



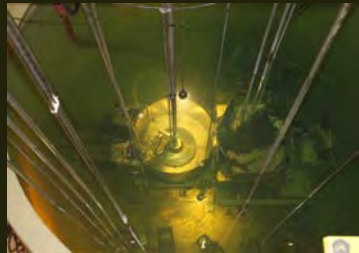
U.S. DEPARTMENT OF
ENERGY

Richland
Operations Office

Hanford Advisory Board *DOE-RL Update*

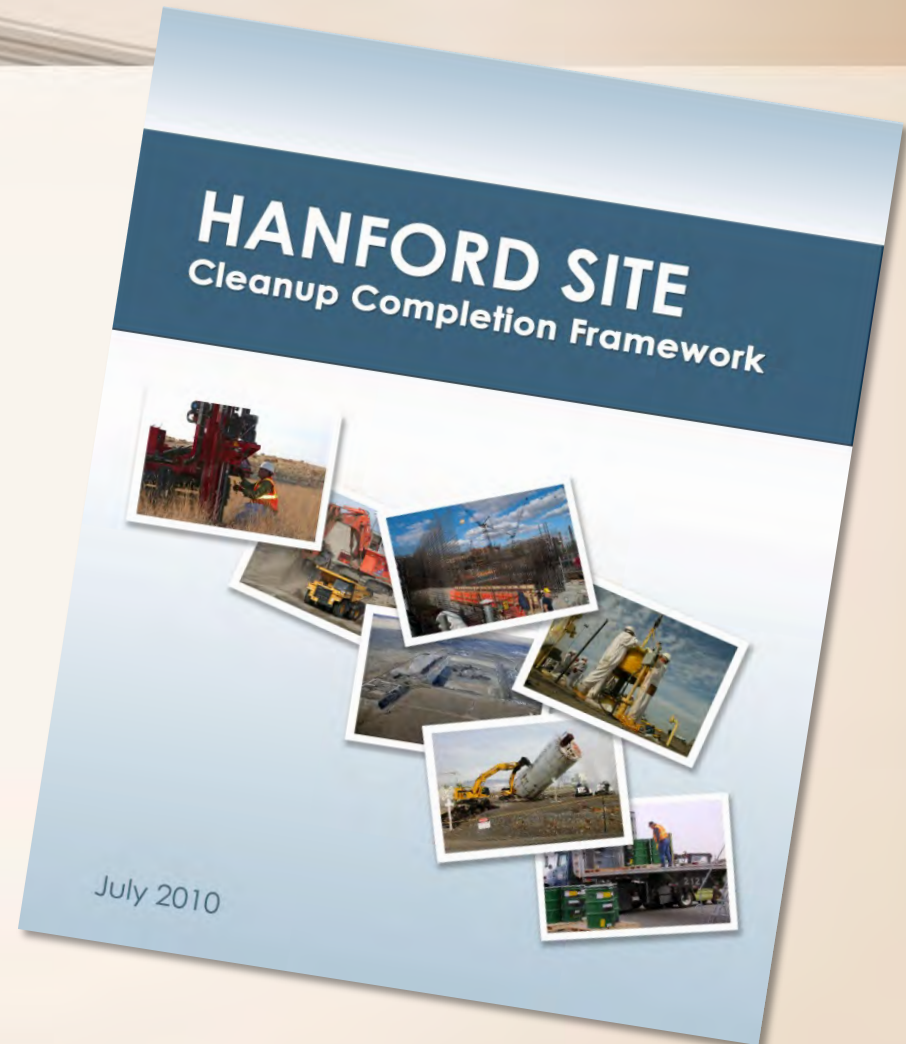
Matt McCormick
DOE-RL Manager

September 6, 2012



Hanford Site Cleanup Completion Framework

- Comprehensive Information Resource on Hanford Site Cleanup
 - Provides overview of Hanford cleanup strategy
 - Strives to make complexities of cleanup more understandable
 - Gives context for how individual activities support cleanup completion



Richland's 2015 Vision

- DOE vision is consistent with values of regulatory agencies, Tribal Nations, and stakeholders
 - Complete River Corridor cleanup (220 sq. mi.)
 - Demolish high-hazard Plutonium Finishing Plant
 - Implement groundwater cleanup
 - Stop key contaminants from getting to the Columbia River
 - Contain and remediate key groundwater contaminants on Central Plateau



Strategic Benefits

1. Reduces active cleanup footprint to less than 75 square miles by 2015
2. Reduces costs by "right-sizing" Hanford infrastructure
3. At completion, shifts emphasis and resources to full-scale cleanup of Central Plateau

FY 2012 HAB Advice Overview

Richland Operations Office



Received 8 letters of advice, 6 pertaining to RL

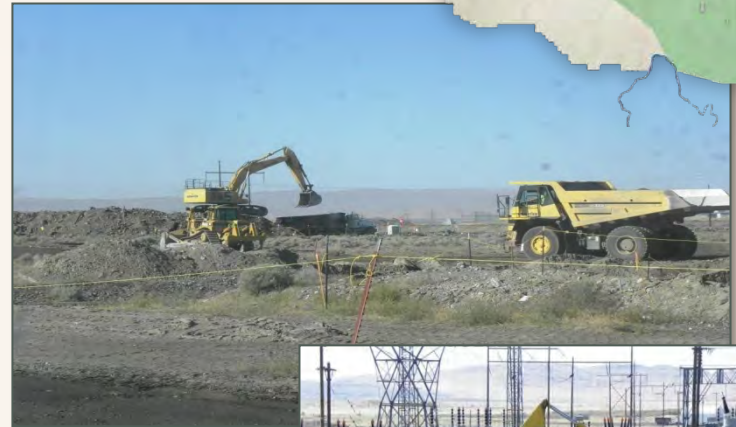
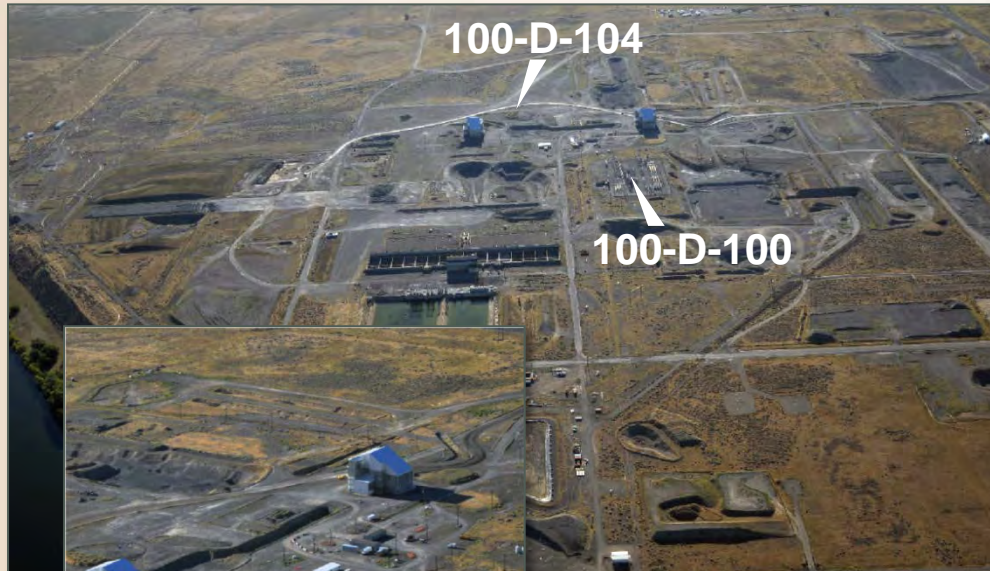
1. **HAB Advice #251: Hanford Public Involvement Plan (PIP)**
 - November 4, 2011- Revised PIP incorporates many of the HAB's advice points
2. **HAB Advice #252: Lifecycle Scope, Schedule and Cost Report**
 - December 08, 2011- Considered advice in the 2013 document
3. **HAB Advice #253: 100-K Proposed Plan (Draft A)**
 - Changes were made to Proposed Plan, e.g., created orchard land operable unit, using irrigation-based preliminary remediation goals
4. **HAB Advice 254: Fiscal Year 2013/2014 Budget Requests**
 - June 15, 2012- HAB participation in budget workshop and cleanup priorities advice provided meaningful feedback, early input into the budget development process
5. **HAB Advice 255: Employee Concerns Program**
 - July 23, 2012- The committee and HAB discussions on this issue were informative and compliment the issues in DOE-RL's continuous improvement plan
6. **HAB Advice 257: 300 Area RI/FS and Proposed Plan**
 - August 3, 2012 – The TPA agencies considered HAB advice and are continuing to develop the 300 Area RI/FS and Proposed Plan in accordance with CERCLA guidance

Safety Focus

- Employee Concerns Program
- Site-wide Safety Culture Survey
 - Evaluate current state of Hanford’s organization climate, safety culture and safety conscious work environment
- Beryllium Program
- Asbestos Program
- Site-wide safety standard for fall protection issued in August



FY 2012 Progress River Corridor: D/H Reactor Area



Extensive chromium contamination was discovered near D and DR Reactors. The hazardous material is expected to extend to 85 feet deep, the approximate depth of groundwater.

100-D-104 excavation and stockpiling

FY 2012 Progress River Corridor: N Reactor Area



2005

*N Reactor placed in
Interim Safe Storage*

- *Represents the largest reactor area footprint*
- *Demolished 99 facilities and disposed of approximately 877,000 tons of contaminated material at the Environmental Restoration Disposal Facility (2005-2012)*



2012

FY2012 Progress River Corridor: KW Reactor Area

- KW Basin is now “fuel free” after shipping the last irradiated nuclear fuel/fuel scrap MCO to the CSB in April
- Four multi-canister overpacks (MCO) of highly radioactive Knock-Out Pot (KOP) material moved to dry storage in the Canister Storage Building (CSB) located in the center of the site
- Developing Engineered Container Retrieval and Transfer System and modifying the Fuel Transfer Annex for future sludge transfer operations



Spent nuclear fuel multi-canister overpack



KOP processing



105-K West

FY2012 Progress River Corridor: KE Reactor Area

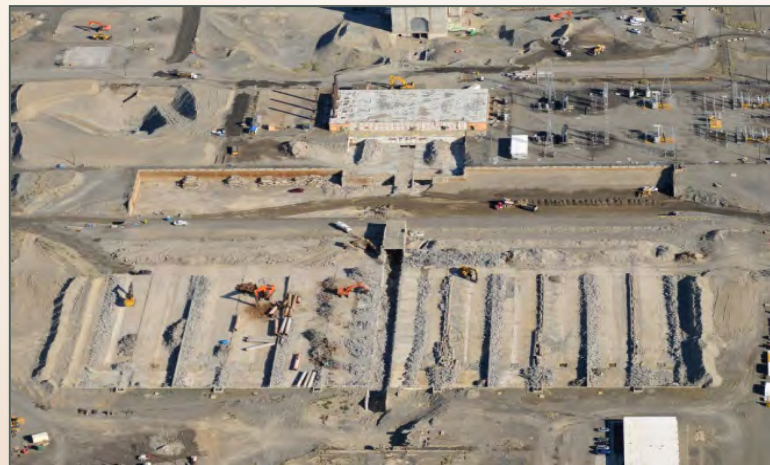
- Completed 105KE Reactor Interim Safe Storage (ISS) Design
- Continued 105KE Reactor interior cleanout and sealing of openings
- Completed demolition of 105KE Water Tunnel, 183.2KE Sedimentation Basin and 183.7KE Intake Water Tunnel
- Continued waste site cleanup to meet TPA milestone M-16-53 due December 31, 2012



105KE May 2008



105KE July 2012



183KE Complex July 2012

FY 2012 Progress River Corridor: B/C Waste Sites



- *Completed remediation of 100-C-7:1 to groundwater (85 feet)*
- *Near C Reactor, 2 million tons of soil removed including about a half a million tons of contaminated soil*

FY 2012 Progress River Corridor Groundwater



Two new groundwater facilities built near Columbia River and another near D Reactor



River Corridor: Progress in 300 Area

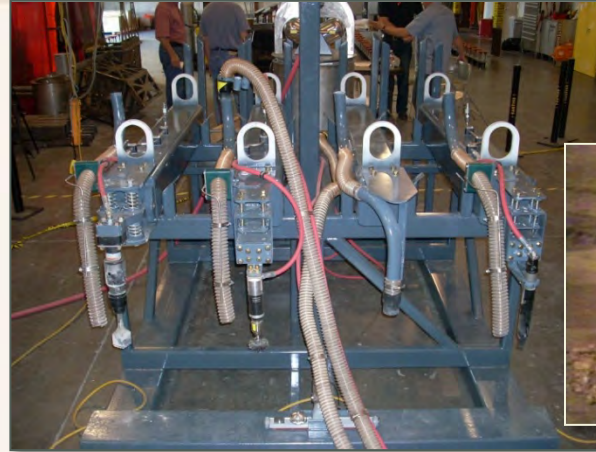


300 Area demolition progress

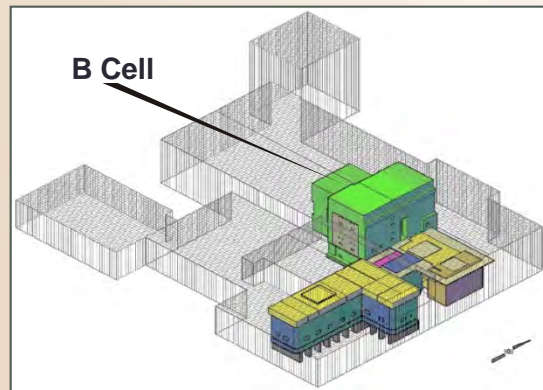
FY 2012 Progress River Corridor: 324 Building



Radiation measurements being taken under the B Cell



Custom designed tools were remotely operated to remove 12,000 curies of radiation from B-cell



Workers collected contaminated soil samples from beneath 324 Building B-cell for analysis



FY 2012 Progress River Corridor: 618-10 Burial Ground



Drum processing at 618-10 Burial Ground



Trench excavation at 618-10 Burial Ground

618-10 Burial Ground Drum Containing Pyrophoric Material

618-10 Excavation 2012-06-22 11:11:01



FY 2012 Progress River Corridor: 618-11 Burial Ground



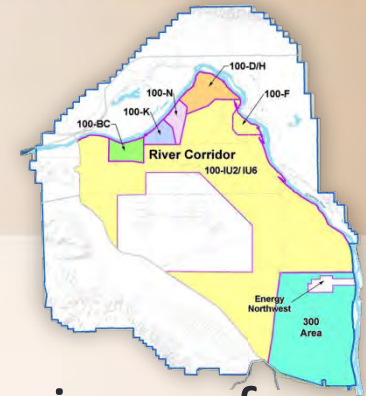
Demolition of abandoned security barrier enclosing the 618-11 Site



Completed access road for 618-11 infrastructure construction



FY 2012 Progress River Corridor Documents



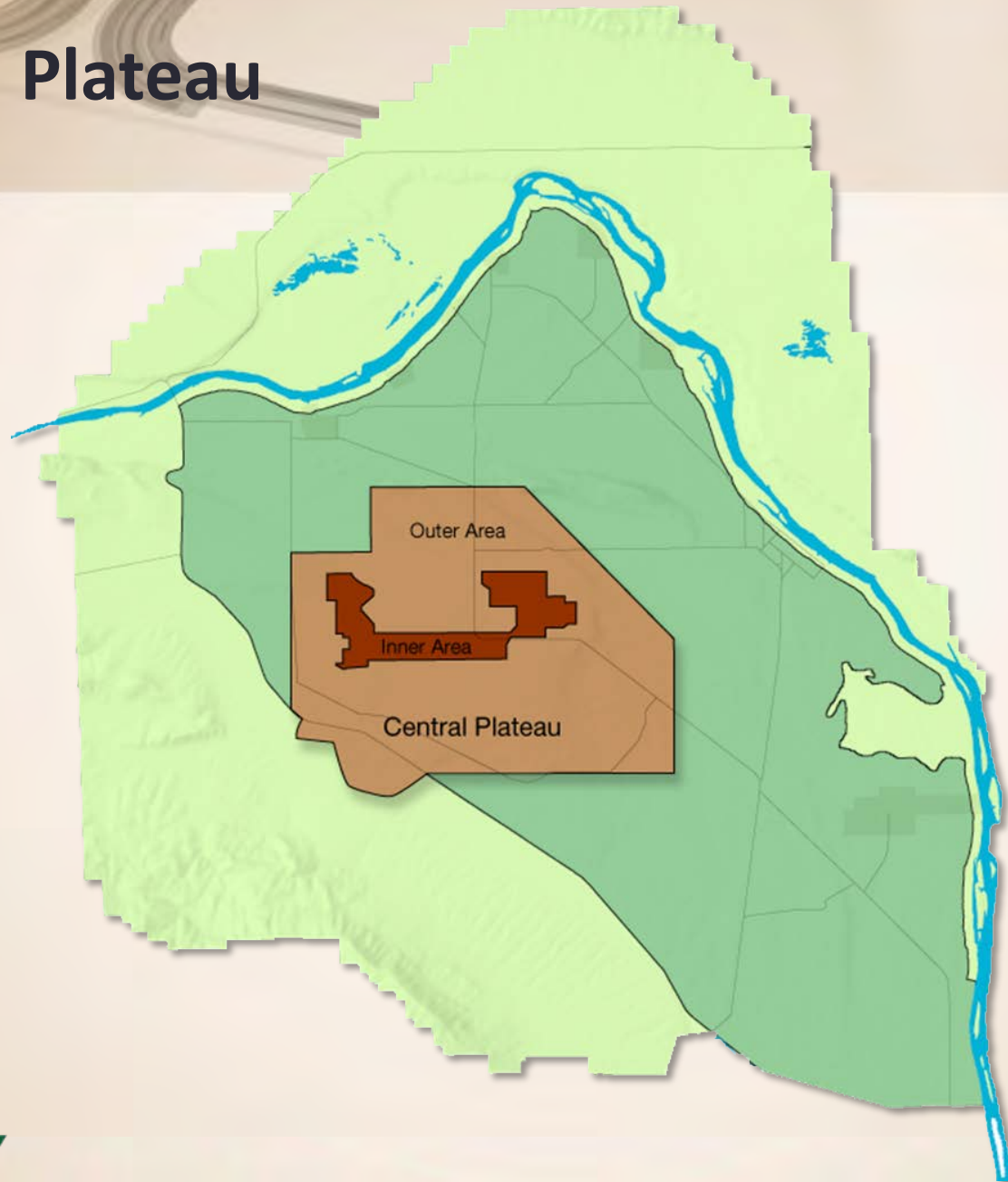
CERCLA Documents

- TPA agencies are evaluating technical and policy issues for the 100-K and 300-Areas that meet all of the agencies' expectations for protection of human health, ecological receptors, groundwater and surface water
- These decisions will be the basis for the remainder of the River Corridor documents

TPA Documents

- Agencies entered into technical discussions to propose changes to some River Corridor milestones

Central Plateau



FY 2012 Progress

Central Plateau: Groundwater

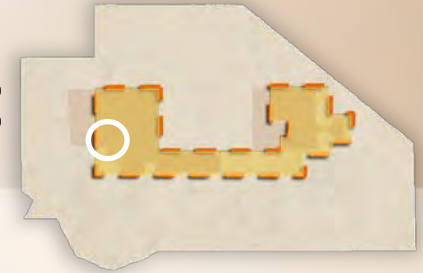


- Treated more than 1 billion gallons of groundwater
- 200 West Pump & Treat System – largest treatment facility
- Designed to remove and contain contamination
- Designed to Leadership for Energy and Environmental Design (LEED®) standards



200 West Pump and Treat System

FY 2012 Progress Central Plateau Inner Area: Plutonium Finishing Plant



- Completed demolition of the six-building vault complex more than 20,000 square feet of structures and highly contaminated equipment
- 75 percent (182 of 238) of PFP's glove boxes have been removed for disposal
- Removed, size reduced, and dispositioned 90 of 196 pencil tank units from the Plutonium Reclamation Facility



FY 2012 Progress Central Plateau Inner Area: Plutonium Finishing Plant



Photos of the Process Vacuum Piping Removal in Room 262 in the duct level



Highly contaminated gloveboxes and facilities



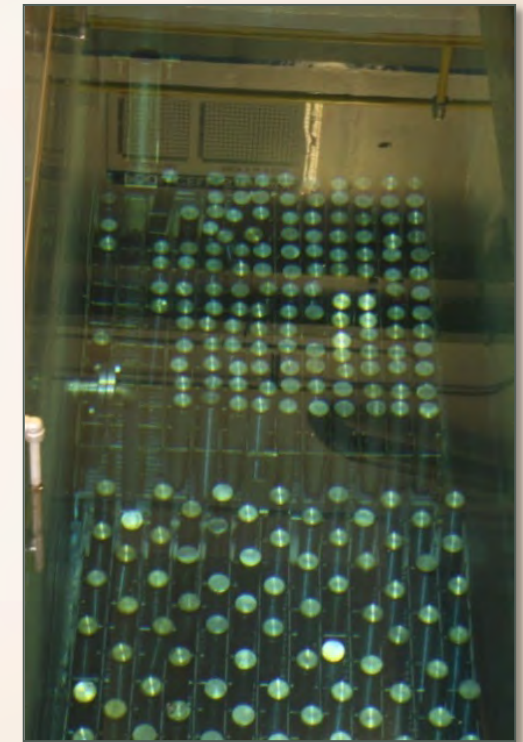
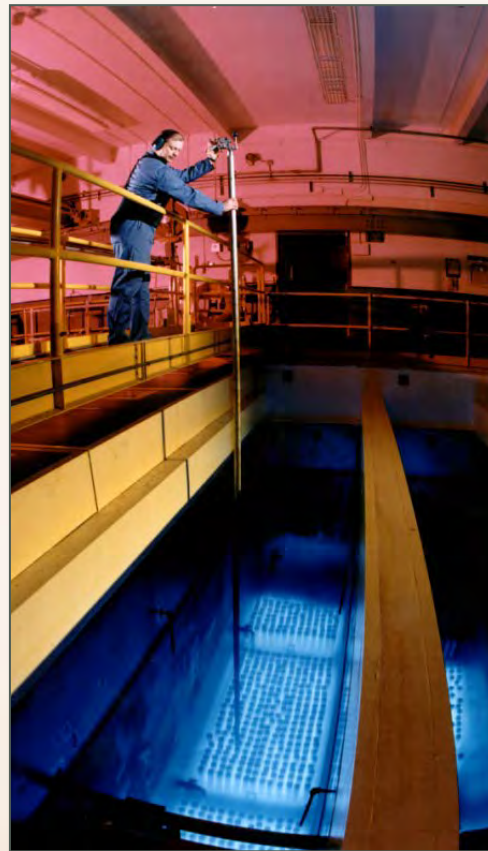
Insulators removing asbestos in duct level



FY 2012 Progress Central Plateau Inner Area *D&D and WESF*



- Completed demobilization of U Canyon grouting and 209-East Criticality Laboratory demolition
- Repositioned cesium and strontium capsules in the Waste Encapsulation and Storage Facility to better dissipate the heat generated by the radioactive isotopes



Containers holding cesium and strontium are stored in 13 feet deep pools filled with water

Addressing cleanup challenges in the Central Plateau's Inner Area



- Deep Vadose Zone Treatability Test
- DV-1 – B Area perched water removal system removes contaminated perched water from the vadose zone before it migrates to the groundwater
- Operational rate of 2,100 gallons per week
- Removed 41,825 gallons of effluent (June)



Deep Vadose Zone Perched Waste Removal Tank

FY 2012 Progress Central Plateau Inner Area: ERDF



Offloading Ion Exchange Module in ERDF



*Constructing New
Access Ramp into
ERDF*



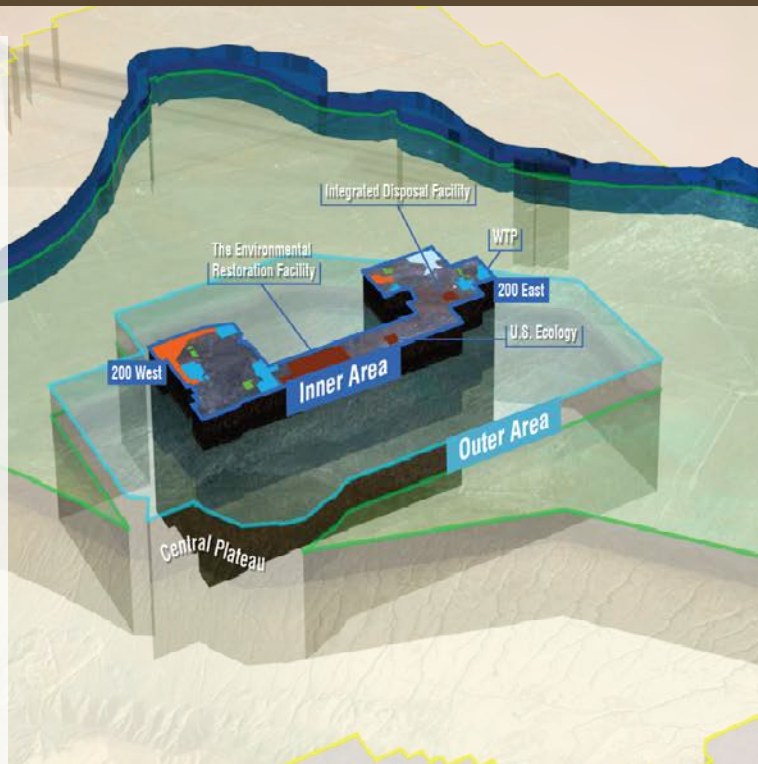
The disposal facility has surpassed the 14 million ton mark of disposed material since operations began in 1996

Hanford Cleanup Beyond 2015

DRAFT

Legacy Waste and Spent Fuel Management

- Complete retrieval of about 5,000 cubic meters of stored contact and remote-handled transuranic waste
- Process and ship transuranic waste to WIPP, including stored legacy waste and new waste generated from cleanup activities
- Place cesium and strontium capsules into dry storage from wet storage
- Continue safe secure operation and storage of 2,100 metric tons of Category 1 irradiated fuel Package and transport used fuel to a national repository or consolidation center
- Treat and dispose of Low Level Radioactive Waste currently in storage and new waste generated from cleanup activities
- Operate Low Level Waste disposal facilities (the Environmental Restoration Disposal Facility, Mixed Low Level waste trenches 31 & 34, Integrated Disposal Facility) as needed to dispose of legacy and cleanup waste
- Operate waste management facilities as needed to support Hanford cleanup (Effluent Treatment facility, Waste Receiving and Processing, and Liquid Effluent Retention facilities)



Waste Site Remediation

- Remediate over 1,100 waste sites*;
 - Liquid & soil discharge site that received over 450 billion gallons of liquid waste
 - Over 40 acres of solid waste disposal trenches
 - Over 100 waste sites in the outer area
- Operate the soil vapor extraction facility that is removing carbon tetrachloride from the soil in the 200 West Area

* Not including tank farms

Building Deactivation, Decontamination, Decommissioning, and Demolition

- Demolish 5 large chemical process canyons
- Demolish over 600 excess facilities (970 originally, 332 demolished to date) ranging from complex nuclear facilities to small shacks and sheds

Groundwater Remediation

- Contain key contaminants so that they do not reach the Columbia River and treat contaminated groundwater per CERCLA Records of Decision
- Operate the 200 West pump and treat system at a nominal rate of 2,000 gallons per minute
- Expand the 200 West pump and treat system as needed to implement Records of Decision for cleanup of Central Plateau groundwater

Applying Technologies to Improve Worker Safety, Increase Efficiency

- Optimization techniques increased groundwater treatment capability by 300 million gallons per year without adding new facilities
- Apatite (calcium-citrate and phosphate) injected into wells to expand a groundwater barrier in soil
- Used telemetry to allow wireless communications with wells, eliminating cables across highly sensitive or historic areas
- New treatment resin loaded at five pump-and-treat facilities; While in use at one facility in past year, surpassed performance expectations, projected to reduce long-term operating costs by \$20 million at that facility alone
- Deployed standard, larger waste containers to more safely and efficiently package equipment removed from buildings for disposal at Waste Isolation Pilot Plant
- Evaluated an auger system to crush and grind vertical pipe units and surrounding soil while remediating burial grounds



Optimizing water treatment



New water treatment tests



Using larger waste boxes



An auger system

23 Years of Cleanup – Where we are today

Continue momentum to reduce or eliminate environmental risks

- Treated 3 billion gallons in the last 5 years of contaminated groundwater, treatment in place along Columbia River and on Central Plateau; new treatment systems operational
 - 1 Billion gallons in FY 12
 - From 1996 to date 6.3 billion gallons – total River and Plateau
- Cleaned up more than half of the total waste sites (656 of 995) and demolished nearly half (342 of 458) of the facilities near Columbia River
 - 68 waste sites and 52 facilities in FY 12
- 6 of 9 reactors placed in Interim Safe Storage
- Cleaned up 81 of 850 waste sites and demolished 322 of 970 of the facilities on the Central Plateau
 - 9 facilities in FY 12
- Disposed more than 14 million tons of waste in Environmental Restoration Disposal Facility
 - ERDF will dispose of over 1.6 million tons in FY 12

Other News Across the Site

- National Environmental Policy Act Environmental Assessment to consider TRIDEC land transfer request – fall 2012
- Natural Gas Pipeline Draft Environmental Impact Statement 45-day public comment period - summer 2013
- Occupational Medical Contract awarded to HPM Corporation in June

Outreach



- **Tours**
- **Speakers Bureau**
- **Hanford Story**

Looking Ahead: Staying the Course to 2015 Vision

DOE-Richland Operations Office FY 2012 through FY 2013 Funding by Control Point

PBS	PBS Title	FY 2012 Appropriation	FY 2013 President's Budget
RL-0011	NM Stabilization and Disposition - PFP	\$99,195	\$121,749
RL-0012	SNF Stabilization and Disposition	\$111,952	\$115,030
RL-0013	Solid Waste Stabilization and Disposition - 200 Area	\$143,482	\$135,741
RL-0030	Soil and Water Remediation - Groundwater/Vadose Zone	\$190,705	\$186,300
Subtotal	Central Plateau Remediation	\$545,334	\$558,820
RL-0041	Nuclear Facility D&D - River Corridor Closure Project	\$329,048	\$320,685
RL-0040	Nuclear Facility D&D - Remainder of Hanford	\$56,121	\$68,662
Subtotal	River Corridor and Other Cleanup Operations	\$385,169	\$389,347
RL-0100	Richland Community and Regulatory Support	\$19,540	\$15,156
RL-0020	Safeguards and Security	\$69,078	\$71,746
RL-0042	Nuclear Facility D&D - Fast Flux Test Facility Project	\$2,703	\$2,704
Total - RL	Richland Field Office Funding Summary	\$1,021,824	\$1,037,773

Note: Expect a C.R. at FY 2012 Enacted level of 1,021,824

HAB Priorities for 2013

River Corridor/Central Plateau Cleanup

- Provide HAB values and prioritize work scope for River Corridor and Central Plateau cleanup

Budget

- Provide HAB values and priorities for cleanup work to allow scope prioritization in the event of a constrained budget

Public Involvement

- Work collaboratively with the TPA agencies to identify the appropriate level of public involvement on the remaining River Corridor Records of Decision public involvement activities

Questions

