aeolian unit is given the new name of Hyatt Ranch member of the Tensleep Formation. The age ranges from Missourian to Wolfcampian, Permian. There are two types of thin dolomitic and gypsiferous sandstones and sandy dolomites intercalated within the aeolian cross-bedded sands. One is thought to be watertable sabkha wind flat deflation surfaces and the other is less through-going and thought to be pond deposits.

Between the marine lower unit and the aeolian upper unit is a distinct and regional unconformity which can be traced from the Black Hills to the western Wind River Basin. The irregular upper surfaces on the dunes are the principle hydrocarbon traps in the Powder River Basin (Minnelusa oil fields) and should provide hydrocarbon traps in the Big Horn Basin, such as at Bonanza oil field.

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The Tensleep Formation of the Southeastern Big Horn Basin, Wyoming

The Tensleep Formation of eastern and southeastern Big Horn Basin, Wyoming, can be divided into two members, and the relief at the top of the upper member is thought to be that of a large dune field. The lower unit is of marine deposition comprised of fine grained, rounded, light gray to light buff, calcareous and dolomitic quartzose sands and dolomitic limestones up to several feet (1 to 3 M.) thick, intercalated with green-gray silty and sandy shales. Marine fossils date the newly named Medicine Lodge Creek member of the Tensleep formation as Desmoinesian, Pennsylvanian, in age. The upper unit is composed almost entirely of aeolian sands which are light gray to light buff, fine to medium, occasionally coarse grained, friable to lightly cemented, and subrounded. Wind direction is consistent from the NNE. The