

SEQUENCE STRATIGRAPHY MODELS OF RIFT LACUSTRINE BASIN AND THEIR APPLICATIONS IN BOHAI BAY BASIN, EAST CHINA

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ABSTRACT

According to the formation mechanism of rift lacustrine sequences, we divided them into two types—tectonic sequence and climactic sequence. Based on the differences of fault movement styles, tectonic sequences were divided into synsedimentary rift sequences, simple rift sequences and multi-stage rift sequences. Nine 3rd grade sequences were identified in the early Tertiary of Dongying Depression, Bohai Bay Basin on the basis of sequence stratigraphy of a rift lacustrine basin, using the comprehensive studies of seismic data interpretations, log analyses, drilling or core and geochemical characters, and analyses of single-well sequence stratigraphy and section correlation. The 1st, 2nd, 8th and 9th sequences are synsedimentary rift sequences. The 3rd and 5th are simple rift sequences. The 4th is a multi-stage rift sequence, and the 6th and 7th are climatic sequences. The evolution of every sequence is the result of sedimentary input to the basin under a certain tectonic setting. Different kinds of sequences have different space distributions and evolution characters, and include different types of system tracts. Through researching the relationships between several system tracts to oil-gas source-reservoir-seal assemblage, we examined the relationship between hydrocarbon distribution to sequence stratigraphy.