



*River Corridor Closure Project*

# **Recovery Act Weekly Report**

For the week ending April 8, 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

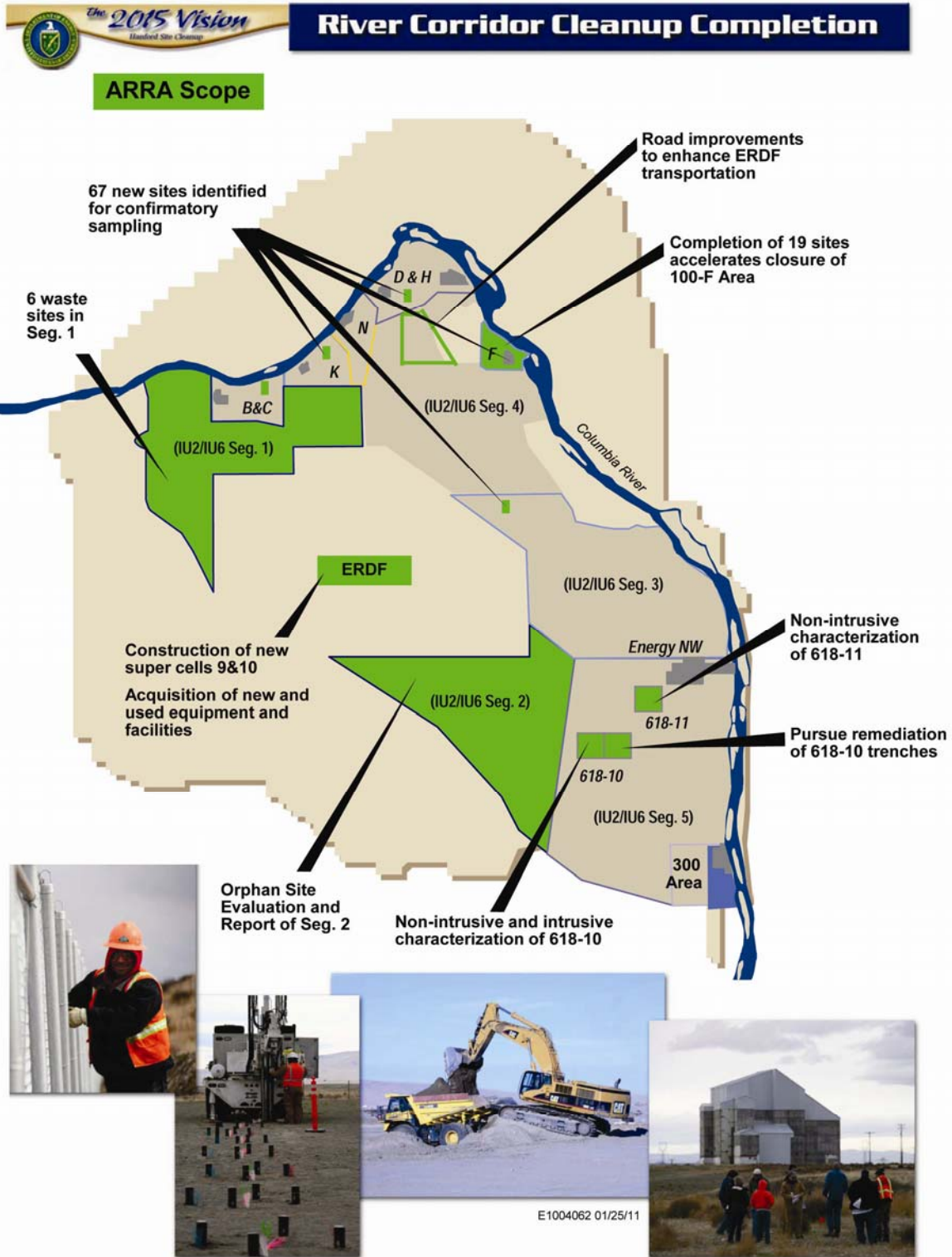
WCH is proposing to complete the early sampling process of 67 potential waste sites using ARRA funds. Confirmatory sampling is performed for sites that require additional information for determining if the site requires remediation.

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)



E1004062 01/25/11



# 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

Listed below are the Safety and Health Initiatives Program's highlights for March. The River Corridor Closure Project uses several tools (e.g., "Hot Topics," "Safety Awareness," "Dodge the Bullet," and "Rude Awakenings") to share safety information with all employees.

### Working Toward an Injury-Free Workplace

- Provided information on fatigue, lack of sleep, and the roles and responsibilities of each employee when responding to a medical emergency.
- Provided site map cards with phone numbers to all Hanford Site contractors, patrol, and the central badging station.
- Provided awareness topics on driving in gusty winds.
- Provided general awareness on eye first aid.
- Completed campaign to bring awareness and open discussion on Lessons Learned.

### Incident Severity Reduction

- Highlighted the confirmatory sampling work at test pit where material broke free and contacted a water pipe causing a leak. This work was conducted in conjunction with the Mission Support Alliance contractor. Both contractors took immediate action to stop the leak without employee or further equipment damage.
- Alerted WCH employees of the Hanford Site Emergency Siren sounds and system.
- Demonstrated the safety issues of operating a scissor lift in high winds.
- Provided information on how to prevent slips, trips, and broken hips both on and off the job site.
- Provided training on crane safety awareness.
- Provided an OSHA recordkeeping class.



## Safety (Continued)

### IH Program Improvements

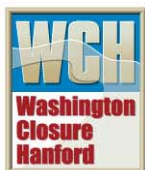
- Provided Beryllium Program and CAP updates and improvement actions conducted by the WCH Beryllium action group.
- Issued the revised Heat and Cold Stress procedures.
- WCH is incorporating sampling methods for the Beryllium Finder to support a new Mobile Beryllium Sampling Lab.
- Provided communication to all employees of the issues identified on an MSA respirator hood that could cut into PPE and/or the employee.

### Subcontractor Oversight

- Conducted focused assessments of active excavations for both WCH and subcontractors.
- Provided information to all employees of the importance of critical pre-operations inspections and the need to incorporate any deviations or expanded work scope into the work package.
- Provided information on best practices for aerial lifts.
- Conducted a focus inspection on fire extinguishers. All WCH sites will be reviewed with information provided into a summarized assessment.
- Provided general hoisting and rigging information, lessons learned, and best practices to all employees

### Site-Wide Program Implementation

- Continue to participate in site-wide programs for Confined Space, Fall Protection, and EJTA.
- WCH continues to support and participate in the process of coordinating the development of Beryllium work history database.
- WCH Industrial Hygienist beryllium subject matter expert is participating on the BAG Committee for soil sampling and data quality objectives.
- WCH has proactively re-evaluated and sampled 85 of 85 facilities and 84 conex boxes as directed by the DOE-RL interim guidance. Additional sampling is expected once characterization process is approved.

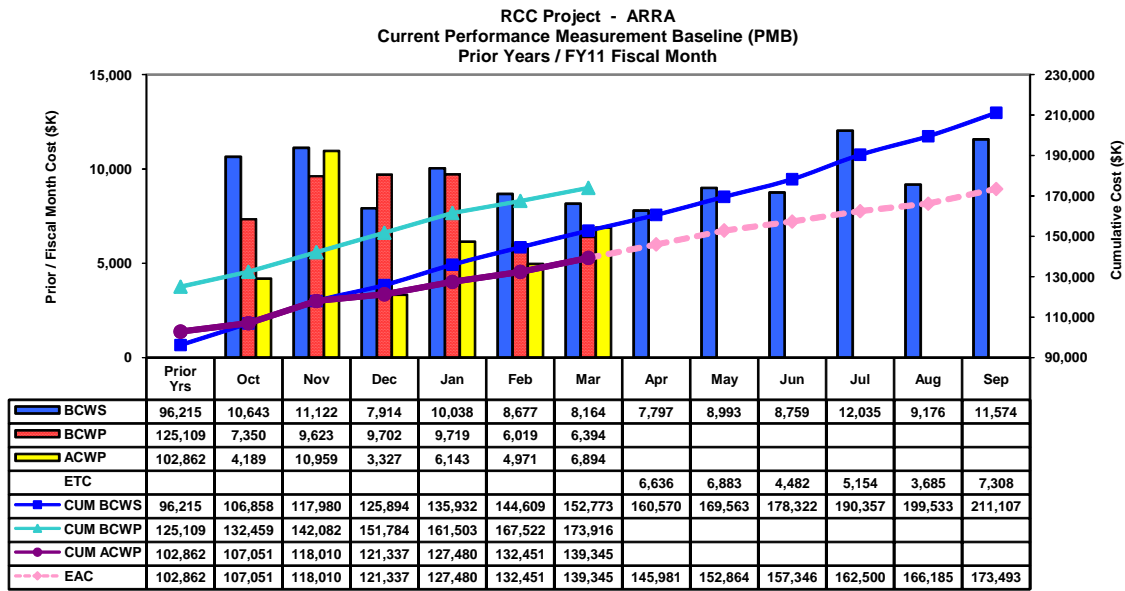




# Cost/Contract Status

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**

Washington Closure Hanford (WCH) submitted the final Construction Quality Assurance (CQA) Report for Super Cell 10 to U.S. Department of Energy, Richland Operations Office (DOE-RL) and the U.S. Environmental Protection Agency (EPA).

WCH demolished Leachate Storage Tank (LST) 2, which was one of the facility's two original tanks (LST 1 was demolished in September). Construction of the facility's two new tanks – LST 3 and LST 4 – was completed last month.

LST 4 is in service, and LST 3 is expected to be authorized for use later this month. Each of the new tanks is 100 feet in diameter with a 425,000-gallon capacity. Each of the original tanks was 80 feet in diameter and had a storage capacity of 275,000 gallons.

### **Facility and Equipment Upgrades**

Progress continues with the construction of the Environmental Restoration Disposal Facility's (ERDF) new maintenance facilities. WCH subcontractor ELRFowler poured the concrete slab for the west addition of the transportation maintenance facility and continues framework in the existing portion of the facility. Construction of the interior walls continues in the equipment maintenance facility/operations center, and finish work is ongoing 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.



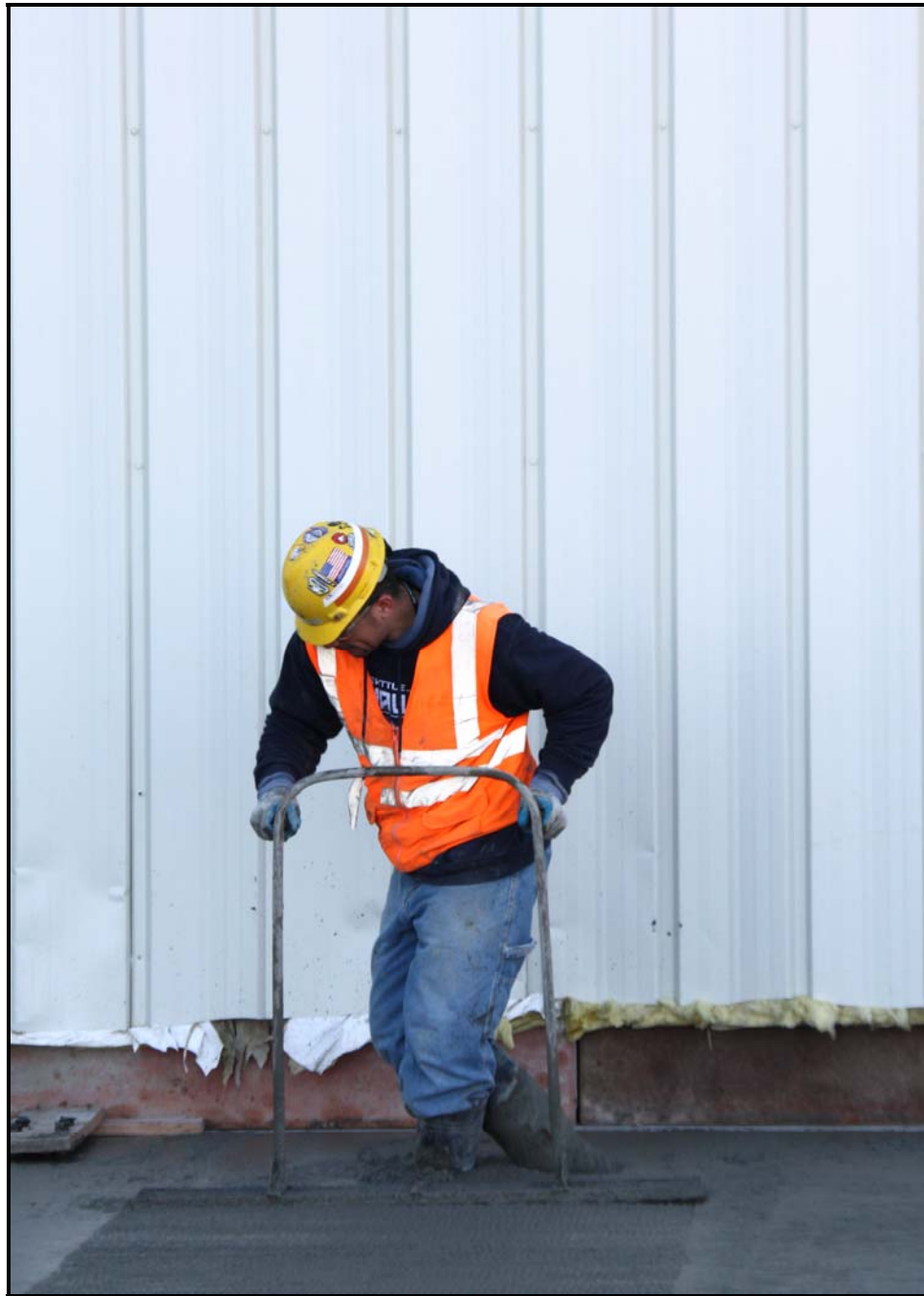
## ERDF (Continued)



Washington Closure Hanford subcontractor ELRFowler pours the concrete slab for the west addition of ERDF's transportation maintenance facility. (Photo 1)



## ERDF (Continued)



*An ELRFowler employee floats the concrete at ERDF's transportation maintenance facility. (Photo 2)*

## ERDF (Continued)



*ELRFowler employees work on an awning at ERDF's transportation maintenance facility. (Photo 3)*

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

WCH subcontractor DelHur Industries has installed the conveyer and hopper for ERDF's new batch plant. Electrical work continues. Testing is scheduled to begin in late April and operations are expected to begin in May. The batch plant will produce concrete used to mix with debris, ensuring no void space during disposal operations.

## ERDF (Continued)



Washington Closure Hanford subcontractor DelHur Industries has installed the conveyer and hopper for ERDF's new batch plant. (Photo 4)

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.

TradeWind Services continues to construct weather enclosures for the crest pads associated with cells 1 and 2. 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 crest pad buildings associated with cells 1 and 2.



## 618-10 Burial Ground

### 618-10 Trench Remediation Project

WCH continued to prepare for full-scale trench remediation of the 618-10 Burial Ground. A project startup review for the start of trench remediation is scheduled for next week.

The project team completed excavation of a surge trench in clean soil adjacent to the burial ground. The surge trench will provide a below-ground area to hold material excavated during the remediation process. The team continued to set up the drum processing area (instrument stations, drum storage area) and is preparing to install water tanks for dust suppression. Mockup exercises and training also continue.



*Mockup exercises continue at the 618-10 Burial Ground. Full-scale trench remediation is expected to begin next week. (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.

## 618-10 Burial Ground (Continued)



*The 618-10 Burial Ground is one of the most complex remediation projects on the Hanford Site. The six-acre burial ground operated from 1954 to 1963. (Photo 6)*

In early September, WCH completed intrusive characterization field operations at the burial ground. Test pits were dug through a subset of disposal trenches and 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 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



## 618-10 Burial Ground (Continued)

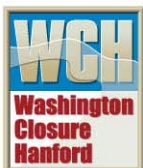
characterization using a multi-detector probe, and soil sampling from below a selection of 10 VPUs. During in situ characterization, measurements were collected for 100 cone penetrometers in the trench area and 375 cone penetrometers in the VPU area.

### Upcoming Activities

- Continue with construction of site upgrades.
- Continue with training and mockups.

### Video

[Click here to view the video of preparations for trench remediation at the 618-10 Burial Ground](#)



## 618-11 Burial Ground

WCH continued mobilization activities in preparation for in situ radiological nonintrusive characterization of the burial ground. The project team is installing office trailers and performing electrical work.

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.

The project team completed geophysical delineation field activities last month and continues to analyze the data. Geophysical delineation is used to help locate each of the burial ground's VPUs and caissons. The delineation is determined using reconnaissance-level magnetic field survey, detailed level magnetic and time domain electromagnetic induction (TDEMI) survey, and ground-penetrating radar (GPR) survey.

In situ radiological characterization is scheduled to begin later this month. Data gathered during geophysical delineation will be used to install cone penetrometers (narrow steel tubes) about 6 to 8 inches around 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.

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

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 VPUs at the 618-11 Burial Ground are similar to those at 618-10. They 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), with the top of the caisson 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.



## 618-11 Burial Ground (Continued)



*The 618-11 Burial Ground is located next to the Energy Northwest's Columbia Generation Station, an operating commercial nuclear power plant. (Photo 7)*

### **Upcoming activities**

- Complete mobilization activities.
- Complete characterization project startup review activities.
- Complete geophysical data analysis.

## 100-F Area

WCH and subcontractor Ojeda Business Ventures continued with the remediation of 19 waste sites at 100-F Area. The project team drained the sludge from an old oil tank at 100-F-49 (maintenance garage lube pit foundation, pipelines, and drywells) and loaded out the tank and remaining waste from the site.

Ojeda also completed the removal of overburden at 100-F-57. The site consists of stained concrete and soil containing hexavalent chromium. Ojeda is expected to begin breaking the concrete next week.



*Washington Closure Hanford subcontractor Ojeda Business Ventures removes overburden from 100-F-57. The site contains hexavalent chromium. (Photo 8)*



## 100-F Area (Continued)



*Ojeda removes overburden from 100-F-57. Next week, the project team plans to begin breaking concrete slabs containing hexavalent chromium. (Photo 9)*

WCH is awaiting sample results from 100-F-26:7. Before removing the pipelines, the approximately 200 gallons of sodium dichromate from pipelines was safely and efficiently secured, preventing potential leaking and groundwater contamination. Waste profiles are being developed.

Next week, the project team is scheduled to remove sludge found in a storage tank at 100-F-49 (old maintenance garage lube pit foundation, pipelines, and drywells).

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 Area (Continued)

- 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-61 (stained soil site)
- 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, the 19 additional waste sites were discovered.

### Upcoming Activities

- Begin breaking concrete at 100-F-57.



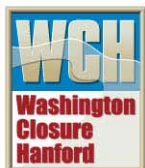
## IU 2 & 6 Segment 1

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, and the remaining documents are in the review and approval process.



## General

### **Media, Visits, Press Releases**

No significant media events this week.

### **Contracting Actions**

No significant contracting actions this week.

