DEPOSITIONAL SETTINGS OF MID-CRETACEOUS LIMESTONES DURING THE EVOLUTION OF THE CARIBBEAN VOLCANIC ARC

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Many interpretations of hydrocarbon reservoirs are influenced by concepts developed from studies of exposed field analogs. Understanding the sedimentology and reservoir properties is key for the exploration and development of such productive areas. This project intends to use mid-Cretaceous carbonates exposed in the Greater Antilles as analogs to productive carbonates reservoirs in the Caribbean, e.g. Poza Rica Field (Albian-Cenomanian) in Mexico. During mid-Cretaceous the Greater Antilles was still an active volcanic island arc, carbonate deposition is interpreted as periods of reduced volcano-tectonic activity. Los Robles Formation in Puerto Rico, and Los Ranchos Formation and Río Hatillo Limestone in the Dominican Republic are the units target to be studied. Herein, we propose the use of facies analyses for the depositional environment interpretations and the use of organic matter content to analyze the source rock potential. In addition, this study will undertake an unprecedented definition of the mid-Cretaceous chemostratigraphy ($\square^{13}C$ and $^{87}Sr/^{86}Sr$) in limestone exposure across the Caribbean to better understand the timing of carbonate deposition. The obtained timing and facies belt migration will be used to constrain tectonic and/or climatic controls of mid-Cretaceous limestone deposition in the Caribbean region.