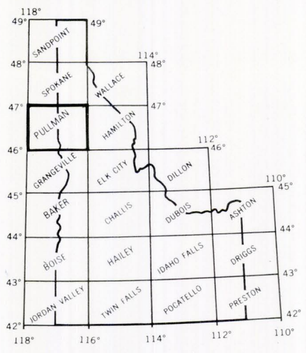
Idaho Department of Lands
Bureau of Mines and Geology

Published and sold by
Idaho Bureau of Mines and Geology
Moscow, Idaho 83843

Surficial Geology Map Series
Pullman 1° x 2° Quadrangle
Othberg

Base by U.S. Geological Survey, 1974

1960 magnetic declination from true north varies from 20°30' easterly for the center of the west edge to 19°45' easterly for the center of the east edge.



Index to 1:250,000- scale maps by USGS.

Printed by Joslyn and Morris, Inc. — Boise

Scale 1:250,000

5 0 5 10 15 20 Statute Miles
5 0 5 10 15 20 25 30 Kilometers

Contour Interval 200 Feet

Field mapping supported in part by the U.S. Geological Survey.

Surficial geology mapped 1980-1981. Bedrock distribution adapted from Rember, W. C. and E. H. Bennett, 1979, Geologic map of the Pullman quadrangle, Idaho: Idaho Bureau of Mines and Geology Geologic Map Series, scale 1:250,000.

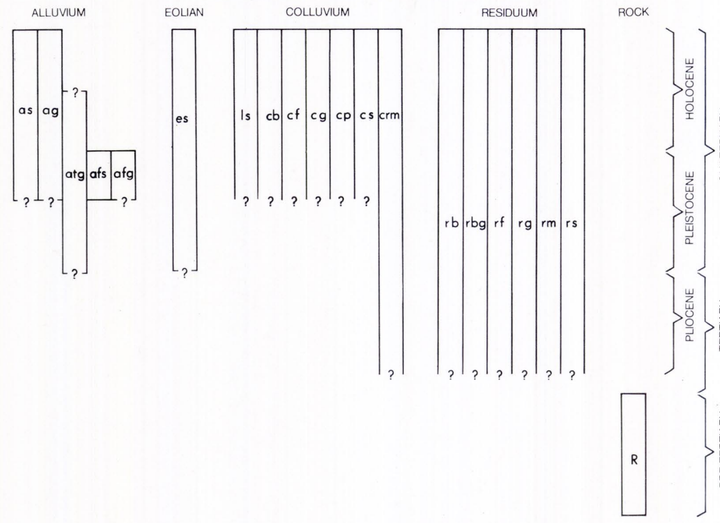
SURFICIAL GEOLOGIC MAP OF THE PULLMAN QUADRANGLE, IDAHO

by

Kurt L. Othberg

1982

CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

- as Alluvial sand, silt, and clay: brown, fine-grained, stratified flood plain deposits. Thickness: 2-5 meters.
- ag Alluvial sandy gravel: gray to black, pebble- and cobble-sized stream channel gravel with variable sand matrix. Clasts chiefly rounded basalt. Thickness: 2-5 meters.
- atg Alluvial sandy gravel and sand: light gray sand and granule gravel terraces near granitic terrain. Black basaltic gravel terraces near basaltic terrain. Thickness: 2-5 meters.
- afs Alluvial slack-water sand and silt from catastrophic floods: buff, rhythmically bedded and graded sand and silt deposited by slack waters of late Pleistocene catastrophic floods. Thickness: 3-5 meters.
- afg Alluvial catastrophic flood gravel: gray, pebble- and cobble-sized gravel deposited by high-energy waters of catastrophic flood. Thickness: 10-20 meters.
- es Eolian silt: brown, massive silt with intercalated layers of silty clay and clay paleosols. Thickness: 1-75 meters.
- ls Landslide debris: nonsorted, unstratified slump and slide debris. Chiefly coarse basalt fragments but locally may include grus. Includes landslide scarps with little or no debris, and blocks of rotated or translationally moved bedrock.
- cb Basaltic gravel colluvium: brown to black, coarse gravel with silt and sand matrix. Clasts chiefly angular basalt. Includes cobble- and boulder-sized talus mantling base of canyon slopes. Thickness: 1-10 meters. Overlies fractured basalt bedrock. Basalt outcroppings abundant along steep canyon walls.
- cf Felsic gravel colluvium: brown, gravelly silt and sand. Clasts chiefly angular andesite pebbles and cobbles. Andesite outcrops locally. Thickness: 1-10 meters.
- cg Granitic sand colluvium: gray-brown coarse sand with a silt and clay matrix. Sand grains cheifly quartz, muscovite, and degraded feldspar. Thickness: 1-10 meters. Outcrops of granite are abundant in the Clearwater Canyon and sparse elsewhere.
- cp Phyllitic gravel colluvium: gray, micaceous, gravelly silt and clay. Clasts include angular phyllite, slate, greenstone, and other metamorphic and sedimentary lithologies. Thickness: 1-10 meters. Bedrock outcroppings locally abundant.
- cs Schist sand and gravel colluvium: gray to brown sand and gravel in a micaceous silt and clay matrix. Clasts include angular schist pebbles and cobbles, and some gneiss, amphibolite, and mylonite. thickness: 1-10 meters. Bedrock outcroppings locally abundant.
- crm Sandy colluvium and clayey silt residuum: complex of relatively steep colluvial surfaces and more gently sloping residual surfaces. Steeper surfaces are underlain by 1 to 7 meters of yellowish brown, pebble- and cobble-sized gravel in a sandy silt matrix. Gravel clasts are angular-platy where bedrock is highly foliated, and angular-blocky where bedrock is more massive. Gentle slopes and other surfaces, protected from erosion, are underlain by 3 to 7 meters of light brown silt and clayey silt. Gravel content increases with depth and is greater in areas of quartzite bedrock. Clay content increases in areas of siltite, phyllite, and schist. Many surfaces are mantled with a dark brown, volcanic ash, silt loam soil. Fractured, weathered bedrock outcrops locally on some ridges and valley sides where colluvium is thin.
- rb Basaltic clay residuum: brown and reddish brown clay, silty clay, and silty sand. Coarse textures increase with depth to contact with fractured basalt. Includes a few clasts of spheroidally weathered basalt. Thickest on interfluves. Locally grades into gravelly residuum and colluvium on valley slopes. Thickness: 2-5 meters. May be overlain by 1 to 2 meters of soil developed in silt of eolian and volcanic ash origin.
- rbg Basaltic gravelly residuum: brown and reddish brown, gravelly silt and clay. Clasts chiefly subangular basalt pebbles and cobbles. Gravel content increases with depth to contact with fractured basalt. Grades into clayey residuum toward interfluves. Includes basaltic gravel colluvium on steeper slopes. Thickness: 2-4 meters. May be overlain by 1 to 2 meters of soil developed in silt of eolian and volcanic ash origin.
- rf Felsic clay residuum: brown clay, silty clay, and silty sand. Coarse textures increase with depth to contact with andesite. May be overlain by 1 to 2 meters of soil developed in silt of eolian and volcanic ash origin.
- rg Granitic clay residuum: light brown and reddish yellow clayey silt and silty sand. Grades with depth into grus, which may be several meters thick. Granite bedrock outcrops on some ridges and steep valley slopes. On more gentle slopes, residuum covers hard granite to a depth of 5 meters or more.
- rm Metamorphic rock residuum: light brown silty clay and silty sand. Subangular pebbles and cobbles of foliated metamorphic rocks increase with depth. Metamorphic bedrock outcrops on some ridges and steep valley slopes. On more gentle slopes, residuum covers hard rock to a depth of 5 meters or more.
- rs Clay saprolite: yellowish red and brown clay in upper part; clayey sand, grus, massive kaolinite, or granule quartz gravel and sand in lower part. May contain relict lithologies of granite, basalt, diamicton, clay, sand, or gravel. Locally consists of thick kaolinitic clay deposits. Sesquioxide accumulations in veins and layers occur locally at depths of 3 meters or more. Saprolite thickness ranges from 3 meters to more than 8 meters. Saprolite is commonly overlain by 1- to 2-meter-thick gravel deposit consisting of rounded quartzite pebbles and cobbles. Surface of unit is mantled with a 1-meter-thick dark brown silt loam to silty clay loam soil derived from volcanic ash.
- R Rock: bedrock at or near the surface of some ridgetops. Soil cover generally less than 1 meter thick.

———— Contact: approximately located. Contacts separating surficial deposits are commonly gradational.

Cartography by Graphics