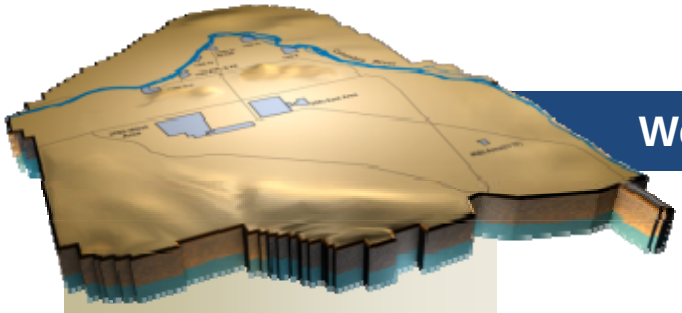
CH2MHILL
Plateau Remediation Company

ARRA Weekly Report



Week Ending November 5, 2010

November 9, 2010
Contract DE-AC06-08RL14788
Modification M047
CHPRC1011-01

Contents

OVERVIEW

CH2M HILL Plateau Remediation Company (CHPRC) is using funds from the American Recovery and Reinvestment Act (Recovery Act) to accelerate cleanup and demolition efforts across the Central Plateau and along the river corridor to help pursue the U.S. Department of Energy (DOE) 2015 vision and shrink the Hanford Site cleanup footprint.

RL-0011 Nuclear Materials Stabilization & Disposition

CHPRC is accelerating critical decontamination and decommissioning (D&D) work to prepare the Plutonium Finishing Plant (PFP) for demolition three years ahead of the Tri-Party Agreement milestone of September 2016. The work scope includes removing over 174 glove boxes/laboratory hoods and other highly contaminated equipment from the 234-5Z, 242-Z, and 2736-ZB buildings as well as preparing the former special nuclear material storage structures and other ancillary buildings for demolition.

RL-0013 Solid Waste Stabilization & Disposition

Recovery Act funds are allowing CHPRC to accelerate retrieval of 2,500 m^3 of suspect transuranic (TRU) waste, eliminate 1,800 m^3 of mixed low-level and low-level waste (MLLW and LLW), and accelerate the overall cleanup of legacy waste and fuels on the Hanford Site.

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

In the ongoing effort to protect the Columbia River, CHPRC is using Recovery Act funding to construct two groundwater treatment facilities, install over 265 wells that will be used for monitoring, extracting, and remediating groundwater, and decommission 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 accelerating the demolition of 34 facilities to reduce mortgage costs on buildings that are no longer of service and complete the remediation of 24 waste sites.

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

In the 100K Area along the Columbia River, CHPRC is demolishing 15 buildings and sampling and/or remediating 23 waste sites to clear the area and prepare for the disposition of two reactors, K East and K West.

ACCOMPLISHMENTS

RL-0011 Nuclear Materials Stabilization & Disposition

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

Non-destructive assay (NDA) confirmed glove box 642-E can be disposed of as LLW. This is the fifth of nine glove boxes/hoods to be removed from the PFP vault complex as it is prepared for turnover to the CHPRC D&D Project for demolition. Two waste shipments left PFP this week, including 15 drums of TRU waste shipped to the Waste Receiving and Processing Facility (WRAP) and one container of LLW shipped to the Environmental Restoration Disposal Facility (ERDF). The Removal Action Work Plan for demolition of the PFP complex was distributed to the project management team for review and comment.

Structures, equipment, waste disposition	Total to Date (since April 2009)
Glove boxes/hoods removed	76 glove boxes/hoods
MLLW/LLW shipped	2,101 m^3
TRU shipped	224 m^3
Non-radioactive waste shipped	22 m^3
Process transfer line removed	268 feet
Process vacuum system piping removed	274 feet
Asbestos removed	11,614 feet
Ancillary structures demolished or removed	22 fuel vaults & ancillary buildings prepared for demolition

Laboratory & Processing Areas

In the RMC Line, large glove boxes C-3 and C-4 were relocated in preparation for removal and transfer to waste operations for disposal. These two boxes, along with the adjacent C-5 glove box that is being prepared for removal, were successfully decontaminated and can be disposed of onsite as LLW.

In the RMA Line, crews successfully completed two fresh-air entries without incident into the 232A hydrogen fluoride scrubber cell for the first time in over 20 years. Crews are inspecting and characterizing the cell to support work planning for future D&D work.

In the laboratory areas, crews continued cleanup and recovery actions from a contamination event during the separation of two hoods from others in room 139 of the Analytical Laboratory.

In the Plutonium Process Support Laboratory, the crew continued spot decontamination of glove box 179-5 to prepare it for a second round of surface contaminated object (SCO) surveys prior to removal.

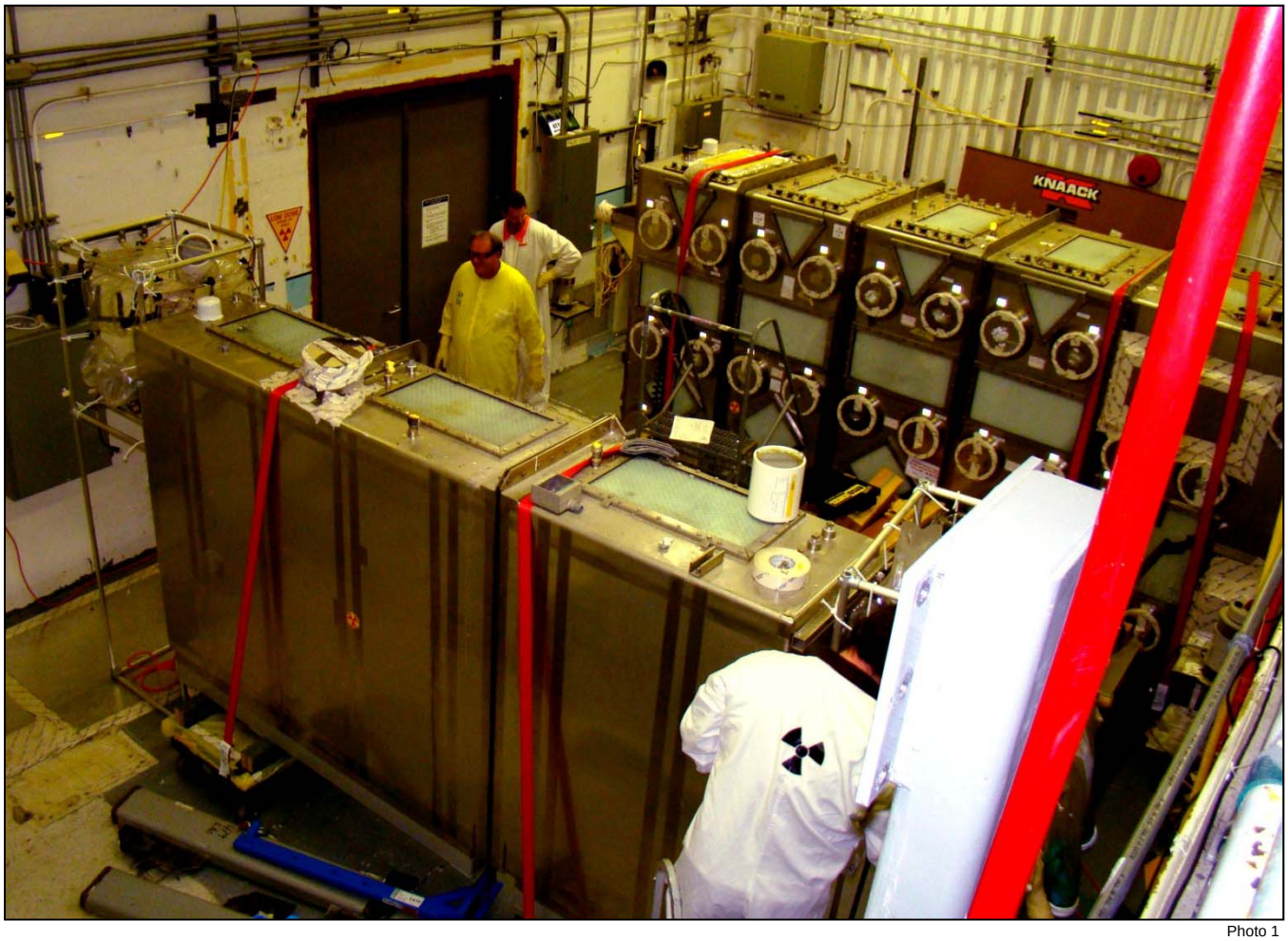


Photo 1

Glove boxes C-3 and -C-4 are set on lift tables and moved to the side of room 230C in the RMC Line in the 234-5Z Building of the Plutonium Finishing Plant. The oversized boxes had to be moved to allow for the removal of C-5.. Removal of these glove boxes is part of CHPRC's Recovery Act-funded effort to remove glove boxes and laboratory hoods to help cleanout and prepare the Plutonium Finishing Plant for demolition.

2736-Z/ZB Vault Complex

Glove box 642-E was isolated from building ventilation and removed to room 636. NDA verified the glove box can be disposed of as LLW. Decontamination continued on glove boxes 642-C and 642-D.

242-Z Americium Recovery Facility

The 242-Z D&D team completed several entries this week, applying additional contamination fixative to areas disturbed during installation of temporary power systems and to obtain information for planning D&D of process equipment on the mezzanine of the control room. The team, heavily experienced in fresh air entries, continued to support other D&D teams with advanced dress/undress training and the entries into the 232A Scrubber Cell.

Infrastructure, process support systems, and equipment removal

Form installation and core-drilling for wall penetrations continued in various locations in the 234-5Z building in preparation for filling the first five drain line trenches with grout. The grout is being installed to strengthen the trenches so that heavier glove boxes can be transported over them as they are removed from the lab and process areas. Removal of highly contaminated process vacuum and transfer line piping

from throughout the 234-5Z building continued, and the insulator crew removed nearly 200 feet of insulation from ductwork and piping for the second week in a row.

Photo 2

Non-standard filter boxes from the Plutonium Finishing Plant ventilation system are carefully packed and braced inside a standard waste box for disposal as transuranic waste.

Photo 3

Process transfer line piping is carefully packed into a standard waste box for disposal offsite. To date, CHPRC has used Recovery Act funding to remove 268 feet of transfer line piping.

RL-0013 Solid Waste Stabilization & Disposition

RL-0013C:R1.1: MLLW Treatment

Of the 1,800 m³ of MLLW and LLW planned for shipment under the Recovery Act:

- 1,032 m³ of MLLW and LLW have been shipped to date including:
  - 876 m³ that have been treated and disposed.
  - 156 m³ at off-site treatment facilities awaiting processing. Treatment is scheduled for FY11.

One shipment went out this week on Nov. 5 from the Central Waste Complex (CWC) to Perma-Fix Northwest (PFNW). The shipment contained one box (11.5 m^3) of MLLW debris. This waste will be non-thermally treated through macro-encapsulation and packaged for disposal in Hanford's Mixed Waste Disposal Units.

RL-0013C:R1.2: TRU Waste

Of the 2,500 m³ of suspect TRU waste planned for retrieval under the Recovery Act:

- 140 m³ are staged, pending shipment.
- 698 m³ have been shipped to a treatment, storage, or disposal facility.

In the 3A burial ground, workers continued excavating Box 12 in Trench 17 for removal and installed reinforcement walls around the box and lifting plates under the box in preparation for removal. They also continued excavating the east end of Trench 8 over the remaining boxes – seven of the eight remaining boxes are now visible. Portable assay was completed on Box 1 from Trench 8.

In the 4B burial ground, a global positioning system laser-integrated mapping survey was conducted on the Trench 11 – Feb. 4 event site and other exposed waste. This new technology was incorporated into the retrieval process. The project conducted a 4B Trench 11 After Action Review with the geophysical survey contractor for Lessons Learned. The final 4B Trench 11 retrieval plan meeting was held.

In the 12B burial ground, sealed source shipments from WRAP to the 12B burial ground to support calibration of the passive/active neutron (PAN) assay system recommenced and the calibration, confirmation, and verification of the PAN assay system continued. The Hazard Review Board review was completed and comments were resolved for the 12B excavation and retrieval procedures. The acceptance test procedures were completed for Drum Venting System (DVS) 3.

Photo 4

Workers reinforce Box 12 in Trench 17 of the 3A burial ground with new plywood prior to the plastic cover installation.

Photo 5

Plywood was installed on Box 12 in Trench 17 of the 3A burial ground. The box is now ready for the plastic cover installation.

Photo 6

Workers install a plastic cover over Box 12 in Trench 17 of the 3A burial ground prior to removing the box from the trench for the installation of a shoring box.

TRU Project Drum Repackaging

Of the 850 m³ planned to be characterized and repackaged with funding from the Recovery Act:

- 1,944 drums (404.4 m³) have been repackaged.
- 96 TRUPACT-II shipments [1,343 55-gallon drums, 24 standard waste boxes (SWBs), two ten-drum over-packs, 456 85-gallon over-packs and 414 drums over-packed into 118 SWBs (507.67 m³ total)] have been shipped.

Suspect TRU Waste Shipments

Of the 637 m³ of suspect TRU waste planned for shipment under the Recovery Act:

- 199.7 m³ have been shipped to date (40 m^3 were shipped using Base funding).
- 109.2 m^3 have been repackaged into WIPP-certifiable packages.

Photo 7

Workers load a box of transuranic waste (32.6 cubic meters) into the Super Type A shipping container at the Central Waste Complex for shipment to Perma-Fix Northwest (PFNW). The box will be repackaged at PFNW into Waste Isolation Pilot Plant (WIPP)-certifiable containers. The repackaged waste will be returned to Hanford for WIPP certification activities.

Photo 8

Workers place the top cover onto a Super Type A shipping container loaded with one box of transuranic waste for offsite shipment to Perma-Fix Northwest.

Photo 9

Workers load a transuranic waste box (47.7 cubic meters) onto a transportation vehicle for offsite shipment. The transuranic waste will be shipped to Perma-Fix Northwest for repackaging.

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

RL-0030.R1: Central Plateau Soil & Groundwater

Well Drilling & Decommissioning

The following table showcases CHPRC's recent progress in well drilling and decommissioning.

Operable Unit	Scope (Wells to be drilled with Recovery Act funding)	In progress	Drilled to Total Depth[1]	Completed or Developed[2]
100-BC-5	Support characterization and removal of chromium (6 wells)	3	2	2
100-KR-4	Support characterization of the vadose zone and aquifer (13 wells)	8	6	6
100-HR-3	H Area: Support the optimization of removal of chromium (40 wells)	40	40	37
100-HR-3	H Area: Remedial Investigation/Feasibility Study Hanford Formation (15 wells)	3	-	-
100-FR-3	Support for Remedial Investigation/Feasibility Study characterization (3 wells)	3	2	-
200-ZP-1	Support the 200 West Groundwater Treatment Facility that will primarily treat carbon tetrachloride contamination in the groundwater (17 wells)	17	15	15
300-FF-5	Support characterization of the aquifer (11 wells)	6	4	4
Site-wide	Decommission wells that are no longer of service[3]			176

[1] Wells are drilled to varying depths to address contaminants at different depths in the soil.
[2] When a well is developed, the well screen and riser pipe are placed in the hole, filter pack material is placed around the screen, and the well has been surged and pumped to establish good communication between the well and the surrounding soil.
[3] Wells that are inactive or no longer of service are filled with grout or other materials, the casing is removed, and a cap or marker is installed.

200 West Groundwater Treatment Facility

Construction activities continue on the 200 West Area Groundwater Treatment Facility project, with the pouring of approximately 428 cubic yards of concrete, bringing the project-to-date total to approximately 4,050 cubic yards.

The general contractor, Skanska USA Build Inc. (Skanska), and its subcontractors continued installing siding for the Radiological Building, placing under slab conduits for the Bio-Processing Building and completed the first two slab-on-grade concrete pours for the Bio-Processing Pad.

Construction of the four transfer buildings, being performed by subcontractor George A. Grant, included:

- Extraction #1: Completion of the simple saver and roof insulation.
- Extraction #2: Installation of C-channels and wall girts as well as the simple saver, insulation, and roofing. Skanska crews mobilized to install weld nuts on the C-channel tabs.
- Injection #1: Construction of the structural steel is complete, installation of the C-channel is pending Skanska's installation of weld nuts on tabs.
- Injection #2: Slab rebar construction is 90 percent complete.

Photo 10

Workers from the subcontractor Skanska USA Build Inc. install siding on the Radiological Building that will be part of the 200 West Groundwater Treatment Facility.

DX Groundwater Treatment Facility
Acceptance testing continued. Testing of the heat trace is complete at all the wells installed for this treatment facility. High and low tank level interlocks were verified for pumps at the M1 and M2 transfer buildings. Verification of the well level is complete for the M1 and M2 wells. Rewiring of all the extraction pumps is complete. Electrical and mechanical equipment installation is 100 percent complete, respectively, for the Chemical Addition building.

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

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

U Canyon
Preparatory work continued on the D-10 tank in Cell 30 of the U Canyon. Crews opened the cell and took environmental samples. Video documentation on the integrity of the tank and lift trunnions is in progress. Workers performed a walk-down to assess the staging areas for material resulting from demolition of the 183KW Sedimentation Basin that will be relocated to U Plant and used for fill over the canyon after demolition. Both the core drilling contractor and haul road construction contractor are meeting to initiate those activities.

U Plant Ancillary Facilities
Final cleanup and "as left condition" surveying of the 224-U and 224-UA buildings area continued. Grouting of the C Cell began.

200 East Core Industrial Area
Final demobilization from the 272-E Fabrication Shop site is complete. Demolition of the crusher house and conveyor system in the 284-E Powerhouse complex continued along with asbestos abatement within the powerhouse.

200 West Area Industrial Facilities
CHPRC demolished the X8 Motor Car Shed and disposed of the debris. This small structure provided on-rail storage for a hand car or other small rail servicing cart and storage space for railroad maintenance tools. Planning, characterization, and radiological surveys are ongoing for the other industrial facilities CHPRC plans to demolish with Recovery Act funding in the 200 West Area. Asbestos abatement is also in progress on the exterior of 284WB Package Boiler Plant.

Photo 11

The X8 Motor Car Shed before demolition. This small structure provided on-rail storage for a hand car or other small rail servicing carts and storage space for railroad maintenance tools. It is one of six industrial facilities in Hanford's 200 West Area that CHPRC plans to demolish with Recovery Act funding to help reduce surveillance and maintenance costs on facilities that are no longer of service.

Photo 12

The site of the X8 Motor Car Shed after demolition and debris removal the first week of November 2010.

209-E Criticality Mass Laboratory

Readiness preparations and validation review for implementing the documented safety analysis document continued. CHPRC approved and released the Criticality Safety Evaluation Report for the equipment removal activities. The project is obtaining materials for mock-ups to support the development of removal techniques for radiological control during tank cutting activities and received approval for the Notice of Construction.

Photo 13

Process equipment located inside the 209-E Criticality Mass Laboratory. CHPRC will remove the equipment as well as tanks and glove boxes located within the building before beginning demolition.

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

Arid Lands Ecology Reserve (ALE) D&D

CHPRC completed demolition of the 6633 Franklin County Communications Building and the 6632 Verizon Communications Building on the upper reserve. These were the last two structures planned for demolition with Recovery Act funding at the reserve. Altogether, CHPRC has removed more than 33,000 square feet of facilities at the ALE Reserve, an accomplishment that will help the DOE meet its goal of shrinking the footprint of the 586-square-mile Hanford Site by 45-60 percent in 2011. Crews also completed debris pile cleanup on the lower reserve. Some debris remains to be loaded for disposal. Crews and equipment are demobilizing from the work site.

Photo 14

CHPRC demolishes the 6632 Verizon Communications structure on the upper Arid Lands Ecology Reserve. This was one of the last of more than 20 structures CHPRC demolished at the reserve.

North Slope Debris Removal

Personnel with Sealaska Environmental Services, a subcontractor to CHPRC, began debris site cleanup on the North Slope in Hanford Reach National Monument Areas 15, 16, and 18. Ecological and cultural reviews continued for other areas on the North Slope.

Photo 15

Crews from Sealaska Environmental Services, a subcontractor to CHPRC, size reduce debris on the North Slope prior to loading it into a disposal container. Sealaska Environmental Services is a small, disadvantaged, Alaska Native-owned business that is supplying temporary service men to clean up debris across the 169-square-mile North Slope area located north and northeast of and across the Columbia River from Hanford's main facilities.

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

As documentation continues through the review and approval processes, resources are being secured and the work package for visual inspection of the railcars is being finalized. CHPRC is also planning for the transportation and shipment of waste to ERDF.

Waste Sites

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

Waste Site in Progress	Tons of Contaminated Soil Removed	
	Week Ending Nov. 5, 2010	*Total to Date*
600-222	150	150
600-286/287-PL	2,913	10,600
BC Control Area	5,500	255,000

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

- *200-MG-1*
  - 216-S-26: CHPRC issued information to potential vendors for evaluation; vendor selection is ongoing.

- 600-36: The Remediation Action Report (RAR) is being prepared.
- 600-40: Verification sampling took place; results are pending.
- 600-220: Direct pushing test (DPT) sampling is expected to resume this week.
- 600-222: Excavation is complete; verification sampling will commence next week.
- 600-226: Excavation is complete and the request for sample verification was initiated.
- 600-228: DPT sampling is expected to resume this week.
- 600-OCL: Retrieve, treat, and disposal activities will commence after completion of 600-286/287-PL activity.
- 299-W-147-PL: Excavation resumed.

- *200-CW-3*
  - 216-N-4: The remaining site verification package (RSVP) is being prepared. Backfill is being hauled for 216-N-4 and N-6 with approximately 11,000 tons stockpiled.
  - 216-N-6: The RSVP is being prepared.
  - 600-286-PL: Remediation is complete, pending verification sampling.
  - 600-287-PL: Remediation is in process with ongoing shipments to ERDF.
- *BC Control Area*
  - For Zone A, approximately 86 acres have been excavated and surveyed.
  - For Zone B, radiological down-posting surveys are in process.

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

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

Facility D&D

Demolition and debris load-out continued on the west side of the 105KE Reactor building. Demolition continued on the 105KE discharge chute and the remaining basin floor at the base of the discharge chute.

Photo 16

Demolition continued on the 105KE discharge chute and the remaining basin floor at the base of the discharge chute. CHPRC is removing the chute and remaining basin floor to access and remove the contaminated soils underneath.

CHPRC is completing punch list items for the facility heating, ventilation, and cooling (HVAC) system upgrades at the 105KW Fuel Storage Basin and installing bollards near external components.

Infrastructure Utilities Upgrade Project
Installation of the fire water and potable water lines in the 100K Area is complete up to the tie-in points. Hanford Fire Marshall approval of the system is being obtained prior to proceeding with fire water and potable water lines tie-ins.

Electrical installation continued at the water treatment building. Asphalt was placed around the southwest portion of the building. Items that need to be finished in order to obtain the Building Occupancy Permit are being completed for the water treatment building.

Photo 17

CHPRC placed asphalt at the Water Treatment Facility under construction in the 100K Area of the Hanford Site. The facility will provide fire and potable water to the 100K Area and allow existing infrastructure to be removed to facilitate future cleanup work.

Waste Sites

Progress in the remediation of the 100K Area waste sites included:

- Continued cleanup of the 100-K-42 tracked contamination; 11 containers with 196 tons of soil were shipped to ERDF.
- Mobilization for 116-KE, 117-KE, and 116-KE-1 waste site remediation; 23 containers were loaded with 488 tons of material.
- Planning for remediation of the 100-K-57 waste site.

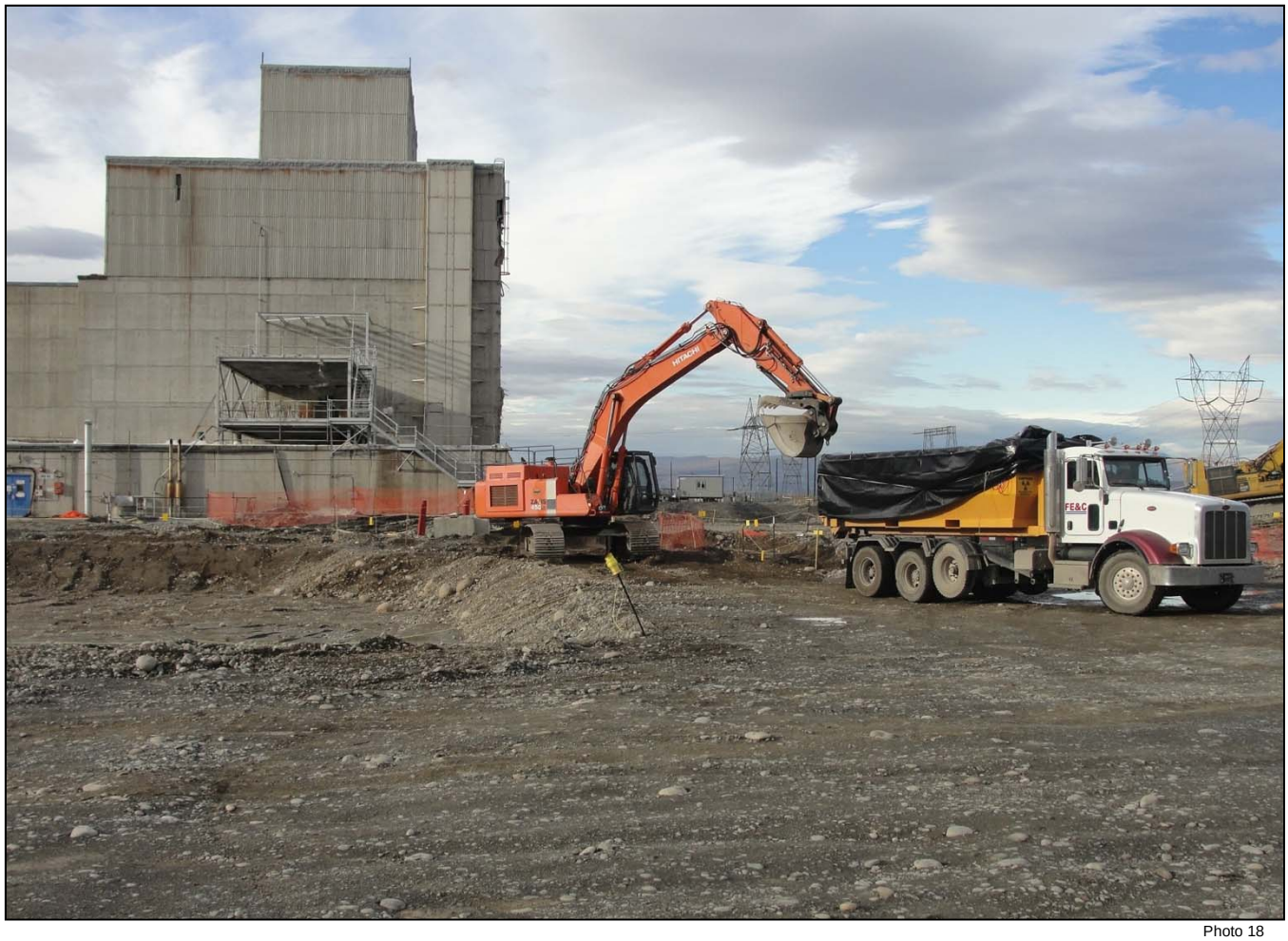


Photo 18

An excavator removes soil near the former 115-KE building, which CHPRC recently demolished with Recovery Act funding in the 100K Area.

UPCOMING EVENTS

RL-0011 Nuclear Materials Stabilization & Disposition

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

- Remove six hoods in room 139 and stage them for size reduction.
- Complete grouting the first phase of drain line trenches in the 234-5Z building.
- Complete disposition of remaining chemicals from room 144.
- Enlarge the door on room 144 and transfer glove box 144-9 to waste operations for disposal.
- Complete decontamination and isolation of glove box 179-5 from building ventilation and remove it from room 185.
- Initiate process equipment removal from the first three glove boxes in room 179.
- Isolate and remove the remaining four glove boxes from room 642 of the 2736-ZB building.
- Transfer glove boxes HC-230C-3, -4, and -5 to waste operations for disposal.
- Initiate D&D of glove box 100A.
- Authorize use of Aspigel® as an alternate decontamination process and deploy it to the field.
- Complete characterization entries into the 232A Scrubber Cell and initiate chemical decontamination of adjacent glove box HA-46.

- Continue removing process vacuum and process transfer piping.
- Begin isolation and cleanout of glove box WT-2 in 242-Z building.

RL-0013 Solid Waste Stabilization & Disposition

RL-0013C:R1.1: MLLW Treatment

- Planned shipment of 34 drums (7.1 m^3) of LLW debris from CWC to PFNW.

RL-0013C:R1.2: TRU Waste

- TRU Retrieval
  - 3A burial ground:
    - Remove Trench 17 Box 12, assemble shoring box, and prepare for shipment.
    - Continue excavation of metal boxes 16, 17 and 19 in Trench 17.
    - Excavate north side of containers 13-22 in Trench 17 and begin excavating a ramp to facilitate removal of Box 13.
    - Continue work planning for removal/shipment of Boxes 27, 16, and 13 in Trench 17.
    - Continue excavation and begin removal of remaining boxes in Trench 8.
    - Excavate and remove the last culvert in Trench 8.
    - Continue the portable assay of removed containers from Trench 8.
  - 4B/4C burial grounds:
    - Complete the initial disinfection and filling of the Mobile Decontamination Unit with potable water.
    - Develop *Mitigate 4B Trench 11 Event Site – Drum Retrieval* work package (2X-10-06963) and remove drum.
  - 12B burial ground:
    - Complete all remaining construction upgrades.
    - Complete calibration, confirmation, and verification of the PAN assay system.
    - Complete the operational tests for DVS 3 and the real-time radiography/drum warming unit.
    - Validate/approve remaining operating procedures for Next Generation Retrieval.
- TRU Repack
  - No planned TRUPACT-II shipments.
- Suspect TRU Waste Shipments
  - One planned shipment this week.

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

RL-0030.R1: Central Plateau Soil & Groundwater

- Continue construction of the 200 West and DX Groundwater Treatment Facilities.
- Continue decommissioning wells across the site.
- Continue drilling at 100-BC-5, 100-HR-3, 100-KR-4, 100-FR-3, 200-ZP-1, and 300-FF-5.

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

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

- Complete final surveys and grouting of C Cell at the 224-U/224-UA buildings.
- Continue asbestos abatement in the U Canyon galleries.
- Continue asbestos abatement and demolition preparations for the 284-E Powerhouse.
- Continue demolition of the crusher house and conveyor building at the 284E Powerhouse.

- Continue preparations for demolition of the 209-E Criticality Mass Laboratory.
- Continue demolition planning, characterization, and asbestos abatement activities for the 200 West Area industrial facilities.

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

- Continue demobilization activities on the ALE Reserve.
- Continue removing debris and processing cultural and ecological reviews for removing debris from the North Slope.
- Continue planning, document preparation, and compilation of characterization information for the railcars in the 200 North Area.
- Continue remediating contaminated soil from waste sites.
- Continue use of mobile survey technology at BC Control Area.

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

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

- Continue with demolition on the west side of the 105KE Reactor building.
- Continue demolition on the 105KE discharge chute and the remaining basin floor at the base of the discharge chute.
- Complete activities for upgrading the 105KW HVAC system.
- Continue preliminary design and review activities for disposition of the 105KE Reactor.
- Continue Infrastructure Utilities Upgrade Project activities.
- Continue remediating contaminated soil from waste sites.