

Poster 1      Sequence Stratigraphy and Facies Analysis of the Upper Morrow Sandstone, Mustang East Field,  
Morton County Kansas

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The objective of this study is to interpret the environment of deposition and the depositional processes responsible for the formation of the Upper Morrow Sandstone within the Mustang East Field of Morton County, Kansas. In particular, these processes will be examined to determine their impact on petroleum reservoir quality. The Upper Morrow has long been a lucrative target within the Hugoton Embayment of the Anadarko Basin. The relatively shallow drilling depths (~4,000-6,000 ft.) and large volumes of produced oil and gas ensure that the upper Morrow will remain an active drilling target now and in the future. More than 100 mmbo and 500 bcf of gas have been recovered from Morrow incised valley-fills of eastern Colorado and western Kansas (Bowen and Weimer, 2003). Fullbore Formation MicroImager (FMI) (Schlumberger®) and STAR Resistivity Image (SRI) (Baker Atlas®) logs, calibrated to core derived porosity and permeability measurements, will be evaluated to establish reservoir properties of designated facies and predict the spatial distribution of reservoirs within them. Whole core analysis, conventional log analysis, and micro-resistivity images will be integrated to characterize facies and establish their distribution within the study area. Once the depositional model is established, this field may be used as an analogue for interpreting depositional environments and predicting reservoir quality of upper Morrow sandstones in the upper Morrow oil and gas producing areas of southwest Kansas, southeast Colorado, and the Oklahoma and Texas Panhandles.