

Microfacies analysis of the well Mohican I-100 cores 7 and 8 from the Scotian Basin, Nova Scotia, Canada

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The Scotian Basin is located offshore Nova Scotia; larger than the Gulf of Mexico, it covers an area of approximately 300 000 km². Half of the basin lies on the present-day continental shelf under 200 m of water, with the remainder on the continental slope in 200 to 4,000 m of water. It is a classic passive conjugate margin, recording about 250 million years of sedimentation (Mesozoic to Cenozoic). In Nova Scotia, offshore hydrocarbon exploration began in 1959. Nonetheless, the Scotian Basin remains underexplored given the low number of exploration wells (127 out of 207 total) and their concentration in the central Sable Sub-basin. Historically, testing focused on the successful rollover anticlinal plays (gas), yet the source and timing of hydrocarbon generation and migration pathways are not yet fully understood).

In this study, we have analysed 15 thin sections from the cores 7 and 8 of the well Mohican I-100 (Scotian Basin) and observed, recorded, and interpreted the microfacies in order to better understand the local variations in the depositional environments within the broader context of the Scotian Basin. We also aimed to investigate the source rock and/or reservoir potential of this carbonate succession. Overall, these cores record the highly dynamic nature of these kinds of transitional to marine depositional environments, ranging from coastal plain to marginal marine; tempestites and evaporitic facies are identified as well. Ongoing research is focused in studying the organic matter content, mineralogy, and stratigraphic sequence components. [Poster]