hanford.

RL contractor Central Plateau Cleanup Company (CPCCo) operates six treatment systems to remove radioactive and chemical contaminants from groundwater along the Columbia River and on Hanford’s Central Plateau, located near the center of the site. This is where massive chemical processing facilities separated plutonium from fission products from the 1940s through the 1980s, discharging billions of gallons of contaminated liquids into soil disposal sites.

“THE EFFICIENCY AND RELIABILITY OF OUR TREATMENT SYSTEMS ARE KEY COMPONENTS OF HANFORD’S GROUNDWATER PROGRAM SUCCESS, BUT IT’S THE EXPERIENCE AND PROFESSIONALISM OF OUR OPERATORS AND SUPPORT TEAMS THAT ALLOW US TO MEET OUR TREATMENT GOALS YEAR AFTER YEAR,”

said Mark Cherry, director of CPCCo soil and groundwater operations.

Hanford’s treatment systems have removed about 600 tons of contaminants over the life of the groundwater cleanup mission, including most of the chromium contamination along the Columbia River, as well as other contaminants of concern, such as carbon tetrachloride, uranium, and technetium-99 on the Central Plateau. ■



The 100-HX Pump-and-Treat Facility is one of five treatment facilities that removes contaminants from groundwater along the Columbia River at Hanford.



Electrician *Ralph Bisla* conducts tests of the finishing line inside the Low-Activity Waste Facility at Hanford's Waste Treatment and Immobilization Plant.

OFFICE OF ENVIRONMENTAL MANAGEMENT

HANFORD PLANT COMPLETES STARTUP TESTING

The Hanford Waste Treatment and Immobilization Plant has completed all startup testing of components and systems associated with transforming low-activity tank waste into a safe form for disposal.

This accomplishment moves the plant fully into the commissioning phase where final steps are taken to prepare for vitrifying, or immobilizing in glass, radioactive and chemical waste as part of Hanford's Direct-Feed Low-Activity Waste (DFLAW) Program.

"It was a huge milestone for the startup team to transfer the final DFLAW systems to the care, custody, and control of plant management," said Valerie McCain, project director and senior vice president for Bechtel National, Inc., the prime contractor designing, building, and commissioning the plant. "We are in the final phase of our preparations to start vitrifying waste."

The DFLAW Program is a system of interdependent projects and infrastructure improvements, managed and highly integrated, that must operate together to vitrify the waste.

"With the completion of startup testing, we can focus on commissioning and establishing the operating culture necessary to safely begin a new era of operations at Hanford," said Mat Irwin, Office of River Protection deputy assistant manager for the plant.

"ALL CONTRACTORS ARE DRIVING TOWARD 24/7 OPERATIONS TO ENSURE WE CAN OPERATE THE PLANT SUCCESSFULLY."

During vitrification, waste is treated to remove radioactive cesium and solids and will be fed directly to the plant's Low-Activity Waste Facility melters. The waste and glass-forming materials will be mixed, heated, and poured into specially designed stainless-steel containers. The containers will be transported a short distance to the site's Integrated Disposal Facility for disposal.

The plant facilities can be viewed using the self-guided [Hanford Virtual Tour](#). ■



OFFICE OF ENVIRONMENTAL MANAGEMENT

Hanford leadership participate in a groundbreaking ceremony for the new Hanford Central Plateau Water Treatment Facility.

HANFORD BREAKS GROUND ON WATER TREATMENT FACILITY TO SUPPORT TANK WASTE TREATMENT

Construction of a new water treatment facility has begun on the Hanford Site, in support of the Direct-Feed Low-Activity Waste (DFLAW) Program and future cleanup work at the site.

EM Richland Operations Office contractor Hanford Mission Integration Solutions (HMIS) awarded the construction contract to a local business, Fowler General Construction, Inc., which began construction last month.

Hanford Site leadership participated in a formal groundbreaking for the 10,000-square-foot Central Plateau Water Treatment Facility. The facility will automate water services by providing all potable water to the cleanup hub of the Hanford Site, the Central Plateau, and also will support tank waste treatment operations. The Central Plateau contains Hanford’s former processing facilities, current site operations, and the Waste Treatment and Immobilization Plant. Watch the groundbreaking here.

“Well beyond the start of DFLAW and the transition to 24/7 operations, we’re looking at the next several decades of cleanup, and this water facility will provide services to the entire site for that period of time,” EM Office of River Protection and Richland Operations Office Manager Brian Vance said.

“IT’S ONE OF MANY PROJECTS WE HAVE NOW IN PLACE THAT ARE GOING TO SET THE CONDITIONS FOR FUTURE WORK AT THE SITE.”

The effort to successfully treat and vitrify, or immobilize in glass, Hanford tank waste for safe disposal will increase the demand for a reliable water supply at facilities and for fire suppression capabilities. The new water facility will produce a minimum of 3.5 million gallons of clean water daily, with the ability to expand to 5 million gallons daily if demand increases. That compares to 2.1 million daily gallons treated currently, but with a completely different system.

HMIS will manage construction of the water facility, scheduled to finish by mid-2023.

“We take great pride in our role in the Hanford mission to support all cleanup progress, including long-term tank waste treatment and risk reduction,” said Bob Wilkinson, HMIS president.

The modernized water treatment facility supports a shift to 24/7 operations set to begin on the Hanford Site by the end of 2023 with the start of tank waste treatment. ■



A rendering of the completed Central Plateau Water Treatment Facility, now under construction on the Hanford Site in support of the Direct-Feed Low-Activity Waste Program.