DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

OPEN FILE REPORT

Geology mapped in 1965 and 1966

SCALE 1:48 000

0 1 2 3 4 5 MILES

EXPLANATION FOR BEAR MOUNTAIN AND OAKBRUSH RIDGE QUADRANGLES

Qal	Qt	Qgt	Qls	Qpg

Surficial deposits

Qal, Alluvium. Valley-bottom alluvial deposits
Qt, Terrace gravels
Qgt, Glacial till. May locally include landslide debris
Qls, Landslide debris
Qpg, Pediment gravels

Tc
Conejos Formation

UNCONFORMITY

Tsj
San Jose Formation

UNCONFORMITY

Klmv
Lewis Shale and Mesaverde Formation undifferentiated

Km (Kmu, Kml)
Mancos Shale
Kmu, upper part
Kml, lower part

Kdb
Dakota Sandstone and Burro Canyon Formation undifferentiated

Jmw
Morrison Formation and Wanakah Formation undifferentiated

Je
Entrada Formation

UNCONFORMITY

Trd
Dolores Formation

UNCONFORMITY

Pc
Cutler Formation

Phm
Hermosa Formation and Molas Formation undifferentiated

UNCONFORMITY

Ml
Leadville Limestone

Doe
Ouray Limestone and Elbert Formation undifferentiated

MDloe
Leadville Limestone, Ouray Limestone, and Elbert Formation undifferentiated

MCli
Leadville Limestone, Ouray Limestone, Elbert Formation, and Ignacio Quartzite (Upper Cambrian) undifferentiated

UNCONFORMITY

pCe
Eolus Granite

pCu
Uncompahgre Formation

Holocene and Pleistocene — QUATERNARY
Oligocene, Eocene — TERTIARY
Upper Cretaceous, L. and U. Cret. — CRETACEOUS
Upper Jurassic — JURASSIC
Upper Triassic — TRIAS
Lower Perm. — PERM.
L. and M. Penn. — PENN.
L. and U. Miss. — MISS.
Upper Devonian — DEVONIAN
PRECAMBRIAN

DESCRIPTION OF ROCK UNITS

Tc, Conejos Formation. Volcanic rocks: andesite flows, lahar breccia and conglomerate.

Tsj, San Jose Formation. Light-gray arkosic sandstone and varicolored claystone.

Klmv, Lewis Shale and Mesaverde Formation undifferentiated. Lewis conformably overlies Mesaverde. Lewis Shale is dark-gray shale containing a few rusty-weathering concretion masses. Mesaverde Formation is interbedded dark-gray clay shale and thin sandstone.

Km, Mancos Shale. Mostly dark clay shale.

Kmu, Mancos Shale, upper part. Mostly dark shale; contains calcareous shale and argillaceous limestone (Niobrara equivalent) within about 600 ft above base; also contains sandy limestone and argillaceous sandstone (Juana Lopez Member) at base.

Kml, Mancos Shale, lower part. Mostly dark shale; contains thin calcareous shale and limestone (Greenhorn equivalent) within 150 ft above base.

Kdb, Dakota Sandstone and Burro Canyon Formation undifferentiated. Dakota disconformably overlies Burro Canyon. Dakota Sandstone is light-gray to brown sandstone with interbedded siltstone and carbonaceous shale; commonly contains chert-pebble conglomerate or conglomeratic sandstone at base. Burro Canyon Formation is lenticular chert-pebble conglomerate and green and gray claystone.

Jmw, Morrison Formation and Wanakah Formation undifferentiated. Morrison conformably overlies Wanakah. Morrison Formation comprises two members: upper is Brushy Basin Member consisting mostly of varicolored claystone and mudstone; lower is Salt Wash Member consisting of sandstone with interbedded claystone and mudstone. Wanakah Formation comprises three members: Junction Creek Sandstone Member at top (questionably present in these quadrangles), a middle member, and the Pony Express Member. Junction Creek Sandstone Member is light-gray cross-bedded sandstone; middle member is limy shale, siltstone, and sandstone; Pony Express Member is dark-gray bituminous limestone, locally containing gypsum.

Je, Entrada Sandstone. Light-gray cross-bedded sandstone.

Trd, Dolores Formation. Mostly red beds - shale, siltstone, sandstone, and limestone-pebble conglomerate; locally contains phyllite fragments near mouth of Weminuche Creek

Pc, Cutler Formation. Mostly red beds - shale, siltstone, mudstone, arkosic grit, and conglomerate.

IPhm, Hermosa Formation and Molas Formation undifferentiated. Hermosa overlies Molas. Hermosa Formation is mostly marine shale, limestone, and sandstone interbedded with lesser nonmarine red beds of shale, siltstone, mudstone, arkosic grit, and conglomerate. Molas Formation 1/ is mostly nonmarine red beds, basal breccia, shale, siltstone, sandstone, and conglomerate. Unit contains possible Rico Formation equivalent of Pennsylvanian and Permian (?) age.

Ml, Leadville Limestone 1/. Dark-gray, medium- to thin-bedded to coarsely crystalline limestone; minor breccia, red shale, siltstone, and sandstone.

Doe, Ouray Limestone and Elbert Formation undifferentiated 1/. Ouray overlies Elbert. Ouray Limestone is thin- or medium-bedded limestone, sandy limestone, calcareous sandstone, quartzitic sandstone, and calcareous shale. Elbert Formation is interbedded varicolored thin-bedded quartzitic sandstone and siltstone.

MDloe, Leadville Limestone, Ouray Limestone, and Elbert Formation undifferentiated.

MCli, Leadville Limestone, Ouray Limestone, Elbert Formation, and Ignacio Quartzite 1/ (of Cambrian age) undifferentiated. Ignacio Quartzite is brown to reddish-brown quartzitic sandstone.

pCe, Eolus Granite. Medium to coarsely crystalline granite.

pCu, Uncompahgre Formation 1/. Quartzite, phyllite, and schist.

1/ Lithologic description from OM-96. Read, C.B., Wood, G.H., Wanek, A.A., and Mackee, P.V., 1949, Stratigraphy and geologic structure in the Piedra River Canyon, Archuleta County, Colo.: U.S. Geol. Survey Oil and Gas Inv. (Prelim.) Map OM-96.

Note: Outcrops of map units pCu and MCli along Piedra River were adapted from OM-96. (See reference above).

Contact
Approximately located
U / D Fault
Dotted where concealed
U, *upthrown side*
D, *downthrown side*
5 — Strike and dip of beds

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This map is preliminary and has not been edited or reviewed for conformity with Geological Survey standards or nomenclature.

GEOLOGIC RECONNAISSANCE MAP OF THE BEAR MOUNTAIN AND OAKBRUSH RIDGE QUADRANGLES, HINSDALE AND ARCHULETA COUNTIES, COLORADO

By
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