

Soil and Water Remediation, Groundwater/Vadose Zone (RL-0030)

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Chromium Plume at 100-BC Area

Overview

This section addresses work in Project Baseline Summary RL-0030, *Soil and Waste Remediation Groundwater/Vadose Zone*.

NOTE: Unless otherwise noted, all information contained herein is as of the end of July 2005.

Notable Accomplishments

Well Drilling: As of the end of July, fourteen of fifteen TPA-required wells for CY 2005 have been completed. The one well that remains to be completed is adjacent to the T Tank Farm in 200 West Area. Two CY 2006 TPA wells (one west of T Plant and one north of the 200 West Area) are in final completion.

Well Decommissioning: There has been continued progress on the work to decommission wells that pose a high risk to provide a pathway for contamination to move directly to the groundwater. All seventy multiple-casing high-risk wells have been worked on, and sixty-seven are complete. These wells require the use of shaped explosive charges (called jet-shotting) to perforate the multiple casings and create holes that penetrate into the soil around the wells. Grout is then pumped into the wells and squeezed out into the soil to create a continuous seal inside and outside the wells. In addition, forty-four single-casing wells are being decommissioned using mechanical perforating tools that cut through the casing wall. Twenty-three of these wells have been worked on and nineteen are completely decommissioned.

Testing a New Chromium Cleanup Technology: A test of a new treatment technology for chromium groundwater contamination that may be used in three reactor areas along the Columbia River was initiated on June 28, 2005, three days ahead of TPA milestone M-016-28B, "Initiate In-Field Treatability Test at 100-KR-4." This technology adds calcium polysulfide to groundwater that is pumped to the surface and it changes the valence state of chromium from the mobile, toxic +6 state to the immobile, nontoxic +3 state. It not only removes chromium at the surface but then the treated stream can be reinjected into the aquifer to treat groundwater in place. Within days of startup, chromium in the aquifer was reduced by 75 percent. Continued operations reduced the chromium to as low as non-detectable concentrations. There are issues with a precipitate forming on the pumps that reduces the time that they can be in operation. A consultant will begin work with the project team in August to evaluate the system.

Carbon Tetrachloride Cleanup: Four new extraction wells were put into operation the last week in July to address a portion of the plume in the 200 West Area that contains concentrations greater than 2000 parts per billion. These four wells supplement five existing wells that have been in operation since the mid-1990s to contain and remediate the same levels of concentration around the PFP disposal cribs in the 200 West area. This new area of contamination was recognized over the last few years as an area of concern as new monitoring wells were installed to investigate the extent of contamination. The system expansion maintains compliance with the 200-ZP-1 Record of Decision.

FY 2005 Funds vs. Spend Forecast (\$M)

	Projected FY 2005 Funding	FY 2005 Fiscal Year Spend Forecast	Variance
Soil & Water Remediation, Groundwater/Vadose Zone	\$ 55.4	\$ 51.9	\$ 3.5

FY 2005 Schedule/Cost Performance (\$M)

	Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Schedule Variance \$	Schedule Variance %	Cost Variance \$	Cost Variance %	Budget At Completion
Soil & Water Remediation, Groundwater/Vadose Zone	\$40.2	\$38.8	\$40.0	-\$1.3	-3.3%	-\$1.2	-3.0%	\$49.0

Numbers are rounded to the nearest \$0.1M and include the Closure Services allocation.

Schedule Performance (-\$1.3M/-3.3%). The unfavorable schedule variance is due to:

- Delayed award of the jet-shot and mechanical perforation decommissioning contracts.
- Technical issues in In-situ redox manipulation (ISRM) barrier drilling and delays in ISRM barrier maintenance.

The schedule associated with well decommissioning will be recovered; field work started in mid-January 2005.

Cost Performance (-\$1.2M/-3.0%). The unfavorable cost variance is due to:

- Under-estimated impact of growth within the Project (labor, training, occupancy, vehicles, etc.) .

Performance Analysis FYTD and Monthly (\$M)

