



*River Corridor Closure Project*

# **Recovery Act Weekly Report**

For the week ending November 5, 2010

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

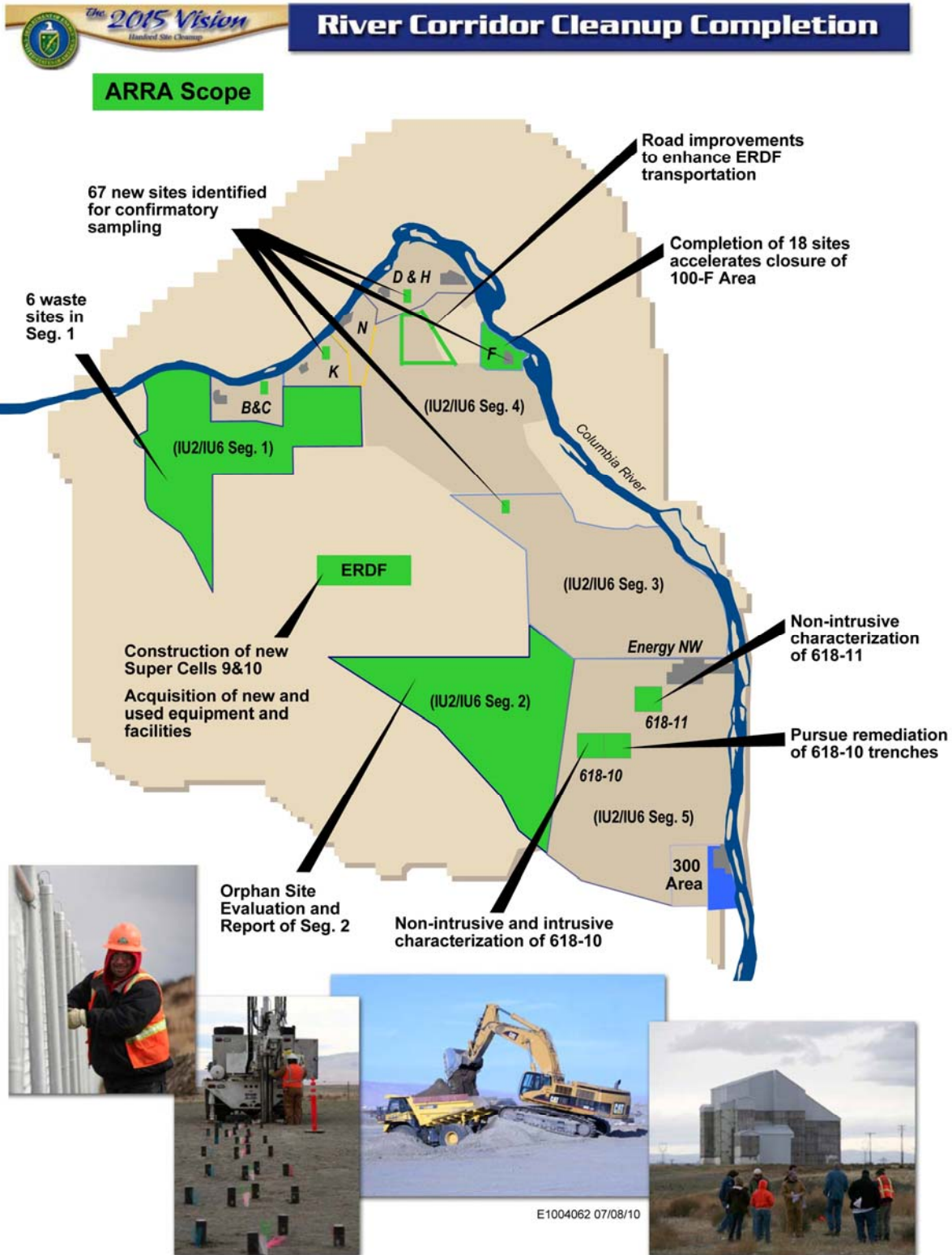
WCH is proposing to complete the early sampling process of 67 potential waste sites using ARRA funds. Confirmatory sampling is performed for sites that require additional information for determining if the site requires remediation.

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 September 30, 2010, WCH and its subcontractors have worked 285,488 hours of ARRA scope with no safety incidents.

### Hazard Reductions

The River Corridor Closure Project provides a “Weekly Roundup” focusing on safety topics that affect Hanford Site workers. This week’s Roundup issued a section on winter driving. It contained the following checklist to be reviewed in preparation of the winter driving season:

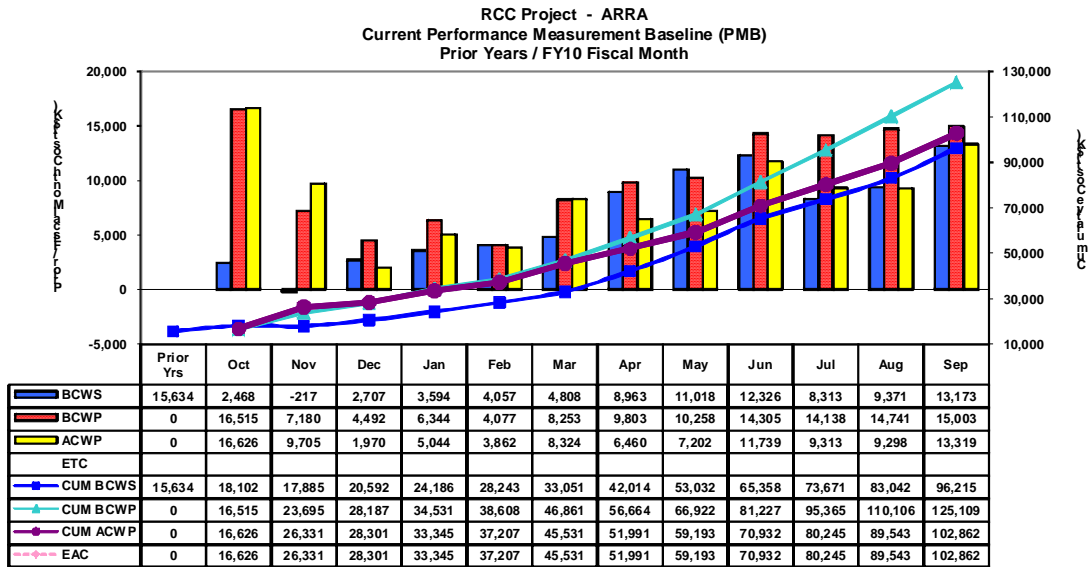
- Windshield washer fluid - Because snow and slush can make windshields a mess, it is important to consistently check the quantity of washer fluid throughout the winter months.
- Maintain a full tank of gas - At cold temperatures, water can condense in fuel tanks that are less than half full. This water can later freeze in fuel lines and block the flow of gasoline to the engine.
- Check rear window defroster - Inside humidity and outside frost can reduce or eliminate visibility in the rear window.
- Check radiator coolant - Old coolant loses its ability to prevent freezing at low temperatures. It must be checked and changed periodically to ensure that the radiator will not freeze and crack.
- Carry snow chains - In very heavy snowfalls, regular tires will slip and only snow tires or snow chains will provide proper traction.
- Carry supplies - In the event of an emergency, it may be necessary to survive for a few hours at very cold temperatures. A supply list might include a thermal blanket, a winter coat, water, energy bars, candy and other non-perishable food items.



# 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

## River Corridor Closure Project - ARRA



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

Apportionment Number	Apportionment Title		September 2010	Inception To Date	Cost Authority
RL-0041.R1.2	ERDF Cell Expansion	PMB	9,645	74,603	139,072
RL-0041.R2	River Corridor Soil & Groundwater (618-10)	PMB	3,673	28,259	38,907
<b>Sub Total</b>		<b>PMB</b>	<b>13,318</b>	<b>102,862</b>	<b>177,979</b>
<b>Fee</b>			<b>1,137</b>	<b>10,633</b>	
<b>Total</b>			<b>14,455</b>	<b>113,495</b>	

\* PMB = Performance Measurement Baseline.





## ERDF

### Super Cells 9 and 10 Construction

WCH and prime subcontractor TradeWind Services continue with construction of the liners and leachate collection systems for super cells 9 and 10.

The liner system consists of a 3-foot layer of admix, two layers of high-density polyethylene (HDPE), a 1-foot layer of gravel with a 12-inch perforated leachate collection pipe, a geocomposite layer, and two geotextile layers. Admix is a 3-foot low-permeability compacted soil layer of the liner system that is manufactured by mixing excavated soil with bentonite.

In super cell 9, the project team completed installation of the geocomposite layer and continues to place the operations layer (3 feet of soil). In super cell 10, the team completed placement of the rock for the gravel drainage layer.



*A view from the northwest corner of super cell 9 shows construction progress of both super cells at the Environmental Restoration Disposal Facility. (Photo 1)*

## ERDF (Continued)



*Washington Closure subcontractor TradeWind Services places the gravel drainage layer in super cell 10 at the Environmental Restoration Disposal Facility. (Photo 2)*

Work also continues on the crest pad buildings associated with the super cells. The mechanical work is complete in crest pad building 9, while the electrical work continues. Both mechanical and electrical work continues in the crest pad building 10.

The super cell 9 acceptance test with the U.S. Environmental Protection Agency (EPA) and the leak detection test for the leachate transmission line have been scheduled for December 2.

WCH continues with construction of two new storage tanks – Nos. 3 and 4 – that will replace the facility's two original storage tanks – Nos. 1 and 2. Mass installation of the liner was completed in leachate storage tank No. 3 and liner construction is under way in tank No. 4. Removal of tank No. 1 was completed in September, and tank No. 2 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.

## ERDF (Continued)



Workers continue to install the liner for leachate storage tank No. 3 at the Environmental Restoration Disposal Facility. (Photo 3)

### Facility and Equipment Upgrades

WCH subcontractor Fowler General Construction continues to make significant progress with construction of ERDF's new maintenance facilities. Fowler began erecting the steel structure for the container maintenance facility and continues installation of underground utilities for the equipment maintenance facility/operations center.

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, a joint venture between local companies ELR Consulting and Fowler General Construction, also will construct 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)



*Washington Closure Hanford subcontractor Fowler General Construction begins to erect steel for the container maintenance facility at the Environmental Restoration Disposal Facility. (Photo 4)*

## ERDF (Continued)



Workers from Fowler General Construction begin work on the underground utilities for the equipment maintenance facility/operations center at the Environmental Restoration Disposal Facility. (Photo 5)

Pacific Northwest National Laboratory (PNNL) continues work on a new waste container tracking system for ERDF. The system will accurately track waste shipments and equipment, and generate real-time reports. PNNL has begun electrical and reader software development. A new batch plant is scheduled to be delivered to ERDF next month. 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.

WCH subcontractor DelHur Industries is constructing forms for the new batch plant’s foundation. The final pieces of the batch plant are scheduled to arrive next week. 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)

WCH completed its review of vendor bids for a new septic system at ERDF and issued a notice to proceed to ELRFowler. The septic system was designed by Columbia Engineers and Constructors, a small business based in Richland, Washington.

Work continues to manufacture crushed base rock for the expanded container transfer area (CTA). The existing CTA will be expanded 600 feet, providing additional storage for about 300 waste containers.

Mission Support Alliance paved and striped the new turn lane for vehicles going to ERDF via North Landfill Road. The turn lane will be opened next week. Last month, repair work was completed on three Hanford Site roads used to transport waste material for disposal at ERDF – Routes 1, 2, and 4.

WCH completed review of Vista Engineering's final design of weather enclosures for crest pad buildings 1 and 2. Vista Engineering is a local company and subcontractor of DelHur Industries. WCH has submitted comments, and Vista Engineering is incorporating changes.

### Upcoming Activities

- Continue construction of the liner and leachate collection systems for super cells 9 and 10.
- Continue construction of leachate storage tanks Nos. 3 and 4.
- Continue construction of container maintenance facility.
- Continue construction of equipment/operations center.



## 618-10 Burial Ground

### 618-10 Trench Remediation Project

WCH received the 618-10 Burial Ground vertical pipe unit (VPU) nonintrusive characterization report this week from subcontractor North Wind. The report will be part of the data reviewed at an upcoming workshop to develop a nonintrusive characterization plan for 618-11 and will be used to support future remediation planning.

The scope of activities carried out as part of non-intrusive 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.

WCH subcontractor White Shield/Apollo continues work on a \$3.7 million contract to install water, electricity, roads, office trailers, and a waste CTA for remediation at the 618-10 Burial Ground. White Shield/Apollo is constructing new site roads and extending the drum storage area. The project team also began activities for the installation of a septic system.

White Shield/Apollo is a small, disadvantaged joint venture between White Shield Inc. of Pasco, Washington, and Apollo Inc. of Kennewick, Washington. White Shield/Apollo is scheduled to complete infrastructure work by February 2011.

In October, WCH awarded two subcontracts totaling nearly \$2.1 million for lease of heavy equipment for trench remediation. CWR Enterprises of Rathdrum, Idaho, partnered with Rowand Machinery of Spokane, Washington, for a \$1,378,000 subcontract. Acquisition Business Consultants of Richland, Washington, partnered with Peters & Keatts of Lewiston, Idaho, for a \$718,000 subcontract. Both companies meet small business procurement requirements and are designated as historically underutilized businesses, or HUB zone businesses.

WCH hosted a technology review workshop last month that was attended by the U.S. Department of Energy (DOE) and EPA. During the workshop, a five-person decision support board reviewed six candidate technologies for remediation of the VPUs at the 618-10 Burial Ground and recommended three for further development and demonstration.

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





## 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.

WCH, along with DOE and Hanford Site regulators, will use the information obtained during intrusive characterization to help determine the safest and most efficient way to clean up the burial ground including how to safely dispose of the high-dose-rate waste in the concreted drums. Full-scale remediation of the 618-10 Burial Ground trenches is scheduled to start in spring 2011.

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 vertical pipe units (VPUs). The VPUs were constructed by welding five bottomless drums together and buried vertically about 10 feet apart.

Available records indicate that the burial ground was used to dispose of cardboard boxes of low-level waste and miscellaneous laboratory debris including bottles, boxes, filters, aluminum cuttings, spent fuel fragments in small juice cans, radiologically contaminated equipment and laboratory instruments, and high-level liquid waste sealed in drums.

### Upcoming Activities

- Continue procurement process for various subcontracts.
- Continue with construction of site upgrades.



## 100-F Area

WCH and subcontractor Ojeda Business Ventures continue remediation activities at 19 waste sites in 100-F Area. The project team is performing excavation and loadout activities at 100-F-47 (electrical substation foundation) and 100-F-48 (coal pit debris). At 100-F-44:8, liquids were drained from old fuel pipelines and excavation was completed.

The project team also is working to remove overburden and collect waste profile samples at 100-F-44:9 (maintenance garage lube pit foundation, pipelines, and drywells), and to collect waste samples at 600-351 (stained oil area). Brush also was removed from 100-F-45, a site on the bank of the Columbia River that contains buried effluent pipeline.



*The project team removed brush from the road to 100-F-45, which contains buried riverbank effluent pipeline. (Photo 6)*

## 100-F Area (Continued)



*Washington Closure Hanford subcontractor Ojeda Business Ventures continues excavation and loadout at 100-F-44:8, a site that contains old fuel pipelines. (Photo 7)*

## 100-F Area (Continued)

In June, WCH awarded Ojeda a subcontract worth \$3.8 million to remediate the 100-F Area waste sites. Ojeda is a small disadvantaged business based in Richland, Washington, that specializes in construction, renovation, and construction management of federal government projects. Remediation of the wastes sites is scheduled to be completed by spring 2011.

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 19 sites that require remediation are:

- 600-351 (stained oil areas)
- 100-F-26:4 (process sewer pipeline section)
- 100-F-26:7 (sodium dichromate and sodium silicate pipelines)
- 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).





## 100-F Area (Continued)

### Upcoming Activities

- Complete loadout of 100-F-26:8.
- Continue stockpiling waste at 100-F-26:8.
- Continue excavation and loadout from 100-F-48.
- Continue excavation and loadout from 100-F-47.
- Begin stockpiling waste at 100-F-44:9.
- Continue waste profile samples from 100-F-61.

### Video

[Click here to view a video of cleanup progress at F Area.](#)



## IU 2 & 6 Segment 1

Waste Site Reclassification Forms for all of the IU 2&6 Segment 1 sites have been signed by the DOE Richland Operations Office and EPA. Remaining work, scheduled for November, includes re-contouring and re-vegetating the sites.

Remediation of the IU 2 & 6 Segment 1 waste sites discovered during the 2008 orphan site evaluation was completed in April. The remediation sites are as follows:

- 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.

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



## Confirmatory Sampling

WCH is more than 50% complete with the confirmatory sampling campaign.

Confirmatory sampling at 100-F and 100-IU-6 is complete. Sampling is continuing at 100-IU-2 sites, and follow-up sampling will be performed at some 100-D sites. The sampling campaign is scheduled to be completed in January 2011.

Sampling is being performed by WCH subcontractor TerranearPMC (TPMC) in accordance with the regulator approved work instructions that were completed earlier this year. TPMC is a small disadvantaged business with an office in Richland, Washington. It provides environmental remediation and compliance, radiological waste management, engineering design, and construction management.

Remove, treat, and dispose reports and closeout documentation are being prepared for the sites that were sampled at 100-D and 100-F Area. These documents will be submitted to DOE and the regulatory agencies for review and approval. Sites where the sample results show contamination below the clean up standards are being recommended for closeout with no further action.



Personnel from Washington Closure Hanford subcontractor TerranearPMC performs confirmatory sampling activities at site 600-293. The site is a former service station. (Photo 8)

## General

### Media, Visits, Press Releases

- Paul Bosco, the Director of the Office of Engineering and Construction Management at DOE Headquarters, visited ERDF and the 618-10 Burial Ground on November 3 as part of a Hanford Site tour. Bosco was briefed by ERDF's Director of Operations and the 618-10 Project Manager.

### Contracting Actions

- Notice to proceed issued for ERDF septic system.
- Requisition received for 618-10 water tanks.

