



River Corridor Closure Project

DOE's Largest Environmental Cleanup Closure Project

March 2011

WCH Completes Super-Sized ARRA Project Super Cells Constructed Ahead of Schedule and Under Budget

Washington Closure Hanford completed construction of super cells 9 and 10 at the Environmental Restoration Disposal Facility (ERDF), the hub of Hanford Site cleanup. Super cell construction was part of a \$100 million expansion and upgrade of the disposal facility funded by the American Recovery and Reinvestment Act (ARRA).

Super cell 9 began receiving waste in February. Super cell 10 will come online in March. The super cells, which increased ERDF's capacity by 5.6 million tons to a total of 16.4 million tons, support accelerated cleanup throughout the 586-square-mile Hanford Site. To put ERDF's size in perspective, it now covers the same area as 52 football fields.

Washington Closure and subcontractor TradeWind Services constructed the super cells ahead of schedule and under budget. Super cell 9 cost \$23 million, more than \$6.7 million under budget.



The super cell design features a unique system to collect liquid as it drains through the waste.



Super cells 9 and 10, in foreground, cover an area of 33.6 acres and have a capacity of 5.6 million tons.

The construction of super cell 10, which included upgrades to the leachate transmission pipe and construction of two new leachate holding tanks, cost \$36 million, about \$9.7 million under budget. The construction team completed both super cells months ahead of their September 30, 2011 deadline.

Safety always first at ERDF

ERDF workers take pride in their strong safety culture across the project. They realize that the success of any project depends



U.S. Department of Energy

Protecting the Columbia River

upon a workforce that believes in disciplined operations and teamwork. That was evident during construction of super cell 9. From excavation through the testing process, the construction team led by TradeWind and DelHur Industries achieved Washington Closure’s project goal of “Zero” injuries.

Super cell design more efficient

The super cells are similar to the facility’s first eight cells in that they were constructed with bottom and side liners consisting of multiple layers of natural and man-made materials that form an impermeable barrier, along with a system to catch liquids, or leachate, that drains through the waste materials.

Lessons learned from previous cell construction at ERDF led to several design enhancements, leading to a decrease in construction and maintenance. The result was a cost reduction of \$1.5 million per super cell. The design enhancements were:



About 1.7 million tons of soil was excavated from super cell 10.



Workers install the operations layer on the north slope of super cell 10.

- The replacement of a 12-inch secondary drainage gravel layer in the liner system with geocomposite material (\$610,000 cost reduction per super cell).
- The elimination one of two sumps, one of two crest pads, 500 feet of leachate transmission pipe, 500 feet of buried electrical power supply and a lysimeter (\$715,000 cost reduction per super cell).
- The replacement of a network of leachate collection pipes with a single leachate collection pipe (\$105,000 cost reduction per super cell).
- The substitution of a sealed double-ring infiltrometer (SDRI) test with Boutwell test on admix test pad (\$20,000 cost reduction per super cell).

ERDF is an engineered landfill in the center of the 586-square-mile Hanford Site. ERDF was built in 1996 to accept low-level radioactive and hazardous waste generated during Hanford cleanup activities. Washington Closure Hanford manages ERDF for the U.S. Department of Energy. The disposal facility is regulated by the U.S. Environmental Protection Agency.

TradeWind is a service-disabled, veteran-owned small business based in Richland, Washington. In early 2010, TradeWind was named a Washington Closure Mentor-Protégé.