

ARRA Weekly Report



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Contents

DVERVIEW	3
ACCOMPLISHMENTS	
RL-0011 Nuclear Materials Stabilization & Disposition	
RL-0011.R1: Plutonium Finishing Plant D&D	
RL-0013 Solid Waste Stabilization & Disposition	7
RL-0013C:R1.1: MLLW Treatment	
RL-0013C:R1.2: TRU Waste	10
RL-0030 Soil & Groundwater Remediation, Groundwater/Vadose Zone	11
RL-0030.R1: Central Plateau Soil & Groundwater	11
RL-0040 Nuclear Facility D&D – Remainder of Hanford	12
RL-0040.R1.1: U Plant/Other D&D	15
RL-0040.R1.2: Outer Zone D&D/Waste Sites	19
RL-0041 Nuclear Facility D&D – River Corridor Closure Project	21
RL-0041.R1.1: 100K Area Remediation	22
JPCOMING EVENTS	23
RL-0011 Nuclear Materials Stabilization & Disposition	24
RL-0011.R1: Plutonium Finishing Plant D&D	24
RL-0013 Solid Waste Stabilization & Disposition	25
RL-0013C:R1.1: MLLW Treatment	25
RL-0013C:R1.2: TRU Waste	25
RL-0030 Soil & Groundwater Remediation, Groundwater/Vadose Zone	25
RL-0030.R1: Central Plateau Soil & Groundwater	25
RL-0040 Nuclear Facility D&D – Remainder of Hanford	25
RL-0040.R1.1: U Plant/Other D&D	25
RL-0040.R1.2: Outer Zone D&D/Waste Sites	25
RL-0041 Nuclear Facility D&D – River Corridor Closure Project	26
RL-0041.R1.1: 100K Area Remediation	26



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 that will help prepare the Plutonium Finishing Plant (PFP) for demolition to slab-on-grade three years ahead of the Tri-Party Agreement Milestone of September 2016. The highest priority scope includes removing over 170 glove boxes/laboratory hoods and other highly contaminated equipment from the 234-5Z building, the largest facility at Hanford for plutonium production and processing.

RL-0013 Solid Waste Stabilization & Disposition

Recovery Act funds are allowing CHPRC to accelerate retrieval of 2,500 m³ of suspect transuranic (TRU) waste, eliminate 1,800 m³ 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 and drill 344 wells that will be used for monitoring, extracting, and remediating groundwater.

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 facilities to reduce mortgage costs on buildings that are no longer of service and provide access to waste sites located underneath.

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

In the 100K Area along the Columbia River, CHPRC is demolishing 12 buildings and remediating 49 wastes 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

With support from Recovery Act funds, workers have now removed 38 glove boxes/hoods, removed process equipment from 20 others, and decontaminated 13 to meet LLW transportation and disposal criteria. Scheduled work on some glove boxes recently slowed as crews began concurrently activating other glove boxes ahead of schedule in order to remove legacy combustibles to support a new PFP combustible control program. This work will continue for 2-3 weeks. Recent accomplishments in the former laboratories and process areas also included:

- Analytical Laboratory Workers initiated chemical decontamination of three glove boxes in room 136 and began size reduction and removal of a scrubber assembly from a glove box in room 149. Glove ports were activated and combustible materials removed from six hoods in room 139 and from glove box HC-46F in room 170. Preparations continued for sampling and disposition of excess chemicals staged in room 144.
- Standards Laboratory Disassembly of analytical cabinets in rooms 221C and 221D was completed to support the upcoming cleanout and removal of five glove boxes in 221D. Preparations continued for cleanout of the 221D-5 glove box, the first of the five to be removed.
- Plutonium Process Support Laboratory D&D crews activated and removed legacy combustibles from glove box 179-9. Crews also activated two additional glove boxes in room 180 and one in room 188 to support accelerated removal of combustible materials.
- Plutonium processing areas Crews continued process equipment removal in glove boxes HA-19B1 and B2, chemical decontamination of glove box HC-60, and external mechanical isolations and reactivation of glove ports on glove box HA-46. Workers also removed legacy combustibles and continued cleanup in room 166. Installation of a large area containment continued in room 235-D to support future cleanout and removal of glove boxes in the former Radioactive Acid Digestion Test Unit area of 234-5Z building.

PFP criticality safety and emergency response documents associated with the 236-Z and 242-Z buildings were modified to eliminate the need to suspend D&D work in adjoining areas of the Analytical Laboratory during future canyon and cell entries.

With the cleanup of contamination in room 166 complete, a safety shower in the room was deactivated and removed, leaving only two showers in the Standards Laboratory to be removed in the near term. Workers also completed removal of several sections of steam piping in the 291-Z building, which will support future D&D work in this area. Preparations also continued for the removal of the process vacuum system from throughout the 234-5Z and 291-Z buildings.

The Solid Waste staff, with support from the Waste and Fuels Management Project, completed preparations for packaging and shipping three hoods to Environmental Restoration Disposal Facility (ERDF) using the Contaminated Equipment – Special Package Authorization (CE-SPA) process.





A pipefitter removes the relief valve from a deactivated steam line in the 291-Z building at the Plutonium Finishing Plant. Removal of this system will provide access to other areas planned for decommissioning and demolition.





Workers remove waste from a laboratory hood in room 139 of the Plutonium Finishing Plant's Analytical Laboratory, where CHPRC D&D crews recently activated glove ports and removed combustible materials from six laboratory hoods.





Three interconnected glove boxes are on the move to a container for shipment to the Environmental Restoration Disposal Facility. These glove boxes were recently cleaned out, decontaminated, and removed from room 131 of the Analytical Laboratory at the Plutonium Finishing Plant. Decontaminating glove boxes to low-level waste limits the need for hazardous and costly dismantling and size reduction that would be required if the glove boxes were disposed of as transuranic waste.

RL-0013 Solid Waste Stabilization & Disposition

RL-0013C:R1.1: MLLW Treatment

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

- 811 m³ of MLLW and LLW have been shipped to date including:
 - o 330 m³ that have been treated and disposed.
 - o 481 m³ at off-site treatment facilities awaiting processing. Treatment is scheduled for FY10.

Two shipments of waste were sent out for treatment this week. One large box (11 m³) of MLLW and Toxic and Control Substances Act (TSCA) MLLW debris was over-packed into a larger shipping container, borrowed from Washington River Protection Solutions, and shipped from the Central Waste Complex (CWC) to Perma-Fix Northwest (PFNW) on Feb. 2. This shipment contains materials of a higher radioactive level that must be packaged differently than most containers. The borrowed container is large enough to handle the waste box for this and two upcoming shipments. The waste will be volumereduced then non-thermally treated and grouted or encased in a special concrete. The second shipment,



containing 84 drums (17.8 m³) of LLW debris, was also sent to PFNW from CWC on Feb. 4. Both shipments of waste will be packaged for disposal in Hanford's Mixed Waste Disposal Units.



A crane lifts the lid for a special shipping container that is being used to ship a large box of mixed low-level waste and Toxic Substances and Control Act mixed low-level waste debris for treatment.



Workers replace the lid on a special shipping container for a shipment of mixed low-level waste and Toxic Substances and Control Act mixed low-level waste debris that will be shipped to Perma-Fix Northwest for volumereduction and macro-encapsulation. Once treated, the waste package will be returned to Hanford for disposal.

Environmental Restoration Disposal Facility "Self Perform"

The Container Maintenance Facility is nearing completion with the installation of insulation, roofing, siding, drywall, and roll-up doors. Electrical work began with the hanging of lights and the installation of power panels. The remaining yard light poles were framed and set in place. Two more concrete pours were performed on the exterior concrete pad. Installation of the vehicle hot starts is complete and field work began on the new access road.





Electricians hang light fixtures inside the Container Maintenance Facility. Electrical work began this week with the hanging of lights and the installation of power panels. Electricians are scheduled to finish interior electrical work next week.

RL-0013C:R1.2: TRU Waste

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

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

Workers reinitiated excavation of 4B Trench 11 and a team planning session was held to develop a path forward for removing the walls on Box 82 in 3A Trench 17. The installation and electrical tie-in of the mask station storage structure was completed. The large fiberglass-reinforced plywood (FRP) box lifting fixture that was sent for repairs passed the loading test after weld repairs were completed. As part of preventative maintenance, the bolts must be replaced prior to resuming use of the fixture.

Alpha Caisson Retrieval Project

The Nuclear Safety group issued four Materials at Risk reports for each of the alpha caissons in addition to a report on reactive material. The Project Management Group issued a notice to proceed toward the next design phase to both AREVA and ARES.



TRU Project Drum Repackaging

Of the 850 m³ planned to be characterized and repackaged under the Recovery Act:

- 684 drums (142.3 m³) were repackaged.
- 1,247 drums (259.4 m³) have been quick-scanned to date.
- Repack instructions (corrective actions) for 1,457 drums (303.1 m³) have been developed.

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

RL-0030.R1: Central Plateau Soil & Groundwater

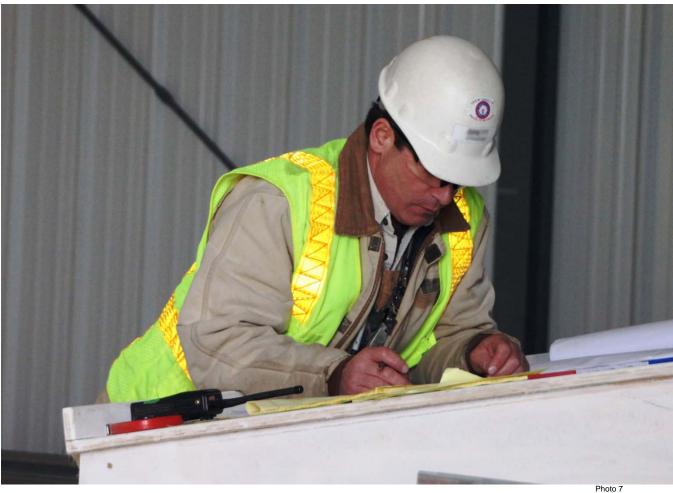
In the 200 West Area, construction of DOE's largest treatment system for contaminated groundwater to date continued with the installation of 13 of 65 road crossings. The road crossings are points where high density polyethylene pipe must be routed underneath an active roadway as it connects wells to the 200 West Groundwater Treatment Facility. The 200 West facility will be designed to remove several chemical and radioactive contaminants, including the primary contaminant of concern – carbon tetrachloride. The treatment system will both remove contamination and slow the movement of the contamination toward the Columbia River.

In the 100-HR-3 D Area, construction of another pump-and-treat system – the DX Groundwater Treatment Facility – is in progress. CHPRC is constructing the facility with Recovery Act funds to treat hexavalent chromium contamination in the groundwater. Construction of the process building and two transfer buildings continued with the mobilization of process equipment to their respective buildings.

Recent drilling progress includes (listed by operable unit):

- 100-NR-2 Drilling on 171 wells to expand the apatite barrier continued with 76 wells in process, 76 wells drilled to total depth, and 42 wells constructed and developed. Development of the remaining shallow wells will continue when the river elevation is sufficient.
- 100-HR-3 In the D Area, a total of 14 wells will be drilled to support the new DX Groundwater Treatment Facility. To date, 14 wells are in process with 13 of the 14 wells drilled to total depth and 12 wells constructed and developed.
- 200-BP-5 Drilling on three planned wells continued last week. One of three wells has been drilled to total depth.
- 200-ZP-1 Expansion Drilling operations continued on 17 wells in support of the new 200 West Groundwater Treatment Facility. Of the eight wells in process, six wells have been drilled to total depth and four have been constructed and developed.
- 100-BC-5 Drilling continued on all four planned wells for this operable unit. To date, two wells have been drilled to total depth and are under construction, and the other two wells are at approximate depths of 75 and 195 feet, respectively.





An electrician reviews plans for electrical installations in the process building of the DX Groundwater Treatment Facility, one of two treatment facilities being constructed with Recovery Act funds within the Soil and Groundwater Remediation Project to treat groundwater contamination on the Hanford Site.





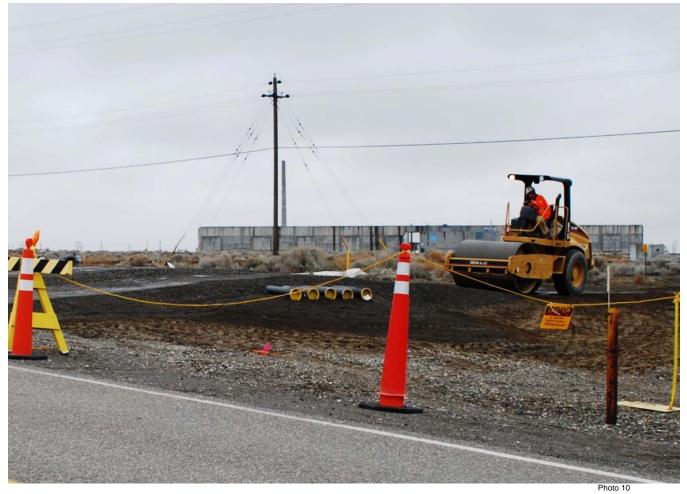
Photo 8

A worker prepares support structures for installation in the process building for the DX Groundwater Treatment Facility. With the outer shells of the process building and the transfer buildings complete, the buildings are filling up quickly with equipment that will support facility operations, which are expected to begin in late 2010.



Workers oversee the covering of a road crossing that will protect high density polyethylene pipe as it passes underneath an active roadway. The high density polyethylene pipe will connect groundwater wells to the 200 West Groundwater Treatment Facility, which will be the largest groundwater treatment facility on the Hanford Site.





Week Ending Feb. 5, 2010

A worker rolls gravel over one of 13 recently installed road crossings that will protect high density polyethylene pipe as it connects groundwater wells to the 200 West Groundwater Treatment Facility. The facility is being designed to treat carbon tetrachloride and various other contaminants in the 200-ZP-1 and 200-UP-1 groundwater operable units.

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

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

U Canyon

Equipment placement activities continued with more items than anticipated fitting into Cell 2. In total, approximately 68 percent of the large mapped items have been placed into process cells below the canyon deck. A repair plan is being prepared for lifting and installing the approximately 600-pound replacement wheel and bearing on the canyon crane. Ongoing work in the canyon included size reduction activities, chemical disposition, as well as evaluations of grout conveyance bids and plans for the disposition of the D-10 tank in Cell 30.





A close-up of the approximately 600-pound wheel and bearing on the U Canyon crane. The crane is used to lift and move equipment from the canyon deck into below-grade process cells. Workers are preparing plans for lifting and installing a replacement unit.





Workers use long-reach tools to move equipment in Cell 2 of the U Canyon. Effective placement has allowed more equipment to fit into the cell, which will limit the number of cells that will need to be opened.

U Plant Ancillary Facilities

At the U Plant ancillary facilities, asbestos abatement continued at the 224-UA building. In 224-U, crews are nearing completion of the asbestos containment for the cell area. The scaffold erection in D cell is complete. Demolition planning is in full swing with demolition expected to begin in the spring.



Photo 13

A worker prepares to enter the contamination area in the 224-U asbestos containment. Workers must wear personal protective equipment while working in the containment area to protect against asbestos hazards.

200 East Core Industrial Area

For the 200 East buildings, asbestos abatement continues in the 272E building. Cold and dark isolations are complete for buildings 2701M, MO-104, MO-840, and 2734E, and should be complete for MO-405 next week. Entries into the 284E building continued for preparation of the Waste Identification Form and cold and dark activities. Beryllium sampling and down posting discussions also continued for the 284E building, and next week the project will initiate biological hazard cleanup, continue cold and dark isolations, and remove non-compliant items from the isolated facilities.

209-E Criticality Mass Laboratory

Beryllium sampling of the facility was completed except for the Criticality Assembly Room (CAR) and the Mix room. Results are expected within 10 days. Once the sample results are received, planning for entry into the CAR and Mix rooms can resume.

Activities for the Documented Safety Analysis, waste documentation, and the environmental documentation continued and follow-up hazards analysis meetings were conducted.

Procurement for the containment structures and ventilation units, scale, waste boxes, and radiological instrumentation was initiated.



The approach for electrical isolation of the facility was evaluated and it was determined that the best approach will be to completely isolate the existing electrical systems and to provide temporary power for the inventory reduction activities. Efforts are underway to obtain the necessary resources for this task.

Heavy Equipment Procurements

All heavy equipment with the exception of the heavy haul truck and miscellaneous end attachments have been delivered. The heavy haul truck should arrive later this spring.

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

Facility D&D

The number of buildings demolished on the lower Arid Lands Ecology (ALE) Reserve climbed to seven last week, with the demolition to slab-on-grade of buildings 6652-H (a laboratory) and 6652-I (ALE headquarters). These were the last of the facilities planned for demolition on lower ALE. The debris is being loaded into roll-on/roll-off containers for disposal at ERDF. Cold and dark isolation activities of structures on upper ALE and cleanup of debris sites throughout the reserve are ongoing.



Demolition of the 6652-I building, one of seven facilities on the lower Arid Lands Ecology Reserve that CHPRC recently demolished with support from Recovery Act funding.





Photo 15



The last of seven facilities on the lower Arid Lands Ecology Reserve before (photo 15) and after (photo 16) demolition. In three weeks, CHPRC demolished seven of 14 facilities planned for demolition on the reserve with support from Recovery Act funding.



Waste Sites

Recent progress in remediating the outer zone waste sites includes (listed by operable unit or site):

- 200-MG-1 Remediation continued for the 600-36 waste site. Preparations and field remediation continued on waste sites 600-218, 600-38, 600-275, and 600-40. The development and processing of the Response Action Completion Reports for closing waste sites 200-E-110, 600-21, and 600-51 continued.
- 200-CW-3 Remediation of the 216-N-1 waste site is complete, pending the sampling results. The sampling instructions necessary to obtain the sampling results were approved. Remediation continued at the 216-N-4 waste site with approximately 3,705 tons of contaminated soil shipped to ERDF. Super dump trucks are being used to help transport the soil.
- *BC Control Area* Approximately 151 acres within Zone B of the BC Control Area are no longer considered a contaminated area. Workers down posted the radiological hazards based on survey results of the area. Remediation of Zone A continued with approximately 34,100 tons of contaminated soil having been shipped to ERDF. In total, six super dump trucks are on site for use in the BC Control Area.



An excavator removes soil from the BC Control Area, where CHPRC has removed 34,100 tons of soil and recently down posted the radiological hazards for approximately 151 acres of Zone B.



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

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

Facility D&D

Demolition continued on the 183.2KW Sedimentation Basin. Most of the internal structures and the east and west exterior walls have been demolished. The rubble is being relocated from the basin floor to a storage pile for processing to separate the rebar from the concrete. Demolition preparations for the 183.1KW Headhouse are complete with demolition expected to begin in mid February. Asbestos removal in 183.7KW Pipe Tunnel was completed.

Removal and packaging of debris from the 105KW Basin continued with a total of 207 debris units removed to date. An overhead monorail system will be installed in the near future to allow removal of heavier items. In addition, tools will be developed to size reduce large items such as fuel processing tables. The amount of debris that will ultimately be removed from the 105KW Basin is still under review and will be determined based on end-point criteria and ALARA, or As Low As Reasonably Achievable, considerations.

Asbestos abatement preparations in the 115KE building continued. Sample analysis for additional characterization samples of the 117KE filters is complete. Analysis results will be used to determine worker protection controls needed during demolition. Preliminary Design activities for the disposition of the 105KE Reactor continued. The draft Equipment Testing List is being independently reviewed. Dry runs for the next phase of sampling are expected to begin this week and will use the recently fabricated glove box mock-ups.





The remains of the east wall of the 183.2KW Sedimentation Basin. To date, D&D crews have demolished the east and west wall and majority of the internal structures.

Waste Sites

Recent progress in remediation at 100K Area waste sites includes (listed by operable unit or site):

- *UPR-100-K-1* Work continued in the 105KE Fuel Storage Basin. Demolition of concrete pads west of the load-out ramp continued and five roll-on/roll-off containers were loaded with approximately 68 tons of material.
- 100-K-3, 100-K-47, and 100-K-56 Pipelines Work continued on removing overburden to truncate lines that potentially feed the 100K outfall from the 105KE area. The pipelines were located and will be air gapped to mitigate water from having a direct path to the 100K outfall.
- 100-K-63 and 100-K-64 Review of the draft document containing the rationale to change the status of 100-K-63 (western flood plain) and 100-K-64 (eastern flood plain) waste sites continued. The document was returned from DOE Richland Operations Office with comments.





An excavator demolishes concrete pads west of the load-out ramp in the waste site beneath the former 105KE Fuel Storage Basin. Approximately 68 tons of material were loaded for disposal.

UPCOMING EVENTS

RL-0011 Nuclear Materials Stabilization & Disposition

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

- Ship three glove boxes removed from room 131 to ERDF using the CE-SPA process.
- Complete chemical decontamination of three glove boxes in room 136 and initiate preparations for removal.
- Complete process equipment removal from five glove boxes (three in room 149 and glove boxes HA-19B1 and HA-19B2) and initiate chemical decontamination.
- Complete chemical decontamination of glove box HC-60.
- Initiate process equipment removal from glove boxes HA-46, HC-227T, and GB400.
- Assess the radiological status of and determine a disposition path for decontaminated glove box HC-230C-3 and three additional glove boxes from room 137 of the Analytical Laboratory.
- Complete electrical and mechanical isolation and removal of the storage tank on the 2731-ZA nitrogen generator facility.
- Initiate disposition of hazardous materials and deactivated air dryers in room 321.



RL-0013 Solid Waste Stabilization & Disposition

RL-0013C:R1.1: MLLW Treatment

- Planned shipment of 12.6 m³ (41 drums) of MLLW, TSCA MLLW, and TSCA LLW solids on Feb. 9 from CWC to PFNW.
- Planned shipment of 4.9 m³ (23 drums) of LLW debris on Feb. 9 from CWC to PFNW.
- Planned shipment of 6.8 m³ (21 drums) of MLLW debris on Feb. 10 from the Waste Receiving and Processing Facility to PFNW.
- Planned shipment of 3.5 m³ (17 drums) of LLW debris on Feb. 11 from CWC to PFNW.
- ERDF "Self Perform":
 - o Container Maintenance Facility:
 - Install man doors.
 - Complete interior electrical work.
 - Electrical utilities outage and tie-in.
 - Continue road work.
 - Pour more concrete for the exterior concrete pad.

RL-0013C:R1.2: TRU Waste

- Complete technical review for proposals for the metal weather covers for removed boxes.
- Receive replacement bolts and return the FRP box lifting fixture to service.
- Remove Box 3 from 3A Trench 17 and stage in a 3A storage zone.
- Place ecology blocks along the east wall of Box 82 in 3A Trench 17 and remove the south sheet piling and FRP box walls.
- Declare readiness to begin removal activities in 3A Trench 8, pending management approval.
- Complete the setup of the 4B/4C area restroom trailer and place it into service.
- Continue setup/startup of the Mobile Decontamination Unit.
- Alpha Caisson Retrieval:
 - o Issue Conceptual Safety Design Report on March 31.

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

RL-0030.R1: Central Plateau Soil & Groundwater

- Continue construction of the DX Groundwater Treatment Facility.
- Continue drilling at 200-ZP-1, 100-HR-3-H, 100-HR-3-D, 100-BC-5, and 100-NR-2.

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

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

- Move the 1200 high-reach excavator to the 272E building, complete assembly of the 850 high-reach excavator, and receive delivery of heavy haul truck and end attachments.
- Continue asbestos abatement and demolition preparations for U Plant ancillary facilities.
- Continue relocating equipment from the canyon deck into the process cells.
- Conduct radiological characterization of the 209-E criticality mass laboratory.
- Continue cold and dark isolation of the nine 200 East Area core industrial complex buildings.
- Perform demolition preparation activities, asbestos abatement, and cold and dark isolations in the 284E building.



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

- Backfill and re-vegetate the former 212 building sites.
- Continue demolition of the lower ALE facilities.
- Continue removal of debris sites.
- Continue cold and dark isolations of upper ALE facilities.

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

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

- Continue demolition of the 183.2KW Sedimentation Basin.
- Begin demolition of the 183.1KW Headhouse.
- Continue debris removal from the KW basin.
- Continue Preliminary Design activities for the disposition of the 105KE Reactor.
- Perform formal KE reactor characterization efforts.
- Continue remediation of the soils beneath the former K East Fuel Storage Basin and the pipeline waste sites (100-K-47, 100-K-56, and 100-K-3).

