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INL Site Cleanup Project Achieved Objectives

IDAHO FALLS, Idaho – Almost a year after shutting off three vapor treatment units at a former radioactive and hazardous waste landfill at the Idaho National Laboratory (INL) Site, analytical data from thousands of vapor samples indicate that cleanup objectives have been achieved and the units will likely remain off in perpetuity.

Last summer, the Department of Energy Office of Environmental Management (EM) and cleanup contractor Fluor Idaho suspended operations of three vapor vacuum extraction and treatment units within the 97-acre Subsurface Disposal Area (SDA), which accepted Cold War weapons wastes from 1952 to 1970.

Engineers and scientists with Fluor Idaho reviewed data on the original source of the solvents and treatment metrics, such as pounds of solvent removed. They concluded that the units had extracted and treated the majority of solvent vapors from within and beneath the landfill that were released when barrels and boxes deteriorated over time.

Beginning in 1996, the three units used high-pressure vacuums to remove approximately 258,000 pounds of solvent vapors from the SDA and destroyed them using a technology that resembles automobile catalytic converters. Removing these vapors is important to protect the Snake River Plain Aquifer, which lies 585 feet below the landfill.

After nearly a year of sampling that collected more than 3,000 vapor samples from the subsurface within and outside the SDA perimeter, results indicate concentrations of carbon tetrachloride and other industrial degreasers have remained steady or declined since the three vapor vacuum extraction units were shut down. Concentrations of chloroform, a degradation product of carbon tetrachloride, initially increased but have since stabilized or declined.

“At this point in the study, the analytical data support the hypothesis that we’ve removed most of the vapors from the ground,” Fluor Idaho Environmental Restoration Engineer Dennis Raunig said. “The ongoing exhumation of buried wastes at the Accelerated Retrieval Project (ARP) IX facility is also a key component of the remedy because it removes the source of the solvents.”

In total, crews supporting nine ARP facilities removed tens of thousands of barrels and boxes containing solidified solvents and radionuclides from the SDA since 2005. That waste is destined for the Waste Isolation Pilot Plant or other off-site locations.

Within the next fiscal year, workers will complete buried waste exhumation at ARP IX, the last of the ARP facilities requiring buried waste exhumation. Soon after, the remaining ARP structures will be dismantled and left in place, and work will begin on construction of a native soil and rock cover over the entire SDA.

“The vapor vacuum extraction units were a relatively passive component of the cleanup project that required very little maintenance,” Raunig said. “But their impact on achieving the overall cleanup goals at the SDA cannot be understated.

Keeping the units shut down will allow EM to direct resources to other on-site environmental cleanup projects.

Fluor Idaho, LLC is a wholly owned subsidiary of Fluor Corporation with subcontractor partners CH2M, North Wind Inc., Portage, and Waste Control Specialists. Fluor Idaho manages the Idaho Cleanup Project Core contract at the Department of Energy's Idaho National Laboratory Site located 45 miles west of Idaho Falls. The 5-year, $1.4 billion project, funded through the U.S. Department of Energy's Office of Environmental Management, focuses on safely remediating the Idaho National Laboratory site including dispositioning transuranic waste, managing spent nuclear fuel, and treating high-level radioactive waste.

For more information visit the Idaho Cleanup Project on the Web at https://fluor-idaho.com

Suggested Caption

Vapor vacuum extraction technology went online in 1996 to remove solvent vapors from a Cold War-era landfill at the Idaho National Laboratory Site. After nearly 25 years of operation, data show that the technology has been so successful that the three vapor treatment units at the site will likely remain off in perpetuity.