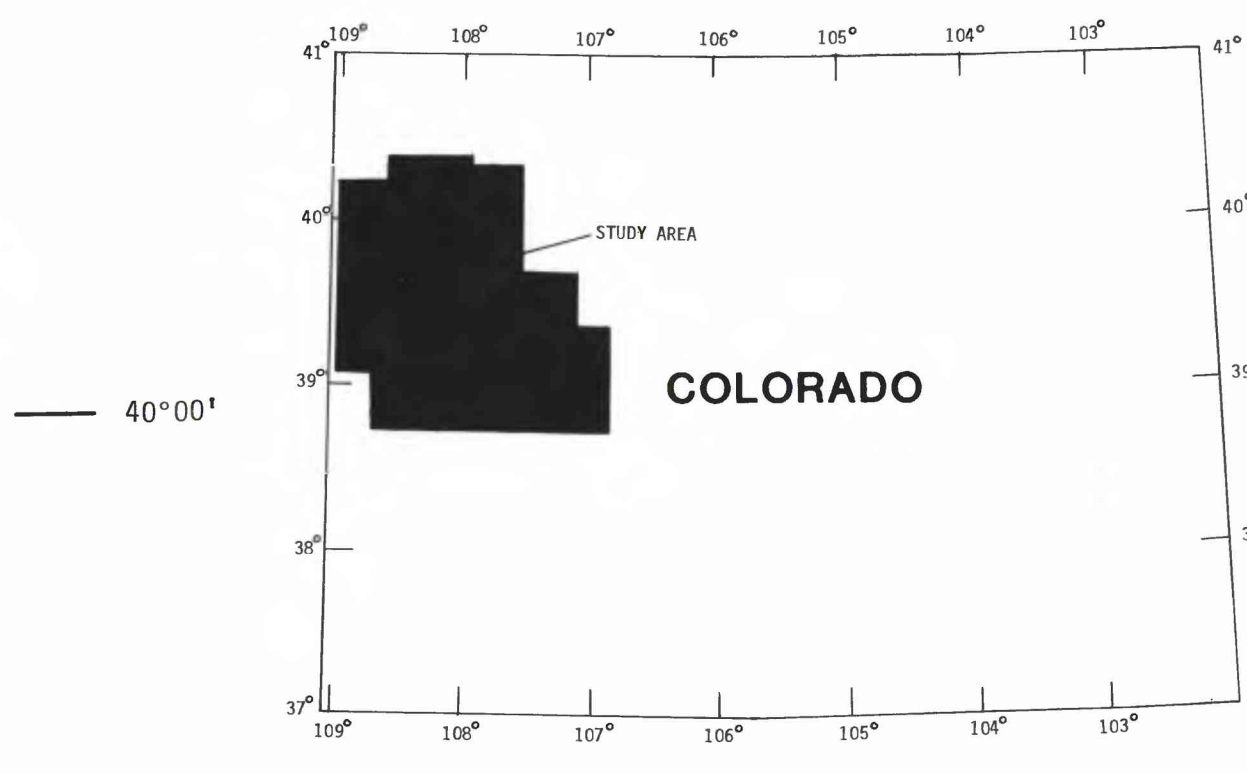


- EXPLANATION
- STRUCTURE CONTOURS—Altitude, in hundreds of feet, on top of Rollins and Trout Creek Sandstone Members or equivalent stratigraphic horizon. Contour interval 500 feet. Contours locally not shown within some faulted areas. Datum sea level.
 - ANTICLINAL AXIS
 - SYNCLINAL AXIS
 - FAULT—Bar and ball on downthrown side (not shown on all faults)
 - DRILL HOLE USED FOR STRUCTURAL CONTROL
 - IGNEOUS INTRUSION

DISCUSSION

The Rollins Sandstone Member of the Mesaverde Formation in the southern part of the Piceance Creek basin and its correlative to the north, the Trout Creek Sandstone Member of the Iles Formation of Late Cretaceous (late Campanian) age, represent a laterally persistent regressive marine sandstone present throughout most of the Piceance Creek basin. The widespread distribution of these sandstones makes them ideal units for structure contouring. Throughout most of the Piceance Creek basin, the Rollins and Trout Creek are generally the stratigraphically highest marine sandstones in the interfingering marine and nonmarine parts of the Cretaceous Mesaverde Group (or Formation). The sandstone grades into nonmarine rocks and is absent along the northwest margin of the Piceance Creek basin, but a persistent coal zone overlies the Rollins or Trout Creek everywhere, and in this limited area the base of this coal zone is used for structural control. The coal zone is termed the Cameo-Fairfield coal zone in the southern part of the Piceance Creek basin.

The structure contour map was constructed using existing geologic maps and most drill holes that penetrated the Rollins or Trout Creek. A limited amount of photogeologic mapping was done by the author, particularly north of Grand Junction, where little surface control was available.



History of the Rollins and Trout Creek Nomenclature

The Rollins and Trout Creek have been mapped as two separate units: the Rollins Sandstone Member of the Mesaverde Formation, which was mapped extensively in the southern part of the basin, and the Trout Creek Sandstone Member of the Iles Formation, which was mapped in the northeast corner of the basin and in the Sand Wash Basin to the north.

The Rollins was first named and extensively mapped by Lee (1912), who traced the prominent sandstone across the southern margin of the basin from Pallisade to Crested Butte. It was described by Lee (1912, p. 31) as "a uniformly white, coarse grained, massive and cliff-making throughout the area here described and appears from a distance as a conspicuous white band in the sides of mesas." According to Lee, the Rollins varies from 60-125 ft in thickness and is the basal member of the Mesaverde Formation in the mapped area. A thin marine sandstone, the Cozette Member of Young (1955, p. 191), underlying the Rollins, was later identified in the western half of the area Lee mapped (Gill and Hall, 1975).

The Trout Creek was originally named and mapped in the southeastern part of the Sand Wash Basin, north of the Piceance Creek basin (Fenneman and Gale, 1906). The Trout Creek was later identified and mapped in the Meeker area, in the northeast part of the Piceance Creek basin (Hancock and Eby, 1930).

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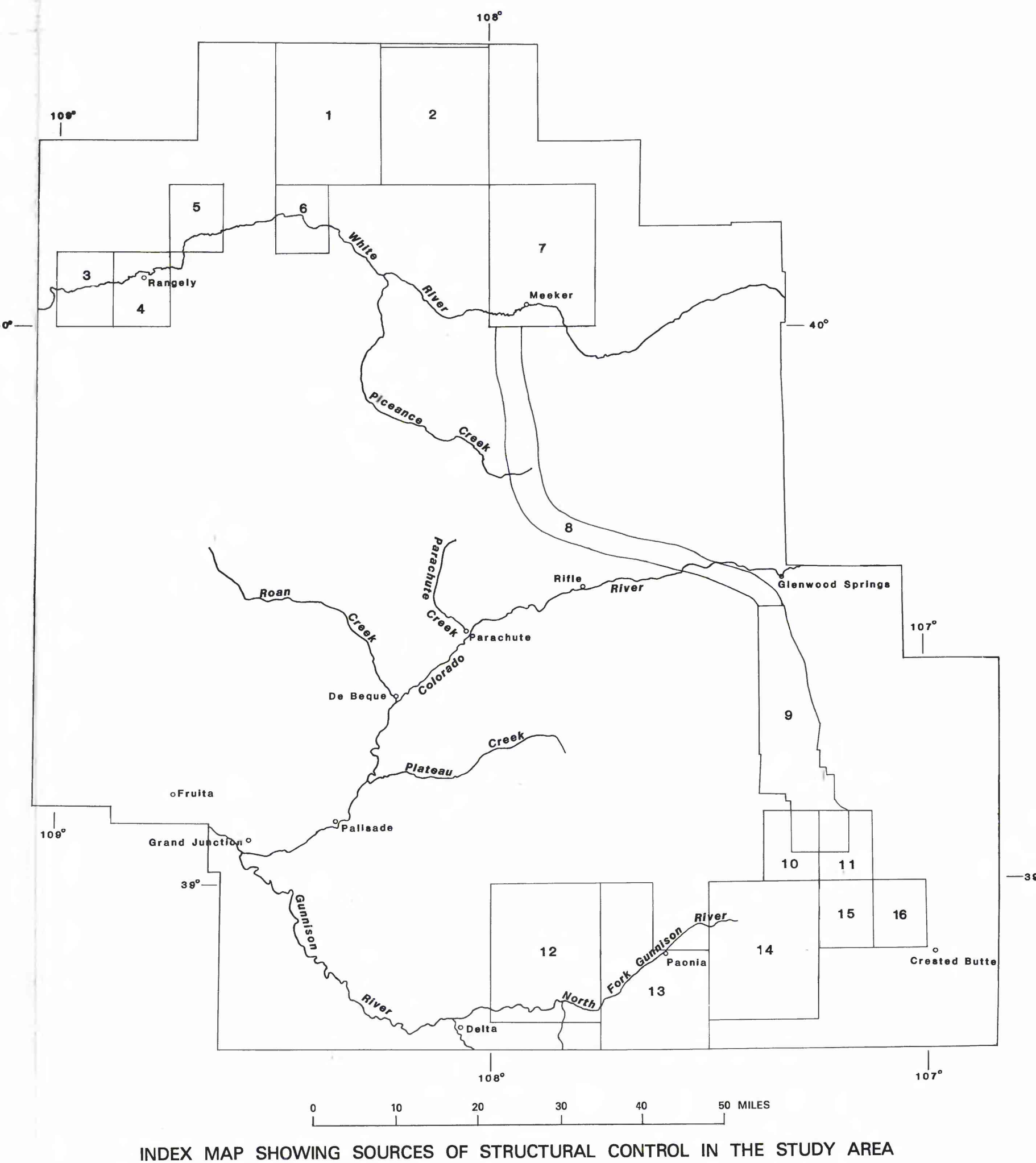
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STRUCTURE CONTOUR MAP OF THE TOP OF THE ROLLINS SANDSTONE MEMBER OF THE MESAVERDE FORMATION AND TROUT CREEK SANDSTONE MEMBER OF THE ILES FORMATION, PICEANCE CREEK BASIN, COLORADO

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