



Base by U.S. Geological Survey, 1948  
SCALE 1:48,000  
CONTOUR INTERVAL 50 FEET  
DATUM IS MEAN SEA LEVEL  
QUADRANGLE LOCATION  
PRELIMINARY GEOLOGIC MAP OF BANCROFT QUADRANGLE, CARIBOU AND BANNOCK COUNTIES, IDAHO  
By  
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Geology by S.S. Oriol assisted by W.N. Bowman, 1962, K.L. Shropshire, 1963, and W.H. Hays, 1964

**EXPLANATION**

**Recent**

Modern unconsolidated surficial deposits  
**Qal**, alluvium: well to poorly sorted gravel, sand, and mud, mainly brown; in channel and flood-plain deposits, small alluvial fans, and deltas.  
**Qaf**, alluvial fans: well-sorted gravel, sand, and brown mud in conspicuous fans  
**Qsf**, sheetflood deposits: mainly stratified silt containing scattered rounded pebbles and cobbles and some interbedded sand  
**Qc**, colluvium: unstratified angular rock fragments in hill wash and talus that grade into terrace gravel near streams and into alluvium in tributary valleys  
**Qs**, partly stratified wind-laid silt grading locally to fine-grained sand; medium-brown

**Partly older surficial deposits**  
**Qt**, tufa: porous to spongy white, buff, and yellowish-tan calcium carbonate deposited by mineralized springs  
**Qsc**, unconsolidated wind-laid silt grading laterally into and covering colluvium; probably overlies Salt Lake Formation from which some detritus is reworked; very light gray to tan  
**Qtg**, terrace gravel: unconsolidated gravel, sand and mud, mainly brown; includes alluvium of tributary streams  
**Qtl**, lower terraces (where there is more than one surface)  
**Qth**, higher terraces

**Upper Ordovician**

**Qm** **Qms**  
**Main Canyon Formation\***  
 Mainly poorly consolidated silt with silt and marl grading into sand and gravel near the valley margins; the deposits formed in Pleistocene Lake Thatcher, intertongued with Gem Valley Basalt  
**Qms**, remnants of the upper depositional surface of the formation (elevations of about 5,445 feet (the inferred Lake Thatcher level); includes slopes at higher elevations that consist of colluvium and alluvium graded to the lake level  
**Qm**, partly eroded exposures

**Qb** **Qbs** **Qsb** **Qbc**  
**Gem Valley Basalt\***  
 Dark gray to very dark gray finely to medium crystalline vesicular, porphyritic, and coarsely crystalline massive olivine basalt; pillow basalt with palagonite rims is present locally; basaltic cinders  
**Qb**, basalt well exposed in valleys, in cones, and in depressions  
**Qbs**, basalt moderately well but discontinuously exposed because of thin eolian silt cover similar to unit **Qs**  
**Qsb**, basalt that is exposed less continuously because of thicker eolian silt cover; probably older than the flows assigned to unit **Qbs**  
**Qbc**, basaltic cinders at cinder cones and collapsed cones

**Pleistocene**

**Tsl**  
**Salt Lake Formation**  
 Tuffaceous calcareous siltstone, claystone, sandstone, and conglomerate, very light gray to white; fine-grained rocks very thinly laminated to thin bedded, and coarser rocks in medium to thick beds and lenses; grades into diamictite near exposures of Paleozoic rocks. Some of these rocks may be older than Pliocene

**Mmc**  
**Monroe Canyon Limestone**  
 Limestone, medium-light gray to dark gray; composed of very fine to very coarse bioclastic debris in thick to very thick resistant beds. Only the basal 200 feet of the unit is exposed

**Upper Mississippian**

**Mlfu** **Mlfi**  
**Little Flat Formation**  
**Mlfu**, upper or predominantly sandy part: sandy and silty limestone and calcareous sandstone in medium to thick beds; medium to medium light gray, weathering to brownish gray. The limestone consists of fine to very coarse bioclastic debris; the sandstone, of silt- to medium-sized quartz grains and limestone fragments. Nodules and thin layers of dark-gray chert are abundant in the upper half and near the base. 760 feet thick  
**Mlfi**, lower or predominantly silty part: silty limestone and calcareous siltstone containing increasing amounts of fine to very fine quartz sand upward; in laminated thin to very thin beds; dark to medium gray, weathering to bright-yellow, orange, pink, and brown slabs and chips. About 700 feet thick

**MI**  
**Lodgepole Limestone**  
 Limestone, medium-gray, thin- to medium-bedded; coarsely bioclastic and conquinoid to very finely crystalline limestone containing numerous layers of dark-gray chert. 650 feet thick

**Db**  
**Beirdneu Formation**  
 Upper part consists of thinly interbedded calcitic dolomite and dolomitic limestone that are finely laminated and light to dark gray; includes the "contact ledge limestone" of Williams (1948, p. 1141), a medium-bedded to massive, gray, aphantic to finely crystalline cliff-forming limestone, containing some bioclastic layers, especially at top. Lower part consists of silty limestone, sandy limestone, calcareous quartz siltstone, and calcareous quartz sandstone in thin to medium, gray, tan, and pink beds; includes resistant layers of very light gray very finely crystalline limestone. 850 feet thick

**Dh** **Dhu** **Dhl**  
**Hyrum Dolomite**  
 Dolomite, thin- to medium-bedded, finely laminated, dark-blue-gray, weathering dull brown, finely to very finely crystalline, petroliferous smelling; contains numerous beds of light-gray thin- to thick-bedded dolomite and some thin beds of light-gray subaphantic limestone. 1,650 feet thick  
**Dhu**, upper part: marked at the base by a conspicuous unit several hundred feet thick of dolomite weathering very light gray to white  
**Dhl**, lower part

**SI**  
**Laketown Dolomite**  
 Dolomite, very light to medium gray, weathering white, finely to very finely crystalline, in medium to thick beds; includes some coarsely crystalline beds and some coarsely bioclastic, largely coralline, beds. 1,040 feet thick

**QH**  
**Fish Haven Dolomite**  
 Dolomite, gray-gray, weathering dull brown, fetid, very finely to finely crystalline, thin- to medium-bedded; contains recrystallized ghosts of fossils and some silicified brachiopods; unit includes beds of very light gray dolomite and dark-gray chert; lower part may be Middle Ordovician. 1,000 feet thick

**Upper Ordovician**

**Qsp**  
**Suan Peak Quartzite**  
 Quartzite, buff, tan, pink and light-gray, very fine to fine grained, well-sorted, medium-bedded to massive; some thin beds of red-weathering porous sandstone. 1,200 feet thick

**Qgc**  
**Garden City Limestone**  
 Dolomite, medium-crystalline, medium-gray; and dark-gray thin- to medium-bedded chert; grades downward into dark-gray thin- to medium-bedded limestone with coarsely bioclastic, oolitic, and intraformational conglomeratic beds and a few chert layers. 1,350 feet thick

**Qsc** **Qsw**  
**St. Charles Limestone**  
**Qsc**, upper part: dolomite, light- to medium-gray and brown, mostly medium-bedded but includes thin and thick finely crystalline beds, with layers of intraformational conglomerate and chert; includes an upper unit of thin- to medium-bedded dark-gray limestone with dolomite interbeds. 900 feet thick  
**Qsw**, Worm Creek Quartzite Member: vitreous quartzite and white to pink quartzitic arkose that form ledges and cliffs, grading downward to less resistant quartzite, sandy dolomite, dolomite, and arkosic quartzite. Quartzite and arkose are light gray, pink, and tan, medium to thick bedded, partly crossbedded, fine to medium grained; dolomite is light to medium gray, medium to thin bedded, finely to medium crystalline. 900 feet thick

**Qn**  
**Nouan Limestone**  
 Dolomite, medium- to light-gray and blue-gray, thin-bedded, medium to coarsely crystalline; includes units of banded thin- to medium-bedded dark-gray silty limestone, calcareous quartz sandstone, and limestone intraformational conglomerate. 675 feet thick

**Qbo**  
**Bloomington Formation**  
 Mainly shaly micaceous green mudstone and claystone; some interbeds of buff and light-gray, tan- to brown-weathering, locally quartzitic siltstone and very fine grained sandstone. Oolitic limestone and silty limestone beds moderately abundant in upper part; aphantic nodular and concretionary light-gray to pale-green limestone and partly oolitic, partly intraformational, conglomeratic limestone interbeds in middle and lower parts. About 1,000 feet thick

**Qbl**  
**Blacksmith Limestone**  
 Limestone, medium-gray to buff, mainly medium- to thick-bedded, finely to coarsely crystalline; oolites are abundant in some beds, recrystallized fossil shell relicts in others; many of the thicker beds are thinly laminated. About 900 feet thick

**Qbn**  
 Limestone within the SW $\frac{1}{4}$  of the Bancroft quadrangle  
 Thin- to medium-bedded, medium-gray; contains motules and silty layers; silty layers weather tan, yellow, and pink. 500 feet thick

**Qlb**  
 Shale near the Lead Bell mine  
 Mainly green mudstone; some interbeds of black mudstone and light- to medium-gray limestone. 400 feet thick

**Qlk**  
 Limestone, sandstone, and quartzite of the twin knobs north of Windy Pass  
 Upper part is limestone, mainly medium- to dark-gray, medium- to thick-bedded, oolitic and *Girvanella*-bearing, with thin interbeds of tan, red-weathering sandstone; thin unit of green claystone near middle; lower part contains limestone like that of upper part, and also gray, brown-weathering muddy limestone, tan, brown-weathering porous sandstone, and a few layers of green quartzite above the basal dark-blue-gray limestone. 600 feet thick

**Qbs** **pEbw** **pEbk**  
**Brigham Quartzite**  
**Qbs**, quartzite member of Sedgwick Peak; green and tan quartzite, medium-bedded, fine- to medium-grained; some interbedded green, tan, and brown argillite. 300 feet thick  
**pEbw**, argillite member of Windy Pass: phyllitic and phyllitic argillite, green, tan, and brown; fine-grained light-gray quartzite in thin interbeds and a few thick ledge-forming layers; may include rocks of Early Cambrian age. 750 feet thick  
**pEbk**, quartzite member of the cliffs overlooking Kasiska ranch: quartzite, white, tan, and buff in upper and middle parts, purple, pink, and gray in lower part; very fine to very coarse grained, partly conglomeratic; forms ledges and cliffs; base not exposed. More than 1,600 feet thick

**QUATERNARY**

**Upper Cambrian**

**TERTIARY**

**MIDDLE CAMBRIAN**

**MISSISSIPPIAN**

**CARBONIFEROUS**

**LOWER CAMBRIAN**

**DEVONIAN**

**UPPER PRECAMBRIAN**

**SILURIAN**

**PRECAMBRIAN**

----- Contact  
 Dashed where approximately located; dotted where concealed

----- Fault  
 Dashed where approximately located; dotted where concealed

Inclined    Overturned    Vertical    Horizontal  
 Strike and dip of beds

Prospect pit

○ Collapse-depressions in Gem Valley Basalt  
 \*Units newly defined by Bright (1967).

REFERENCES CITED

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Williams, J. Stewart, 1948, Geology of the Paleozoic rocks, Logan quadrangle, Utah: *Geol. Soc. America Bull.*, v. 59, no. 11, p. 1121-1163.