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**Stratigraphy, Depositional Environments and Coalbed Methane Resources of Cherokee Group Coals  
(Middle Pennsylvanian)—Southeastern Kansas**

In southeastern Kansas, the Middle Pennsylvanian Cherokee Group contains thin coal beds (.2 to 1.5 meters) within numerous deposition sequences. Cherokee coals compose a large portion of an estimated 48 billion metric tons of deep (greater than 30 meters) coal resources in eastern Kansas. Cherokee coals are of high-volatile bituminous A and B rank. With sufficient overburden and thick seals they have high potential for coalbed gas production. In Kansas, economic coalbed gas production requires identification of coals of higher gas content, seams generally thicker than 0.5 meters, and multiple coals within close proximity to pipeline infrastructure.

Structure and isopach maps, along with cross sections, were constructed from cores, outcrops and well logs to provide a better understanding of the lateral variability and extent of the major coal bearing sequences. Core descriptions were integrated with well logs to determine depositional environments. Coal samples from core holes within the study area were desorbed to determine total gas content. Gas content varies widely (from 25 to more than 250 scf/ton). Variations in coal quality, thickness, and lateral distribution can be understood by placing Cherokee Group coals within a sequence stratigraphic framework. Cherokee Group coals accumulated in a variety of depositional settings such as marsh, back marine barrier (lagoonal), fluvial floodbasin, and interdistributary deltaic environments. An improved geologic understanding of the Cherokee Group coals can aid in coalbed-gas exploration and development in southeastern Kansas.