GEOLOGIC MAP OF THE BRISTOW 30' X 60' QUADRANGLE, CREEK, LINCOLN, OKFUSKEE, OKMULgee, PAYNE, AND TULSA COUNTIES, OKLAHOMA

The map shows the geologic formations in the study area, including the Chase Group, Cottonwood Limestone, Eleventh Street Limestone, and Wabaunsee Group. The Chase Group is near complete along the northern border of the quad, while the Cottonwood Limestone is only the basal 8 meters present. The Eleventh Street Limestone is a 1 to 2 meter thick unit consisting of two light gray limestone beds in the northern boundary. The Wabaunsee Group consists of six limestone and six shale members. The formation pinch out just north of the Cimarron River where it interfingers with lithologic elements of the Stillwater Formation. The Stillwater Formation is a series of red to gray mudstones and claystones interbedded with thin shales. The group pinches out to the south. The formation is truncated by the overlying Boley Conglomerate of the Vamoosa Formation about 10-11 kilometers north of Stroud. The Vamoosa Formation consists of locally calcareous, gray-green, blue-green, and maroon arenites with local cross-bedding; and thin limestones. The formation is correlated to the Jenks Sandstone of the Memorial Formation to the north. The formation thins considerable to the south until it is truncates by post-Wann, pre-Barnsdall erosion just north of Little Deep Fork Creek, although some intervals are still exposed as far south as Deep Fork Creek.

Total thickness of the Chase Group varies between 80 and 85 meters. The Cottonwood Limestone total thickness varies between 30 and 40 meters. The Eleventh Street Limestone total thickness is 10 to 15 meters. The Wabaunsee Group total thickness varies between 40 and 80 meters. The Chase Group is comprised of six limestone and six shale members, which are, in descending order: the Chase Shale, Cottonwood Limestone, Eleventh Street Limestone, Wabaunsee Group, Cottonwood Limestone, and Chase Shale. The Chase Shale is a fine-grained, gray shale with a thin, sandy interval. The Cottonwood Limestone is brown weathering, laminated, slightly calcareous, micaceous, silty clayshale. Basal 3 ft of formation, have numerous horizontal burrows locally. Formation thins considerable to the south until it is truncated by post-Wann, pre-Barnsdall erosion just north of Little Deep Fork Creek, although some intervals are still exposed as far south as Deep Fork Creek.

The Cottonwood Limestone is a thick, reddish-brown to blue-gray sandstone interval forming distinct cuestas and escarpments. The formation is 10-15 meters thick and is correlatable to the Jenks Sandstone of the Memorial Formation to the north. Shales are slightly argillaceous quartz arenites. A prominent sandstone interval forming distinct cuestas and escarpments occurs at the base of the Eleventh Street Limestone, which roughly correlates to the lower limestone bed. The formation is truncated by the overlying Boley Conglomerate of the Vamoosa Formation about 10-11 kilometers north of Stroud. The formation is truncated by the overlying Boley Conglomerate of the Vamoosa Formation about 10-11 kilometers north of Stroud. The formation is truncated by the overlying Boley Conglomerate of the Vamoosa Formation about 10-11 kilometers north of Stroud.