Issue 45

River Corridor Closure Project

Recovery Act Weekly Report

For the week ending July 18, 2010

Contract DE-AC06-05RL14655

Protecting the Columbia River

E0908027

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.

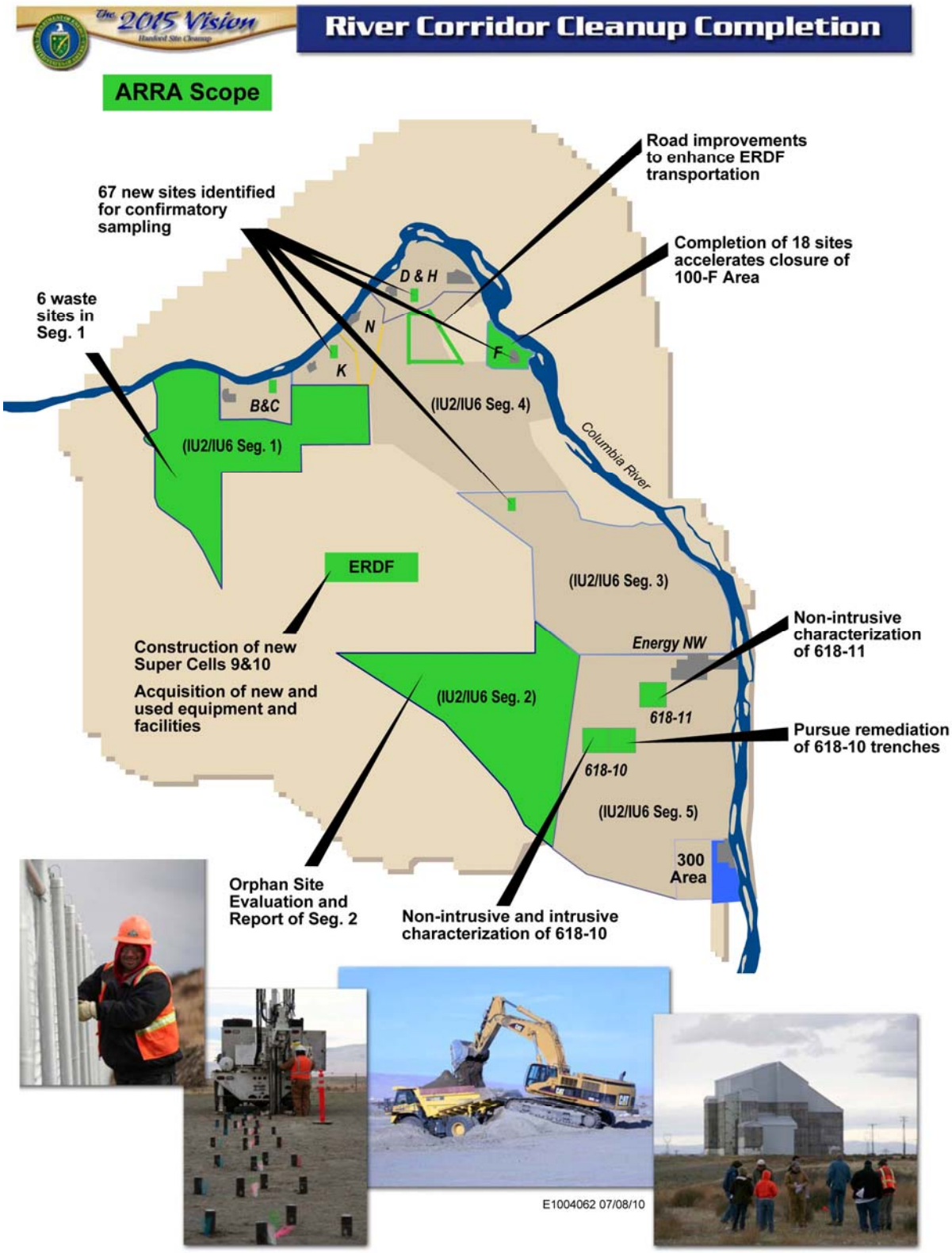
E. Confirmatory Sampling of other new sites

   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 Flashes" are used to share safety information with all WCH employees about weather extremes. Last week's edition focused on the importance sweating.

The production and evaporation of sweat is the principal pathway for reducing core body temperature.

1. Heat in the body core is transported by blood to the skin
2. Blood vessels in the skin dilate to send as much blood as possible to the skin
3. The sweat glands take water from the blood and elsewhere
4. Sweat is produced
5. Sweat is then sent to the surface and where it evaporates, taking 540 calories of heat for every gram of sweat.

It is a great mechanism and it is because of this mechanism that your face gets red, your heart beats faster, and you lose water when you get hot.

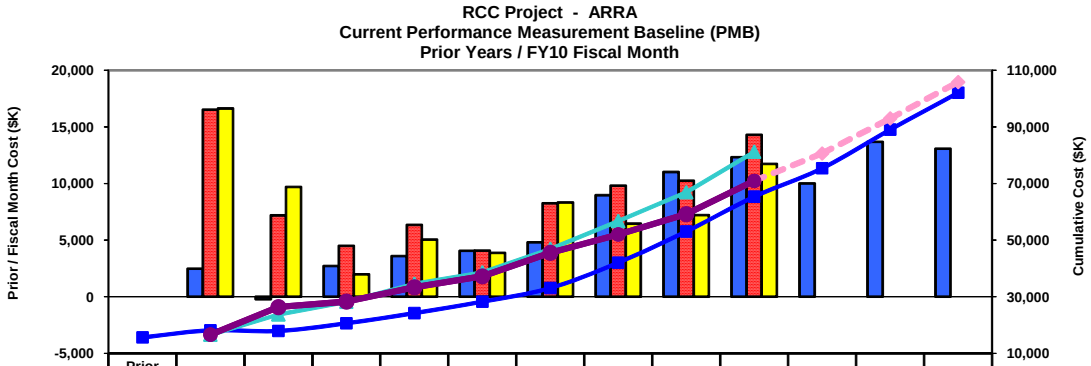
It is a complex process and to make it work it takes water, blood flow, and hormones to regulate the entire process. Water is essential for adequate blood volume and is the principal ingredient in sweat. Blood absorbs heat in the body's interior and transports it to the surface. The message has to get to the heart that the body is heating up so it can pump more, so blood vessels will dilate, and sweat glands will produce sweat. Hormones are the messengers. Consequently, if you are taking any medications that change these hormones, the mechanism that helps you cool off may not work as efficiently as it should. Therefore, if you are taking any medications, tell your doctor you may get overheated on the job and ask him or her whether any medications you are taking could affect your ability to control your temperature.

If you are wearing protective clothing or heavy clothing, it may prevent sweat from evaporating and thus prevent you from cooling off. To counter this wear light weight clothing (modesty clothes) under your protective clothes, taking care to protect yourself from direct sunlight (if possible), and from other hazards on the job. If your job requires you to wear protective clothing, this could have a significant effect on heat stress primarily because it prevents sweat from evaporating. The effects of excess heat then accumulate rapidly. To guard against this, we encourage proper hydration, self regulation, and the use of the TLV guidelines, adjusted for protective clothing, to set work/rest regimens.

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

River Corridor Closure Project - ARRA



	Prior Yrs	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
BCWS	15,634	2,468	-217	2,707	3,594	4,057	4,808	8,963	11,018	12,326	10,016	13,689	13,068
BCWP	0	16,515	7,180	4,492	6,344	4,077	8,253	9,803	10,258	14,305			
ACWP	0	16,626	9,705	1,970	5,044	3,862	8,324	6,460	7,202	11,739			
ETC											9,688	12,386	12,870
CUM BCWS	15,634	18,102	17,885	20,592	24,186	28,243	33,051	42,014	53,032	65,358	75,374	89,063	102,131
CUM BCWP	0	16,515	23,695	28,187	34,531	38,608	46,861	56,664	66,922	81,227			
CUM ACWP	0	16,626	26,331	28,301	33,345	37,207	45,531	51,991	59,193	70,932			
EAC	0	16,626	26,331	28,301	33,345	37,207	45,531	51,991	59,193	70,932	80,620	93,006	105,876

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
Sub Total		PMB	11,739	70,932	177,979
Fee			419	6,284	
Total			12,158	77,216	

*** 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 system collects and removes leachate as it drains through the waste materials.

The mass placement of approximately 90,000 cubic yards of admix in super cell 9 was completed last week, and admix has been placed on the south slope of super cell 10 (about 25% of the super cell). Admix is a 3-foot low-permeability compacted soil layer of the liner system and is manufactured by mixing excavated soil with imported bentonite in an onsite pugmill.

The liner system consists of a layer of the admix layer, 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. A 3-foot protective soil layer covers the liner system.

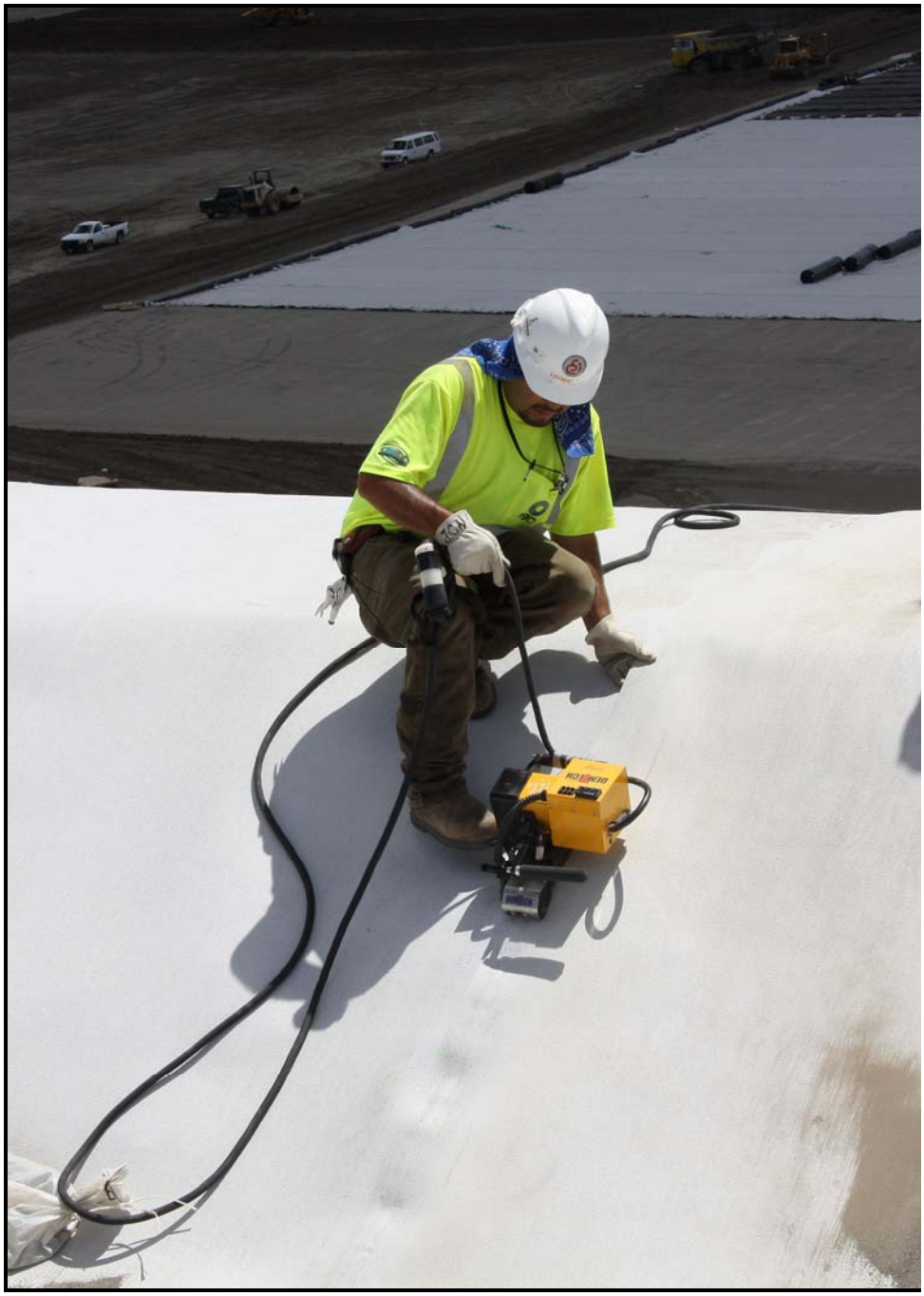
The project team has installed about 80% of the secondary HDPE liner, 50% of the primary HDPE liner, and 60% of the geocomposite liner in super cell 9.

TradeWind Services/DelHur Industries personnel place admix on the south slope of super cell 10 at the Environmental Restoration Disposal Facility.

ERDF (Continued)

TradeWind Services/DelHur Industries personnel install the secondary high-density polyethylene liner on the north slope of super cell 9 at the Environmental Restoration Disposal Facility.

ERDF (Continued)



A DelHur Industries employee heat welds two rolls of secondary high-density polyethylene liner in super cell 9 at the Environmental Restoration Disposal Facility.

The onsite screening plant continues to stockpile gravel for the gravel drainage layer of the liner system. About 20,000 cubic yards of gravel will be manufactured for each super cell, which covers about 17 acres (including the base and the side slopes).

ERDF (Continued)

A new leachate holding tank that will contain the leachate from super cells 9 and 10 also is under construction. 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 leachate transmission pipe from super cells 9 and 10 to the new leachate holding tank. Four of the six sections of pipe have been installed.

The project team continues work on the crest pad buildings for super cells 9 and 10. The single cell design allows for the leachate collection to be accomplished with only one sump and one crest pad building.

Facility and Equipment Upgrades
WCH will begin reviewing ELRFowler's 90% design of ERDF's new maintenance facilities and operations center 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.

Earlier this month, WCH issued a statement of work to Pacific Northwest National Laboratory (PNNL) for the new waste container tracking system PNNL designed for ERDF. PNNL is developing a proposal. The system will accurately track waste shipments and equipment, and generate real-time reports. PNNL conducted a proof-of-concept demonstration of its system in April. As part of the demonstration, Radio Frequency Identification and global positioning system tags were attached to waste containers to show how accurately the system tracks waste shipments and container locations, as well as generates maintenance reports.

Columbia Engineers and Constructors submitted its final design of ERDF's new septic system. Columbia Engineers and Constructors is a small business based in Richland, Washington.

WCH is expected to receive delivery of two Genie articulating boom man lifts from Powers Equipment Company later this month. 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.

Hanford Site contractor Mission Support Alliance (MSA) is scheduled to award a subcontract next week 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.

WCH subcontractor George A. Grant continues with construction of a new lighting system at ERDF's transportation yard. A total of 15 light posts are being erected. 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.

ERDF (Continued)

WCH subcontractor George A. Grant began installing light posts at the Environmental Restoration Disposal Facility's transportation yard.

Construction of an onsite 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.

Sage Tech and WHPacific continues to develop a design package for a new batch plant at ERDF. 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 awarded two subcontracts to Peters and Keatts Equipment Inc. for a new pump truck and two concrete mixer trucks. All three trucks are scheduled to be delivered by late July. Peters and Keatts is based in Lewiston, Idaho.

A change notice has been issued to TradeWind Services for the construction of weather enclosures for the crest pad buildings associated with cells 1 and 2.

ERDF (Continued)

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 the 90% design of the new maintenance facilities.

618-10 Burial Ground

618-10 Non-Intrusive Characterization/Trench Remediation Project
WCH continues to prepare for intrusive characterization at the 618-10 Burial Ground. Field operations are scheduled to begin later this month. They will involve digging test pits in several disposal trenches to verify the condition and types of waste that were disposed. The trenches were selected based on previous geophysical studies and readings from non-intrusive characterization activities.

The project team performed mock-ups of drum characterization techniques, instrumentation, and procedural steps required in work packages. Preparations are being made for mock-ups of the drum penetration facility. Because the burial ground might contain potentially flammable material, unearthed drums will be opened in an onsite penetration facility with negative air pressure and remotely operated equipment. A sand hopper will be used to quench chemical reactions.

The 618-10 Burial Ground project team continues to perform mock-ups in preparation for intrusive characterization, which is expected to begin later this month.

618-10 Burial Ground (Continued)

An excavator picks up a drum during mock-ups at the 618-10 Burial Ground.

618-10 Burial Ground (Continued)

A telehandler will be used to transport drums during intrusive characterization and remediation activities at the 618-10 Burial Ground. The drums will be opened in a penetration facility.

The development of procurement packages for trench remediation labor and equipment also continues, as does work to prepare for the flaring of a propane tank discovered outside the site fence in late March.

Earlier this month, WCH awarded a subcontract worth nearly $3.7 million to install water, electricity, roads, office trailers, and waste container transfer areas 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.

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.

618-10 Burial Ground (Continued)

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.

Work continues on the development of the non-intrusive characterization report, which is scheduled to be issued in mid-August. Non-intrusive characterization field activities were completed May 20. 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 mock-ups for intrusive characterization.
- Continue development of non-intrusive characterization report.

Video

WCH prepares for intrusive characterization 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 startup review's (PSR's) checklist for site mobilization was completed. The PSR process is used to ensure that the project is ready to be safely implemented.

The air monitoring plan was approved, and the Beryllium Facility Assessment form indicating that no beryllium is present at 100-F Area was completed.

WCH continues to review submittals from subcontractor Ojeda Business Ventures. Last month, 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.

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 most of the cleanup work at F Area in 2008. 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 of PSR completion activities.
- Continue review of subcontractor submittals.

Profile

Josh Jakubek must have felt like he was back in school when he began working for Washington Closure subcontractor ANR Group, Inc.

Jakubek was hired in April as a resident engineer for the 100-F Area project. Later this summer, WCH will use funds from the American Recovery and Reinvestment Act to remediate 18 waste sites.

The 100-F Area is home to F Reactor, one of the original three plutonium production reactors built as part of the Manhattan Project, and also a life sciences research laboratory used to study the effects of radiation on plants and animals.

However, all of this was news to Jakubek. "I didn't know much about Hanford," he said. "So when I got the job, I had to start reading. I can't tell you how many reports I've read in the past three months."

Josh Jakubek is an earthwork construction specialist for Washington Closure Hanford subcontractor ANR Group Inc. He has spent his first three months on the job supporting the design team on the 100-F remediation project.

Profile (Continued)

Jakubek, who specializes in earthwork construction, has proven to be a quick study. He's supported the 100-F Area field remediation design team by working on design calculations and reports.

Jakubek took an unconventional route to the earthwork construction business. He graduated from Portland Bible College with the intention of becoming a minister. During school, however, he took a job with a local excavation contractor and has been in the business ever since.

Jakubek even teamed with his brother-in-law to start their own company in the Portland area – DirtLogic. His duties included building computerized earthwork takeoffs to provide quantity estimations for earth-moving projects and also building GPS models for automated machine control systems. A takeoff is the process of quantifying earthwork for the cost estimating process and uses the construction blueprints as well as AutoCad files to build the model.

"Essentially, I build the job on paper before it is built in the field," he said.

Jakubek later took a job with another Portland-area construction company as a project manager and eventually made his way to Fairbanks, Alaska. He spent 3½ years in Fairbanks working for R&D Environmental as a project manager/estimator.

"I loved working in Alaska," he said. "But we had two kids and another on the way, so it was time to move close to family. The job at Hanford was a great opportunity."

Remediation of the 100-F Area sites is scheduled to begin in August. Jakubek can't wait.

"The people I've been working with in the design group have been great," he said. "They've been very helpful. But I can't wait to get out into the field and see some dirt being moved."

IU 2 & 6 Segment 1

Work continues on waste site-specific verification closeout sample plans to determine the number and location of waste site closeout samples including field quality control samples, sampling methodologies, analyte lists, and analytical methods. Once the work instructions are reviewed and approved by the U.S. Department of Energy, Richland Operations Office (DOE-RL) and the U.S. Environmental Protection Agency, verification closeout samples are 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. The field remediation project initiated planning to implement this additional effort.

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 DOE-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-F, 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. Training, site walk-downs, and a job hazards analysis recently were performed. TPMC is scheduled to begin sampling at 100-K later this month.

WCH has issued the confirmatory sampling work instructions and remove, treat, and dispose memos for 62 of 66 sites for 100-D, 100-K, and 100-IU 2/6. In addition, the sampling instruction for the 100-F Area was added to the confirmatory scope and 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 earmarked 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
No significant media events this week.

Contracting Actions
- Awarded purchase order for litter fencing.
- Received Cost and Pricing data for 618-10 Non-Destructive Analysis/Real-Time Radiography.