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Exploration of the Sunniland Formation of Southern Florida

The early Albian Sunniland Limestone represents a shoaling-upward depositional cycle that extends throughout onshore and offshore southern Florida. At the base of the Sunniland Formation, atop the Punta Gorda Anhydrite, there is evidence of a slow marine transgression and the termination of a major regression. This oscillating transgression is continuous to the top of the Sunniland where it gives way to a major regression with the deposition of the Lake Trafford anhydrite. The oil-productive trend in the Sunniland is restricted to a limited porous area, due to subaerial exposure, that contains fragmented rudistid tidal-shoal mounds. Seaward of this porous trend, is a shale-anhydrite facies, while landward there is a chalky-limestone facies. Although the Sunniland has varying lithofacies in some oilfields, there are five widespread distinct units of the formation as determined from cores, thin-sections, and electric log character. This study examines each unit in general, presents findings on the two major trends, and discusses the relationship between the terraces and the models of the oil-producing buildups. An understanding of these units, mound types, and terraces is considered necessary for the exploration of the oil-producing mound buildups that have developed in the vicinity of subtle bathymetric terraced highs related to underlying basement faulted-structures.