



*River Corridor Closure Project*

# **Recovery Act Weekly Report**

For the week ending January 28, 2011

Contract DE-AC06-05RL14655

## 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

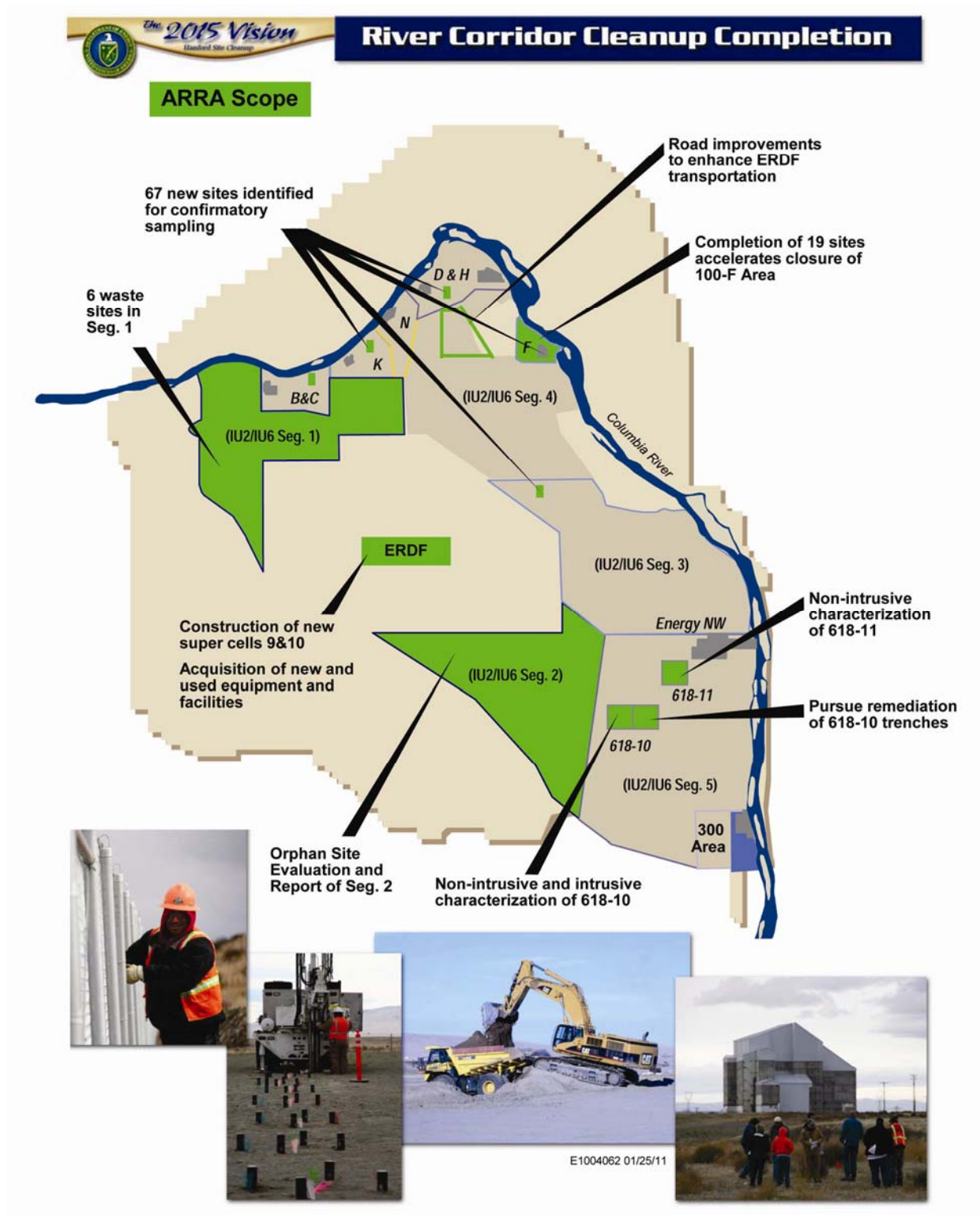
WCH is proposing to complete the early sampling process of 67 potential waste sites using ARRA funds. Confirmatory sampling is performed for sites that require additional information for determining if the site requires remediation.

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 December 20, 2010, WCH and its subcontractors have worked 338,914 hours of ARRA scope with no safety incidents.

## Hazard Reductions

WCH used its Weekly Roundup to share facts about cold stress with its employees. Workers who are exposed to extreme cold or work in cold environments may be at risk of cold stress. Extremely cold or wet weather is a dangerous situation that can cause occupational illness and injuries such as hypothermia, frostbite, and trench foot.

Hypothermia – a condition in which the body uses its stored energy and can no longer produce heat. Often occurs after prolonged exposure to cold temperature.

### *Early symptoms*

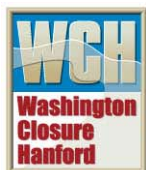
- Shivering
- Fatigue
- Loss of coordination
- Confusion and disorientation

### *Late symptoms*

- No shivering
- Blue skin
- Dilated pupils
- Slowed pulse and breathing
- Loss of consciousness

### *First Aid*

- Request immediate medical assistance.
- Move the victim into a warm room or shelter.
- Remove wet clothing.
- Warm the center of their body first—chest, neck, head, and groin—using an electric blanket; or use skin-to-skin contact under loose, dry layers of blankets, clothing, or towels.
- If conscious, warm beverages may help increase the body temperature. Do not give alcohol.
- Once temperature has increased keep them dry and wrapped in a warm blanket, including the head and neck.
- If no pulse, begin CPR.



## Safety (Continued)

Frostbite – an injury to the body that is caused by freezing, which most often affects the nose, ears, cheeks, chin, fingers, or toes.

### *Symptoms*

- Reduced blood flow to hands and feet
- Numbness
- Aching
- Tingling or stinging
- Bluish or pale, waxy skin

### *First Aid*

- Get into a warm room as soon as possible.
- Unless necessary, do not walk on frostbitten feet or toes.
- Immerse the affected area in warm (not hot) water, or warm the affected area using body heat. Do not use a heating pad, fireplace, or radiator for warming.
- Do not massage the frostbitten area; doing so may cause more damage.

Trench foot – an injury of the feet resulting from prolonged exposure to wet and cold conditions that can occur at temperatures as high as 60 °F if the feet are constantly wet.

### *Symptoms*

- Reddening of the skin
- Numbness
- Leg cramps
- Swelling
- Tingling pain
- Blisters or ulcers
- Bleeding under the skin
- Gangrene (foot may turn dark purple, blue, or gray)

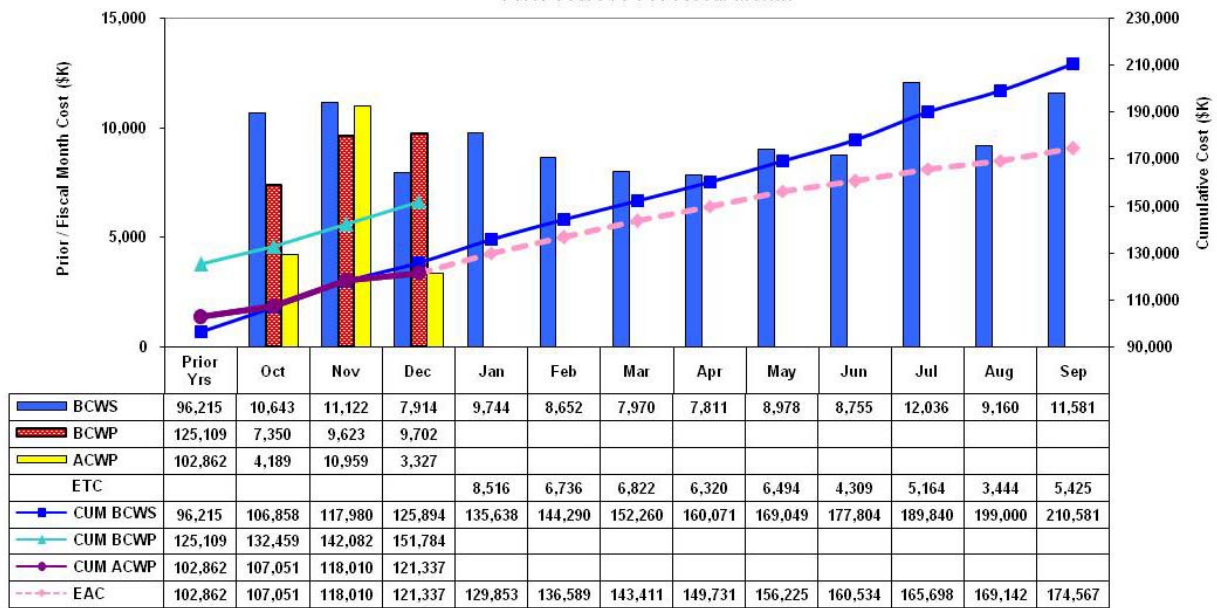
### *First Aid*

- Remove shoes/boots and wet socks
- Dry feet
- Avoid walking on feet, as this may cause tissue damage.

# 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

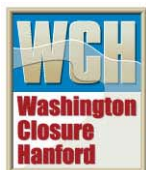
RCC Project - ARRA  
Current Performance Measurement Baseline (PMB)  
Prior Years / FY11 Fiscal Month



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

Apportionment Number	Apportionment Title		December 2010	Inception To Date	Cost Authority
RL-0041.R1	ERDF Cell Expansion	PMB	799	87,268	139,072
RL-0041.R2	River Corridor Soil & Groundwater (618-10)	PMB	2,527	34,069	57,566
Sub Total		PMB	3,326	121,337	196,638
Fee			480	12,193	
Total			3,806	133,530	

\* PMB = Performance Measurement Baseline.



## ERDF

### **Super Cells 9 and 10 Construction**

On January 20, 2011, Washington Closure Hanford delivered to the U.S. Department of Energy (DOE) the *Final Report Construction Quality Assurance (CQA) Environmental Restoration Disposal Facility (ERDF) Super Cell 9* (submittal S013213A00-05-030-001) to introduce waste into super cell 9. DOE forwarded the report to the U. S. Environmental Protection Agency (EPA) for approval. The EPA completed its review and sent a letter on January 28, 2011, to DOE approving the additional cell operation. In conjunction with the report, the project team has started a Project Start-Up Review to ensure operational readiness. The super cell is expected to begin accepting waste in mid-February.

WCH subcontractor TradeWind Services conducted final acceptance testing for super cell 10 with DOE and EPA.

TradeWind completed installation of the primary liner in Leachate Storage Tank No. 3. The acceptance test will be conducted with DOE and EPA next week. Earlier this month, TradeWind conducted the acceptance test for Leachate Storage Tank No. 4.

Removal of one of the two original leachate storage tanks was completed in September; the second will be removed when the replacement tanks are in service. Each of the original tanks measured 80 feet in diameter and had a capacity of 275,000 gallons. Each replacement tank will measure 100 feet in diameter with a 425,000-gallon capacity.

### **Facility and Equipment Upgrades**

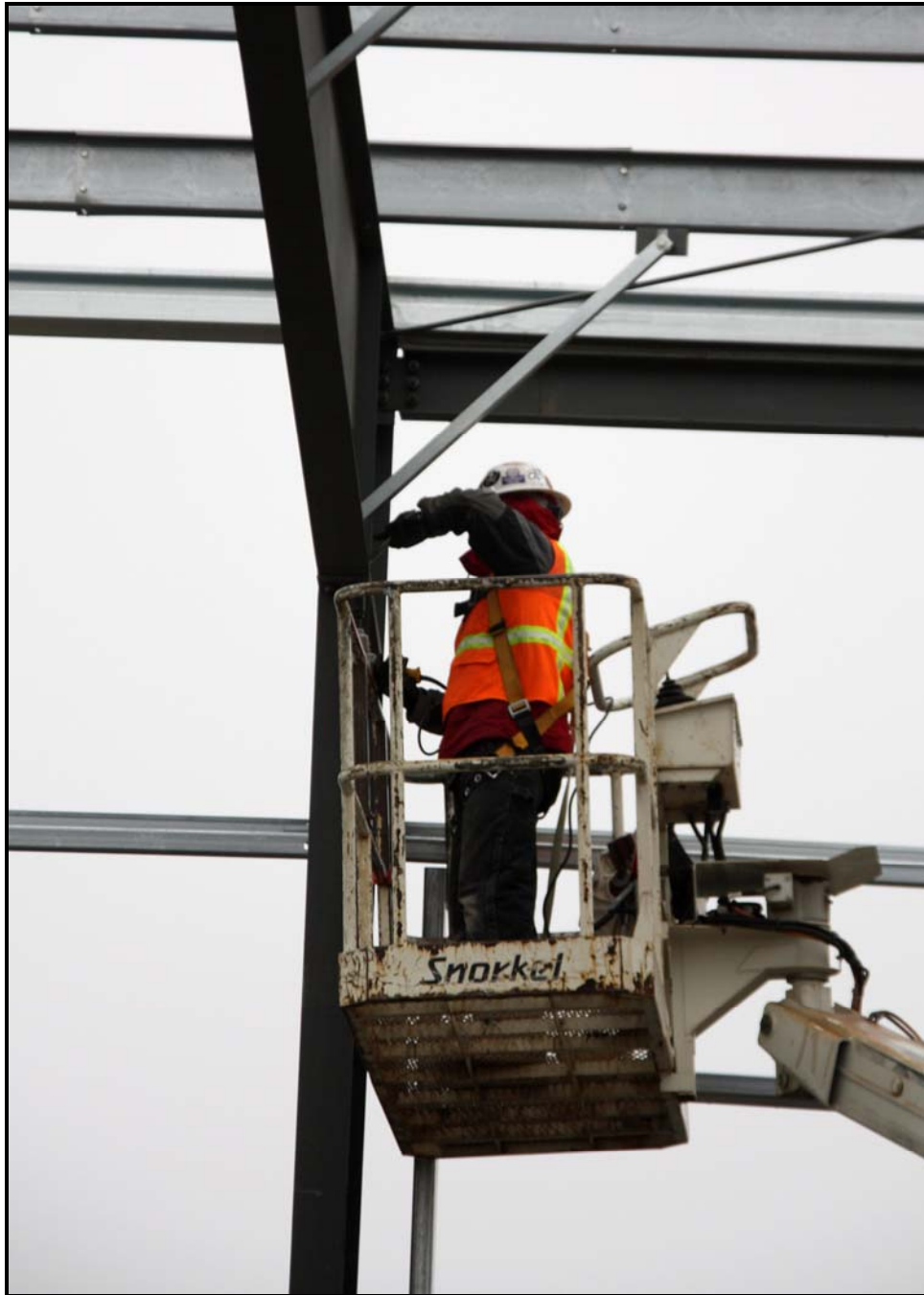
WCH subcontractor ELRFowler continues to make progress with construction of ERDF's new maintenance facilities. The project team completed insulation installation and construction of the interior wall frames in the container maintenance facility. At the equipment maintenance facility/operations center, the project team continues to build doors and window frames.

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.

ELRFowler also is constructing an upgraded transportation truck maintenance facility. The 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.



## ERDF (Continued)



*An ELRFowler employee works on a truss at the Environmental Restoration Disposal Facility's heavy equipment facility/operations center. (Photo 1)*



## ERDF (Continued)



*ELRFowler employees conduct a hydrostatic test on a fire riser at the equipment maintenance facility/operations center. (Photo 2)*

Pacific Northwest National Laboratory (PNNL) continues to develop the hardware and software for a new waste container tracking system for ERDF. The system will accurately track waste shipments and equipment, and generate real-time reports.

WCH subcontractor DelHur Industries continues to work on the electrical installation for ERDF's new batch plant. The batch plant will produce "flow fill" concrete used to mix with debris, ensuring no void space during disposal operations. In support of the batch plant, WCH purchased two concrete mixer trucks and a pump truck from Peters and Keatts Equipment Inc. Peters and Keatts is based in Lewiston, Idaho.

## ERDF (Continued)



*Electrical work continues for the new batch plant at the Environmental Restoration Disposal Facility.  
(Photo 3)*

ELRFowler continued work to install the tank and transmission lines for ERDF's new septic system. ERDF's new septic system was designed by Columbia Engineers and Constructors, a small business based in Richland, Washington.

WCH issued a notice to proceed to DelHur for construction of weather enclosures for crest pad buildings 1 and 2. The enclosures have been ordered and are expected to arrive on site next month. 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.

## 618-10 Burial Ground

### Trench Remediation Project

WCH subcontractor White Shield/Apollo continues to install utilities to prepare the 618-10 Burial Ground for remediation. The project team is making significant progress with electrical installation, erecting light poles, and building site roads. A new perimeter fence also has been erected, and office trailer installation continues. Infrastructure work is scheduled to be completed in February, with full-scale remediation of the burial ground trenches set to begin in March.



Washington Closure Hanford subcontractor White Shield/Apollo grades the staging area at the 618-10 Burial Ground. (Photo 4)

## 618-10 Burial Ground (Continued)



*Workers continue to install light polls along site roads at the 618-10 Burial Ground. (Photo 5)*

## 618-10 Burial Ground (Continued)



*White Shield/Apollo installed new perimeter fencing at the 618-10 Burial Ground. (Photo 6)*

Intrusive characterization field operations at the burial ground were completed in early September. 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, which contained liquid radioactive waste, 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.

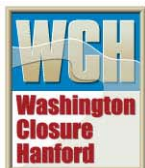
## 618-10 Burial Ground (Continued)

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.

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 23 trenches, while the moderate- and high-activity wastes were disposed in 94 VPUs. The VPUs were constructed by welding five bottomless drums together and buried vertically about 10 feet apart.

### Upcoming Activities

- Continue with construction site upgrades.
- Continue mobilization of heavy equipment to site.
- Continue with mobilization for mockups.



## 100-F Area

WCH and subcontractor Ojeda Business Ventures continued to make progress with remediation of 19 waste sites at 100-F Area. Field work began in September and will conclude this spring.

The project team began a test pit campaign at 100-F-57, where stained concrete was discovered in December. Earlier this month, the presence of hexavalent chromium was confirmed to be in the area of the concrete slab and underlying soil. Work to load out stockpiled waste from the site is underway.

The team also completed excavation and loadout at 100-F-47 (electrical substation foundation) and continued stockpiling waste at 100-F-49 (old maintenance garage lube pit foundation, pipelines, and drywells). An underground storage tank was discovered at 100-F-49 last week, and sampling on the soil around the tank was conducted.



*A storage tank was discovered at the site containing an old maintenance garage lube pit foundation. Sampling of the soil around the tank was conducted. (Photo 7)*

Stockpiling of overburden for pipe removal continues at 100-F-26:7. The site contains sodium dichromate and sodium silicate pipelines. Pipe draining is underway.

## 100-F Area (Continued)



*Washington Closure Hanford subcontractor Ojeda Business Ventures drains liquid from a pipe at 100-F-26:7. The site contains sodium dichromate and sodium silicate pipelines. (Photo 8)*

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. The sites are:

- 100-F-26:4 (process sewer pipeline section)
- 100-F-26:7 (sodium dichromate and sodium silicate pipelines)



## 100-F Area (Continued)

- 100-F-44:8 (fuel oil pipelines)
- 100-F-44:9 (process sewer pipeline)
- 100-F-45 (buried riverbank effluent pipeline)
- 100-F-47 (electrical substation foundation)
- 100-F-48 (coal-pit debris)
- 100-F-49 (maintenance garage lube pit foundation, pipelines, drywells)
- 100-F-51 (fish laboratory footprint, pipelines)
- 100-F-55 (contaminated ash layer)
- 100-F-56 (scattered surface debris, stains)
- 100-F-57 (buried pipeline cradle debris)
- 100-F-58 (asbestos-containing surface debris)
- 100-F-60 (pipeline)
- 100-F-61 (stained soil site)
- 100-F-8 (French drains)
- 100-F-62 (animal farm septic lines)
- 100-F-63 (animal farm radioactive effluent lines)
- 600-351 (stained oil areas).

### Upcoming Activities

- Complete loadout of stockpiled asbestos waste at 100-F-57.
- Continue test pit campaign at 100-F-57.
- Continue draining liquids from pipes at 100-F-26:7.
- Begin excavation and stockpiling at 100-F-61.
- Begin loadout of stockpiled waste at 100-F49.
- Collect grab samples from 100-F-47.



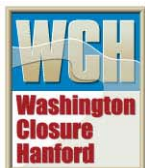
## IU 2 & 6 Segment 1

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:

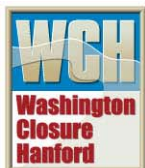
- 600-341 (four areas that contained dry cell battery remnants and/or battery debris)
- 600-343 (residual ash from burned material and dumped asphalt in excavation trench)
- 600-344 (stained area)
- 600-345 (stained area with oil filters)
- 600-346 (four small fly-ash dump areas with metal debris).

In 2010 a global positioning environmental radiological survey indicated that an additional site, 600-342, did not require additional remediation.



## Confirmatory Sampling

To date, WCH completed sampling at the ARRA confirmatory sites. Sampling was performed 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 under development or in the review and approval process.



## General

### Video

[Click here to view the video on ARRA projects progress update.](#)

### Media, Visits, Press Releases

No significant media events this week.

### Contracting Actions

No significant contracting actions this week.

