

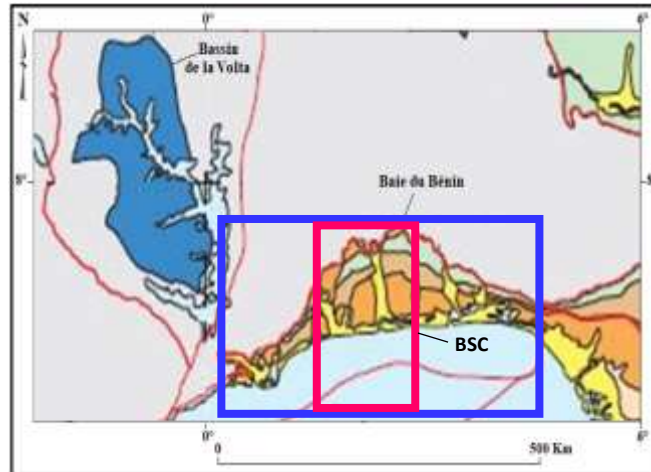
Proof of existence of pre-rift deposits and hydrocarbon potential of Neocomian sediments in the coastal sedimentary basin of Benin

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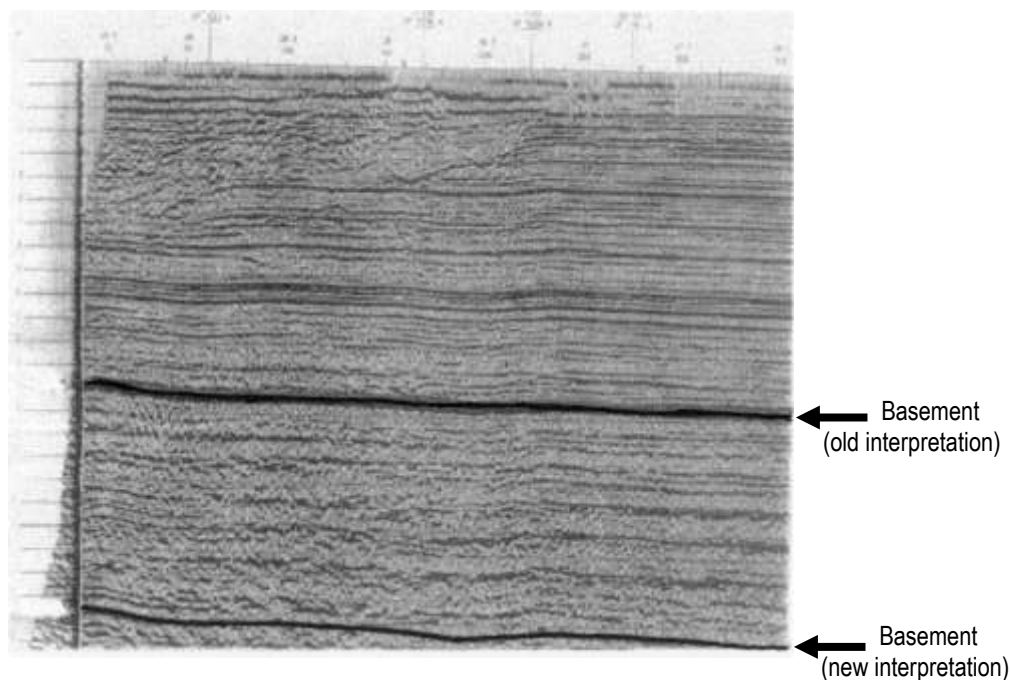
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The coastal sedimentary basin (BSC) of Benin belongs the Dahomey Embayment, a province with high petroleum potential.



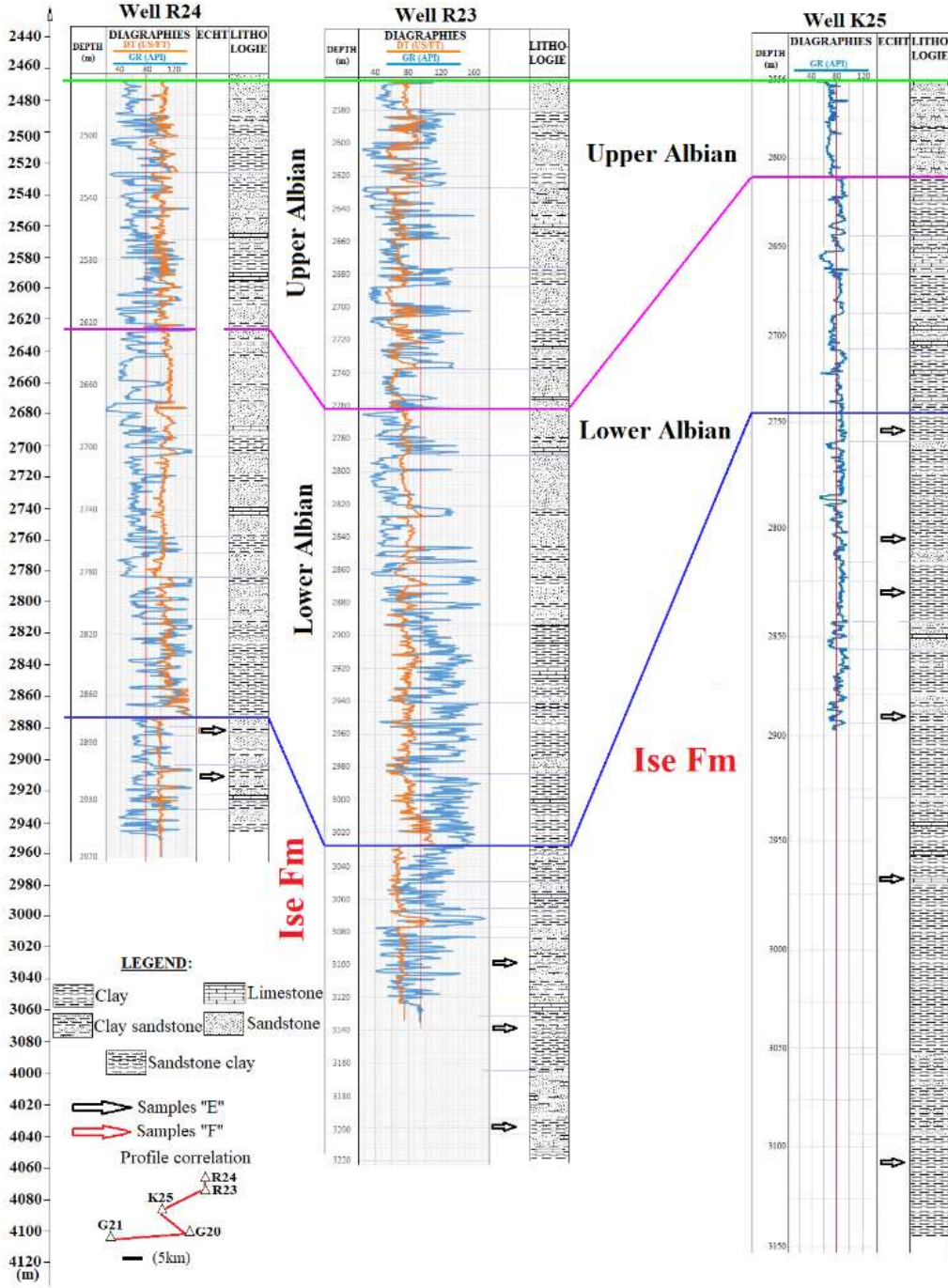
This study, based mainly on observation and description of outcropping sediment, interpretation of geophysical data (seismic and diagraphic for three wells), petrographic and geochemical study by pyrolysis Rock-Eval 6 have confirmed the existence of pre-rift deposits (Paleozoic?) and out the hydrocarbon potential of Neocomian formations inaugurate the rifting in the Embayment. Indeed, a review of old sections interpreted showed packet parallel reflectors below the seismic horizon previously considered as the basement, suggesting the presence of older sediments than the Neocomian (Lower Cretaceous).



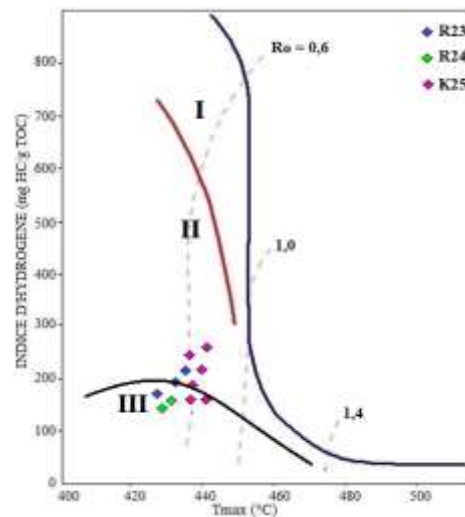
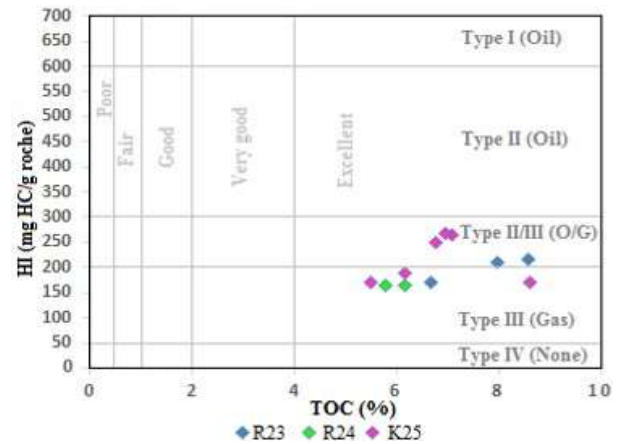
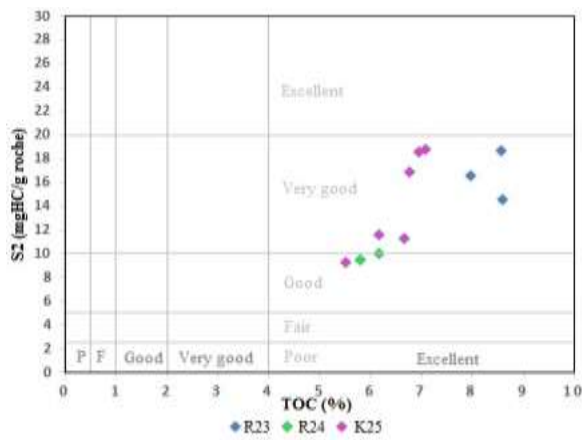
The presence in the northern edge of arkosic sandstone basin mapped as sediment of ancient Paleozoic volcano-sedimentary basin confirms the existence of pre-rift sediments in the basin.



Furthermore, Neocomian sediments are two dominant facies (sandstone and clay) characterized by gamma ray values ranging from 19.5 to 163 API with frequent values between 40 and 120 API.



The average values of the TOC and S₂ obtained from the Rock-Eval 6 analysis identified clay levels of 6.93% and 14,18 mg HC/g, respectively. Moreover, the values of the maximum temperature (T_{max}) and the Hydrogen Index (HI) are ranging from 427 to 441°C and 163 to 268 mg HC/g TOC, respectively.



Keywords : Coastal basin of Benin, pre-rift deposit, Neocomian sediment, hydrocarbon potential, source rock, kerogen.