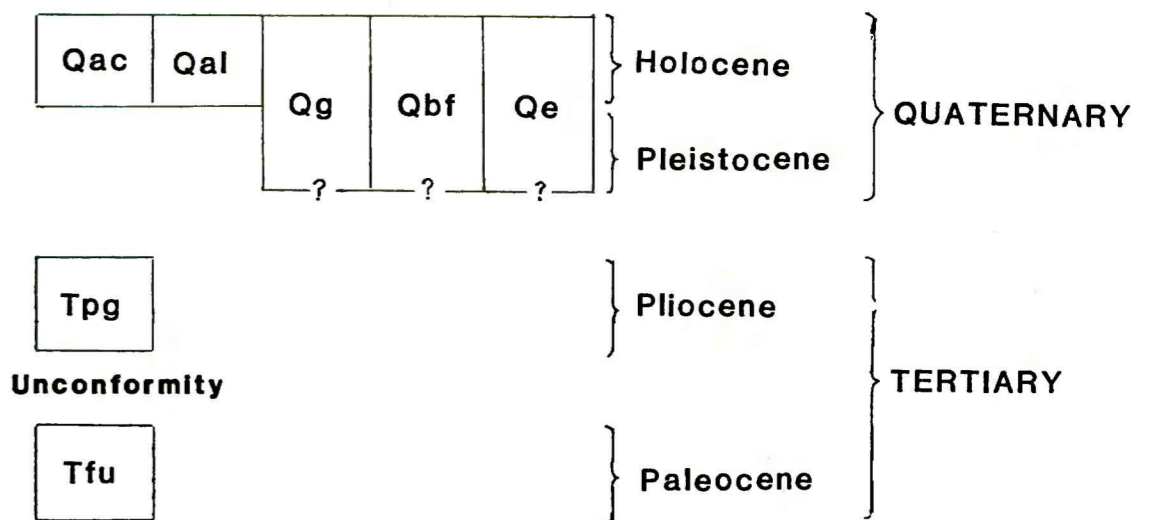


CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

- Qal Alluvium (Holocene)**—Light-brown and gray, well-stratified and well-sorted clay, silt, sand, and gravel. Thickness ranges from as much as 6 m (20 ft) under the flood plain of Redwater River to less than a few meters under flood plains of tributaries. Unit limited to areas characterized by meander or braided patterns on aerial photographs. Surface of unit may be subject to occasional flooding.
- Qac Alluvium and colluvium (Holocene)**—Light-brown and gray, poorly sorted and poorly stratified clay, silt, sand, and gravel deposited by gravity and slope wash. The color and texture of the colluvium reflect the parent material upslope. May interfinger with alluvium; includes alluvial fans and much windblown clay, silt, and sand. As much as 10 m (33 ft) thick, but generally less than 5 m (16 ft). Soil profiles range from well-developed to poorly developed.
- Qe Eolium (Holocene to Pleistocene)**—Light-brown to light-gray silt, sand, granules, and pebbles. Pebbles were carried up into eolium by bioturbation. Present as a general veneer on alluvium-colluvium (Qac) and older alluvial deposits (Tpg). As much as 2 m (6 ft) thick where shown but not mapped where less than 1 m thick.
- Qbf Baked and fused bedrock (clinker) (Holocene to Pleistocene)**—Red to orange baked shale, sandstone, and siltstone of the Fort Union Formation that was heat-metamorphosed by combustion of lignite. Hard, dense, metamorphosed sediments are known as porcellanite; locally, sediments fused and melted to form black, vesicular, glassy, scoriaceous rock called buchite, which forms linings of chimneys and veins in porcellanite. As much as 6 m (20 ft) thick, but generally less than 3 m (10 ft).
- Qg Sand and gravel, undivided (Holocene to Pleistocene)**—Light-brown to light-gray, well-stratified to poorly stratified and well-sorted to poorly sorted sand and gravel. Thickness is as much as 5 m (16 ft), but generally less than 3 m (10 ft).
- Tpg Sand and gravel, undivided (Pliocene)**—Light-brown to light-gray, well-stratified and well-sorted to poorly sorted sand and gravel. Thickness is as much as 10 m (33 ft), but generally less than 3 m (10 ft). May contain some Pleistocene sand and gravel.
- Tfu Tongue River Member (Collier and Knechtel, 1939) of Fort Union Formation (Paleocene)**—Yellowish- or light-brown shale and sandstone containing numerous lignite beds. Maximum exposed thickness estimated to be more than 100 m (330 ft).

- w Water
- Contact—Dashed where approximately located
- X Abandoned coal mine
- ⊗ Gravel pit

REFERENCE

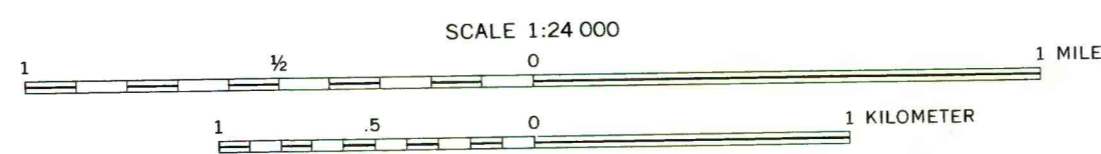
Collier, A.J., and Knechtel, M.N., 1939, The coal resources of McCone County, Montana: U.S. Geological Survey Bulletin 905, 80 p.

JOHNSON COULEE EAST 88-610	BRACKWAY NE 88-631	YOUNGQUIST MINE 88-627	CIRCLE SW RESERVOIR 88-628	QUICK ANTELOPE SOUTH 88-618	WOODWORTH HILL NORTH 88-626	OLBON COULEE NORTH 88-620	JOHNSON RESERVOIR NW 88-613	JOHNSON RESERVOIR NE 88-611
BEAUTY CREEK 88-636	BRACKWAY SW 88-623	CIRCLE SW RESERVOIR 88-628	QUICK ANTELOPE SOUTH 88-618	QUICK ANTELOPE SOUTH 88-618	MOUNT ANTELOPE SOUTH 88-616	OLBON COULEE SOUTH 88-621	DEER CREEK CHURCH 88-628	JOHNSON RESERVOIR 88-608
BERRY SCHOOL 88-632	WATKINS SE 88-621	SIO SHEEP MOUNTAIN NW 88-622	BEARSHACK CREEK NW 88-634	DIAMOND BUTTE NW 88-607	DIAMOND BUTTE NW 88-607	UNION SCHOOL NW 88-617	LINDSAY SW 88-614	WOODROW UPPER BOX SCHOOL 88-625
HEITZ SCHOOL 88-608	WATKINS SE 88-624	SIO SHEEP MTK 88-628	BECKER DAM 88-633	NORTH COULEE BUTTE 88-610	NORTH COULEE BUTTE 88-610	DIAMOND BUTTE 88-635	LINDSAY SW 88-615	UPPER BOX SCHOOL 88-612

INDEX TO QUADRANGLES IN THE CIRCLE 30' x 60' QUADRANGLE. MAPPED QUADRANGLE SHOWN BY STRIPES, NUMBERS ARE OPEN-FILE NUMBERS

Base from U. S. Geological Survey

Geology mapped in 1980 and 1981



**GEOLOGIC MAP OF THE CIRCLE SW QUADRANGLE,
McCONE COUNTY, MONTANA**

By
R.B. Colton, J.P. McGraw and S.L. Durst

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