The Abaco windward lagoon, bounded bankward by Great Abaco Island and seaward by the discontinuous Abaco Cays, exhibits up to 6 m or more of lagoonal, non-reef derived sediments, 5 km from the marginal escarpment of northeastern Little Bahama Bank. Six sedimentary facies, distinguished by texture, composition, and molluscan fauna, record the changing depositional environments as water depth and circulation increased during the Holocene transgression.

A skeletal grainstone and mixed (skeletal-ooid-aggregate) grainstone are limited to inter-island channel areas. Away from these channel energy windows, a maximum sequence of 4 depositional facies is observed. The bulk of sediments are a normal marine (N.M.) skeletal wackestone or mixed (pellet-skeletal) packstone. The N.M. wackestone dominates the western half of Abaco lagoon while the packstone occurrence