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FOR IMMEDIATE RELEASE

Silver-Bearing Sludge at SRS Recycled for U.S. Precious Metals Repository

AIKEN, S.C., September 18, 2020 – The Savannah River Site (SRS) and its management and operations contractor Savannah River Nuclear Solutions (SRNS) have successfully removed sludge containing silver from an industrial wastewater tank.

The silver-bearing sludge at SRS will be shipped to the DOE Business Center for Precious Metals Sales and Recovery to be reclaimed, with proceeds going to the U.S. Treasury. Precious metals reclamation is the recycling and recovery of elements such as gold, silver, platinum, and palladium from hazardous waste.

For many years, workers at SRS developed photo film in a process that generated industrial wastewater containing silver nitrate. The wastewater passed through ion-exchange equipment to remove the silver before being discharged into the tank.



(left) Savannah River Nuclear Solutions mechanic Curtis Williford helps remove the cover of an industrial wastewater tank within a containment pit at the Savannah River Site. Employees tested for potential health hazards prior to pumping silver-bearing sludge from the tank.



(right) A special vacuum-equipped truck was used to remove water, exposing a layer of sludge containing silver to be processed and delivered to the U.S. Precious Metals Repository.

“Some of the precious metal still made it to the tank and over the years has accumulated to a significant amount,” said Ted Millings, with the Environmental Compliance Division at SRNS. “Fast forward to the age of digital photography. Now this tank that’s regulated through the South Carolina Department of Health and Environmental Control (SCDHEC) no longer serves a purpose.”

Millings said appropriate safety measures were followed during removal of the sludge. After workers emptied the contents of the tank and cleaned it, a camera was lowered into the vessel to verify that no sludge remained and that the floor and walls of the tank remained intact.

“It was at this point that we filled the tank with grout, which has properties similar to concrete,” said Andrew MacMillan, Project Lead for SRNS Area Completion Projects.

MacMillan noted that the sludge removal project will allow SRS to avoid the cost of managing and disposing of the sludge as hazardous waste.

“Helping to ensure the proceeds from the reclaimed precious metal goes to the U.S. Treasury is important; however, protecting our environment from this waste is invaluable,” he said.

EM and SRNS worked closely with SCDHEC officials to ensure all state environmental regulations were followed in the project.

“Although it’s the end of an era at SRS for developing photographic film, the successful completion of this project validates the continued value of teamwork and shared resources for a common cause,” said Travis Shaw, SRNS Environmental Compliance Authority for Asset Management and Distribution operations.

Factoid:

German chemist Johann Schulze (1687–1744) is credited with laying the foundation for photography when he found that mixing silver, chalk and nitric acid to form a solution, when exposed to light, becomes black in color.

Savannah River Nuclear Solutions, a Fluor-led company with Newport News Nuclear and Honeywell, is responsible for the management and operations of the Department of Energy’s Savannah River Site, including the Savannah River National Laboratory, located near Aiken, South Carolina.

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