

Keighin and others, 1993

Data Set 34

Reference: Keighin, C.W., R.S. Zech, and R.W. Dunbar, 1993, The Point Lookout Sandstone: A tale of two cores, or petrology, diagenesis, and reservoir properties of Point Lookout Sandstone, Southern Ute Indian Reservation, San Juan Basin, Colorado: *The Mountain Geologist*, v. 30, n. 1, p. 5-16.

Authors' affiliation: United States Geological Survey

Age: Late Cretaceous

Formation: Point Lookout Sandstone within Mesaverde Group

Location: Southern Ute Indian Reservation, San Juan Basin, Colorado

Wells: 1HCMS and 2HCMS, located five miles apart.

Depth range: 740 - 1207 feet.

Depositional environment: Marine sandstone: "straight, wave-dominated shoreface and delta-front deposits form the bulk of the sandstone; tidal foreshore, and offshore sandstones are lesser constituents."

Lithology: "Thin section analyses show the Point Lookout sandstones are quartz-rich, fine to very-fine-grained, and contain moderately variable quantities of potassium feldspar (2 to 20 modal percent) and lithic fragments (9 to 30 modal percent). ... The sandstones are dominantly feldspathic litharenite, but contain subsidiary quantities of sublitharenite and lithic arenite, according to the classification of Folk (1980). Sorting ranges between moderate and well sorted; angularity is between subangular and subrounded." Grain size, sorting, angularity, and quartz-feldspar-rock fragment data, as well as depositional environment, are given below in the table of data

Alteration: The paragenetic sequence (Fig. 8) is: compaction, quartz overgrowth, intergranular calcite cement, Fe-bearing dolomite rhombs, dissolution, and kaolinite precipitation. Further description is given under section "Diagenesis".

Further discussion of the diagenetic characteristics of the Point Lookout Sandstone in wells 1HCMS and 2HCMS can be found in Loomis, J.L. and L.J. Crossey, 1996, Diagenesis in a cyclic, regressive siliciclastic sequence: the Point Lookout Sandstone, San Juan Basin, Colorado in *Society of Economic Paleontologists and Mineralogists Special Publication No. 55*, p. 23-36.

Production: none; gas production elsewhere in the San Juan basin.

Core measurement conditions: Measurements are described by A.P. Byrnes, Special core analysis of selected BIA Southern Ute cores for U.S. Geological Survey - Denver, report by GeoCore of Loveland Colorado, February, 1989. Samples one inch in diameter by one-half inch in length were oven dried at 70 degrees C, then vacuum saturated with an azeotrope and Soxhlet extracted until clean and again dried in a vacuum oven to a constant weight. Samples were placed in a Hassler cell; in situ measurements were carried out at 2500 psi. The Klinkenberg correction was determined using He gas at three pore pressures.

Data entry: scanned from Table 1 and entered from Figure 7 of the referenced paper.