

Core Examples from Modern Estuarine Tidal Bars, Tillamook Bay, Oregon, USA

Rares Bistran¹, David Herbers¹, John-Paul Zonneveld¹, and S. George Pemberton¹

¹*University of Alberta, Edmonton, Alberta Canada*

Abstract

Tidal sand bars are ideal estuarine morphologic features to use as modern analogues in understanding the complex sediment distribution of ancient estuarine environments, many of which host large hydrocarbon resources (e.g. McMurray Formation in Alberta). Tidal bars may accrete both laterally and vertically, resulting in complex stratal geometries and sediment distributions. Heterolithic Stratification and Inclined Heterolithic Stratification (Thomas et. al, 1987) are common characteristics of inner and middle estuary tidal bars at Tillamook Bay. Due to changes in sediment source, and the interplay between tidal and fluvial currents and sediment reworking, large variations appear in the sedimentological and ichnological character of Inclined Heterolithic Stratification (IHS). At Tillamook Bay, IHS is observed in the inner and middle estuary, being the most prominent in the middle estuary bars. In the outer estuary bars, IHS is largely absent and not recognized.