



An interpretation of core and wireline logs for the Petrophysical evaluation of Upper Shallow Marine sandstone reservoirs of the Bredasdorp Basin, offshore South Africa

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This paper embodies a study carried out to assess the Petrophysical evaluation of upper shallow marine sandstone reservoir of 10 selected wells in the Bredasdorp basin, offshore, South Africa. The studied wells were selected randomly across the upper shallow marine formation with the purpose of conducting a regional study to assess the difference in reservoir properties across the formation. The data sets used in this study were geophysical wireline logs, Conventional core analysis and geological well completion report. The physical rock properties, for example, lithology, fluid type, and hydrocarbon bearing zone were qualitatively characterized while different parameters such as volume of clay, porosity, permeability, water saturation, hydrocarbon saturation, storage and flow capacity were quantitatively estimated. The quantitative results were calibrated with the core data. The upper shallow marine reservoirs were penetrated at different depth ranging from shallow depth of about 2442m to 3715m. The average volume of clay, average effective porosity, average water saturation, hydrocarbon saturation and permeability range from 8.6%- 43%, 9%- 16%, 12%- 68% , 32%- 87.8% and 0.093mD -151.8mD respectively. The estimated rock properties indicate a good reservoir quality. Storage and flow capacity results presented a fair to good distribution of hydrocarbon flow.