DEPARTMENT OF THE INTERIOR
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MAP SHOWING LITHOLOGY OF PRECAMBRIAN ROCKS IN THE CHRISTENSEN RANCH AND ADJACENT QUADRANGLES, MADISON AND BEAVERHEAD COUNTIES, MONTANA

By
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1969

Base from U.S. Geological Survey, 1:24,000-
Dillon East, 1962; Christensen Ranch, 1961;
Mine Gulch, 1961; Elk Gulch, 1961; Ashbough
Canyon, 1961

Geology mapped by H.L. James, 1960, 1962-66;
K.L. Wier, 1960, 1964-66; K.W. Shaw, 1966-
68; JoAnna Dewhurst, 1968; and B.A. Morgan,
1967

0 2 3 MILES

EXPLANATION

Contact
Approximately located. Dashing may indicate lesser degree of certainty

Fault
Approximately located

Anticline Syncline Drag Closely spaced
Minor folds
Arrow shows approximate bearing and plunge of axis. Some closely spaced folds shown diagrammatically without axis

Inclined Vertical
Strike and dip of bedding or of compositional layering. Overturned beds not separately distinguished

Inclined Vertical
Strike and dip of foliation or schistosity

Inclined lineation (rodding, grooving, mineral alinement, or minor fold axis), showing bearing and plunge. Also combined with strike and dip symbols

Large float blocks

Metadiabase and metagabbro

Dolomite Iron-formation Quartzite
Only some of the larger or more persistent lithologic units are colored; units may contain minor amounts of other lithologies. Presence of iron-formation based partly on magnetic data

Symbols
(Listed alphabetically)

Quaternary
- Qal ---------- alluvium

Tertiary
- Tbs ---------- basalt
- Tcg ---------- conglomerate
- Tss ---------- sandstone
- Tv ---------- volcanics

Precambrian
- a, am ---------- amphibolite
- agg ---------- anthophyllite garnet gneiss
- ans ---------- anthophyllite schist
- an, anth, ant -- anthophyllite
- bi ---------- biotite
- Br, br ---------- breccia
- carb ---------- carbonate-silicate gneiss
- cma ---------- calcium magnesium schist
- cr ---------- chromium mica
- cq ---------- carbonate quartzite
- d, di, diop ---- diopside
- disc ---------- discoidal
- dol ---------- dolomite
- F, f, fl ------- float
- fe ---------- ferruginous
- ga ---------- garnet
- gqt ---------- garnet quartzite
- gg, ggn, grg --- granite gneiss
- gn ---------- gneiss
- gr ---------- granite
- hb ---------- hornblende
- if ---------- iron-formation
- ja ---------- jasperoid
- m, mi ---------- mica
- md ---------- metadiabase
- mg ---------- metagabbro
- mpx ---------- metapyroxenite
- msq ---------- mica schist-quartzite
- oc ---------- outcrop
- p, pg, peg ------ pegmatite
- pd ---------- peridotite
- q ---------- quartz or quartzite
- qt, qtz ---------- quartzite
- sch ---------- schist
- sil, sill ------ sillimanite
- si ---------- silicified
- sp ---------- serpentinite
- tpg ---------- tourmaline pegmatite
- um ---------- ultramafic
- v ---------- vitreous
- xx ---------- iron-formation float

This map is essentially an unedited field compilation of geologic data, acquired by intermittent field work over a period of several years. It lacks stratigraphic and structural interpretation, and abbreviations used to designate lithology and mineralogy are not entirely consistent from one part of the map to another. The map is being released at this time in order to make the basic data available to those concerned with development of potential iron and talc resources.