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SRNL is a DOE National Laboratory
operated by Savannah River Nuclear Solutions.

Technology Testbeds at Savannah River National Laboratory

U.S. DEPARTMENT OF ENERGY • SAVANNAH RIVER SITE • AIKEN • SC

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SRNL Fast Facts

- > The Savannah River National Laboratory (SRNL) has a unique set of assets that can be accessed to test innovative technologies that address Department of Energy, Office of Environmental Management (DOE-EM) high priority needs.
- > Priority DOE-EM concerns include technetium-99 (Tc-99), mercury, cesium-137 and strontium-90
- > The Regional Groundwater Network constitutes a diverse array of easily accessible wells located in non-contaminated areas representative of the full range of geologic conditions of SRS.

Contact Information

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Regional Groundwater Network Testbed

The Savannah River Site (SRS) encompasses 310 square miles along the Savannah River in south-central South Carolina. SRS is underlain by a thickening sequence of unconsolidated coastal plain sediments consisting of alternating beds of sands, silts, clays and carbonate facies. Although thousands of wells and borings had been drilled at SRS, very little data existed outside major SRS facilities. In 1984, an effort was initiated to collect data in the remote areas of the site to garner a better understanding of the geology and groundwater geochemistry, especially in the deeper stratigraphic units to the top of the crystalline basement. As a result of this work, over 120 wells were installed at 18 clusters around the SRS. The depth of the wells range from near surface to depths exceeding 900 feet below land surface.

The wells are located in non-contaminated areas, are representative of the full range of geologic conditions at SRS, and are easily accessible. They provide an excellent opportunity to evaluate various sampling techniques, new technologies, collection for further studies on regional geochemical changes and modeling, in situ long-term monitoring applications/approaches, and instructional learning for environmental and engineering students.

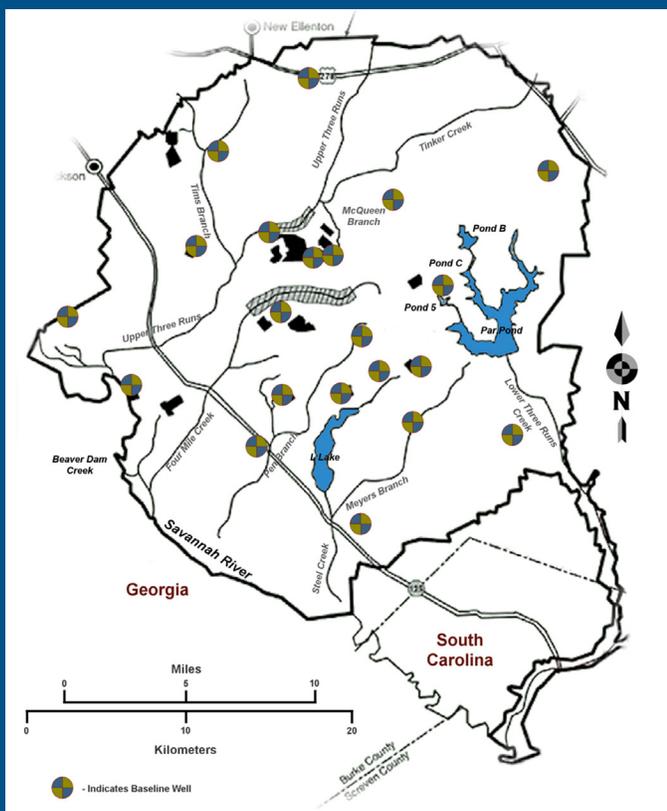
Attributes

- Mature conceptual site model that includes detailed information on site hydrology and geologic features
- Numerous wells installed at varying depths within multiple aquifers across SRS
- Availability of supporting geologic, geochemical, geotechnical, and geophysical data
- Subsurface access to a wide range of geochemical conditions
- Availability of archived cores collected during drilling campaign
- Ease of accessibility to conduct studies

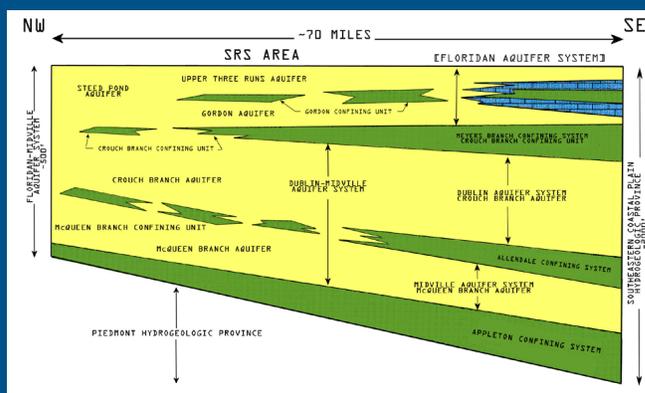
Impact

- Benchmarking and validation of regional groundwater flow and contaminant models
- Supporting evaluation of long-term storage/disposal of various waste forms
- Supporting regulatory decisions on facility area closures and remedial approaches
- Supporting evaluation of technologies suited to sedimentary environments via a wide variety of well characterized wells

Technology Testbeds at SRNL



Regional Baseline Wells



Cross-Section Depicting Hydrogeology at SRS



Well Monitoring



Savannah River National Laboratory
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