

5 YEAR PLAN

ONE HANFORD: DELIVERING ON TREATING TANK WASTE AND ENVIRONMENTAL REMEDIATION

GOALS: DRIVING TO END STATE COMPLETION



MINIMUM SAFE OPERATIONS
 Safely, securely and compliantly **MANAGE** Hanford's critical resources efficiently, including rejuvenated, reconfigured and right-sized infrastructure to reliably sustain the Hanford cleanup mission.



WASTE TREATMENT
 Start treatment of tank waste, **OPERATING** the Waste Treatment and Immobilization Plant (WTP) via Direct-Feed Low-Activity Waste (DFLAW) to vitrify tank waste into a stable glass form for disposal. **MANAGE** secondary liquid waste and solid wastes generated in the treatment processes. **CHARACTERIZE** waste generated from remedial actions for treatment and disposal. **EXPLORE** opportunities for alternate treatment and disposition pathways.



RISK REDUCTION
CLEAN UP Central Plateau and River Corridor waste sites and **DEMOLISH** facilities to support decisions that are protective of ongoing groundwater remedial actions. **MINIMIZE** the footprint requiring extensive surveillance and maintenance activities. Safely **STORE** tank waste until it can be transferred to treatment facilities and **PROCEED** to closure of waste management areas.



WASTE DISPOSITION
MANAGE the interim storage of K Basins sludge, cesium/strontium capsules (Cs/Sr), loaded ion exchange columns, spent nuclear fuel and transuranic wastes until final decisions regarding their treatment and / or disposition are **ESTABLISHED** while **OVERSEEING** disposal facilities (i.e., Environmental Restoration Disposal Facility (ERDF), Integrated Disposal Facility (IDF) and State-Approved Land Disposal Site) operations.



LONG-TERM STEWARDSHIP TRANSITION
 geographic areas where facility demolition and waste site remediation activities are complete to a surveillance and maintenance program, ensuring long-term protection of human health and safety and environmental resources.

MAJOR COMPONENTS OF THE HANFORD SITE CLEANUP MISSION

TANK WASTE CLEANUP



- Located within the Inner Area of the Central Plateau (approximately 10 square miles)
- Contains 177 underground storage tanks in 12 single-shell tank (SST) farms and 6 double-shell tank (DST) farms
- Safely managing tank waste until retrieved for treatment
- Initiating tank waste treatment via DFLAW no later than fiscal year 2024 (FY2024), then transitioning to high-level waste and supplemental low-activity waste treatment
- Staging and conditioning waste to meet treatment facilities' waste acceptance criteria
- Retrieving waste from SSTs into DSTs (many SSTs have or are suspected to have leaked in the past)



CENTRAL PLATEAU CLEANUP



- Approximately 75 square miles in the central portion of the Hanford Site
- Contains 15 soil, 6 legacy processing facilities and 4 groundwater operable units
- Ongoing groundwater pump-and-treat operations
- Remediating hundreds of contaminated waste sites and demolishing facilities
- Operating low-level waste disposal facilities



RIVER CORRIDOR CLEANUP



- Approximately 220 square miles in proximity to the Columbia River
- Contains 20 soil and 6 groundwater operable units
- Remediating final waste sites and demolishing facilities
- Ongoing active groundwater remediation (pump-and-treat and sequestration)
- Transition remediated geographic areas to Long-Term Stewardship



FY2020

CRITICAL ACTIVITIES:

- TANK WASTE** 🏗️ 🚚 🧪
- ✓ Tank-Side Cesium Removal (TSCR) Pretreatment System Delivered and Installed
 - ✓ Complete All Low-Activity Waste (LAW) Turnovers to Startup
 - Complete Tank Farm Waste Feed Delivery Upgrades
 - ✓ Finalize Program and Processes to Qualify Tank Waste to Meet Waste Acceptance Criteria
 - ✓ Receive First Immobilized LAW Transporter
 - Complete Effluent Treatment Facility (ETF) Secondary Waste Upgrade
 - ✓ Complete WTP to Liquid Effluent Retention Facility (LERF) Transfer Line Tie-in
 - Initiate Construction of the Central Plateau Water Treatment Facility
 - ✓ Complete WTP Analysis of Alternatives

CENTRAL PLATEAU

- Complete and Close Out PFP Slab on Grade
- ✓ PFP Crib Stabilization
- ✓ Initiate Reduction-Oxidation Canyon Cleanout
- ✓ Initiate Capsule Storage Area Construction
- ✓ Complete IDF Safety Analysis / Permitting / Upgrades to Support DFLAW
- ✓ Obtain 200-BP-5 and 200-PO-1 Interim Record of Decision (ROD)

RIVER CORRIDOR

- ✓ Continue K West Basin Deactivation
- Complete Removal of 324 Building B-Cell Floor
- ✓ Obtain 100-BC Area ROD

✓ COMPLETE
➢ CARRYOVER

FY2021



CRITICAL ACTIVITIES:

- TANK WASTE** 🏗️ 🚚 🧪
- Transition All WTP Lab, LAW and Balance of Facilities Systems to Commissioning (Excluding EMF)
 - Complete TSCR Readiness to Operate [PICTURED]
 - Complete Effluent Management Facility (EMF) Construction
 - Complete Scheduled LERF / ETF DFLAW Upgrades
 - Complete Construction on TX Farm Surface Barrier

CENTRAL PLATEAU

- Complete Capsule Storage Area Construction
- Complete Plutonium-Uranium Facility Removal Action Work Plan
- Complete 200 East Area Sewer Consolidations
- Complete Overlay of Interior 200 East Area Roads
- Complete Fire Protection Infrastructure for Central Plateau Raw Water
- Install Mobile Office Trailers 200 East Area

RIVER CORRIDOR

- Complete K West Basin Deactivation and Sand Filter Removal
- Operate 100-KR-4 and 100-HR-3 Pump-and-Treat Facilities
- Submit 100-BC Area Remedial Design Report / Remedial Action Work Plan for Regulatory Review

FY2022

CRITICAL ACTIVITIES:

- TANK WASTE** 🏗️ 🚚 🧪
- Implement Integrated Sitewide Operations
 - Complete AX-102 and AX-104 SST Retrievals (Consent Decree Milestone B-3)
 - Resume 242-A Evaporator Operations



- Complete WTP Loss of Power Testing
- Transition EMF to Commissioning
- Complete First and Second LAW Facility Melters Heat-Up
- Complete WTP Water Run
- Central Plateau Water Treatment Facility Operational [PICTURED]
- Start LAW Facility Cold Commissioning with Simulated Tank Waste
- Complete LERF Basin 41 Construction
- Complete 12-inch Potable Water Line Loop to WTP

CENTRAL PLATEAU

- Complete 224B Facility Demolition Preparation
- Complete Waste Encapsulation Storage Facility Modifications Construction
- Install High-Capacity Fiber-Optic Lines to the Central Plateau
- Replace 200 West Area 1.1 Million Gallon Potable Water Tank

RIVER CORRIDOR

- Obtain 100-N and 100-K Area RODs
- Continue K West Basin Deactivation
- Operate 100-KR-4 and 100-HR-3 Pump-and-Treat Facilities

FY2023



CRITICAL ACTIVITIES:

- TANK WASTE** 🏗️ 🚚 🧪
- Complete LAW Facility Operational Readiness Review to Authorize Hot Commissioning
 - Initiate IDF Operations
 - Commence Hot Commissioning of WTP LAW Facility and EMF [PICTURED]
 - Resume 242-A Evaporator Operations
 - Complete AX Farm Retrievals
 - Initiate A Farm Retrieval

CENTRAL PLATEAU

- Initiate 224T Facility Deactivation
- Complete 400 Area Fire Station
- Eliminate All IT Services from Gable Mountain - West

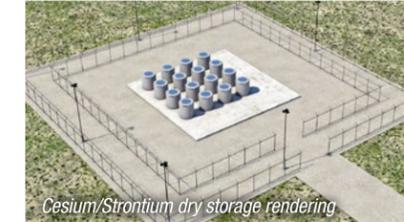
RIVER CORRIDOR

- Complete 105KE Reactor ISS
- Complete K West Basin Characterization and Dewatering
- Operate 100-KR-4 and 100-HR-3 Pump-and-Treat Facilities
- Submit 100-K and N Area Remedial Design Report / Remedial Action Work Plans for Regulatory Review

FY2024

CRITICAL ACTIVITIES:

- TANK WASTE** 🏗️ 🚚 🧪
- Initiate LAW Waste Treatment Operations (12/31/2023)
 - Initiate Alternative Treatment & Disposition of Tank Waste
 - Complete 230kV Transmission System Reconditioning
 - Complete Construction on U Farm Surface Barrier



CENTRAL PLATEAU

- Initiate Transfer of Cs / Sr Capsules to Capsule Storage Area [PICTURED]
- Complete 224T Facility Demolition
- Submit Conceptual Design for Contact-Handled Transuranic Waste Capability
- Replace Single-Circuit Distribution Poles
- Complete Upgrade of the Site Business Management System

RIVER CORRIDOR

- Complete K West Basin Demolition and Removal
- Operate 100-KR-4 and 100-HR-3 Pump-and-Treat Facilities
- Replace 181B Vertical Turbine Pumps

FY2025



CRITICAL ACTIVITIES:

- TANK WASTE** 🏗️ 🚚 🧪
- DFLAW Operations Ramp Up to Treatment Capacity
 - Complete Activation of Cross-Site Transfer System
 - Resume WTP High-Level Waste Facility Construction

CENTRAL PLATEAU

- Complete Cs / Sr Capsule Transfers to Dry Storage
- Initiate 224B Facility Demolition
- Initiate Early Action ROD Remedial Actions
- Replace 200 East Area 1.1 Million Gallon Potable Water Tank
- Rebuild Routes 4S, 2S and 11A

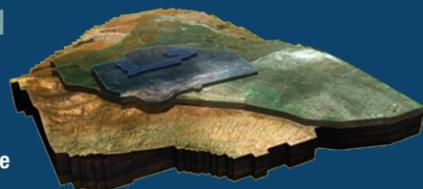
RIVER CORRIDOR

- Complete Waste Site 300-296 Remote Excavation / 324 Building Mortgage Reduction
- Operate 100-KR-4 and 100-HR-3 Pump-and-Treat Facilities

PAGE OF OPERATIONS

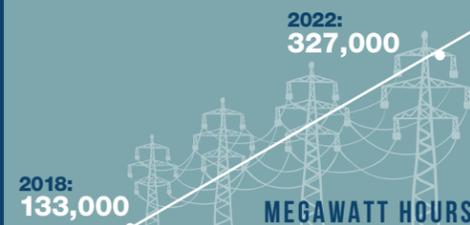
ONE HANFORD TRANSITION

As cleanup progresses, the Site will transition to an integrated "One Hanford" approach to execution. The pace of the mission will increase and expand to 24 / 7 operations to support tank waste treatment at the WTP. Coordinated planning and execution will define successful end states.



DIRECT FEED LOW-ACTIVITY WASTE

The WTP's new DFLAW approach is the first of many long-term cleanup strategies that will be employed at Hanford. Commissioning and testing will begin as early as FY2022 serving as the catalyst for accelerating Hanford's cleanup pace for the foreseeable future.



ESSENTIAL SERVICES

The Hanford Site will transition to decades of 24 / 7 operations. This will affect how essential services will continue to be safely and flexibly delivered with the right level of rigor and robustness. Today, nearly 200 infrastructure / service upgrade projects are prioritized and are being planned through FY2025 to support the pace of operations. Currently, WTP utilizes 42 site services and will progress up to 76 services with 27 required during 24 / 7 operations.

TRANSITION TO 24/7 OPERATIONS >
[INITIATE 2022]

DFLAW OPERATIONAL
[AS EARLY AS FY 2022]

[AS LATE AS FY 2024]



THE FUTURE OF CLEANUP

By FY2025, Tank Waste cleanup will ramp up to producing ILAW at 21 metric tons of glass (MTG) / day and disposing of it at IDF, retrieve seven SSTs and resume construction on the HLW Vitrification Facility.

Central Plateau cleanup will have completed the transfer of Cs / Sr capsules to dry storage, reduced risk / mortgage cost for several aging facilities, and treated approximately 5 billion gallons of groundwater.

River Corridor cleanup will have obtained final 100-BC, 100-N and 100-K RODs, remediated numerous waste sites and facilities, and treated approximately 5 billion gallons of groundwater. This scope safely, efficiently and effectively reduces risk and progresses the Hanford Site cleanup mission.