

Mitchell-Tapping, 1997

Data Set 43

Reference: Mitchell-Tapping, 1997: Bassfield Field, Mississippi, an exploration and production analog for Lower Cretaceous Hosston sandstone reservoirs: Transactions Gulf Coast Association of Geological Societies, v. 47, p. 377-382.

Author's affiliation: Retog International Inc.

Age: Early Cretaceous (Aptian)

Formation: Hosston Formation

Informal names: Booth and Harper sandstones, units within the Hosston Formations

Location: Bassfield Field, Mississippi Salt Basin, Jefferson Davis County, Mississippi, United States

Wells: not given

Depth range: 15700 - 16100 feet.

Depositional environment: Fluvial environment. "The base of a typical sand section contains distributary channel sands. These quartz sands are light gray to brown, coarse to fine-grained, cross-bedded, and usually contain some basal conglomerates and pebble-sized grains. Most of the high production rates in Bassfield Field come from these channel sands. The overlying sandstone section is interpreted as a point-bar deposit. ... This sequence of deposition is indicative of a flood plain in which the main river-channels are meandering and prograding in an upper deltaic environment."

Lithology: Average composition from examination of 70 thin sections: "78% quartz, 10% dolomite, 8% kaolinite and 4% illite, with traces of calcite, mica, plagioclase, siderite, and chlorite, montmorillinite, halite, and mixed-layer clays. Of the clays, kaolinite had the highest percent content usually concentrated in balls or lumps in the rock pore space."

Rock Type A: Quartz overgrowths with some grains overcoated with kaolinite in the pore spaces. However, there was no kaolinite present in the pore throats.

Rock Type B: Quartz grains with quartz overgrowths and pressure contact solution features. Kaolinite and illite are both present, but are located only as attached pore linings and do not appear to be present loose in the pore throats.

Rock Type C: Mainly siltstones (less than 80% quartz and greater than 8% total clay). The small grain size of the quartz particles, the relatively high percentage of kaolinite and illite, and the presence of calcite cement all reduce or occlude the permeability of the rock. The illite in this rock type not only coats the kaolinite, but also blocks many of the pore throats.

Production: gas and condensate production.

Core measurement conditions: not given.

Data entry: manual entry from Figure 5 and Table 1 of the referenced paper.

Note: Data from the Bassfield Field are also described by Thomson, 1978, Transactions Gulf Coast Association of Geological Societies