



*River Corridor Closure Project*

# **Recovery Act Weekly Report**

For the week ending August 8, 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

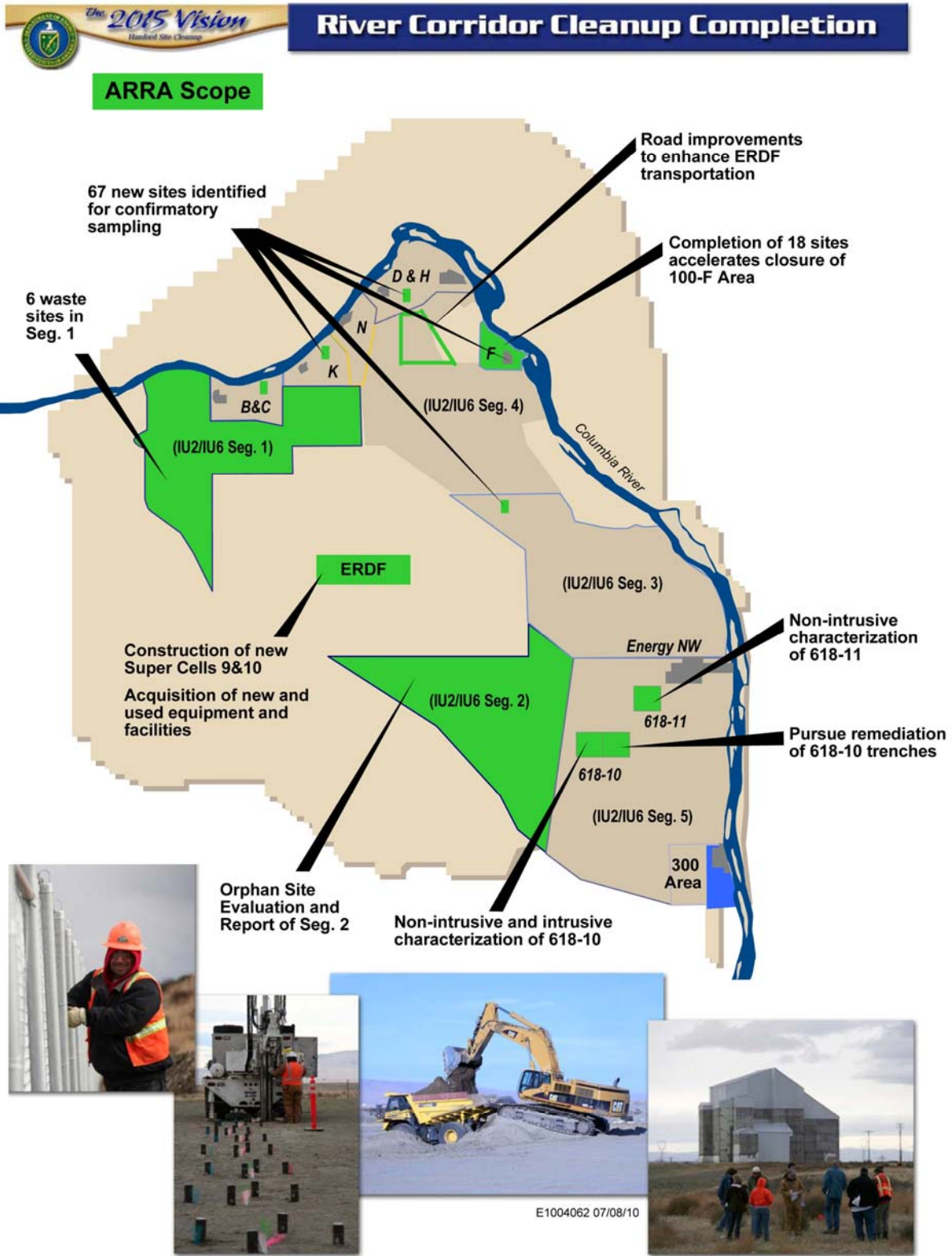
WCH is proposing to complete the early sampling process of 67 potential waste sites using ARRA funds. Confirmatory sampling is performed for sites that require additional information for determining if the site requires remediation.

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 June 27, 2010, WCH and its subcontractors have worked 225,874 hours of ARRA scope with no safety incidents.

## Hazard Reductions

The River Corridor Closure Project's "Hot Topics" are used to share safety information with all WCH employees. Last week's edition included a briefing on heat stress and a summary of improvements made to procedures.

Procedure reviewed and revised to:

- Continuously improve the heat stress program and afford enhanced protection to the workers
- Fulfill the commitments of a Corrective Action Plan requirement issued by the U.S. Department of Energy (DOE) in 2009
- Ensure that the guidelines of the American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit values (TLVs) are incorporated, interpreted, and proceduralized
- Incorporate the lessons learned and best practices obtained through assessments, direct observation, and employee feedback.

Summary of changes to stress/strain monitoring:

- Monitoring requirements for heat stress/strain were clarified to allow for wet-bulb globe thermometer (WBGT) and/or physiological monitoring
- Work/Rest regimens are no longer required to be conducted PRIOR to beginning physiological monitoring
- A flow chart provides guidance in regards to monitoring, work stoppage, and work control review.

Responsibility changes include:

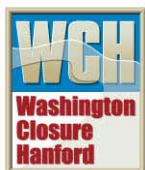
- Safety professionals clarified to allow for Industrial Hygiene (IH) oversight to be performed
- IH Management added to reflect the newly formed IH department under Safety Health and Quality (SH&Q) Director and approval authorities
- IH Technicians clarified to ensure that responsibilities are consistent throughout the site.

Self-monitoring requirements are:

- Allowance provided to employees to conduct self-monitoring
- Self-monitoring form added to procedure
- Training must be verified before commencing with self-monitoring
- Training includes the use of and proper disposition of form (considered sensitive when employee information is entered)
- Determination to perform self-monitoring will be established by the project IH personnel.

Training improvements include:

- Training clarified to ensure that personnel using monitoring equipment and forms are trained with training verified
- Training extended to personnel performing self-monitoring



## Safety (Continued)

- On the job training will be conducted to verify competency of each individual
- Training will include the proper use, control, and disposition of records generated as a result of this procedure.

Heat stress/strain monitoring thresholds:

- Added chart to include the monitoring thresholds with typical personal protective equipment (PPE) ensembles
- Included specific temperature and humidity information for Hanford in the determination of the monitoring thresholds
- Included chart to provide WBGT temperature triggers for work/rest regimens in typical PPE ensembles
- Clarified that the charts in the procedure are for “typical PPE ensembles” and that any deviations or special conditions must be evaluated by a certified industrial hygienist (CIH).

Employees were reminded to:

- Hydrate, hydrate, hydrate
- Notify your supervisor of any heat-related conditions before starting work
- If experiencing any heat-related symptoms (e.g., cramps, excessive temperature, sweating, and/or thirst, lack of sweat, nausea, headache, dizziness) during the course of work, exit the area immediately and notify your supervisor and IH personnel.

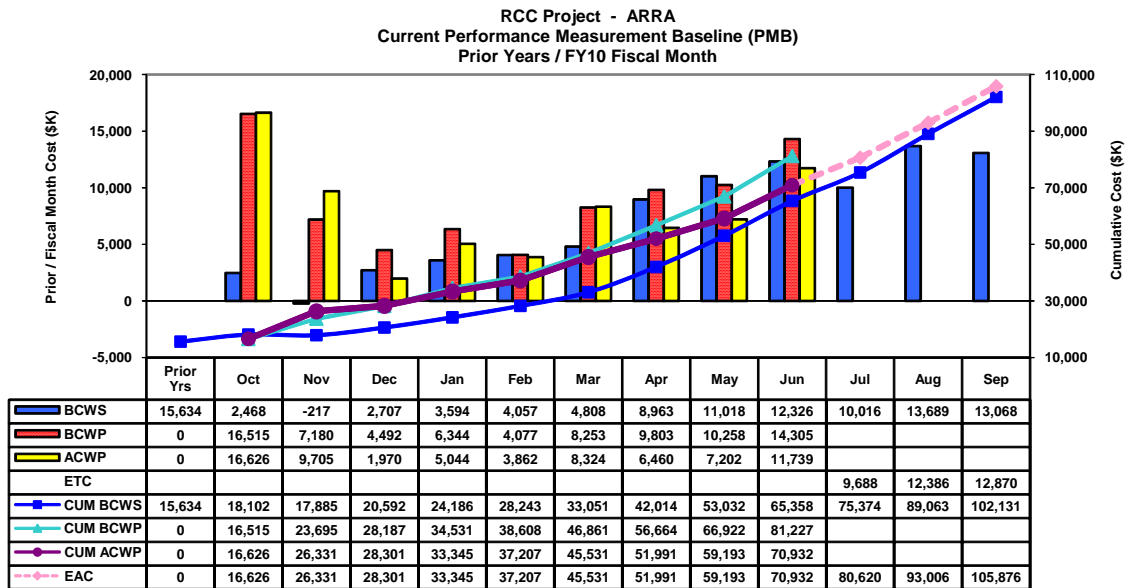




# Cost/Contract Status

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

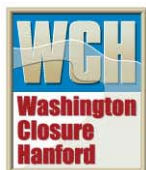
## River Corridor Closure Project - ARRA



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

Apportionment Number	Apportionment Title		June 2010	Inception To Date	Cost Authority
RL-0041.R1.2	ERDF Cell Expansion	PMB	9,088	51,305	139,072
RL-0041.R2	River Corridor Soil & Groundwater (618-10)	PMB	2,651	19,627	38,907
<b>Sub Total</b>		<b>PMB</b>	<b>11,739</b>	<b>70,932</b>	<b>177,979</b>
<b>Fee</b>			<b>419</b>	<b>6,284</b>	
<b>Total</b>			<b>12,158</b>	<b>77,216</b>	

\* PMB is the Performance Measurement Baseline.



## ERDF

### Super Cells 9 and 10 Construction

WCH subcontractor TradeWind Services and its main subcontractor, DelHur Industries, continue construction of the liner 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 drainage pipe, a geocomposite layer, and two geotextile layers. Admix is a 3-foot low-permeability compacted soil layer of the liner system and is manufactured by mixing excavated soil with imported bentonite. A 3-foot protective soil layer covers the liner system.



*A photograph from the southeast corner of super cell 10 shows liner construction at the Environmental Restoration Disposal Facility.*

Approximately 60% of admix used in the liner system has been placed in super cell 10. In July, the project team completed the placement of approximately 90,000 cubic yards of admix in super cell 9.

## ERDF (Continued)



*A TradeWind Services/DelHur Industries employee runs a sheepfoot compactor during admix placement in super cell 10 at the Environmental Restoration Disposal Facility.*



## ERDF (Continued)



*An employee from Envirotech prepares to test the compaction of admix on the north slope of super cell 10 at the Environmental Restoration Disposal Facility.*

The installation of the HDPE and geocomposite liners in super cell 9 also continues at a rapid pace. More than 90% of the secondary HDPE liner and 65% of the primary HDPE liner has been installed. The geocomposite liner is 70% complete.

## ERDF (Continued)



*Environmental Services Inc. employees carry sandbags up the south slope of super cell 9 during the installation of the liner system at the Environmental Restoration Disposal Facility.*

The project team also continues to install the secondary riser pipes from the sump of super cell 9 to the crest pad building, and work to form the lysimeter sump area in super cell 10 continues.

The onsite screening plant is stockpiling gravel for the gravel drainage layer of the liner system. More than 20,000 cubic yards of gravel, enough for one of the super cells, has been manufactured. Each super cell is about 17 acres (including the base and the side slopes).

Construction also continues on the new leachate holding tank that will contain the leachate from super cells 9 and 10. The new holding tank is 100 feet in diameter with a capacity of 425,000 gallons. Each of ERDF's two existing holding tanks is 80 feet in diameter with a capacity of 275,000 gallons. Work also continues on the crest pad buildings for super cells 9 and 10, and the leachate transmission pipe from super cells 9 and 10 to the new leachate holding tank.



## ERDF (Continued)

### Facility and Equipment Upgrades

ELRFowler has submitted the entire 90% design of ERDF's new maintenance facilities and operations center and has begun to mobilize. WCH will begin reviewing the design next week. ELRFowler is a joint venture between local companies ELR Consulting and Fowler General Construction.

The upgraded transportation truck 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 new container maintenance facility will include a large container repair line, a maintenance shop, a weld area, a lunch area, and an exterior awning over a concrete pad. The new 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.

WCH has authorized Pacific Northwest National Laboratory (PNNL) to begin work on a new waste container tracking system for ERDF. The system will accurately track waste shipments and equipment, and generate real-time reports.

WCH issued a change notice to ELRFowler for construction of ERDF's new septic system. The septic system was designed by Columbia Engineers and Constructors, a small business based in Richland, Washington.

WCH received delivery of two Genie articulating boom man lifts from Powers Equipment Company. The man lifts will be used for elevated work such as installing rigging, washing out hazardous waste containers, applying fixatives, and adjusting lights. Powers Equipment Company is based in Pasco, Washington.

WCH began receiving submittals from Hanford Site contractor Mission Support Alliance (MSA) and its subcontractor, Fowler General Construction, for repair work on three Hanford Site roads – Routes 1, 2, and 4. The roads are used to transport waste material for disposal at ERDF. Fowler has begun to issue submittals. Submittals are due by mid-August.

WCH subcontractor George A. Grant continues with construction of a new lighting system at ERDF's transportation yard. A total of 15 light posts have been erected and the electrical is being installed. The transportation yard is used for truck-and-trailer combinations and other equipment. The truck-and-trailer combinations are used to transport non-regulated soil for disposal at ERDF. The project is scheduled to be completed by mid-August.

WCH began receiving proposals for the construction of ERDF's onsite fueling station. Proposals are due next week. Construction of the fueling station, designed by Sage Tech and WHPacific, is scheduled to begin in late summer. Currently, disposal equipment is fueled by a subcontractor that makes daily deliveries, and transportation uses the 200 East fuel station. Sage Tech is based in Richland, Washington. WHPacific is an Alaska-based company with an office in Richland, Washington. It specializes in all facets of building engineering, land development, water resources, survey, architecture, and transportation.



## ERDF (Continued)

Sage Tech and WHPacific completed the design package for a new batch plant at ERDF. WCH will begin work on the purchase order for the batch plant next week. The batch plant will manufacture 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.



*Two new mixer trucks from Peters and Keatts Inc. will be used in conjunction with a new batch plant at the Environmental Restoration Disposal Facility.*

A change notice has been issued to TradeWind Services for the construction of weather enclosures for the crest pad buildings for cells 1 and 2. Contractors are developing bids.

### Upcoming Activities

- Continue to manufacture admix and place in super cell 10.
- Continue construction of the liner and leachate collection system for super cells 9 and 10.
- Continue work on the crest pad buildings for super cells 9 and 10.
- Review ELRFowler's 90% design of the maintenance facilities and operations center.



## 618-10 Burial Ground

### 618-10 Non-Intrusive Characterization/Trench Remediation Project

WCH completed the startup review for intrusive characterization and began field operations at the 618-10 Burial Ground. Field operations will involve digging test pits in several disposal trenches to verify the condition and types of wastes that were disposed.

The project team began excavating the first surge pit in clean, undisturbed material outside the trench area. Next week, the team will begin cross-trenching and removing drums. Because the burial ground might contain potentially flammable material, unearthed drums will be opened inside a metal enclosure that is operated and monitored remotely for safety. The enclosure includes a HEPA-filtered ventilation system and a sand hopper that can be activated immediately to quench (smother) any reaction that may occur inside a drum. Upon completion of the cross-trenching process, the cross trench will be covered with the clean backfill.



*A track-hoe excavates a surge trench as intrusive characterization field operations began at the 618-10 Burial Ground.*

## 618-10 Burial Ground (Continued)



*A radiological control technician takes a measurement of soil after excavation of a surge pit at the 618-10 Burial Ground.*

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.

In early July, WCH awarded a subcontract worth nearly \$3.7 million to install water, electricity, roads, office trailers, and waste container transfer areas for remediation at the 618-10 Burial Ground. 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 will begin work at the burial ground this fall and is scheduled to complete infrastructure work by February 2011.

## 618-10 Burial Ground (Continued)

Work continues on the development of the non-intrusive characterization report. 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. Data collected during non-intrusive characterization activities are being used to develop and evaluate safe and effective strategies for intrusive characterization (if required) and/or remediation.

### Upcoming Activities

- Continue work on procurement packages for trench remediation labor and equipment.
- Continue intrusive characterization field activities.
- Continue development of non-intrusive characterization report.

### Video

[Click here to view video of intrusive characterization begins at the 618-10 Burial Ground.](#)





## 100-F Area

WCH continues to prepare for remediation of the 18 remaining waste sites at 100-F Area. The project team continues working on the project startup review (PSR) for site mobilization and reviewing submittals from subcontractor Ojeda Business Ventures.

Earlier this summer, WCH awarded a subcontract worth \$3.8 million to Ojeda to remediate the 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 sites is scheduled to begin in September.

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, 18 additional waste sites were discovered. The 18 sites that require remediation are:

- 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).

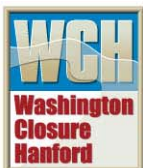




## 100-F Area (Continued)

### Upcoming Activities

- Continue mobilization PSR completion activities.
- Continue remediation PSR activities.
- Continue reviewing subcontractor submittals.



## IU 2 & 6 Segment 1

Remaining work instructions for waste site-specific verification closeout sample plans have been reviewed and approved by the U.S. Department of Energy, Richland Operations Office (RL) and the U.S. Environmental Protection Agency. Verification closeout samples for sites 600-341 and 600-344 have been collected for laboratory analysis.

Closeout verification sample data has been received from the analytical laboratory for waste site 600-345. Data for the southeast quadrant (quadrant 4) of the waste site remains above the remedial action goal for total petroleum hydrocarbons (TPH). Waste site 600-345 was excavated earlier this year to approximately 1.5 feet below grade, removing the stained soil and oil filters residing on the ground surface. Additional remediation of the southeast quadrant is required to remove the TPH contaminated soil to then be followed by a second round of closeout sampling.

Remediation of five 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.

Remediation of these waste sites will contribute to RL's Vision 2015 goal of completing regulatory closure work in IU 2 & 6 Segment 1 by the end of 2010.



## Confirmatory Sampling

WCH and subcontractor Terranear (TPMC) continue to prepare for confirmatory sampling of 67 waste sites at 100-D, 100-K, and 100-IU 2/6 Areas. Confirmatory sampling is performed for waste sites that require additional information for determining the need for site remediation. TPMC is scheduled to begin sampling at 100-D next week.

WCH has issued the confirmatory sampling work instructions and remove, treat, and dispose memos for 62 of 67 sites for 100-D, 100-K, and 100-IU 2/6. In addition, the sampling instruction for the 100-F Area site that was added to the confirmatory scope also was approved. The remaining four 100-D Area sampling instructions are with DOE and the regulatory agencies for review or comment resolution, with a forecasted completion date in early August. Of the 67 sites designated for confirmatory sampling, 26 have been recommended to remove, treat, and dispose, which means they will not undergo the sampling process.

Sites that pass the confirmatory sampling process will be closed out and no further action will be required under the existing interim record of decision. Those that fail will be recommended for remediation to meet regulatory standards.



## General

### **Mentoring/Training**

No significant mentoring/training events this week.

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

- Reporters from two local television stations visited ERDF on August 3 for a media event highlighting progress at the disposal facility. ERDF's Waste Operations Director and its Construction Manager discussed the record amounts of waste being disposed at the facility and the construction of super cells 9 and 10.

### **Contracting Actions**

- Concrete mixer and concrete pump trucks delivered.
- Alternate resume accepted for 618-10 Infrastructure Construction subcontract.

