

Geology of the Tilston Interval (Mississippian) of Central North Dakota

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ABSTRACT

The Tilston interval is a carbonate and evaporite unit in the central portion of North Dakota which extends northward into Canada. These rocks are shallow shelf, intertidal and supratidal carbonates overlain by supratidal anhydrite. In the deeper portions of the Williston Basin, the anhydrite is not present and the Tilston interval is indistinguishable from the overlying Frobisher-Alida interval.

The Tilston interval produces petroleum in only a few

areas in North Dakota, Saskatchewan, and Manitoba. However, there have been scattered Tilston shows elsewhere in North Dakota. Three possible types of hydrocarbon entrapment are (1) a wedge-out of the Tilston at the angular unconformity between underlying Tilston and the overlying impervious Mesozoic unit and (2) a capping of the permeable Tilston by supratidal anhydrites or impermeable carbonates associated with structural closure (3) paleogeomorphic traps along the subcrop area.

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