



River Corridor Closure Project

Recovery Act Weekly Report

For the week ending June 24, 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.



Safety

Safety Accomplishments

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

Hazard Reductions

The River Corridor Closure Project's "Weekly Safety Roundup" focuses on safety issues that affect Hanford Site workers. One recent topic was eye strain, which is a common physical complaint associated with many tasks including computer work. Eye strain can be reduced by taking short, regular vision breaks to condition and relax eye muscles. The following exercises can help prevent eye strain:

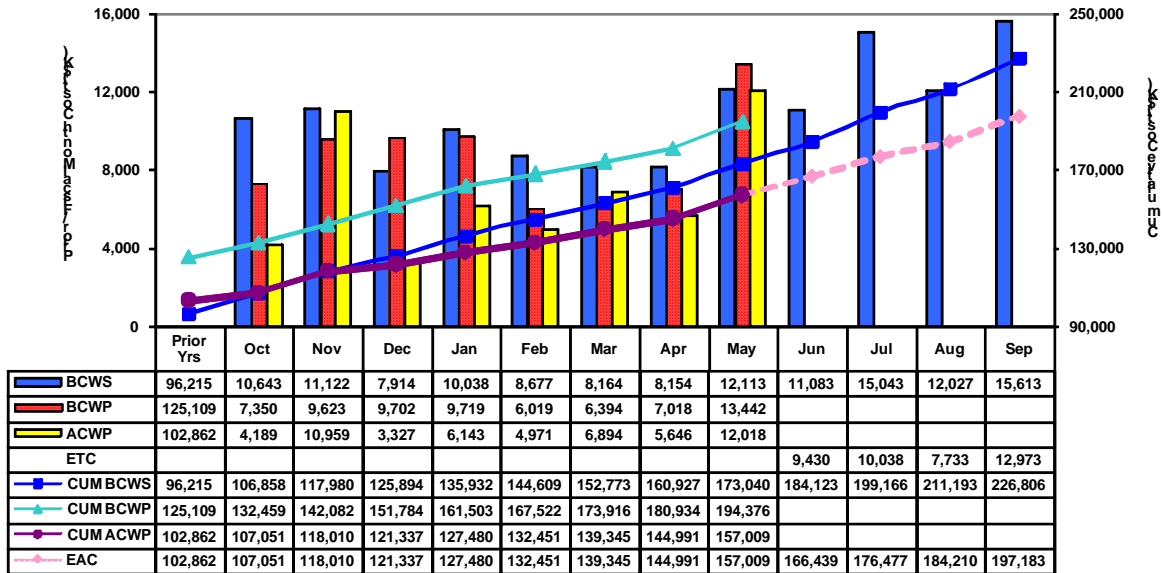
- The 20/20/20 Rule
 - After every 20 minutes of computer use, focus on something 20 feet away for at least 20 seconds.
- Focus Rock
 - Hold an article as close to your eyes as possible so you can still see it clearly.
 - Then focus on something 10 feet away.
 - Refocus on the close article and back to the far target.
 - Do this periodically for up to five minutes a day.
- Eye Stretch
 - Look up at your eyebrow and make just your eye roll around in a very big circle, looking as far as you can in each direction.
 - Do this every few hours.
- Palming
 - Shut out the light by cupping your hands over your eyes. Try to focus on the blackness.
 - Do this for 1 to 3 minutes while taking deep breaths, several times a day.
- Thumb Rotations
 - Cover one eye with your hand. Hold other hand directly in front of your nose, elbow straight, thumb up. Look at your thumbnail.
 - Moving only your eyeball and your arm, move your arm upward, then outward and down to a point that it is level with the nose. Then move it to the starting point again. Your thumb should have moved in an outline of a quarter circle.
 - Repeat 4 to 6 times for each eye.
- Pencil Push-Ups
 - Hold a pencil 10 inches away from your face. Slowly bring it to your nose and stop before it appears to double.
 - Next, pretend there is a tic-tac-toe board in front of you and bring the pencil in from each box, moving only your eyes.
 - This will strengthen all of the muscles around the eye and help prevent eye strain, or double or blurred vision.



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
304	6/15/11	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)



A view from the southeast corner of the Environmental Restoration Disposal Facility shows disposal activities in super cell 9. (Photo 1)

ERDF (Continued)



Waste is disposed off two dumps ramps set up in super cell 9 at the Environmental Restoration Disposal Facility. (Photo 2)

ERDF (Continued)



A Hanford Site railcar arrives at ERDF for disposal. The Waste Operations team has disposed of six railcars, with five more scheduled to be delivered and disposed. The railcars were used to transport irradiated fuel. (Photo 3)

ERDF (Continued)



*Earlier this month, ERDF received the final shipment of 58,500 Hanford Site railroad ties for disposal.
(Photo 4)*

ERDF (Continued)



The Waste Operations team at ERDF constructed macro pads to dispose of chromium-contaminated debris. (Photo 5)

Facility and Equipment Upgrades

Construction continues on ERDF's new maintenance facilities. The project team is completing finish work at the container maintenance facility and installing flooring and carpet in the equipment maintenance facility/operations center. Electrical and plumbing work continues in the truck 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)

Pacific Northwest National Laboratory (PNNL) delivered 290 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 next month.

Operating procedures are being finalized for ERDF's new batch plant. The plant, which will manufacture concrete used to mix with debris during disposal operations, is expected to be in service within two weeks.



The new batch plant at the Environmental Restoration Disposal Facility has been tested. The plant's operating procedures are being finalized before the plant is placed into service. (Photo 6)

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.

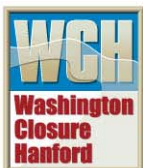
Upcoming Activities

- Continue construction of the container maintenance facility.
- Continue construction of the equipment maintenance facility/operations center.
- Continue construction of the transportation maintenance facility.

ERDF (Continued)

Video

[*Click here to view a video of waste being disposed in super cell 9 at the Environmental Restoration Disposal Facility.*](#)



618-10 Burial Ground

Trench Remediation Project

WCH continued trench excavation on the north and south sides of the 618-10 Burial Ground. The project team continues to encounter bottles in the north trench. A total of 25,000 bank cubic meters has been removed.

The project team also continued testing of the burial ground's water system and the setup of the second drum punch facility.



Waste trench excavation continues at the 618-10 Burial Ground. Trench excavation work is about 20% complete. (Photo 7)

618-10 Burial Ground (Continued)



Workers at the 618-10 Burial Ground have been encountering liquid-filled bottles, concrete drums, containers of ion exchange resins, and miscellaneous debris. (Photo 8)

618-10 Burial Ground (Continued)



A telehandler moves a concreted drum at the 618-10 Burial Ground. (Photo 9)

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

618-10 Burial Ground (Continued)

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.
- Complete set up of second drum punch facility.



618-11 Burial Ground

WCH subcontractor North Wind Inc. completed radiological characterization of the 50 vertical pipe units (VPUs) at the 618-11 Burial Ground. The project team is now performing civil surveying.

Earlier this spring, 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. It then inserted a gamma-logging probe into the cone penetrometers to identify the location of radioactive materials within the VPUs.

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.

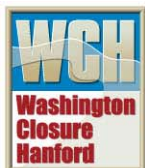
The VPUs typically were constructed by welding five 55-gallon bottomless drums end to end. The caissons were constructed of corrugated metal pipe (8-foot diameter, 10-foot long). The top of the caisson was 15 feet below grade and connected to the surface by an offset pipe (3-foot diameter) with a dome-type 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 civil survey of VPU cone penetrometers.
- Conduct demobilization activities.



100-F Area

Washington Closure Hanford continued with remediation of 19 waste sites at 100-F Area. Subcontractor Ojeda Business Ventures is excavating and loading out at sites 100-F-47 (electrical substation) and 100-F-61 (stained soil).

Next week, the project team will return to 100-F-57 to load out concrete and underlying soil from the western portion of the site. The site is a former water pumphouse that contains hexavalent chromium.

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



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

- The local chapter of Certified Hazardous Materials Managers toured ERDF. The visitors were briefed on operations and procedures by the facility's Operations Manager.

Contracting Actions

- There were no significant contracting actions this week.

