



AMERICAN RECOVERY & REINVESTMENT ACT

Week Ending June 24, 2011









CHPRC-01412

Contract DE-AC06-08RL14788 Modification MO47



Contents



OVERVIEW

CH2M HILL Plateau Remediation Company (CHPRC) is using funds from the American Recovery and Reinvestment Act (Recovery Act) to accelerate critical environmental cleanup across the Central Plateau and the 100K Area along the Columbia River to help pursue the U.S. Department of Energy (DOE) "2015 Vision" to shrink the Hanford Site cleanup footprint.

RL-0011 PLUTONIUM FINISHING PLANT D&D

CHPRC is accelerating critical decontamination and decommissioning work to cleanout and prepare the Plutonium Finishing Plant (PFP) for demolition ahead of the Tri-Party Agreement milestone of September 2016.

RL-0013 SOLID WASTE STABILIZATION & DISPOSITION

CHPRC is accelerating cleanup of Hanford's legacy waste and fuels, including retrieving, repackaging, and shipping transuranic (TRU) waste and shipping mixed low-level waste (MLLW) and low-level waste (LLW) for treatment and/or disposal.

RL-0030 SOIL & GROUNDWATER REMEDIATION

In the ongoing effort to protect the Columbia River, CHPRC is constructing two groundwater treatment facilities; installing 265 wells for monitoring, extracting, and remediating groundwater; and decommissioning 280 wells that are no longer of service.

RL-0040 NUCLEAR FACILITY D&D REMAINDER OF HANFORD

Across the Central Plateau and along the outer zone of the Hanford Site, CHPRC is remediating 24 waste sites and decommissioning and demolishing (D&D) 34 facilities to reduce mortgage, surveillance, and maintenance costs on buildings that are no longer of service. The scope also includes cleanup along the outermost edges of the Hanford Site at the Arid Lands Ecology (ALE) Reserve and North Slope, preparing the U Plant for a first-of-its-kind canyon demolition, and preparing to disposition radioactive railcars in the 200 North Area.

RL-0041 100K AREA REMEDIATION

CHPRC is demolishing 15 reactor support facilities and sampling and/or remediating 23 waste sites to shrink the cleanup footprint of two reactors, K East and K West, located in the 100K Area along the Columbia River.

For More Information

To find out more about Recovery Act progress at the Hanford Site, visit <u>www.hanford.gov/recovery</u>.

For information about CHPRC, including weekly Recovery Act newsletters and videos, visit <u>www.plateauremediation.hanford.gov</u> or contact <u>chprcc@rl.gov</u>.



SUMMARY

The following chart outlines CHPRC's progress on its main Recovery Act work goals. Progress on subprojects and other Recovery Act-funded activities are detailed throughout this report and accompanied by a short progress video available on <u>www.youtube.com/hanfordplateau</u>.

PLUTONIUM FINISHING PLANT D&D

Remove 174 Gloveboxes	125 17	4 Gloveboxes 📀
Ready 20 Ancillary Structures for Demolition	2	5 Structures
SOLID WASTE STABILIZATION & DIS	POSITION	
Ship 1,800 m ³ Mixed and Low-Level Waste for Treatment	1,733 m³	1,800 m³ 🔶
Retrieve 2,500 m ³ Suspect Transuranic (TRU) Waste 1,563 m ³		2,500 m³ 🔶
Repackage 850 m ³ TRU Waste for Waste Isolation Pilot Plant		972 m³ 🐺
Retrieve 50 m ³ of suspect Remote-Handled TRU Waste		80 m³
Disposition 2,000 m ³ of Contact-Handled TRU Waste	1,777 m ³	2,000 m³ 🔶
m ³ = cubic meters SOIL & GROUNDWATER REMEDI	ATION	
Install 243 Wells/Boreholes		281 Wells
Install 22 Wells (including 5 Tri-Party Agreement Wells) to Support 200 West Grou	undwater Treatment Facilit	y 22 Wells 🙀
Decommission 280 Wells/Boreholes	270	280 Wells 🔶
Construct 200 West Groundwater Treatment Facility	71%	100% 🔶
Construct 100-DX Groundwater Treatment Facility		100%
NUCLEAR FACILITY D&D		

	100K AREA REMEDIATION	
Disposition 15 Railcars	10 dispositioned (9 KPP*); 15 Ready for Disposition	15 Railcars 🔶
Remediate 24 Waste Sites		34 Waste Sites
Complete D&D of 18 Facilities i	n the Outer Zone	27 Facilities
Complete D&D of 16 Facilities of	on the Central Plateau	21 Facilities
U Plant Canyon Demolition	Continued Grouting of Cells	Demolition Ready

Complete D&D of 15 Facilities	13 Facilities Overa	all (12 KPP* Facilities)	15 Facilities 🔶
Remediate 23 Waste Sites			29 Waste Sites
Progress 9	22 🔶 Target		

*Key Performance Parameters (KPP) are specific items (wells, buildings, etc.) included in the Target. "Overall" indicates the total number completed with Recovery Act funds. "Completed" marks that CH2M HILL has completed a KPP.



ACCOMPLISHMENTS

RL-0011 Nuclear Materials Stabilization & Disposition

RL-0011.R1: Plutonium Finishing Plant D&D

ACTIVITY	PFP WASTE REMOVAL & DISPOSITION	
	Week of June 24, 2011	Completed to Date with Recovery Act Funding
Gloveboxes/hoods removed or dispositioned in place	-	125 gloveboxes/hoods
Add'l gloveboxes ready for removal/size reduction	-	2 gloveboxes/hoods
MLLW/LLW shipped	7 m ³	2,683 m ³
TRU shipped	4 m ³	627m ³
Non-radioactive waste shipped	1 m ³	26 m ³
Process transfer line removed		491 feet
Process vacuum system piping removed		1,210 feet
Asbestos removed	-	14,453 feet

Process and Laboratory Areas

Glovebox removal is complete in most of the lab and vault areas. Area clean out continues in the Analytical Laboratory, with miscellaneous material removal completed in 10 additional rooms. Work packages to complete removal of remaining segments of process piping and drain lines is in the approval phase. In the Plutonium Process Support Laboratory, equipment removal has been completed on the final glovebox undergoing D&D work, 179-1, and the interior of the box has been painted in preparation for removal next week. The work package to modify a door and allow previously isolated Glovebox 188-1 to be removed was approved and work will begin next week.

In the RMA/RMC Line process areas, external isolations are in progress to prepare three more gloveboxes for removal from Room 235A-1, following removal of HA-16L last week. Chemical decontamination of over-sized Glovebox HA-23S has been initiated, and external isolations are in progress on the HC-2 conveyor in Rooms 230A and 230B. Work was completed on isolation and removal of the hydrogen fluoride lines in Room 228A. Drain line removals are underway in Room 228B and heat detectors are being removed in Room 228C. Glove port activations and waste seal outs are being completed on Glovebox 227S.





Electrical isolation is in progress for the RMA Line gloveboxes.

Photo 1

2736-Z/ZB Vault Complex

Hard-line communications (phone, local area network and PAX) to the Vault Complex have been terminated in preparation for demolition. Soil excavation was completed to support isolation of the main water lines servicing the complex, scheduled for early next week. Preparations have also been made for electrical isolation of the complex, which is targeted for mid-week next week. The last few segments of heavily contaminated ductwork are being removed, and the crew began painting to stabilize contamination on the interior surfaces of the ductwork that will remain in place for demolition. A crew from CHPRC D&D Project is expected to arrive next week to begin final preparations for demolition of the four vault complex buildings and two adjacent ancillary structures.

Infrastructure, support systems, and equipment removal

Deactivated filter rooms 311 and 316 have been physically isolated from the rest of the 234-5Z ventilation system and blanks are being installed in preparation for removal of the 112 contaminated HEPA filters from each room.





Soil excavation to access the main waterline to the Vault Complex was initiated this week.

Photo 2

RL-0013 Solid Waste Stabilization & Disposition

RL-0013C:R1.1: Mixed Low-Level Waste (MLLW)/Low-Level Waste (LLW) Treatment

ACTIVITY

Ship 1,800 m³ of MLLW/LLW for treatment and disposal

SOLID WASTE STABILIZATION & DISPOSITION Total Completed with Recovery Act funds

1,733 m³ shipped
 1,265 m³ treated and disposed
 468 m³ at offsite treatment facilities awaiting processing. Treatment is scheduled for FY11

Two shipments (14.5 m³) were sent to Perma-Fix Northwest (PFNW) for processing this week. Both shipments were made directly from the Waste Retrieval Project (WRP) and contained MLLW debris to be treated by macro-encapsulation. Two additional shipments (0.8 m³) were sent to Perma-Fix East (PFE) from the Central Waste Complex (CWC). These shipments will undergo treatment by stabilization and thermal processing. The processed waste from these four shipments will be returned to the Hanford Site for disposal in the mixed waste disposal units at the low-level burial grounds.



RL-0013C:R1.2: Transuranic (TRU) Waste	
ACTIVITY	SOLID WASTE STABILIZATION & DISPOSITION Total Completed with Recovery Act funding
Retrieve 2,500 m ³ of suspect TRU waste	 358 m³ are staged, pending shipment 1,563 m³ shipped to a treatment, storage, or disposal facility
Retrieve 50 m ³ of suspect remote-handled TRU waste	 6 m³ are staged, pending shipment. 80 m³ shipped to a treatment, storage, or disposal facility

At Trench 17 of the 3A burial ground, workers completed the repairs on and shipped Box 14 (43.5 m³) to CWC. Workers also loaded and shipped Box 80 (43.5 m³) to CWC. Box 18 (32.6 m³) was shipped to PFNW.

At Trench 11 of the 4B burial ground, workers continued mechanical and hand excavation on both ends of the trench and nine metal containers along with one 55-gallon drum (20.5 m^3) were removed. Two metal containers, one concrete box (57.7 m^3) and one remote-handled (RH) metal container (1.6 m^3) were shipped to CWC. Calibration gas for the Mobile Drum Venting System (MDVS) was received for the MDVS functional test in the 4C Process Area. Removal of overburden resumed in Trench 7 of the 4B burial ground in Module 9.

At the 12B burial ground, excavation continued and 153 drums were removed from Trench 17. Fortyeight LLW drums were shipped in 8 x 4 x 4 foot waste boxes to PFNW and 42 drums were assayed in the Gamma Assay System. Six drums were x-rayed in the Real-Time Radiography System.

TRU Repackaging & Shipments

-	ACTIVITY	SOLID WASTE STABILIZATION & DISPOSITION Total Completed with Recovery Act funding
I	Repackage 850 m ³ of WIPP certifiable TRU waste	972 m ³ have been repackaged
	Disposition 2,000 m ³ of contacted-handled TRU waste	 1,777 m³ have been disposed

A total of 11 drums were repackaged at T Plant this week.

TRUPACT-II shipments from the Hanford Site are paused and anticipated to resume July 7, 2011.

Two shipments including one large and one small box of TRU debris (33.4 m³) were made from the WRP to PFNW this week. The waste will be repackaged into a standard waste box and the repackaged waste will be returned to the Hanford Site for WIPP certification activities.

RL-0030 Soil & Groundwater Remediation, Groundwater/Vadose Zone

RL-0030.R1: Central Plateau Soil & Groundwater

ACTIVITY	Week of June 24, 2011	Complete to Date with Recovery Act funds
Install 265 wells and/or boreholes along the river and in the Central Plateau		303
Decommission 280 old wells and boreholes that are no longer of service	3 wells completed	270
Construct the 200 West Groundwater Treatment Facility	71% cc	omplete

200 West Groundwater Treatment Facility

Recent construction of the process and transfer facilities included (listed by facility):

• Process buildings



- Radiological Building: Ongoing activities include instrumentation and controls rough-in. Continued mechanical overhead piping installation and installation of Vapor Off Gas ductwork; electrical lighting and power conduits overhead, pulling wire, as well as installation of exterior transformers.
- Bio-Process Building: In process work continues for all disciplines: Instrumentation and controls rough in continues; Electrical panels and switchgear, fire alarm, overhead lighting and pulling wire, and installation of exterior transformers continued prep for setting main switch gear and rough in in the administration area. Continued installation of C and A-line utility racks, installation of process piping; installation of chemical piping in the chemical area. Fire protection nearing completion.
- Bio Pad: Continued steel installation on the utility racks, hand rails and toe boards, grating and grouting base plates. Continued installation of Vapor Off Gas duct work and blower equipment. Also continued installation of racks and panels, conduit, sleeves and cabling for lightening protection.
- Transfer buildings
 - Extraction Building #1: Initiated Acceptance Test Procedure.
 - Extraction Building #2: Continued Construction Acceptance Testing punchlist items with Acceptance Test Procedure initiation on schedule.
 - Injection Building #1 & #2: Installation of service gears, piping, and/or pumps continued. Continued CAT testing on MEP at Injection Building #1.



With the building erected and equipment installed, acceptance test procedures have begun at Extraction Building #1 of the 200 West Groundwater Treatment Facility.



PLANNED FOR D&D/IN PROGRESS

RL-0040 Nuclear Facility D&D – Remainder of Hanford

RL-0040.R1.1: U Plant/Other D&D

CENTRAL PLATEAU FACILITIES DEMOLISHED WITH RECOVERY ACT FUNDS

211U Cold Chemical Makeup Tank Farm	2734EA Gas Cylinder Storage Bldg	284E Power House & Steam Plant
• 211UA Cold Chemical Makeup Tank Farm Addition	275E Carpenter Shop Bldg	 209E Critical Mass Laboratory 284W Power House & Steam Plant
 203UX Gas Storage Facility 	MO104 Mobile Office	284W Power House & Steam Plant
2701M Office Bldg	MO405 Mobile Office	
• 272E Fabrication, Mockup Shop Bldg	MO840 Mobile Office	
2716E Power Maintenance Storage Bldg	X8 Motor Car Shed	
2722W Welding Laboratory Bldg	• 224U UO3 Plant Concentration/Load-out Bldg	
224UA UO3 Calcination/Load-out Facility	 284WB Package Boiler Plant 	
2710W Coal Handlers Shed*	 209EA 90 Day Storage Pad* 	
2701EC 209-E Guard Station*	 2902W Water Storage Tank* 	
2902E Water Storage Tank*	TOTAL: 108,951 square feet	
*Not part of the Key Performance Parameter		

U Canyon

CHPRC crews continued pouring grout into U Canyon cells, delivering approximately 1,175 cubic yards of grout into Cells 1-20. CHPRC has now poured 3,314 cubic yards of grout out of a planned total of 20,318, or 16 percent. Workers also continued on preparations to remove the D-10 Tank from Cell 30, conducting efficiency testing to determine expected dose rates for fastening the lid on the shipping container after the D-10 Tank is placed inside.





Photo 4

Workers insert foam balls into grout tubes to clean them out between pours. CHPRC poured another 1,175 cubic yards of grout into U Canyon cells, for a total of 3,314 cubic yards of a planned 20,318 (16 percent).

U Plant Ancillary Facilities

Closure documentation is being prepared.

200 East Core Industrial Area

Processing and loadout of debris from the 284-E Power House demolition site is nearly complete.





Debris cleanup is nearly complete at the site of the the 284-E Power House and Steam Plant, where demolition of stacks, baghouses and the main Power House building began March 4.

200 West Area Industrial Facilities

Asbestos abatement continued inside the 284-W Power House building in a mass containment on the structure's second, third and fourth floors.

209-E Criticality Mass Laboratory

CHPRC crews continued size-reduction of Tank 102, the second of 11 slab tanks in the facility. Upon removal of all 11 tanks, the 209-E facility can be downgraded to a Less Than Hazard Category 3 (non-nuclear) facility and demolished later this summer.

RL-0040.R1.2: Outer Zone D&D/Waste Sites

OUTER ZONE FACILITIES DEMOLISHED WITH RECOVERY ACT FUNDS

212N Storage Building 212P Electrical Storage & Transformer Shop 212R Storage Building 614 Monitor Station 646 Radioecology Field Laboratory 6652G ALE Field Storage Building 6652H ALE Laboratory 1 6652I ALE Headquarters 6652J ALE Laboratory II 6652S Sentry Shed* 6634 ENW Tower and Building*



6652M Fallout Laboratory 6652R Acid Storage Shed 6652C Space Science Laboratory 6652CSHED Storage Building 6652D Pump House 6652T Fire Protection Lower Pump House 6652U Rattlesnake Mountain Upper Pump House 623A Plant Radio Relay Bldg T520-6 Navy MARS Radio Station 6631 Radio Telescope Pedestal* 6630 Hodges Well Pumphouse* 6635 Crown Castle/Cingular Tower and Building * 6637 Tri City Amateur Radio Tower and Building* 6632 Verizon Telephone Enclosure* 6636 Columbia Communication Tower and Building* 6633 Franklin County Communication Building* TOTAL: 62,748 square feet

*Not part of the Key Performance Parameter

North Slope Debris Removal

Personnel with CHPRC subcontractor Sealaska Environmental Services have now completed cleanup of Areas 12, 13, 15, 16, and 18 as crews await the completion of cultural and environmental reviews of remaining debris sites.

Arid Lands Ecology Reserve

Revegetation of cleared sites on ALE is ongoing while closure documentation for removal of facilities from the area is prepared.

D&D of Railcars Located on the 212-R Rail Spur

CHPRC crews and subcontractors Clauss Construction and Barnhart Crane delivered the fifth of the cask well railcars to the Environmental Restoration Disposal Facility (ERDF).



A CHPRC worker prepares another cask well railcar for delivery to the Environmental Resoration Disposal Facility (ERDF). One tall and one standard cask well car will be delivered to B Reactor to join the two locomotives for preservation and display; the rest will be delivered to ERDF for disposal.



Waste Sites

The following table showcases CHPRC's recent progress in outer zone waste remediation.

	TONS OF CONTAMINATED SOIL REMOVED		
WASTE SITE IN PROGRESS	Week Ending June 24,	Total to Date with Recovery Act funds	
	2011		
BC Control Area	6,000	459,000	

Recent activities regarding the outer zone waste sites included (listed by operable unit or site):

- 200-MG-1
 - 600-228: Verification sample results indicate additional excavation is required. Excavation is planned within the next two weeks.
 - 600-281: Verification sample results indicated additional excavation was needed at two locations. Excavation at those locations was performed and the second round of verification sampling is planned within the next two weeks.
 - 216-S-19: Direct push test sampling is complete. Laboratory results of surface sampling were analyzed revealing some elevated levels of contamination above the remedial action levels. Additional excavation was completed on June 1, 2011. Verification sampling was completed and laboratory results are expected within the next two weeks.
 - 216-S-26: Verification sample results indicate no residual contamination above the cleanup criteria. Down posting and backfill operations are planned to commence within the next two weeks.
 - 200-W-147-PL: Backfill of the southern section of the pipeline is complete, waiting down posting of the northern 100ft to complete backfill.
 - 600-49: Initial excavation field activities are complete. Verification has been completed with results expected within the next two weeks.
- BC Control Area
 - o Radiological down-post surveys and localized spot removal are ongoing.

RL-0041 Nuclear Facility D&D – River Corridor Closure Project

RL-0041.R1.1: 100K Area Remediation

*Not part of the Key Performance Parameter

100K AREA FACILITIES DEMOLISHED WITH RECOVERY ACT FUNDS

 183KW Chlorine Vault 	 116KE Reactor Exhaust Stack
• 183.1KW Headhouse	118KE Horizontal Control Rod Storage
183.2KW Sedimentation Basin	MO048 Construction Lunch Trailer
• 183.3KW Filter Basin	MO969 Ops/HPT Change Trailer
• 183.7 KW Pipe Tunnel	115KE Gas Recirculation
 110KE Gas Storage Facility 	185-K Potable Water Treatment Plant*
 117KE Exhaust Air Filter Bldg 	TOTAL: 428, 260 square feet

PLANNED FOR D&D/IN PROGRESS

110KW Gas Recirculation*

• 181KW River Pump

House'

- 183.4KW Clearwell
- 183.4KE Clearwell
- 190KW Main Pump House
- 190KE Main Pump House 181KE River Pump House
- TOTKE River Pump Hous
 1605KE Guard House
- TOUSKE Guard House
 183.1KE Headhouse

Facility D&D

Demolition and loadout continued on the 181-KW River Pumphouse Structure, the 110-KW Gas Recirculation Building, the west side of the 183.3-KE Filter Basins, and below-grade portions of the 183.1-KE Headhouse.





Demolition is nearly complete on the 110-KW Gas Recirculation Building, which replaced blanketing gases lost during reactor processes at both the K West and K East reactors. Here, a CHPRC crane operator size-reduces helium tanks used in the facility.





Demolition continues on the 181-KW River Pumphouse Structure, which once pumped over 200,000 gallons of Columbia River water a minute into the K West Reactor system. Here, a CHPRC bulldozer "ramps in" to prepare for demolition of below-grade portions of the structure.

Infrastructure Utilities Upgrade Project

All 100K Area Infrastructure Projects are completed and operational.

Waste Sites

A confirmatory sample instruction is being drafted to complete the sampling of 100K-79 waste site, Sodium Dichromate and Sulfuric Acid Product Pipelines at 100K.



UPCOMING EVENTS

RL-0011 Nuclear Materials Stabilization & Disposition

RL-0011.R1: Plutonium Finishing Plant D&D

- Enlarge a doorway and transfer glovebox 188-1 to waste operations.
- Remove Glovebox 179-1, the last remaining glovebox in the laboratory and backside vault areas.
- Remove or stabilize contaminated ventilation ductwork in 2736-ZB, complete water and electrical isolations, and transfer the 2736-Z vault complex to CHPRC D&D for demolition.
- Isolate Gloveboxes HA-15, HA-16BS and HA-16CS from building ventilation and prepare them for removal from RMA Line.
- D&D the remaining gloveboxes in the RMA/RMC Line process areas.
- Complete final area cleanout in the Standards, Analytical and Plutonium Process Support Laboratory areas.
- Remove more than 200 contaminated HEPA filters from 234-5Z final filter rooms 311 and 316.
- Continue removing process vacuum piping, process transfer lines and asbestos insulation from throughout 234-5Z building.

RL-0013 Solid Waste Stabilization & Disposition

RL-0013C:R1.1: MLLW Treatment

• One MLLW shipments (11.2 m³) planned from the WRP to PFNW for treatment by macroencapsulation.

RL-0013C:R1.2: TRU Waste

- TRU Retrieval
 - o 3A burial ground
 - Complete backfill of Trench 17 where Box 80 was removed.
 - Continue clean-up of Trench 17 areas.
 - o 4B/4C burial ground
 - Complete the 4C Process Area User Validation/Functional Test of the MDVS procedure.
 - Vent 12 drums at the 4C Process Area MDVS and load the drums into SWBs in preparation for shipment.
 - Continue 4C Process Area assay of removed waste containers from Trench 11 of the 4B burial ground.
 - Complete work package to remove Box 101 from Trench 11 of the 4B burial ground.
 - Ship large concrete Box 105 (48.1 m³) from Trench 11 of the 4B burial ground to CWC.
 - Ship two metal containers (6 m³) in gray cruiser to PFNW from Trench 11 of the 4B burial ground.
 - Overpack eight metal containers from Trench 11 of the 4B burial ground into 9 x 5 x 5 foot waste boxes for shipment.
 - Overpack two thorium 55-gallon drums from Trench 11 of the 4B burial ground into 85-gallon drums for shipment.
 - o 12B burial ground
 - Continue excavation and waste removal activities.
 - Continue to process removed drums (venting, assay, x-ray) and shipments.
- TRU Repackaging and Shipments
 - No planned shipments.
- Suspect TRU Waste Shipments
 - One TRU shipments (3.3 m³) planned from WRP to PFNW for repackaging.



RL-0030 Soil & Groundwater Remediation, Groundwater/Vadose Zone

RL-0030.R1: Central Plateau Soil & Groundwater

- Continue construction of the 200 West Groundwater Treatment Facility.
- Continue well decommissioning.

RL-0040 Nuclear Facility D&D – Remainder of Hanford

RL-0040.R1.1: U Plant/Other D&D

- Continue pouring grout into U Canyon cells.
- Continue size-reduction of slab tanks inside the 209-E Criticality Mass Laboratory.
- Continue processing and loadout of debris at the 284-E Power House site.
- Continue asbestos abatement inside the 284-W Power House.

RL-0040.R1.2: Outer Zone D&D/Waste Sites

- Continue to deliver well cask railcars to ERDF for disposal and to B Reactor for display.
- Continue planning for and remediating 200-MG-1 waste sites.

RL-0041 Nuclear Facility D&D – River Corridor Closure Project

RL-0041.R1.1: 100K Area Remediation

- Continue demolition of 181-KW River Pumphouse.
- Continue demolition and loadout of the 183.3-KE Filter Basins.
- Continue excavating soil from and planning for remediation of 100K Area waste sites.

