PALEOGEOGRAPHIC RECONSTRUCTIONS OF THE OUTENIQUA BASIN DURING THE CRETACEOUS (POST-RIFT DEPOSITS) - SOUTH AFRICA

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ABSTRACT

The South African passive margin is the result of two main phases: the syn-rift phase (Jurassic - Lower Valanginian) and the post-rift phase (Upper Valanginian - Miocene). Post-rift sedimentation was controlled by the AFFZ (Agulhas Falkland Fracture Zone) and by the horsts and grabens structures forming the sub-basins. This study is part of an exploration campaign and aims to create paleogeographic maps of the Cretaceous post-rift deposits of the Outeniqua basin. The methodology undertaken from completion reports was to update a database, correlate and calibrate well data in order to characterize the lithologies and depositional environments. Forty wells have been studied throughout the Outeniqua basin and five paleogeographic maps have been interpreted between the Valanginian and the Upper Maastrichtian. The uplift of the African plateau and the thermal subsidence engendered the deposition of deep marine sediments in the Outeniqua basin after the break up unconformity (1At1 marker – Valanginian) with, locally, turbiditic sediments. Several transgressive cycles occurred until the Turonian when began the regional regression until the Miocene. The platform reached its maximum progradation in the Maastrichtian. These studies have illustrated intervals of source rocks (Neocomian, Aptian, and Turonian) and turbiditic reservoir rocks (Neocomian, Barremian, Aptian, and Albian).

Key words: South Africa, Outeniqua basin, paleogeographic map, database.