

SECTION GENERALIZED FROM OUTCROP DATA
MADISON (MISSISSIPPIAN) GROUP --
BIGHORN BASIN, WYOMING

DIVISIONS	THICK	LOG	LITHOLOGY	GENERAL REMARKS	INSOLUBLE RESIDUE
AMSDEN FORMATION			Sandstones and shales; smaller amounts of limestone and dolomite	Basal Darwin sandstone absent at northern end of Basin; red shales occur sporadically in basal part.	Quartz sand.
MISSISSIPPIAN (MADISON GROUP)					
Chestertonian?					
Meramecian?					
Osagean					
Member MCI	10 ft. to 80 ft.		Fragmental limestones, crystalline dolomites, thin stringers of sandstone and shale; sparsely fossiliferous (abundantly crinoidal locally); cherts.	A thin-bedded member; thicknesses vary due to pre-Amsden and intra-MCI erosions. Note: Member is possible Brazer or Big Snowy equivalent.	Silicic fossil debris. Sandstone aggregates. Modified chert and quartz. Limonite-centered, clay concretions. Chert residuals (Wind River).
Member MC2	80 ft. to 110 ft.		Sublithographic to fragmental, fossiliferous, brown to gray limestones; gradational into carbonate breccia; cherts.	Generally massive rocks which weather blue-gray to brown; thickness varies from pre-MCI and intra-MC2 erosions. Basal breccia thins southward	± 1% silicic fossil debris, partly modified cherts. 10 to 20% clays, quartz and sand; fragments of green shale.
Member MC3	140 ft. to 160 ft.		White to gray, micro-crystalline, uniformly-textured, unfossiliferous dolomitic limestone to calcitic dolomite; locally, upper portions highly silicified and dolomitized; thin chert lenses and beds.	Massive-appearing sequence characterized by smooth outcrop surfaces; well-bedded facies to the south and west. Solution breccias. Basal sedimentary breccias; unconformities locally.	High, variable percentages of secondary, lacy, modified quartz in silicic facies; clays and modified cherts.
Member L1	140 ft. to 200 ft.		Gray to brown, fossiliferous and oolitic, medium- to very finely crystalline dolomites, and partially dolomitized fragmental limestones; more calcareous downward; dominant lithology clastic.	Well-bedded sequence which weathers to dark gray-brown; sporadically cross-bedded. Member thins and becomes more magnesian to southeast. Thickness variations from marginal basin deposition and pre-MC3 erosion.	± 2% quartz grains, silts, and clays. Chert oolites? or grains.
Member L2	70 ft. to 170 ft.		Sandy, hematitic, oolitic limestone; argillaceous dolomites; basal oolitic cherts locally.	Intraformational conglomerates; sedimentary breccias above basal unconformity.	Increasing percentages, of sands, silts, clays and hematite.
Member L2	70 ft. to 170 ft.		Gradational fossiliferous, fragmental limestones and finely crystalline dolomites. Brown, vuggy dolomites of varied crystal size.	Banded sequence, bedded at base, weathers to dark gray and black laminations; uppermost calcitic facies more magnesian southward. Thickness variations chiefly from post-L2 erosion. Basal erosional surface.	Clays, euhedral quartz, in decreasing percentages downward; locally petrolierous residue. < 1% argillaceous material. Increasing percentage of clay.
KINDERHOOKIAN?	0 to ± 10 ft.		Quartzitic sandstone with fossil debris and phosphatic concretions; black shale stringers; varicolored dolomites.	Erosional remnants present at Tensleep, Shell, and (Crooked Creek?)	Fine to coarse, frosted quartz grains.
THREE FORKS SHALE?	0 to 200 ft.		Silicic, crystalline and granular, sandy dolomites; green shale; sandstones.	Remnants of pre-L2 erosion which thins southward.	High, variable percentages of clay, sands, silt.
ORDOVICIAN			Fine- to medium-crystalline dolomites.	Bedded dolomites which thicken northward.	Low percentages of clay.

Explanation

- limestone
- solution breccia
- dolomitic limestone
- sedimentary breccia
- dolomite
- intraformational conglomerates
- shale
- cherts
- sandstone
- oolites