UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PHOTOGEOLOGIC MAPS OF THE MILES RANCH AND LOVE RANCH QUADRANGLES, FREMONT AND NATRONA COUNTIES, WYOMING

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DESCRIPTIONS OF MAP UNITS

Surficial deposits

Mostly gray undifferential surficial material, including stream deposits, sand dunes, colluvium, and playa lake deposits. The deposits range in thickness from 1 to possibly 5 meters and consist mostly of material derived from the underlying and adjacent formations.

Gravel

Gray to brown sandy gravel, mostly of granite pebbles and cobbles but with many shale particles and conglomerate pebbles and cobbles from older formations. The gravel is about 1 to 3 meters thick. It largely occurs as linear deposits capping ridges of Cody Shale, Mesaverde Formation, and Lewis Shale in the southern part of the Miles Ranch quadrangle. It probably is largely remnants of stream channel deposits.

Wind River Formation

Mostly very light gray to yellowish gray, loosely cemented, feldspathic quartz sandstone with some medium dark gray weathered surfaces and moderate brown oxidized zones. The formation is fluviatile in origin and contains beds consisting mostly of pebbles and cobbles of granite, but with some sandstone; many of the granite pebbles and cobbles are saprolitized.

In much of the Miles Ranch quadrangle, the formation is divided into upper and lower units; the upper unit generally is coarser grained than the lower unit and contains granite boulders up to 60 cm in diameter. The lower unit is not exposed in the Love Ranch quadrangle.

The formation has a low angle of dip and lies unconformably across the erosion truncated beds of the more steeply dipping older formations. It is as much as 100 meters thick.

Landform varies from flat and gently sloping to randomly oriented low hills and erosion dissected sloping uplands.

Fort Union Formation

Very light gray to medium dark gray and grayish orange, largely massive friable, calcite-cemented and blocky-jointed, resistant sandstone. The formation is about 290 meters thick.

Landform varies from distinctive wind and water sculpted spires and pillars, as seen in Castle Gardens, to prominent, blocky, jointed, dipping ledges.

Lance Formation

Gray sandy shale in the lower part with many beds of carbonaceous shale and sandstone in the upper part of the formation. Numerous sandstone beds typically are brown, thin bedded, and fine to medium grained. Marly, bentonitic, and fragmental klinker-like clay-ironstone beds are present. The formation is about 285 meters thick.

Landform is largely a narrow strike valley with ledgy sandstone beds cropping out along the southwest slope. Because of poor exposures, the formation is not mapped separately from the Lewis Shale in part of the Miles Ranch quadrangle.

Lewis Shale

Gray marine shale with some sandstone beds. The shale is about 295 meters thick.

Landform is a shallow strike valley with minor sandstone ridges rising above the valley bottom and slopes. Because of lack of good exposures, the Lewis Shale is not mapped separately from the Lance Formation in part of the Miles Ranch quadrangle.

Mesaverde Formation

Gray to brownish gray, alternating massive and thin bedded sandstone and shale. Sandstone beds are mostly near the base and top of the formation. Total thickness is about 240 meters.

Landform is low relief with some dissection and conspicuous ledges and low sharp ridges.

Cody Shale

Dark gray marine shale and siltstone with thin argillaceous sandstone beds in the upper part, some of which are oxidized to moderate and reddish brown. The shale is as much as 900 meters thick.

Landform typically is low rounded hills and ridges, and shallow valleys.