

# SOLUTIONS

A weekly publication of highlights and progress of the Hanford Tank Operations Contractor, Washington River Protection Solutions

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## SGE work helps identify underground contamination

Soil characterization activities are under way at Hanford's C and U Farms, where surface geophysical exploration (SGE) crews have been working this summer. SGE is an imaging tool that works by placing a grid of sensors at the ground surface, injecting electrical current and measuring the resulting voltage gradient. The resulting information allows geophysicists in the Washington River Protection Solutions (WRPS) Closure and Corrective Measures organization to generate a 3D image of in-ground contaminants. The image shows areas of low and high resistivity, which can be attributed to areas of increased moisture content and the presence of salts associated with the known waste streams.

The images at U Farm will be used to evaluate the need for interim surface barriers or other interim measures. This work represents the first full-farm, true-3D electrical resistivity deployment. Technological and manufacturing developments by hydroGEOPHYSICS, Inc. (HGI) have resulted in a data acquisition system that far surpasses the ability of the previous off-the-shelf systems and leads to a more accurate model of the subsurface. The new system also increases the speed and quality of data acquisition, reduces field work duration and cuts overall project costs.

The C-Farm work will be used to support various environmental characterization activities. This process helps provide better understanding of the contamination in the soil under and around the waste storage tanks.

Field activities for the U-Farm resistivity imaging were completed in June. The C-Farm field investigation will be completed the first week of August.



*Tank farm workers place cable protectors for an SGE survey at Hanford's C Farm. Pictured L to R: Michael McNeill, hydroGEOPHYSICS, Inc.; Ricky Sharp, WRPS nuclear chemical operator; Justin Dubois, WRPS electrician, and Charles Taylor, Jr., WRPS electrician.*

*HGI's climate-controlled operating station.*

