

Hydrology - SCDNR Open-File Report 39

Hydrogeologic Investigation and Establishment of a Permanent Multi-Observational Well Network in Aiken, Allendale and Barnwell Counties, South Carolina -- Phase IV

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ABSTRACT

The Lower Savannah River Project, initiated in 1986 for the purpose of understanding the hydrogeologic conditions adjacent to the Savannah River Site, has proceeded in phases over the past four years. A total of 4,500 feet of core has been recovered from five core holes. Nineteen monitoring wells have been completed, 16 of which have been equipped with automatic water-level recorders. Microscopic core descriptions, sieve analyses, age dating, and other core analyses continue to be obtained.

During Phase IV (August 1989 – August 1990), two deep monitoring wells were completed at site C-10. One well is screened in the Cape Fear Formation and one in the Middendorf Formation. Paleontologic and palynological age dates, in conjunction with lithologic data, were used to determine the stratigraphy at sites C-2, C-6, and C-10. Eleven formations and three members were identified at site C-10, and nine formations were identified at sites C-2 and C-6.

Two cluster sites, C-2 and C-6, are complete—no additional monitoring wells are scheduled to be drilled at either site. Water-level differences are minor among the wells at site C-2, indicating regional hydraulic continuity among the aquifers in the area. Significant water-level differences occur among wells at site C-6, suggesting the presence of four hydraulically isolated aquifers in the region. High correlations between water-level fluctuations also imply four separate aquifers.

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