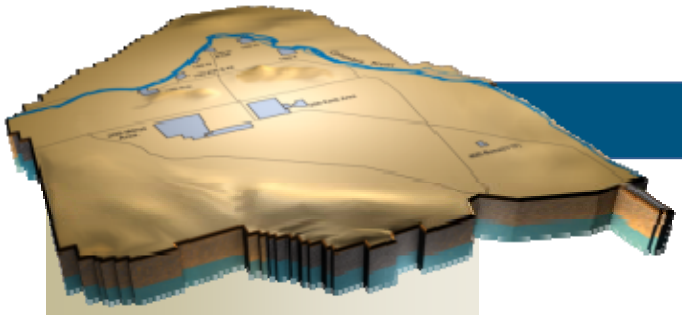
CH2MHILL
Plateau Remediation Company

ARRA Weekly Report



Week Ending March 5, 2010

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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 170 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 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 300 wells that will be used for monitoring, extracting, and remediating groundwater, and decommission 350 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 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

Laboratory areas

Glove box 221D-5 was isolated from building ventilation and removed from its installed location, bringing the number of glove boxes and hoods at PFP removed with Recovery Act funds to 39. The glove box will remain staged in the Standards Laboratory pending receipt of beryllium clearance sample results and the removal of four hoods also in room 221D. A large quantity of excess electronic laboratory equipment was disposed of from room 132 of the Analytical Laboratory to clear other laboratory rooms for cleanout and deactivation. Removal of equipment, decontamination, non-destructive assay and radiological survey measurements are continuing on four additional hoods in the Standards Laboratory, six additional glove boxes and hoods in the Analytical Laboratory, and three hoods in the Plutonium Process Support Laboratory; seven of these are expected to be removed by the end of March.

Plutonium processing areas

In the former Remote Mechanical C (RMC) production line, one crew continued preparations for the removal of glove box HC-230C-2, including installation of scaffolding to support separation of the glove box from building ventilation. Surface Contaminated Object surveys were conducted following removal of external piping stubs from nearby glove box HC-60. Crews are also removing external piping and connections and internal equipment from four other glove boxes, at least one of which is expected to be removed by the end of March.

Photo 1

Scaffolding installed to support the separation of glove box HC-230C-2 from building ventilation. Glove boxes like HC-230-C-2 pose ergonomic challenges to workers as they were previously connected to building ventilation many feet above the floor.

2736-Z/ZB Vault Complex

Work is well under way to clean out and ready the former plutonium vault storage complex for demolition, including three vault and support buildings and 15 fuel storage structures. One of nine glove boxes and hoods in the 2736-ZB support facility has been cleaned out and surveyed, and fixative was applied within the hood to prepare it for removal from the east end of a large glove box. Preparations continued for reactivation, cleanout, and decontamination of the eight remaining glove boxes and hoods in the building. Twenty-six empty 9975 shipping containers were removed from the building and are awaiting shipment to the Lawrence Livermore National Laboratory and 330 lead bricks, weighing 4.5 tons, formerly used for shielding in the non-destructive assay laboratory were also removed from 2736-ZB. The bricks were packaged in two containers to be treated through macro-encapsulation for onsite disposal at the Environmental Restoration Disposal Facility (ERDF).

242-Z Americium Recovery Facility

A successful entry was made into the control room to further assess the condition of the room and the fire protection systems. Few entries have been made into this building since an accident in the 1970s.Water accumulation in the control room was observed as a result of an apparent roof leak, and a large amount of waste was identified for removal prior to the application of contamination fixative to reduce the airborne

radiological hazards in the building. Photographs were also taken to support an assessment of the protection system operability.

Infrastructure systems and equipment removal
Preparations are continuing toward the startup of an extensive task to remove 5,000 feet of heavily contaminated 26-inch process vacuum system piping running throughout the 234-5Z and 291-Z facilities. An additional 135 feet of asbestos insulation was also removed from piping in the 234-5Z building, bringing the total removed with Recovery Act funds to nearly 7,800 feet.

Photo 2

Workers prepare to remove asbestos from piping in the 234-5Z building. To date, CHPRC has removed approximately 7,800 feet of asbestos from piping and ductwork throughout the 234-5Z building.

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:

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

One shipment containing a large box (13.6 m³) of MLLW debris was sent from the Central Waste

Complex (CWC) to Perma-Fix Northwest (PFNW) to be non-thermally treated by macro-encapsulation and packaged for disposal.

Photo 3

CHPRC teamsters load a shipping container of mixed low-level waste onto a transportation vehicle being sent to Perma-Fix Northwest for offsite treatment and packaging for disposal in Hanford's Mixed Waste Disposal Units.

Photo 4

A shipment containing one large box (13.6 m³) of mixed low-level waste leaves the Hanford Site for Perma-Fix Northwest to undergo macro-encapsulation and repackaging.

ERDF "Self Perform"

With an increased amount of waste site and remediation projects, CHPRC requires additional ERDF waste containers and roll-on/roll-off trucks to support the increased field work. A new Container Maintenance Facility will supply a storage area for the new containers.

Two additional roll-on/roll-off trucks were brought on-site, bringing the total number of trucks on-site to five of the 14 trucks procured. The two new trucks are currently undergoing Department of Transportation inspections and will be put into service next week. Operations performed a walk-down of the facility last week and generated a "punch list" of tasks needing to be addressed by the construction sub-contractor. A majority of the "punch list" items have been corrected. A permanent air compressor which will be used to power air tools was installed on the south side of the facility. Site restoration activities were completed with the application of hydro seed on disturbed areas. Workers laid asphalt entrances off Dayton Street for the new access road to the Container Maintenance Facility. This will help prevent erosion to Dayton Street and reduce the amount of gravel and dust carried onto the roadway.

Photo 5

Workers applied hydro seed to disturbed areas surrounding the Container Maintenance Facility site for restoration and stabilization. This view is of the new access road (before asphalt entrances were laid) with the Environmental Restoration and Disposal Facility containers currently stored at the Container Maintenance Facility in the background.

Photo 6

Asphalt was laid on the Container Maintenance Facility access road entrances. The asphalt will prevent erosion on Dayton Street and will help reduce the amount of gravel and dust carried onto the roadway.

RL-0013C:R1.2: TRU Waste

CHPRC is continuing to review and rework its plans and procedures to address changing conditions of waste containers being encountered in the trenches. To date, the conditions of the containers have degraded and in recent months workers have encountered shredded and breached containers as well as a glove box buried without an outer container. The following photos showcase the range of conditions that the CHPRC Waste Retrieval Project has encountered in the trenches.

Photo 7

Initially, waste was found contained in drums or barrels, stacked within the trenches. Degraded containers were over packed into new drums (shown in bright green).

Photo 8

Workers encountered large wooden boxes lined up in waste trenches. Some boxes required additional shoring before they could be lifted from the trenches and others required in-trench handling and repackaging of both the waste and removal of the deteriorated box itself.

Photo 9

CHPRC has encountered waste in unknown configurations within the trenches, with waste unevenly distributed in the trenches and/or packed into containers that have incurred significant damage during placement into the trench or after being buried for decades in the trenches.

Workers continued resolving deficiencies with the new 4C restroom facility and set-up/startup preparations for the new Mobile Radioactive Decontamination Unit (MDU) continued. Nuclear Chemical Operator training and certifications continued. Engineering and safety personnel performed a walk-down of the proposed trailer location at the 3A Burial Grounds with the Fire Protection Engineer. The second shipment of Kelly Klosure building materials was off-loaded.

Alpha Caisson Retrieval Project

The Project Management Group initiated an acquisition development plan for the procurement and construction packages to be issued on the project. The ARES Corporation continued developing the final design of the waste retrieval system, focusing on the remote retrieval system and the shielded transfer containers and accessories. Areva was given a notice to proceed with the preliminary design and mobilization of the design team began.

TRU Project Drum Repackaging
Of the 850 m³ planned to be characterized and repackaged under the Recovery Act:

- 850 drums (176.9 m³) were repackaged.
- 1,442 drums (299.9 m³) have been quick-scanned to date.
- Repack instructions (corrective actions) for 1,953 drums (406.2 m³) have been developed.

TRUPACT-II Shipments
Recovery Act funding has allowed TRUPACT-II shipments from the Waste Receiving and Processing Facility (WRAP) to resume. TRUPACT-II shipments consist of Contact-Handled TRU waste in stainless steel containment vessels that are 8'x10'. Each vessel can hold 14 55-gallon waste drums. Each shipment contains three TRUPACT-II vessels. On March 4, two shipments (17.5 m³) were sent to the Waste Isolation Pilot Plant (WIPP) where they will be disposed of in a repository.

The TRU Repack group teamed up with the Central Characterization Project Mobile Load-Out Crew to complete a management assessment to support the national TRU waste shipping schedule. Every week in March, two shipments will leave WRAP for disposal at WIPP. Beginning in April and continuing through this fiscal year, five shipments will be scheduled to ship out each week.

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

RL-0030.R1: Central Plateau Soil & Groundwater

DX Groundwater Treatment Facility
In the 100-HR-3 D Area, construction of the buildings for the DX Groundwater Treatment Facility is in progress. Electrical, mechanical, and process equipment is being mobilized to the process and transfer buildings. The progress of equipment installations is listed in the table below.

Equipment installation status for the DX Groundwater Treatment buildings

Building	Electrical Equipment (% complete)	Mechanical Equipment (% complete)
Process	20%	25%
Transfer (M1)	20%	25%
Transfer (M2)	15%	15%

Well Drilling & Decommissioning
With Recovery Act funding, CHPRC is installing wells to monitor, extract, and remediate contaminated groundwater while also decommissioning or closing wells that are no longer of service to support reduction of the Hanford Site cleanup footprint. The following table showcases recent progress listed by operable unit and the number of wells that have been decommissioned to date.

Operable Unit	Scope (Wells to be drilled with Recovery Act funding)	In progress	Drilled to Total Depth[1]	Developed[2]
100-NR-2	Expand the apatite barrier to better contain a strontium-90 plume along the Columbia River (171 wells)	100	100	60
100-BC-5	Support characterization of the aquifer (4 wells)	4	4	4
200-BP-5	Support characterization of the aquifer (3 wells)	3	3	1

200-ZP-1	Support the 200 West Groundwater Treatment Facility that will primarily treat carbon tetrachloride contamination in the groundwater (17 wells)	9	6	6
Site-wide	Decommission wells that are no longer of service[3] (350 wells)	16		

[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 such as sand or clay), the casing is removed, and a cap or marker is installed to indicate where the well was previously located.

Photo 10

Workers prepare a rig to decommission a well in the 600 Area. CHPRC plans to use Recovery Act funding to decommission over 300 wells that are no longer of service which will help shrink the Hanford Site cleanup footprint.

Photo 11

A well hole prior to being filled with grout. After the well is filled with grout, the casing is removed and a cap or marker is installed to indicate where the well was previously located.

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

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

U Canyon

Work has completed on the electrical collectors that feed power to the U Canyon crane. Required maintenance activities that could not be performed while the crane was out of service for repair are being completed. Equipment placement is expected to resume next week. Application of fixative was completed on the "R" access doors and is in progress in the stairwells. An entry will be made through the rail tunnel to move needed equipment into the canyon. Evaluations of grout conveyance bids and plans for disposition of the D-10 tank in Cell 30 continue.

U Plant Ancillary Facilities

Progress continued on asbestos abatement in 224-U and 224-UA. Abatement in the calciner area of 224-UA is complete and final cleanup is under way. Asbestos abatement and demolition preparations will continue next week in both facilities.

Photo 12

Workers prepare asbestos waste bags for removal from the 224-U building. Asbestos abatement is in progress at both the 224-U and the 224-UA building, two of three U Plant ancillary facilities that are being prepared for demolition later this year.

200 East Core Industrial Area

Cold and dark preparations were completed for the 272-E building. Entries into the 284-E building continued to support preparation of the Waste Identification Form and cold and dark activities. Biological hazards cleanup of the building continued, beryllium has been cleaned up, and down posting as well as asbestos abatement is planned for next week.

209-E Criticality Mass Laboratory

Development of the Fire Hazards Analysis, Documented Safety Analysis, and waste documents continued in support of inventory reduction activities. The documents are being developed to consider the use of boxes for LLW disposition and other changes that resulted from the operations walk down of the facility. Solid waste boxes for the project were ordered and five 5'x5'x9' LLW boxes were received and staged at the 209-E facility. Work documentation for the execution of housekeeping to remove miscellaneous waste within the facility is completed and awaiting resources for execution. Also, work documentation for additional radiological surveys of the facility is complete and ready to work.

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

Facility D&D
Debris from the recently demolished facilities on the lower Arid Lands Ecology Reserve (ALE) continues to be loaded into roll-on/roll-off containers for disposal at the ERDF. Cold and dark isolation activities of structures on upper ALE and cleanup of debris sites throughout the reserve are ongoing. Ninety-one debris sites have been removed.

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

- *200-MG-1* – Sampling of waste sites 600-38 and 600-40 were taken to determine the waste site needs no further action. Sampling instructions are being prepared for the 600-36, 600-275, 200-W-33, and 200-37. Sampling was completed for waste site 600-218 and UPR-600-12 and preliminary results indicate that the retrieve, treat, and dispose cleanup method may be required. Development and processing continued for the Response Action Completion Reports (RACR) for closing waste sites 200-E-101 and 600-51.The RACR for 200-E-110 and 600-21 was completed and forwarded to the DOE. In addition to the RACR documents, cultural reports for waste sites 600-220, 600-222, 600-226, and 600-228 were submitted to the DOE.
- *200-CW-3* – Remediation continued at the 216-N-4 waste site with three super dump trucks delivering approximately 9,800 tons of contaminated soil to ERDF. Development of the RACR continued for waste sites 2607-N, -P, and -R, which are waste sites associated with the former 212-N, -P, and -R interim fuel storage buildings. Sampling results confirmed the sites require no further remedial action. The RACR contains the closure documentation necessary for closing out the waste sites.
- *BC Control Area* – Remediation of Zone A continued with six super dump trucks delivering approximately 55,000 tons of contaminated soil to ERDF. In Zone B, approximately 570 acres have been radiologically down posted and remediation of the remaining contaminated spots continued.

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

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

Facility D&D
Demolition of the 183.1KW Headhouse is continuing. Debris is being size reduced and loaded into roll-on/roll-off containers for disposal at ERDF. Demolition also continued on the north end of the west basin floor of the 183.2KW Sedimentation Basin. Demolition of the floor will facilitate demolition of the 183.3KW Sand Filter Facility.

Photo 13

The site of the former 183.1KW Headhouse. The 16,900 square foot building was brought to ground level in just days and the debris is being loaded for disposal at the Environmental Restoration Disposal Facility.

Photo 14

An excavator unloads debris from the 183.1KW Headhouse into a container for disposal at the Environmental Restoration Disposal Facility.

Photo 15

The remaining sections of the floor of the 183.2KW Sedimentation Basin.

Debris removal in the 105KW Fuel Storage Basin resumed. A total of 304 debris units have been removed to date. The amount of debris that will ultimately be removed is under review and will be determined based on end-point criteria and As Low As Reasonably Achievable considerations.

Asbestos abatement continued in the 115KE Gas Recirculation building and resumed in the 1706KE and1706KER substructures in preparation for demolition.

Preparations for upgrading the 105KW heating, ventilation, and cooling (HVAC) system unit continued. The engineering load analysis needed to support the design of the HVAC upgrade was completed. Work documents are being prepared and materials procured. Scaffolding is being erected to support construction activities.

Preliminary design activities for disposition of the 105KE Reactor continued, including independent review of the draft Equipment Testing List and development of work documents for core sampling. The glove box mock-up was moved to the 190KW facility for continued training and work instruction validation. This facility has fewer on-going operations than the previous location and reduces distractions. Dry runs in full personal protective equipment are being planned.

Infrastructure Utilities Upgrade Project
Isolation of 100K Area utilities continued in support of cold and dark conditions for buildings, structures, and waste sites planned for D&D and remediation. Scanning of planned construction sites with ground-penetrating radar continued. Construction materials are being delivered. A pre-bid conference was conducted with potential bidders for a design/build contract for the water treatment facility and dual-use water tank. The cultural and ecological reviews of the locations for the water line and treatment plant facility have been completed and the results are being reviewed internally by the Pacific Northwest National Laboratory. Engineering design reviews for re-routing the 13.8KV electrical lines were completed. Transformer and switch gear procurements are being accelerated as result of a meeting with the contractor for the skid-mounted substation to identify opportunities for schedule acceleration.

Waste Sites
Recent progress in remediation of the 100K Area waste sites includes (listed by waste site):

- *100-K-3* – Remediation of the 100-K-3Fish Pond continued with the demolition of the heat exchanger and associated pipeline. Approximately 600 tons of contaminated soil was loaded into ERDF containers and delivered to ERDF.
- *100-K-47* - Remediation of the 100-K-47 Process Sewer continued with the demolition and load out of approximately 800 tons of contaminated soil.
- *100-K-56* – Remediation of the 100-K-56 Reactor Cooling Water Effluent pipeline continued with demolition and shearing of the pipeline. Approximately 600 tons of contaminated soil was loaded into ERDF containers and delivered to ERDF.
- *100-K-53* – The pipelines associated with the 100-K-53 waste site were utilized during reactor operations to transport glycol. Remediation of the pipeline was initiated with removal of overburden.
- *100-K-63 and 100-K-64* – Review of the draft document containing the rationale to change the status of 100-K-63 and -64 waste sites continued.

Photo 16

Recovery Act funding is being utilized to remediate the 100-K-53 waste site that began last week with the removal of the overburden soil to expose the pipelines. The 100-K-53 pipelines transported glycol during reactor operations.

UPCOMING EVENTS

RL-0011 Nuclear Materials Stabilization & Disposition

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

- Complete chemical decontamination of glove box HC-60, three glove boxes in room 136, and three glove boxes in room 149; initiate preparations for removal.
- Remove glove box HC-230C-2 from the RMC Line.
- Remove the east hood from glove box 636 in 2736-ZB.
- Initiate process equipment removal from glove boxes HC-227S and GB400.
- Assess the radiological status of and determine a disposition path for decontaminated glove box HC-230C-3 and three glove boxes previously removed from room 137 of the Analytical Laboratory.

RL-0013 Solid Waste Stabilization & Disposition

RL-0013C:R1.1: MLLW Treatment

- Planned shipment of 20 drums (11.5 m^3) of MLLW debris, previously classified as TRU waste, sent from WRAP to PFNW.
- Planned shipment of nine drums (3 m^3) of MLLW debris, previously classified as TRU waste, shipped from CWC to PFNW.
- Planned shipment of four drums (1.3 m^3) of MLLW debris and Toxic Substances Control Act (TSCA) MLLW solids shipped from WRAP to PFNW.
- Planned shipment of 31 drums (6.3 m^3) of MLLW liquid lab-packs shipped from CWC to PFNW.
- Planned shipment of 14 drums (3 m^3) of MLLW and TSCA MLLW solids shipped from CWC to PFNW.
- Planned shipment of one drum (0.2 m^3) of TSCA LLW solids shipped from CWC to PFNW.
- ERDF "Self Perform" Project - Container Maintenance Facility:
    - Put the two additional roll-on/roll-off trucks into service.
    - Complete compressor enclosure.
    - Issue occupancy permit.
    - Issue "as-built" drawings.
    - Turn facility over to Operations.
    - Demobilize construction (construction workers are packing up the trailer, heavy machinery, tool boxes, etc. and leaving the Container Maintenance Facility site).

RL-0013C:R1.2: TRU Waste

- Continue the set-up/startup of the MDU.
- Complete occupancy inspection for the new 4C area restroom facility and place into service.
- Complete review/revision of the 4C Process Area procedures.
- Ship secondary waste drum that is on a regulatory 90-day timeline by March 10.
- Alpha Caisson Retrieval
    - Issue Conceptual Safety Design Report on April 9 to the Department of Energy for review.

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

- Receive delivery of the remaining D&D heavy equipment being procured.
- Continue asbestos abatement and demolition preparations for U Plant ancillary facilities.
- Continue relocating equipment from the canyon deck into the process cells.

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

- Backfill and re-contour the former 212-NPR building sites.
- Continue waste load out for the lower ALE facilities.
- Continue removal of debris sites throughout the ALE Reserve.
- Continue cold and dark isolations of upper ALE facilities.

- Continue remediation at the BC Control Area, 200-MG-1, and 200-CW-3 waste sites.
- Develop the RACR for closing the 2607-N/P/R waste sites.

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

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

- Continue demolition of the 183KW Sedimentation Basin structures.
- Continue demolition preparation activities for the 115KE, 117KE, 1706KE, and 1706KER buildings.
- Continue debris removal from the KW basin.
- Continue activities for upgrading the 105KW air handling unit.
- Continue Preliminary Design activities for the disposition of the 105KE Reactor.
- Perform formal 105KE Reactor characterization efforts.
- Continue activities for isolating 100K Area utilities to support of cold and dark preparations.
- Continue remediating soils beneath the former K East Fuel Storage Basin and the pipeline waste sites (100-K-47, 100-K-56, and 100-K-3).