



Based on U.S. Geological Survey Hailey, 1970, and Idaho Falls, 1962
Universal Transverse Mercator Projection

SCALE 1:250 000
CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS
NATIONAL GEODESIC VERTICAL DATUM OF 1929
1986 MAGNETIC DECLINATION FROM THE NORTH VARIES FROM 13° EASTERLY FOR THE CENTER OF THE WEST EDGE TO 10° EASTERLY FOR THE CENTER OF THE EAST EDGE

DESCRIPTION OF MAP UNITS

Quaternary terrane—Sedimentary and volcanic deposits, undivided

Quaternary—Quaternary

TERTIARY VOLCANIC ROCK TERRANES

Miocene and Pliocene volcanic rocks—All Miocene and Pliocene volcanic and sedimentary rocks including rocks of the Magic Mountain eruptive center, the Barbary Basalt and coeval rocks, the Idavada Volcanics, the tuff of Cannonball Mountain, and the Payette Formation

Eocene rocks—Eocene extrusive volcanic rocks, volcanoclastic sedimentary rocks, and smaller hypabyssal bodies of the Challis Volcanic Group

TERTIARY INTRUSIVE ROCK TERRANES

Rhyolite—Mostly hypabyssal bodies, many of which are too small to show

Granite—Pink to light-gray granite in the Sawtooth, Trinity, and Soldier batholiths and many smaller plutons

Diorite complex—Diorite, granodiorite, dacite porphyry, latite, quartz monzonite, and hornblende gabbro in the border areas of major batholiths and many smaller plutons

CRETACEOUS INTRUSIVE ROCK TERRANES

Granite—Granite and leucogranite

Granodiorite—Major phases of the Idaho batholith

Tonalite—Potassium-rich granodiorite and quartz diorite, mainly in the southwestern border areas of the Idaho batholith

PALEOZOIC SEDIMENTARY ROCK TERRANES

Black shale—Divided into two types, based on the relative proportions of dark carbonaceous shale, slate, argillite, and impure carbonate rocks and clastic and calcareous clastic rocks

Argillaceous and arenaceous rocks—Includes the Eagle Creek and Halley Members of the Wood River Formation and equivalent parts of the Dollarhide and Grand Prize Formations

Primarily argillaceous rocks—Includes the Wilson Creek Member of the Dollarhide and Grand Prize Formations, the Milligan Formation, unnamed Devonian and Silurian rocks, and the Trail Creek and Phi Kappa Formations

Flysch—Mainly carbonate and sandstone turbidite. Includes the McGowan Creek and Copper Basin Formations

Drummond Mine Member of the Copper Basin Formation—Shown separately because of its importance in control of mineralization

Carbonate rocks—Divided into two types, based on the relative proportions of limestone, dolomite, silty limestone, quartzite, sandstone, siltstone, and mudstone

Primarily carbonate rocks—Includes the Snake Canyon, Bluebird Mountain, Arco Hills, and Saturday Mountain Formations and the Ella Marble

Carbonate rocks—Includes the White Knob Limestone, the Surret Canyon, South Creek, Scott Peak, Middle Canyon, and Jefferson Formations, and the Laketown and Fish Haven Dolostones

Quartzite—Divided into two types, based on the relative proportions of quartzite and sandstone to shale, conglomerate, and sandy dolostone

Quartzite and other rocks—Includes the Clayton Mine Quartzite and the Wilbert Formation. The Wilbert Formation is included with sedimentary rock terranes although its age is considered Early Cambrian and Late Proterozoic (?)

Quartzite—Includes the Kinikinic Quartzite and the Summerhouse Formation

PROTEROZOIC OR PALEOZOIC ROOF PENDANTS

Metamorphic rock inclusions within Idaho batholith

MIDDLE PROTEROZOIC METAMORPHIC ROCK TERRANE

High-grade metamorphic rocks and felsic intrusive rocks in the Pioneer gneiss dome

Contact—Approximately located

Gradational contact representing facies change

High-angle normal fault—Dashed where approximately located, dotted where concealed; ball and bar on downthrow side

Low-angle normal fault—Dashed where approximately located, dotted where concealed; hadhanded on upper plate

Thrust fault—Dashed where approximately located, dotted where concealed; sawtooth on upper plate

Younger-over-older fault—Dashed where approximately located, dotted where concealed; open teeth on upper plate. Fault is probably a Mesozoic thrust fault that was later reactivated as a low-angle normal fault

Strike-slip fault—Showing relative motion. Dashed where approximately located, dotted where concealed

REFERENCES

Worl, R.G., Kilgusard, T.H., Bennett, E.H., Lank, P.K., Lewis, R.S., Mitchell, V.E., Johnson, K.M., and Snyder, L.D., 1991, Geologic map of the Hailey 1° x 2° quadrangle, Idaho: U.S. Geological Survey Open-File Report 91-340, scale 1:250,000.

Worl, R.G., Wilson, A.B., Smith, C.L., Kleinkopf, M.D., and Sykes, R.C., 1989, Mineral resource potential and geology of the Challis National Forest, Idaho: U.S. Geological Survey Bulletin 1873, 101 p.



MAP SHOWING GEOLOGIC TERRANES OF THE HAILEY 1° x 2° QUADRANGLE AND THE WESTERN PART OF THE IDAHO FALLS 1° x 2° QUADRANGLE, SOUTH-CENTRAL IDAHO

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Geology simplified from Worl and others (1989) and Worl and others (1991).
Geologic terranes compiled by Ronald G. Worl and Kathleen M. Johnson, 1991. Cartography by Lori D. Snyder and Louisa R. Stanford on a computer-aided cartographic system at the Idaho Geological Survey, Moscow, Idaho.