AAPG Annual Convention
Salt Lake City, Utah
May 11-14, 2003

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New Tectono-Stratigraphic Models and Their Impact on the Reservoir Quality and Distribution in the Eastern Black Sea Basin

Interpretations of recently acquired 2-D seismic, gravity and magnetic data over blocks II and III on the eastern margin of the Black Sea (offshore Georgia) and the re-interpretation of existing data onshore Georgia, has significantly changed the play concepts in the offshore basin.

The stratigraphy of the Eastern Black Sea Basin is extrapolated from seismic data and correlations with onshore. It appears that the basin formed in the latest Cretaceous and continued to subside during the earliest Tertiary. Post-Eocene to upper-most Miocene sediments passively onlap the northern flank (slope) of the basin (Shatsky Monocline). Concurrently, sediments were deposited on a broad shelf that extended over the Caucasus into southern Russia. These sediments are expected to be texturally mature and mineralogically stable. The arrival of the Achara-Trialet (volcanic) complex from the south and its progressive collision with the simultaneously uplifted Greater Caucasus in the latest Miocene, significantly modified the basin geometry. Transport direction changed from north-south to east-west. In turn, the Plio-Pleistocene basin fill was derived from the juvenile Greater Caucasus and the Achara-Trialet (volcanic) complex. These sediments are expected to be texturally immature and mineralogically unstable.