DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY
W. E. WRATHER, DIRECTOR

PREPARED IN COOPERATION WITH THE
BUREAU OF INDIAN AFFAIRS

COAL INVESTIGATIONS
MAP C29

Base and geologic map compiled from aerial photographs

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C. NO. 7623
For sale by U. S. Geological Survey, price 50 cents

PRELIMINARY GEOLOGIC MAP OF THE SHIP ROCK AND HOGBACK QUADRANGLES, SAN JUAN COUNTY, NEW MEXICO

by
E. C. Beaumont

SCALE
1 0 1 2 3 MILES

1955

EXPLANATION

SEDIMENTARY ROCKS

QUATERNARY

Recent

Qal — Alluvium
Unconsolidated deposits of valley fill.

Qpg — Pediment gravel
Veneer of unconsolidated gravel and boulder debris on upland pediment surfaces.

Qtg — Terrace gravel
Veneer of unconsolidated gravel and sand on river and stream terrace surfaces.

UNCONFORMITY

TERTIARY

Tc — Chuska sandstone
Gray to grayish white, cross bedded, massive-bedded sandstone with some interbedded shale and siltstone.

CRETACEOUS

Upper Cretaceous

Kf — Fruitland formation
Gray, brown, and black shale yellowish brown and tan, cross bedded sandstone.

Kpc — Pictured Cliffs sandstone
Tan cross bedded medium to massive-bedded, fine- to medium-grained sandstone.

Kl — Lewis shale
Medium-gray and tan shale and sandy shale interbedded with thin, platy sandstone--especially in the upper and lower parts of the formation, and concretionary limestone.

Mesaverde group

Kch — Cliff House sandstone
Tan and gray crossbedded, fine to medium grained sandstone and interbedded gray sandstone.

Kmf — Menefee formation
Gray, brown, greenish-gray shale, lenticular sandstone and coal.

Kp — Point lookout sandstone
Tan and brown sandstone with interbedded gray shale.

Lower (?) and Upper Cretaceous

Kmu, Kg, Kml, Kjl, Kml, Kgh, Kml — Mancos shale
Consists of an upper gray shale and sandy shale sequence (Kml), a tan sandstone – the Gallup sandstone of the Mesaverde group (Kg), and a lower gray shale (Kml) which contains the tan, limy, fossiliferous Juana Lopez sandstone member of Rankin, 1944, (Kjl) and the light-gray argillaceous Greenhorn limestone member (Kgh).

Kd — Dakota sandstone
Tan and brown cross bedded fine- to coarse-grained sandstone, conglomeratic sandstone, and conglomerate with interbedded carbonaceous shale and coal.

UNCONFORMITY

JURASSIC

Upper Jurassic

Ju — Jurassic undivided
Gray and greenish-gray shale and tan and gray sandstone principally of the Morrison formation

IGNEOUS ROCKS

TERTIARY

Qb — Forming the lava cap on Beautiful Mountain

Tc — Intrusive volcanic stocks and dikes

Geologic contact
Dashed where approximate or transitional; dotted where concealed.

U D — Fault
U, upthrown side; D, downthrown side dashed where approximately located.

Strike and dip of beds
Long bar indicates direction of strike, short bar indicates direction of dip; figure indicates amount of dip in degrees.

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