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Natalie A. Sirman and S. George Pemberton, University of Alberta, Edmonton, AB

**Ichnology, Sedimentology and Sequence Stratigraphy of the Late Mississippian (Visean) Kiskatinaw Formation, Northwest Alberta: Development of an Incised Valley Model**

Recent trends of hydrocarbon exploration within the Western Canada Sedimentary Basin have lead to closer examination of less developed plays such as the Late Mississippian (Visean) Kiskatinaw Formation within the Stoddart Group. The study area within TWP 77-83, Range 24w5-12w6 contains two Kiskatinaw producing fields, the George and Eaglesham Fields. Detailed investigation of the ichnology, sedimentology and stratigraphy of the Stoddart Group within this area was done in order to develop a synergistic model to determine the depositional history. Such a model will help in the exploration and exploitation of this reservoir.

The Kiskatinaw reservoir is comprised of clean, medium to coarse grained channel sandstones which overlie an incised surface on the Golata shales, and have high porosities and permeabilities. Channel beds are overlain by finer grained interbedded sandstones and shales, as well as mixed clastic/carbonate paleosol suites.

Detailed core logs from both fields show facies successions within the Golata and Kiskatinaw Formations. Progression from a quiet marine embayment to a macrotidal estuary is shown both in the sedimentary and biogenic structures. The ichnofossils seen in the Golata Formation include Chondrites, Planolites, Zoophycos, Teichichnus, Asterosoma, and Rhizocorallium and help to interpret a fully marine environment. The cores from the Kiskatinaw typically show a more restricted trace fossil assemblage within the fining upward tidal sequences. These sequences show progression from a flooding surface into channel lags, subtidal channels, point bars, tidal flats, supratidal mudflats, and finally supratidal and coastal marshes and soils.