

tite mixed-layer minerals was supplied mainly from K-feldspar alteration within the sandstones and from mica within the shales. Most of the K-feldspar alteration for both the shale and sandstone samples were observed outside the main zone of illitization, which is restricted to the upper 2000 m of sediment. The feldspar grains were altered below this depth for both lithologies. Therefore, illitization requires an open sedimentary system. This is in contrast to the illitization model for deeply buried shales of the Gulf Coast. That system is commonly assumed to be a closed K system.

Key Words: Diagenesis • Illitization • K transfer

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