

Transgressive Sandstone Sedimentology of the Albian Martin House Formation, Peel Region, Northwest Territories

Thomas Hadlari¹, Danielle Thomson², and C. J. Schröder-Adams²

¹Northwest Territories Geoscience Office, Yellowknife, NT; thomas_hadlari@gov.nt.ca

²Carleton University, Ottawa, ON, Canada

Abstract/Excerpt

In the Peel Region of NWT the 10-50 m thick Martin House Formation records Albian transgression of the Western Interior Seaway. Martin House Formation comprises up to 3 sandstone units separated by intervals of offshore mudstone. The 5-10 m thick basal sandstone records a transgressive facies succession from upper to lower shoreface sandstones overlain by offshore mudstone. A proposed depositional model for the lower sandstone consists of wave-dominated barrier bar deposits in the west and restricted, tide-influenced deposits in the east. Upper Martin House Formation sandstone units record shoreface progradation from east to west. The uppermost sandstone is overlain by an up to 1 km thickness of Arctic Red Formation offshore mudstone. Within the Martin House Formation reservoir properties are more favourable in eastern, marginal marine sandstones (>15% porosity; >50 mD permeability).