

West End Mercury Area Horizontal Wells

Scope: The West End Mercury Area (WEMA) Horizontal Well project will install a horizontal well in the WEMA of the Y-12 National Security Complex (Y-12). The project objective is to isolate mercury sources by lowering the water table. Using the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process, the project will:

- Conduct a treatability study [as specified in the Upper East Fork Poplar Creek (UEFPC) Phase I Record of Decision (ROD)¹] to confirm the effectiveness of a proposed horizontal well in the WEMA;
- Prepare a focused feasibility study (FS) and ROD amendment to add the selected remedy to the UEFPC Phase I ROD;
- Install a horizontal well and pumping station and disposition waste from well installation.

The WEMA Horizontal Well project is planned for implementation by the Integrated Facility Disposition Program (IFDP) at an estimated cost of \$13M.

Environmental Risk and Principal Threat Source Material Rating: High

Mercury-contaminated groundwater exists beneath and adjacent to former mercury use buildings in the WEMA (Buildings 9204-4, 9201-5, and 9201-4). Mercury migration seems to be primarily through open pathways, such as the storm sewer system, gravel beds, pipeline backfill, disturbed soil, and large fractures, or in association with high velocity water and sediment. Installation of a horizontal interceptor well would lower the water table and reduce groundwater flow through the contaminated media. Non-contaminated water intercepted by the well would flow by gravity to a storm drain and discharge to UEFPC.

Other Prioritization Factors:

The WEMA Horizontal Well project was envisioned prior to the IFDP proposal to deactivate and decommission (D&D) additional former mercury use buildings in the WEMA. Building 9201-4 was already slated for demolition. Facility D&D of these buildings will allow direct access to residual mercury contamination that exists within soil and shallow groundwater beneath and adjacent to the buildings as part of the soil remediation scope in the UEFPC Phase II ROD².

Overall Prioritization: Low

Based on the IFDP plans to D&D additional buildings in the WEMA, the overall prioritization of the WEMA Horizontal Well project is **Low**. As IFDP plans progress, the WEMA Horizontal Well project will be assessed and may be modified or determined to be no longer necessary.

The information presented in this fact sheet is preliminary and will be refined during Critical Decision-2/3 development.

¹ Record of Decision for Phase I Interim Source Control Actions in the Upper East Fork Poplar Creek Characterization Area, Oak Ridge, Tennessee, DOE/OR/01-1951&D3, DOE 2002

² Record of Decision for Phase II Interim Remedial Actions for Contaminated Soils and Scrapyard in Upper East Fork Poplar Creek, Oak Ridge, Tennessee, DOE/OR/01-2229&D3, DOE 2006

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For more information, please contact the DOE public affairs office at (865) 576-0885.

