

THE APPLICATION OF PALEONTOLOGY TO ENVIRONMENTAL RESTORATION  
ACTIVITIES: AN EXAMPLE FROM THE SAVANNAH RIVER SITE, SOUTH CAROLINA

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Over the past ten years, environmental issues have become a major focus of scientific research in an attempt to address air, water and soil contamination from past industrial and public practices. Geologic disciplines such as hydrogeology, hydrology, paleontology, sedimentology, stratigraphy, geochemistry, and geophysics are currently used in the investigation of environmental restoration activities.

At the Savannah River Site, paleontology is currently being applied in combination with other geoscience disciplines to reconstruct the subsurface hydrogeological framework. Emphasis is placed on using micro- and macrofossils in defining the lateral and vertical extent of aquifer and confining units; preferential pathways (e.g. structural anomalies and facies changes) for groundwater movement are also identified through the assistance of paleontological research.

Specifically, dinoflagellate stratigraphy has been applied successfully to identify and correlate aquifers and confining units beneath the SRS and surrounding vicinity. Future work at SRS will include the application of palynofacies and sequence stratigraphy to understand the depositional framework of the subsurface in more detail. Because of the rapid vertical and lateral changes in the updip coastal plain setting, the use of paleontology is crucial to relating the lithostratigraphy and the hydrostratigraphic units underlying the SRS and vicinity.