UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PROFESSIONAL PAPER 451
PLATE 1

Base compiled by Kelsh plotter by C. H. Marshall from aerial photographs by U.S. Army Map Service. Section lines taken in part from planimetric maps by U.S. Soil Conservation Service and Township plats of U.S. Bureau of Land Management

Field geology by S. W. Lohman, mainly in 1947–52, on planimetric sets of aerial photographs by U.S. Soil

EXPLANATION

QUATERNARY — Pleistocene and Recent

Qal — Alluvium
Silt, sand, and gravel; upper Pleistocene and Recent valley or canyon fill; mapped only in larger valleys and tributaries. Alluvium of Colorado and Gunnison Rivers contains very hard water

Qts — Landslide deposits
Only larger landslides that cover older formations and formation contacts are shown

Qtg — Terrace gravel
Only high-level terrace gravel in sec. 6, T. 14 S., R. 99 W. is shown. Drained of water

CRETACEOUS — Upper Cretaceous

Km — Mancos Shale
Gray marine shale; few thin beds of sandstone near base; few thin beds of limestone. Unimportant as source of water

Lower Cretaceous

Kdb — Dakota Sandstone and Burro Canyon Formation undivided
Coarse white basal conglomerate, lignitic shale, buff sandstone, and thin beds of lignite of Dakota Sandstone at the top. Sandstone, conglomeratic sandstone, conglomerate, and green-hued shale of the Burro Canyon Formation at the base. Yield small supplies of water to a few wells; water generally salty

JURASSIC — Upper Jurassic — San Rafael Group

Jms — Morrison and Summerville Formations undivided
Red, green, brown, purple, and gray-white siltstones and mudstones, some bentonitic beds and volcanic ash and a few thin beds or lenses of white to brown sandstone and limestone, and a few beds of conglomerate of the Brushy Basin Member of the Morrison at the top. Siltstones and mudstones similar to those of Brushy Basin, thick lenticular sandstones, and, in lower part, thin beds of dove-gray limestone of the Salt Wash Member of the Morrison at the middle. Red, gray, blue-gray, greenish-gray, purple, and brown mudstone and siltstone, and persistent thin beds of gray, yellow, greenish-gray, reddish-gray hard sandstone of the Summerville Formation at the base. Sandstone lenses in Salt Wash Member yield small supplies of soft water under moderate artesian head; other units yield no water to wells

Je — Entrada Sandstone
White to gray evenly bedded fine-grained sandstone of Moab Member at top; of probable Curtis age. Salmon-colored to pink fine-grained generally crossbedded sandstone containing scattered grains of medium- to coarse-grained sand at the base of the Slick Rock Member. Yields small supplies of soft water under moderate to high artesian head

TRIASSIC(?) — Upper Triassic (?) — Glen Canyon Group

Trk — Kayenta Formation
Medium- to coarse-grained highly lenticular hard sandstone, lenses of red or purple siltstone and mudstone, and lenses of conglomeratic and conglomeratic sandstone. Unimportant as source of water

TRIASSIC — Upper Triassic — Glen Canyon Group

Trw — Wingate Sandstone
Thick beds of salmon-colored to buff fine-grained generally crossbedded sandstone. Yields small supplies of soft water under moderate to high artesian head

Trc — Chinle Formation
Red siltstone containing a few thin lenses of green-hued limestone or limestone conglomerate. Yields no water to wells

PRE-CAMBRIAN

pC — Schist, gneiss, granite, and pegmatite

Contact
Dashed where approximately located or inferred

Fault
Dashed where approximately located or where fault merges into a fold axis; dotted where concealed. U, upthrown side; D, downthrown side

Anticline
Dashed where approximately located or where fold axis merges into a fault

Syncline
Dashed where approximately located or where fold axis merges into a fault

Central axis of symmetrical monocline, showing direction of plunge
Dashed where approximately located or where fold axis merges into a fault; dotted where concealed

Upper bend of monocline, showing direction of plunge
Dashed where approximately located or where fold axis merges into a fault; dotted where concealed

Lower bend of monocline
Dashed where approximately located or where fold axis merges into a fault

Strike and dip of beds by field measurment

Strike and dip of beds determined photogrammetrically. Angle of dip given only if 10° or more

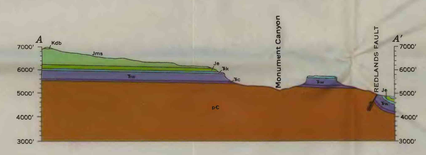
Structure contour
Drawn on top of Entrada Sandstone; dashes indicate projection above land surface. Contour interval 200 feet. Datum is mean sea level

Artesian well
Number corresponds to number of well given in table 7

Mine

Quarry

APPROXIMATE MEAN DECLINATION, 1964



MAP AND SECTION OF THE GRAND JUNCTION AREA, COLORADO, SHOWING THE GEOLOGY, STRUCTURE CONTOURS AND LOCATION OF ARTESIAN WELLS FOR WHICH RECORDS ARE GIVEN

SCALE 1:31 680