



River Corridor Closure Project

Recovery Act Weekly Report

For the week ending April 29, 2011

Contract DE-AC06-05RL14655

Protecting the Columbia River

Overview

Background Summary of Projects that Washington Closure Hanford (WCH) will accomplish using ARRA funds (pending definitization of scope and contract modifications).

A. The Environmental Restoration Disposal Facility (ERDF)

ERDF is the hub of the WCH scope of work and supports a major portion of other Hanford contractor (OHC) waste disposal. Wastes collected from sites around the Hanford complex are brought to ERDF for treatment and disposal. WCH operates the ERDF and is currently using ARRA funds to upgrade and expand its capabilities to meet the needs of Hanford's accelerating mission.

B. The 618-10 Burial Grounds

The trenches at 618-10 have long been regarded as some of Hanford's worst waste sites. Using ARRA funds, WCH will characterize the site. Intrusive and non-intrusive techniques will be used, and the subsequent analysis of data will enable the project to pursue remediation of the site safely and effectively.

C. The 618-11 Burial Grounds

Along with 618-10, the 618-11 Burial Grounds are among the biggest challenges faced by WCH using ARRA funds. The 618-11 characterization work will require special care because of its proximity to the Energy Northwest Generating Facility, north of the 300 Area.

D. Waste Site Remediation

WCH is employing ARRA funds to clean up many failed waste sites not originally part of its contract. Sites in the 100-F and IU 2&6 segments 1&2 are proposed for waste site remediation in the two year period starting in October 2009.

E. Confirmatory Sampling of other new sites

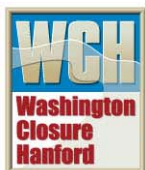
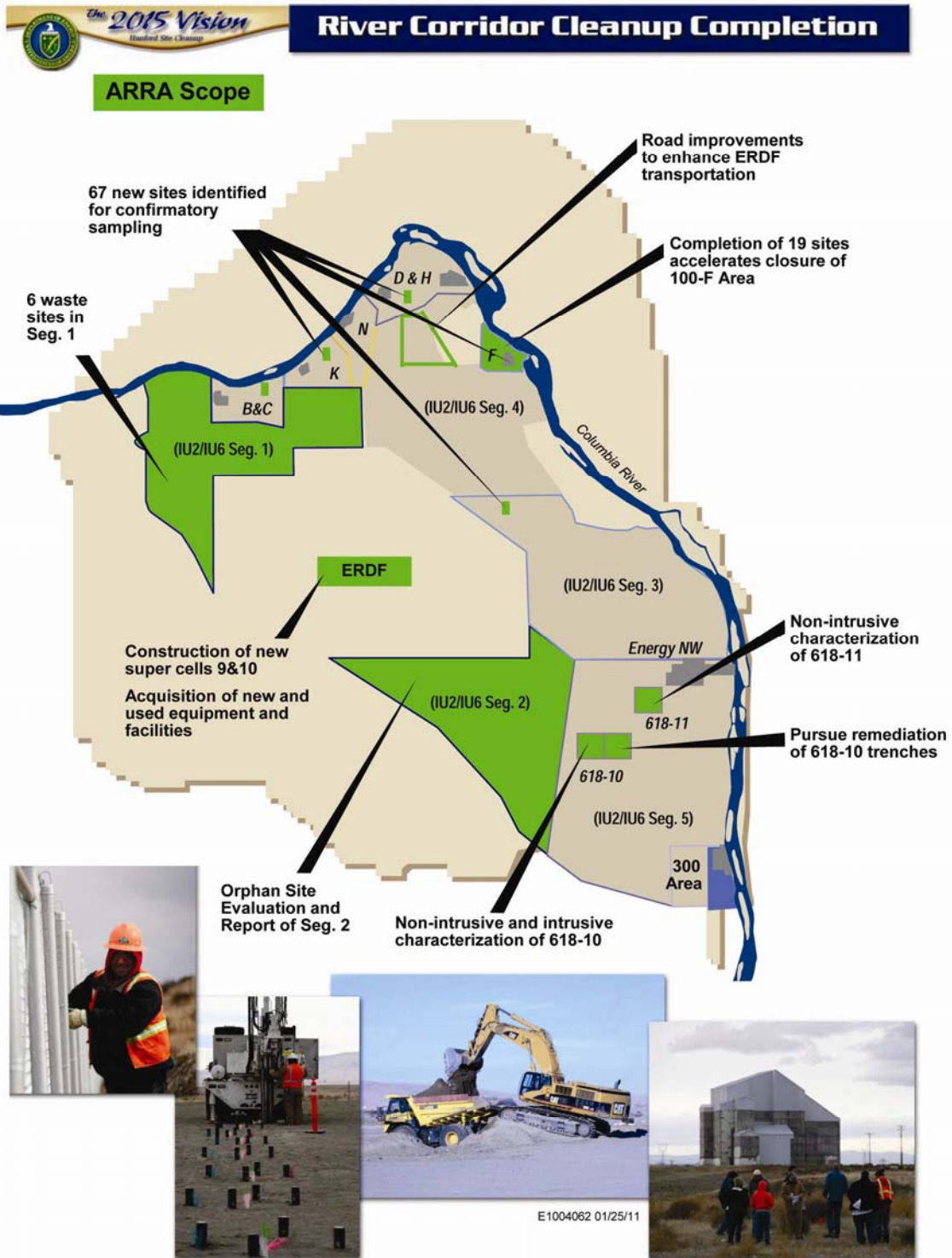
WCH is proposing to complete the early sampling process of 67 potential waste sites using ARRA funds. Confirmatory sampling is performed for sites that require additional information for determining if the site requires remediation.

This weekly report will provide evidence of these activities as they occur in support of ARRA.

The following figure illustrates the overall scope of WCH's ARRA projects.



Overview (Continued)



Safety

Safety Accomplishments

As of March 20, 2011, WCH and its subcontractors have worked 423,305 hours of ARRA scope with no safety incidents.

Hazard Reductions

The River Corridor Closure Project's "Lessons Learned" features a "Good Work Practice" message sent to Hanford Site workers. This week's issue featured WCH's installation of a solar powered light trailer at 100-N Area.

Safety and security lighting at Hanford installations is generally accomplished by diesel-powered, trailer-mounted, metal-halide or high pressure sodium lights. While relatively inexpensive to purchase, the diesel-powered units are not cost-effective in the long term, as they require constant refueling and maintenance. In addition, the diesel generators that power the lights create high ambient noise levels, can cause substantial ground level pollution, and are a potential fire hazard in the event of a spill or a collision with another vehicle.

The solar-powered light unit is fully automatic so that a person is not needed to start the diesel in the morning (without lighting to do so) and stop it when it is no longer needed. This reduces the work hazard to the worker who must do this startup in the dark.

Other virtues of the solar-powered lighting include reduce green house gas emissions, less expensive to operate than diesel powered lighting, less noise, and removes a fire/explosion hazard as well as potential diesel fuel spill hazards.

The NEST Energy System's Raptor Towable Solar Security Light that was installed addresses costs and maintenance issues, and eliminates excessive noise levels and pollution caused by burning diesel fuel. Based on solar power, the unit employs a trailer/tower configuration superior to light trailers powered by diesel generators. Pre-determined sizing of the unit's solar array and battery system ensures continuous operation even during periods of cloudy weather. The system, including foldout solar array, is field deployable without tools, and is designed to operate for extended periods without human intervention. A multi-cycle electronic timer is used to activate the lights on a customer-specific schedule. Photocells are not used, eliminating false system-on situations caused by ambient particulate obstruction. The trailer used in the NEST system is a standard Magnum 3060 Light Trailer.

The entire unit is heavy-duty construction, and the lampheads can be rotated 360 degrees on the pole. The lamps can also be adjusted individually in two directions, allowing for maximum flexibility in focusing light precisely where it is needed.

Expected component lifetime, based on 12 hours per night, 365 days per year operation include the following:

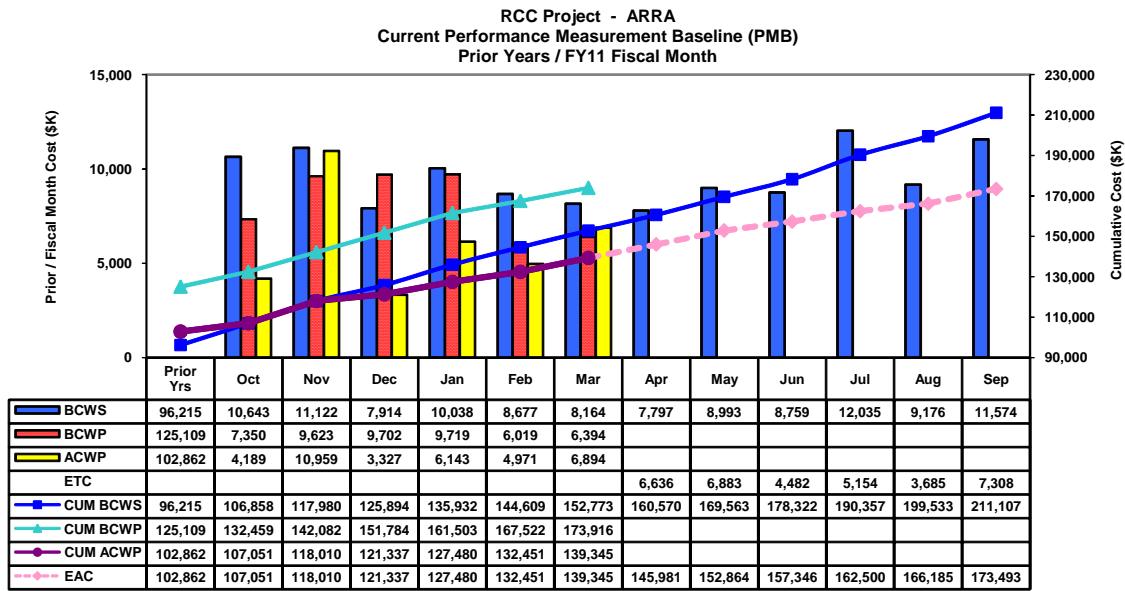
- Batteries – 3 to 5 years
- Solar array – 20 to 25 years
- High-intensity fluorescent lamps – 8 years.



Cost/Contract Status

Contract Mod #	Date	Scope	Obligated (\$M) (Inception to Date)	Not to Exceed (\$M) (Inception to Date)
099	4/9/09	ERDF Cell Expansion & Upgrades; 618-10 NIC	\$203.0	\$28.0
105	4/30/09	ERDF Cell Expansion & Upgrades; 618-10 NIC	\$203.0	\$44.5
126	7/23/09	H.37 Clause - Reporting Requirements	N/A	N/A
139	9/3/09	ERDF Cell Expansion & Upgrades; 618-10 NIC	\$253.6	\$44.5
142	9/30/09	ERDF Cell Expansion & Upgrades; 618-10 NIC; Phase 2 Scope	\$253.6	\$123.8
174	2/22/10	ERDF Cell Expansion & Upgrades; 618-10 NIC; Phase 2 Scope	\$248.2	\$123.8
182	3/25/10	ERDF Cell Expansion & Upgrades; 618-10 NIC; Phase 2 Scope	\$248.2	\$155.8
185	4/19/10	Phase 1 and Phase 2 Scope	\$248.2	\$178.0
192	4/27/10	Phase 1 and Phase 2 Scope	\$253.6	\$178.0
205	5/26/10	Reallocate Funds for Equipment and GPPs	\$253.6	\$178.0
210	6/23/10	Funding deobligation	\$229.3	\$178.0
217	8/4/10	Funding re-obligation	\$233.6	\$178.0
230	9/24/10	Phase 3 Definitization	\$233.6	\$178.0
241	11/22/10	Reallocate Funds for Equipment	\$233.6	\$178.0
242	12/1/10	Increase the Cost Authority on RL-0041.R2	\$233.6	\$196.6
247	12/16/10	Reallocate Funds for Capital Expenditures	\$233.6	\$196.6
253	1/18/11	Increase 41.R1 Cost Authority and reallocate funds for capital	\$233.6	\$214.4
266	2/17/10	Reallocate Funds for Capital Expenditures	\$233.6	\$214.4

River Corridor Closure Project - ARRA



ARRA Proposals 1, 2 and 3 Actuals (\$K)

Apportionment Number	Apportionment Title		March 2011	Inception To Date	Cost Authority
RL-0041.R1	ERDF Cell Expansion	PMB	3,973	97,705	156,847
RL-0041.R2	River Corridor Soil & Groundwater (618-10)	PMB	2,921	41,640	57,566
Sub Total		PMB	6,894	139,345	214,413
Fee			460	13,814	
Total			7,354	153,159	

* PMB = Performance Measurement Baseline.



ERDF

Super Cells 9 and 10 Construction

WCH is awaiting approval of the final Construction Quality Assurance (CQA) Report for super cell 10 and Leachate Storage Tank No. 3. The report was submitted earlier this month to the U.S. Department of Energy, Richland Operations Office, and the U.S. Environmental Protection Agency.

Super cell 9 was placed into service in mid-February. WCH and subcontractors TradeWind Services and DelHur Industries completed construction of both super cells with no recordable injuries, months ahead of schedule, and more than \$16 million under budget.



An aerial photo shows the Environmental Restoration Disposal Facility from the northeast corner of the facility. (Photo 1)

ERDF (Continued)

Facility and Equipment Upgrades

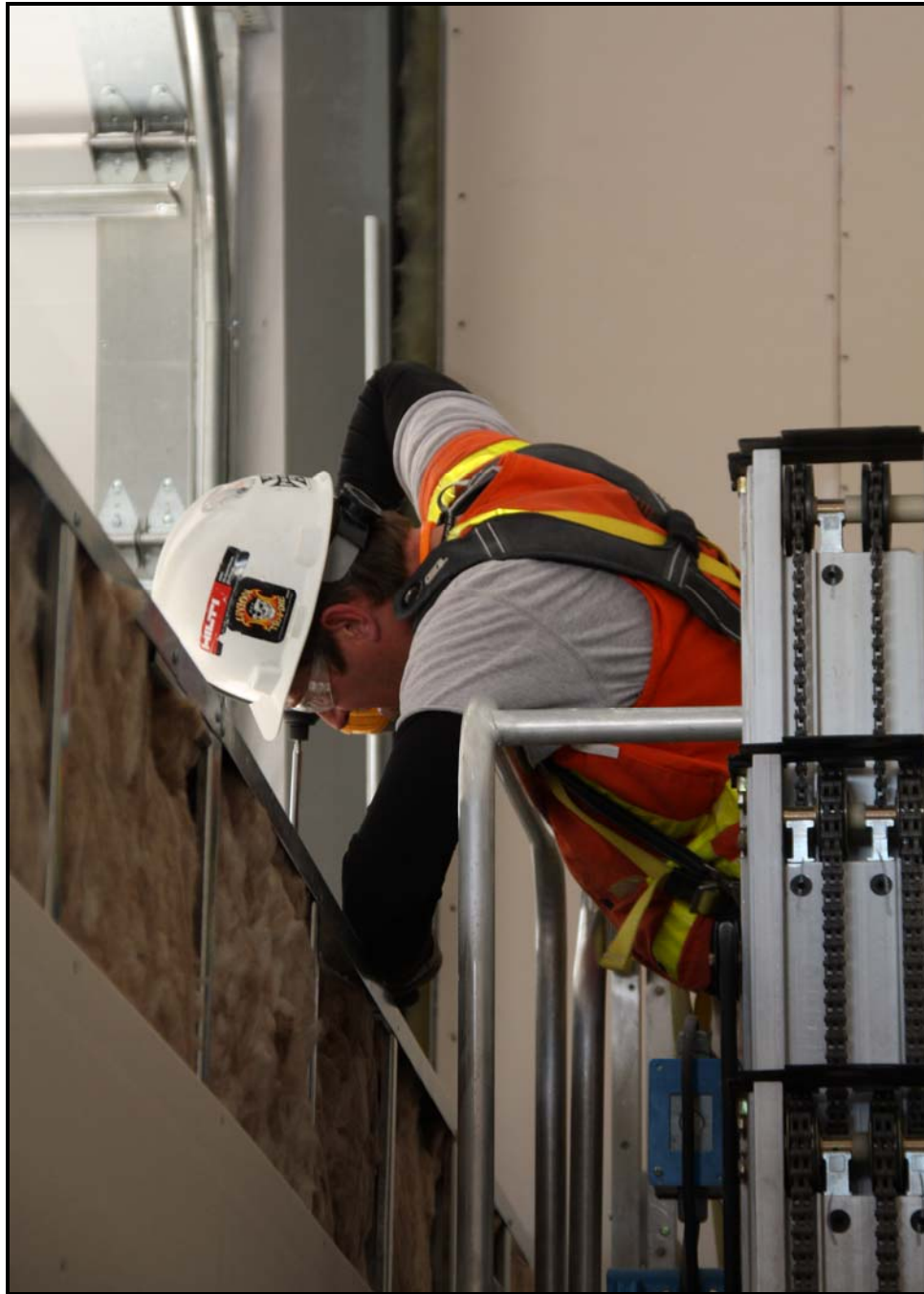
WCH continues to make progress with construction of the new maintenance facilities at the Environmental Restoration Disposal Facility (ERDF). The project team completed siding installation on the west addition of the transportation maintenance facility and began rough-in electrical work in the existing section of the facility. At the equipment maintenance facility/operations center the garage doors were installed and electrical and plumbing work continues. The team also is making preparations to pour exterior concrete and sidewalks at the container maintenance facility.

The container maintenance facility will include a large container repair line, a maintenance shop, and a weld area. The equipment maintenance facility will include two service lines, an operational storage facility, a large concrete pad, and an exterior awning over a smaller concrete pad. The new operations center will help alleviate severe overcrowding of personnel and also accommodate new employees hired to handle the increasing waste volumes.

The expanded transportation maintenance facility will include two additional truck bays, a large concrete pad, an exterior awning that will cover two smaller concrete pads, and a conference room. The project began pouring the concrete footers on the east side of the building.



ERDF (Continued)



An ELRFowler employee works on the interior walls in ERDF's equipment maintenance facility/operations center. (Photo 2)

ERDF (Continued)

Pacific Northwest National Laboratory (PNNL) continues to produce radio-frequency identification tags for a new waste container tracking system at ERDF. WCH has received the wireless communications equipment. The system will accurately track waste shipments and equipment, and generate real-time reports.

WCH subcontractor DelHur Industries has completed electrical tie-in at ERDF's new batch plant. Safety guards are being installed, and an operations test is scheduled for mid-May. The batch plant will produce concrete used to mix with debris, ensuring no void space during disposal operations.



Washington Closure Hanford subcontractor DelHur Industries has completed installation of ERDF's new batch plant. The batch plant is expected to be placed into service in May. (Photo 3)

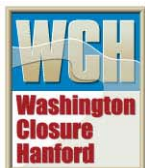
ERDF (Continued)

The final report for ERDF's new septic system has been submitted to the Washington State Department of Health. The septic system was designed by Columbia Engineers and Constructors, a small business based in Richland, Washington.

WCH subcontractor TradeWind Services finished installing the siding and roofing of the weather enclosures for the crest pads associated with cells 1 and 2. The project team began installing insulation and continues electrical work. The enclosures were designed by Vista Engineering, a local company.

Upcoming Activities

- Continue construction of the container maintenance facility.
- Continue construction of the equipment maintenance facility/operations center.
- Continue construction of the transportation maintenance facility.
- Continue construction of the crest pad buildings associated with cells 1 and 2.



618-10 Burial Ground

Trench Remediation Project

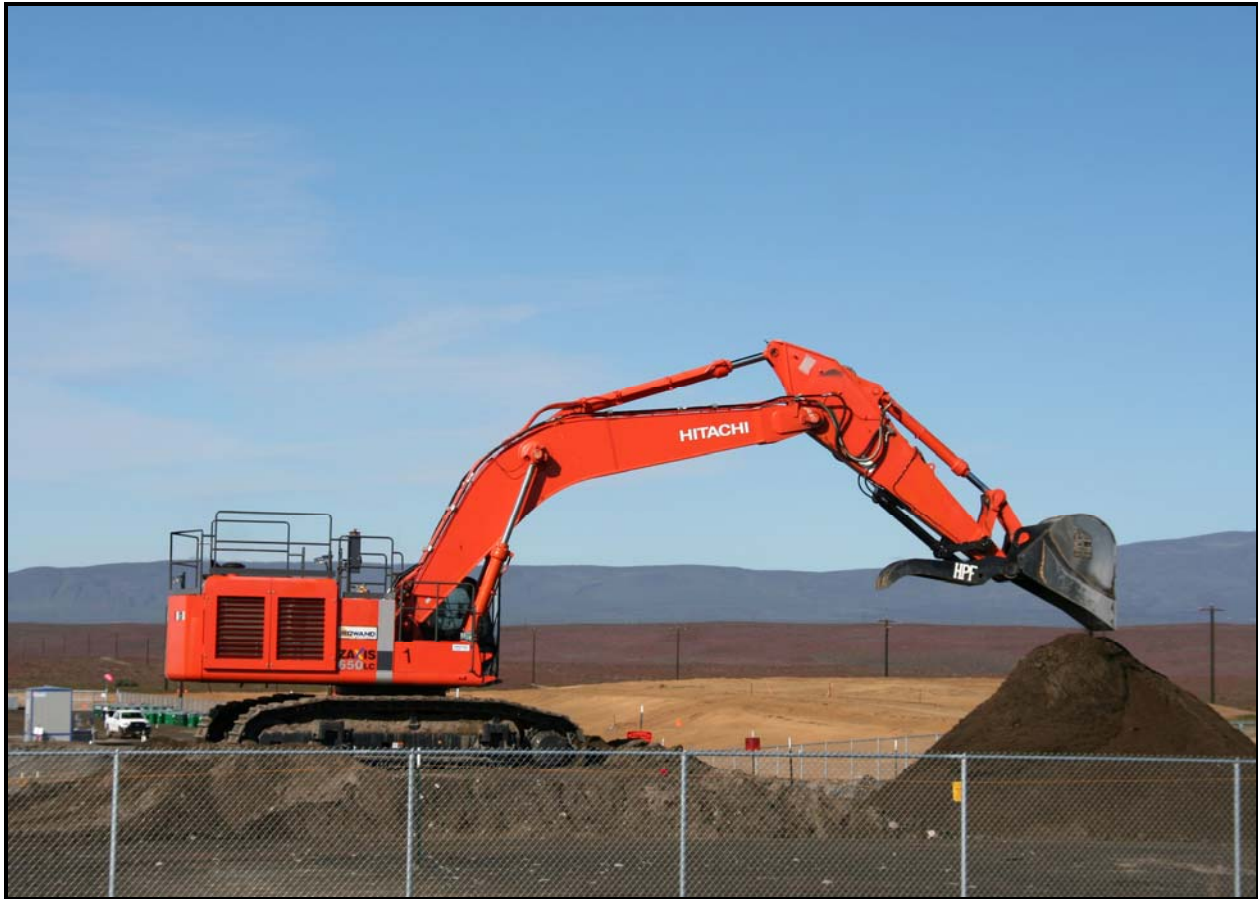
WCH continued trench excavation at the 618-10 Burial Ground. The project team began removing overburden from the northeast corner of the site and started excavation of a surge trench on the south side of the site. Surge trenches are excavated in clean soil adjacent to the burial ground. They provide a below-ground area to hold material excavated during the trench excavation process.

The project team also connected three water storage tanks to the piping system. The 22,000-gallon capacity tanks are used for dust suppression.



Trench remediation activities continue at the 618-10 Burial Ground. An excavator removes overburden from the northeast corner of the burial ground. (Photo 4)

618-10 Burial Ground (Continued)



Washington Closure Hanford completed its second week of trench excavation at the 618-10 Burial Ground. To date, more than 10,000 bank cubic meters have been excavated. (Photo 5)

The 618-10 Burial Ground operated from 1954 to 1963, receiving low- and high-level radioactive waste from 300 Area laboratories and fuel development facilities. Low-activity wastes were primarily disposed in 12 trenches, while the moderate- and high-activity wastes were disposed in 94 vertical pipe units (VPUs). The VPUs were constructed by welding five bottomless drums together and buried vertically about 10 feet apart.

In early September, WCH completed intrusive characterization field operations at the burial ground. Test pits were dug through a subset of disposal trenches, unearthing a limited number of drums to verify the condition and types of wastes that were disposed.

Several drums containing radioactive waste, a shipping cask, and miscellaneous waste were discovered during the intrusive trench characterization activities. The drums contained depleted uranium and uranium oxide. In addition, "concreted" 55-gallon drums also were discovered. Based on the records research and the finds during intrusive characterization, the number of drums the burial ground may contain is estimated to be as many as 4,000. That includes an estimated 800 concreted drums that were used to dispose of highly radioactive waste nested inside a pipe surrounded by concrete. The pipe contains the waste and the concrete provides

618-10 Burial Ground (Continued)

radiation shielding for its contents. Workers also found a cask with unknown contents, bollards, bottles, metal pieces, and other miscellaneous debris.

Nonintrusive characterization field activities were completed in May. The scope of activities carried out as part of nonintrusive characterization included geophysical delineation, in situ characterization using a multi-detector probe, and soil sampling from below a selection of 10 VPUs. During in situ characterization, measurements were collected for 100 cone penetrometers in the trench area and 375 cone penetrometers in the VPU area.

Upcoming Activities

- Continue trench excavation.
- Complete overburden removal.
- Set up and connect high tank.
- Receive second drum penetration facility.

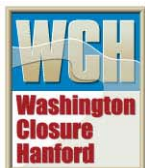
618-11 Burial Ground

WCH and subcontractor North Wind Inc. began installing cone penetrometers in support of nonintrusive characterization of the 618-11 Burial Ground. The purpose of nonintrusive characterization is to determine the burial ground's contents without opening or exposing them to workers or the surface environment. The data collected will be used to help plan remediation strategies.

Similar to the 618-10 Burial Ground, 618-11 is one of WCH's most hazardous and complex cleanup projects. The site is located in the 300 Area, adjacent to Energy Northwest's commercial nuclear power plant (Columbia Generating Station) and near the Columbia River.

The 618-11 Burial Ground operated from March 1962 to December 1967 and contains three slope-sided trenches, five large caissons, and 50 VPUs. The burial ground received low- to high-activity waste from 300 Area laboratories and fuel development facilities.

North Wind is installing two cone penetrometers (narrow steel tubes) about 6 to 8 inches from the exterior of each VPU and to an approximate depth of 6 feet below the VPU. A gamma-logging probe will then be inserted into the cone penetrometers to identify the location of radioactive materials within the VPUs.



618-11 Burial Ground (Continued)



Washington Closure Hanford subcontractor North Wind Inc. began installing cone penetrometers at the 618-11 Burial Ground. The site is located next to the Columbia Generating Station. (Photo 6)

618-11 Burial Ground (Continued)



A North Wind Inc. employee prepares a cone penetrometer for installation at the 618-11 Burial Ground. (Photo 7)

618-11 Burial Ground (Continued)



Cone penetrometers are installed to a depth of 6 feet below each vertical pipe unit. (Photo 8)

Before beginning installation of the cone penetrometers, WCH conducted geophysical delineation to help locate each of the burial ground's VPUs and caissons. The delineation was

618-11 Burial Ground (Continued)

determined using reconnaissance-level magnetic field survey, detailed-level magnetic and time-domain electromagnetic induction (TDEMI) survey, and ground-penetrating radar (GPR) survey. The VPUs typically were constructed by welding five 55-gallon bottomless drums end to end. The caissons were constructed of corrugated metal pipe (8-foot diameter, 10-foot long). The top of the caisson was 15 feet below grade and connected to the surface by an offset pipe (3-foot diameter) with a dome-type cap. The trenches are 900 feet long by 500 feet wide and 25 feet deep.

Low- to moderate-activity waste typically was disposed in the trenches, and moderate- to high-activity waste was disposed in the VPUs and caissons. Some high-activity waste was placed inside concreted-sealed drums and disposed in the trenches.

Upcoming Activities

- Continue cone penetrometer installation activities.
- Continue characterization system training.

Video

[Click here to view the video of cone penetrometer installation at the 618-11 Burial Ground.](#)

100-F Area

WCH and subcontractor Ojeda Business Ventures continued with the remediation of 19 waste sites at 100-F Area. The project team is demolishing concrete at 100-F-57 and loading out concrete and underlying soil. The site consists of stained concrete and soil containing hexavalent chromium. Closeout samples also were collected from 100-F-45, a site located on the bank of the Columbia River that contained dislodged and re-buried sections of river outfall pipelines.

The following sites have had the soil excavated and loaded out:

- 100-F-26:4 (process sewer pipeline section)
- 100-F-44:8 (fuel oil pipelines)
- 100-F-44:9 (process sewer pipeline)
- 100-F-45 (river bank pipeline)
- 100-F-47 (electrical substation foundation)
- 100-F-48 (coal-pit debris)
- 100-F-49 (maintenance garage lube pit foundation)
- 100-F-51 (fish laboratory footprint, pipelines)
- 100-F-55 (contaminated ash layer)
- 100-F-58 (asbestos-containing surface debris)
- 100-F-8 (drains)
- 100-F-62 (animal farm septic lines)
- 100-F-63 (animal farm radioactive effluent lines).

F Reactor operated from 1945 to 1965 as one of Hanford's nine surplus plutonium production reactors for the nation's nuclear weapons program. The reactor was cocooned in 2003. During reactor construction and operations, waste was disposed in unlined pits and trenches throughout the site.

The 100-F Area also was the home of the experimental animal farm (EAF), which from 1945 to 1976 operated adjacent to the reactor site. The EAF used animals for studying the potential effects of ionizing radiation exposure to humans in the occupational setting. Reactor and EAF sites in the 100-F Area contributed to the discharge of contaminated cooling water, other liquids, and solid wastes.

WCH completed cleanup of 53 waste sites at F Area in 2008, loading out more than 408,000 tons of waste. However, during the course of cleanup, 19 additional waste sites were discovered.

Upcoming Activities

- Continue demolishing concrete slab and loading out slab and underlying soil at 100-F-57.
- Collect closeout samples from F-44:9.



IU 2 & 6 Segment 1

WCH completed revegetation of the five IU 2&6 waste sites on November 30. Segment 1 encompasses about 23 square miles of the northwestern portion of the Hanford Site, away from the nine surplus plutonium production reactor areas. The waste sites were unique because they were primarily used for housing and support areas.

The remediation sites were:

- 600-341 (four areas that contained dry cell battery remnants and/or battery debris)
- 600-343 (residual ash from burned material and dumped asphalt in excavation trench)
- 600-344 (stained area)
- 600-345 (stained area with oil filters)
- 600-346 (four small fly-ash dump areas with metal debris).

Earlier this year a global positioning environmental radiological survey indicated that an additional site, 600-342, did not require additional remediation.



Confirmatory Sampling

WCH completed sampling of ARRA confirmatory sites. Sampling was performed at 41 sites in accordance with the regulator approved work instructions that were completed earlier this year. Based on the sampling results, documentation is being prepared to recommend whether the sites require remediation. This documentation is then submitted to the DOE and the regulatory agencies for review and approval. The recommendations have been approved for more than 75% of the sites; the remaining documents are in the review and approval process.



General

Media, Visits, Press Releases

The following groups visited ERDF as part of a Hanford Site tour and were briefed on the facility's operations and procedures:

- Members of the Small Business Symposium
- Republicans for Environmental Protection
- New staff members from DOE's Richland Operations Office and Office of River Protection
- DOE public tours.

Contracting Actions

There were no significant contracting actions this week.

