



River Corridor Closure Project

Recovery Act Weekly Report

For the week ending June 17, 2011

Contract DE-AC06-05RL14655

Protecting the Columbia River

Overview

Background Summary of Projects that Washington Closure Hanford (WCH) will accomplish using ARRA funds.

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

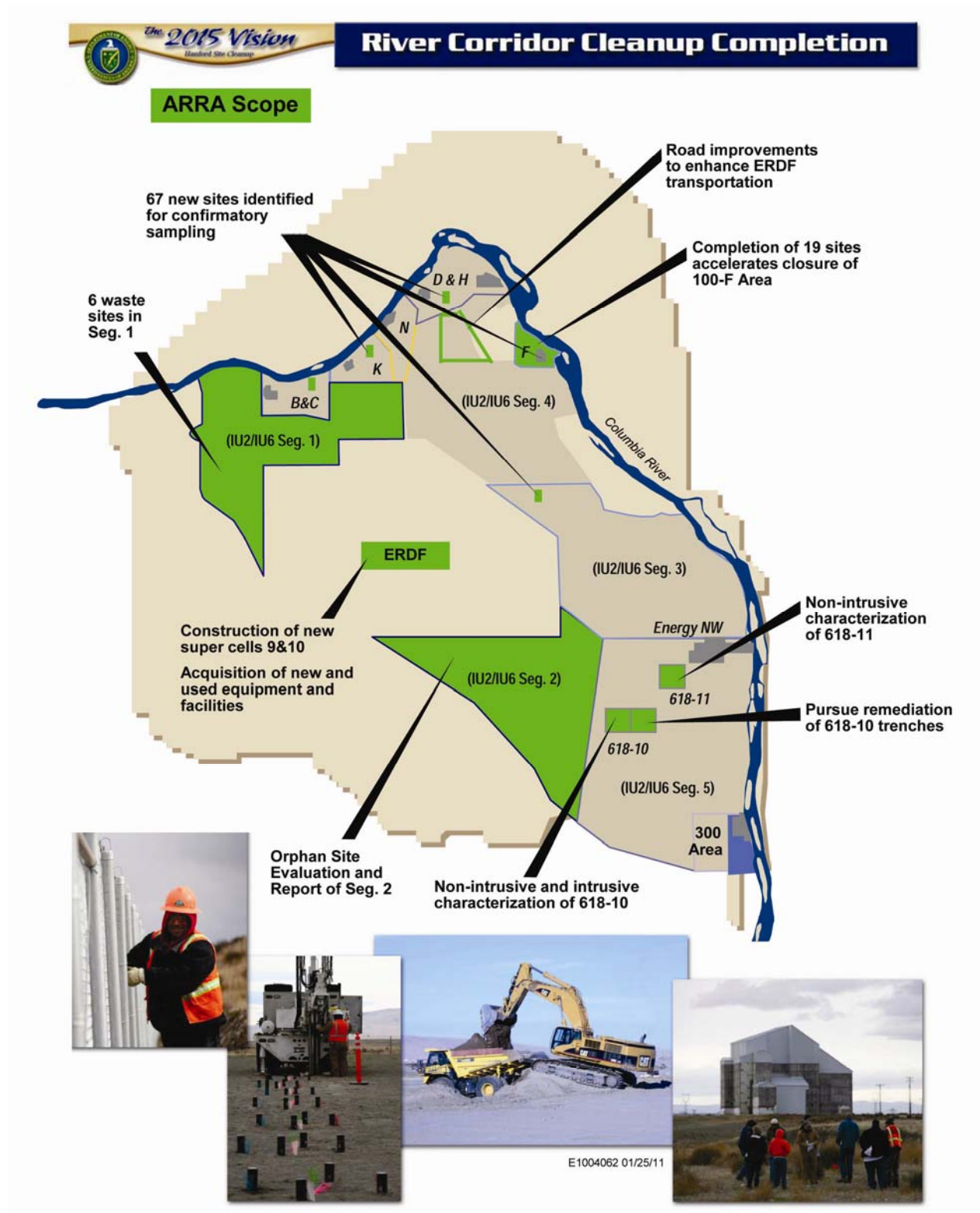
WCH is proposing to complete the early sampling process of 67 potential waste sites using ARRA funds. Confirmatory sampling is performed for sites that require additional information for determining if the site requires remediation.

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 May 22, 2011, WCH and its subcontractors worked 513,888 hours of ARRA scope with no lost-time incidents.

The 100-F Area project team recently completed its third consecutive 90-day safety campaign by conducting work without a first-aid or recordable accident.

Hazard Reductions

The River Corridor Closure Project's "Take 5 for Safety" focuses on safety issues that affect Hanford Site workers. Last week's topic was titled "Radiation Work Permits." How are workers informed of the risks of radiation or contamination in the work areas before they enter them? Aside from the postings, the method used to control work in radiological areas is the use of Radiation Work Permits (RWPs).

What does an RWP tell you?

- Establishes radiological controls, allows activities in the radiation or contamination areas and authorization to enter and perform work.
- The area's radiation levels and the contamination levels present, including hot spots.
- Personal Protective Equipment (PPE) that is required for entry into the area and for performance of the activities described in the RWP. PPE includes personal dosimetry, booties and gloves, and other anti-contamination clothing. PPE may also include respiratory protection devices.
- Requirements for coverage by Radiation Control (RadCon) personnel.

What do you do with an RWP?

- Make sure the RWP matches the area to be worked in the work document and has not expired.
- Read, understand, and follow the requirements – if you have questions ask the assigned Radiation Technician and then follow their instructions.
- If conditions change, stop work and notify supervision and RadCon.
- When frisking is required before exiting a rad buffer area or contamination areas, do it properly. A quick frisk is bad rad practice. Do not become complacent about frisking out. Contamination is a terrible thing to spread.
- Know the signals of the different radiation alarms and what to do if an alarm sounds.



Safety (Continued)

What do you do when things go wrong?

- If any limiting condition is reached, the RWP is voided and everyone is required to leave the work area (life-saving actions may be performed). RadCon personnel may gather radiological data as the crew is exiting, but they shall not delay the exit.

What are the standard limiting conditions of an RWP?

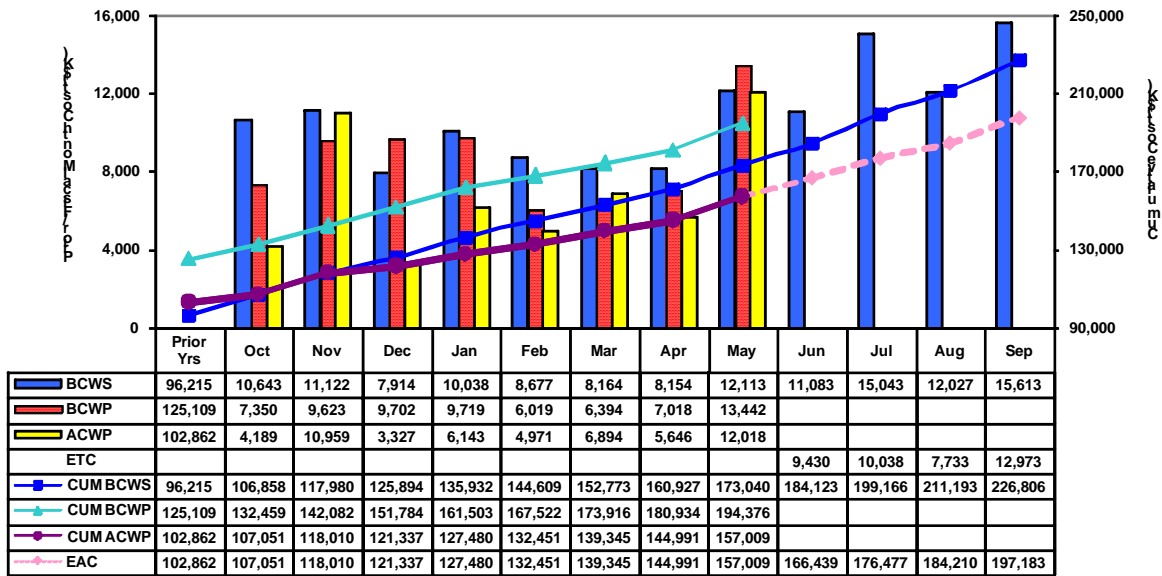
- Total Dose – how much dose the worker is allowed for that entry/day.
- Dose Rate – the dose rate field the worker is in.
- Contamination Level – how much loose contamination is in the area.
- Airborne Radioactivity – how much radioactivity is in the air.

Radiation Work Permits exist to protect you from receiving excessive radiation exposure or becoming contaminated and then spreading the contamination. Failure to follow the RWP always increases the chance of excessive exposure or the spread of contamination.

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	2/17/11	Reallocate Funds for Capital Expenditures	\$233.6	\$214.4
281	4/5/11	Increase Cost Authority on RL-0041.R2	\$233.6	\$233.6
284	4/14/11	Reallocate Funds for Capital Expenditures	\$233.6	\$233.6
291	5/9/11	Authorization to charge ERDF operations to ARRA	\$233.6	\$233.6
298	5/20/11	Reallocate Funds for Capital Expenditures	\$233.6	\$233.6

RCC Project - ARRA
Current Performance Measurement Baseline (PMB)
Prior Years / FY11 Fiscal Month



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

Apportionment Number	Apportionment Title		May 2011	Inception To Date	Cost Authority
RL-0041.R1	ERDF Cell Expansion	PMB	8,464	111,049	156,847
RL-0041.R2	River Corridor Soil & Groundwater (618-10)	PMB	3,554	45,960	76,754
Sub Total		PMB	12,018	157,009	233,601
Fee			707	15,096	
Total			12,725	172,105	

* PMB = Performance Measurement Baseline.



ERDF

Super Cells 9 and 10 Construction

WCH and subcontractors TradeWind Services and DelHur Industries completed construction of super cells 9 and 10 in February. Super cell 9 was placed into service in February, and super cell 10 was authorized for use in early May. A project startup review package for super cell 10 is under development.

The addition of the super cells increased the Environmental Restoration Disposal Facility's (ERDF) capacity by 5.6 million tons for a total of 16.4 million tons. The expansion project, initially scheduled to be completed by September 30, 2011, was finished 7 months ahead of schedule and nearly \$16.4 million under budget. The construction of super cell 10 included upgrades to the leachate transmission pipe and construction of two new leachate storage tanks.

The project team used lessons learned from previous cell construction to devise the design for the super cells. A super cell is equivalent to an existing pair of cells – 1,000 feet long, 500 feet wide, and 70 feet deep – and is more cost-efficient because it simplifies the leachate collection system. The super cell design eliminated 12 inches of drainage gravel and requires fewer pumps, motors, crest pads, valves, and other pieces of equipment. The result was a cost reduction of \$1.5 million per super cell.

In addition, weather enclosures for cells 1 and 2 were constructed. The enclosures provide protection for the existing leachate piping systems and electrical/instrumentation.



ERDF (Continued)



Washington Closure Hanford continues to dispose waste in super cell 9 at the Environmental Disposal Facility. The super cell was placed into service in February. (Photo 1)

ERDF (Continued)



ERDF received the final shipment of 58,500 railroad ties from the Hanford Site. The railroad ties were disposed in super cell 9. (Photo 2)

Facility and Equipment Upgrades

Construction continues on ERDF's new maintenance facilities. The project team completed testing of the HVAC system and continues touch-up work in the container maintenance facility. Power was hooked up to the equipment maintenance facility/operations center. Installation of the floors and acoustical ceilings continued. In the transportation maintenance facility, the air, water, and lubrication lines are being installed. Flooring also is being installed.

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)



A worker with Washington Closure Hanford subcontractor ELRFowler performs electrical work for the equipment maintenance facility/operations center. (Photo 3)

Pacific Northwest National Laboratory (PNNL) continues to produce radio-frequency identification tags for the new waste container tracking system at ERDF. So far, WCH has installed 140 tags on waste containers. PNNL is scheduled to deliver the balance of the 1,300 tags to WCH by early July. The tracking system will assist the Waste Operations team by providing the location of full and empty containers.

Operational testing was completed at ERDF's new batch plant. Testing produced approximately 220 yards of concrete, which was used for disposal operations. The batch plant is expected in service by the end of the month.

ERDF (Continued)



ERDF's new batch plant will manufacture concrete used to mix with debris, ensuring no void space during disposal operations. (Photo 4)

ERDF (Continued)

Earlier this spring, WCH transitioned to its new septic system at ERDF. The new system will handle the additional demands of ERDF's new maintenance facilities, as well as its existing facilities. Later this month, the facility's original septic tank will be demolished. The new septic system was designed by Columbia Engineers and Constructors, a small business based in Richland, Washington.

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.



618-10 Burial Ground

Trench Remediation Project

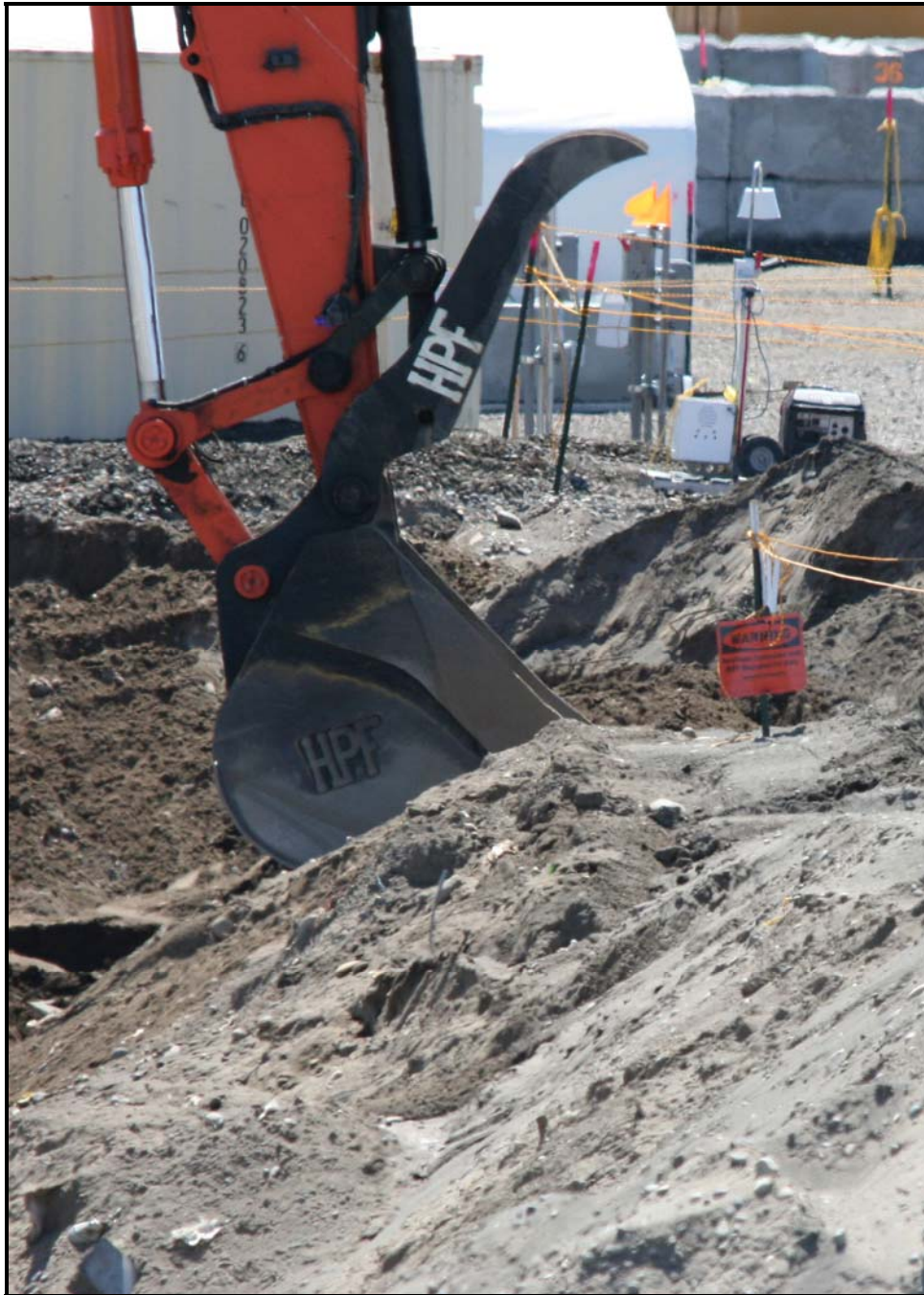
WCH continued trench excavation of the 618-10 Burial Ground. As of June 16, a total of 25,000 bank cubic meters has been removed. Last week, the project team processed 35 bottles and several concreted drums. It also performed sampling of powder and resin anomalies.

Training of operators and resident engineers for the second drum punch facility, and a site drill that included fire department personnel also were conducted.



Washington Closure Hanford continues to excavate the waste trench on the north side of the 618-10 Burial Ground. (Photo 5)

618-10 Burial Ground (Continued)



Washington Closure has excavated 25,000 bank cubic meters from the 618-10 Burial Ground. (Photo 6)

618-10 Burial Ground (Continued)

The 618-10 Burial Ground operated from 1954 to 1963, receiving low- and high-activity 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 September 2010, 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 between 2,000 and 6,000 (most likely closer to 2,000). 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 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 2010. 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 excavation of waste trenches.
- Continue processing of drums and bottles.



618-11 Burial Ground

Nonintrusive characterization continues at the 618-11 Burial Ground. WCH subcontractor North Wind Inc. is performing radiological characterization of the vertical pipe units (VPUs).

The project team is inserting a gamma-logging probe into the cone penetrometers to identify the location of radioactive materials within the VPUs. Earlier this month, North Wind installed 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. To date, 46 VPUs have been characterized.



618-11 Burial Ground (Continued)



An employee with Washington Closure Hanford subcontractor North Wind lowers a multi-detector probe into a cone penetrometer at the 618-11 Burial Ground. (Photo 7)

618-11 Burial Ground (Continued)

The 618-11 Burial Ground, which operated from March 1962 to December 1967, also contains three slope-sided trenches and five large caissons. Low- to high-activity wastes from 300 Area laboratories and fuel development facilities were disposed in the burial ground.

Prior to cone penetrometer installation, the project team conducted geophysical delineation to determine the number and location of the burial ground's VPUs and caissons. The delineation was 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.

The purpose of nonintrusive characterization is to characterize 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.

Upcoming Activities

- Complete VPU radiological characterization activities.
- Initiate civil survey of VPU cone penetrometers.



100-F Area

Washington Closure Hanford continues with remediation of 19 waste sites at 100-F Area. Subcontractor Ojeda Business Ventures is working at two sites – 100-F-47 and 100-F-44:8 – that required additional cleanup. Site 100-F-47 is a former electrical substation, and 100-F-44:8 contains old fuel oil pipelines.

The project team also continues to demolish concrete at 100-F-57 and load out concrete and underlying soil from the western portion of the site. The site is a former water pumphouse that contains hexavalent chromium.



Washington Closure Hanford subcontractor Ojeda Business Ventures is demolishing concrete at 100-F-57. The site is a former water pumphouse and contains hexavalent chromium. (Photo 8)

100-F Area (Continued)



Ojeda constructs a clean path for its trucks as Washington Closure prepares 100-F-47 for further excavation. The site is a former substation. (Photo 9)

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).

100-F Area (Continued)

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.

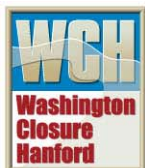
WCH completed cleanup of 53 waste sites at F Area in 2008, loading out more than 408,000 tons of waste. However, during the course of cleanup, 19 additional waste sites were discovered.

Upcoming Activities

- Continue excavation of western portion of 100-F-57 to 15 feet.
- Continue excavation of additional material from 100-F-47.
- Begin excavation and loadout of plume at 100-F-61.

Video

[Click here to view the video remediation activities at 100-F-Area waste sites.](#)



IU 2 & 6 Segment 1

WCH completed revegetation of the five IU 2&6 waste sites on November 30, 2010. Segment 1 encompasses about 28 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 80% of the sites; the remaining documents are in the review and approval process.



General

Media, Visits, Press Releases

- Officials representing the Wanapum, Yakama, Nez Perce, and Umatilla tribes visited ERDF as part of a Hanford Site tour. The visitors were briefed on the facility's operations and procedures by WCH's Director of Waste Operations.

Contracting Actions

- There were no significant contracting actions this week.

