

Peridotite of Flume Creek

DESCRIPTION OF MAP UNITS

Igneous Rocks

TMzg MESOZOIC GRANITIC ROCKS (Mesozoic to Tertiary)
Primarily quartz monzonite and granodiorite but includes granite to diorite with local aplite, alaskite, and pegmatite. Fine to coarse grained; equigranular to coarsely porphyritic. Biotite-hornblende quartz monzonite abundant. Commonly crops out in tors. Most of larger plutons probably Mesozoic in age, but unit probably includes Tertiary intrusive rocks.

Igneous and Metamorphic Rocks

MzPzsp ULTRAMAFIC ROCKS, MOSTLY SERPENTINIZED (Paleozoic to Mesozoic)
Dominantly harzburgite with subordinate dunite and minor clinopyroxenite, generally referred to as peridotite. The peridotite is 10 to 25 percent serpentinized in the central and western portions and 80 to 100 percent serpentinized in the eastern portion of the mapped area, but original minerals can generally be distinguished. Primary minerals are dominantly olivine with subordinate orthopyroxene (enstatite) and local clinopyroxene. Accessory chromite (less than 1 percent) is found in the Mount Sorenson body. Lizardite and clinochrysotile mixtures are the most common serpentines.

MzPzd DIABASE (Paleozoic to Mesozoic)
Pods of diabase are irregular in size and distribution and are found throughout the peridotite body. The diabase is equigranular within the size range of 1 to 2 mm. Subhedral plagioclase originally made up 40 to 65 percent of the mineral mode with differing proportions of clinopyroxene and hornblende comprising the rest of the rock. Alteration of the diabase is common with secondary minerals including tremolite, penninite, biotite, magnetite, and sphene. Diabase pods are probably tectonic inclusions that may have originally been dikes.

MzPzbg METAMORPHOSED BASALT AND GABBRO (Paleozoic to Mesozoic)
Metamorphosed basalt is mostly altered fine-grained porphyritic basaltic rocks that are probably tholeiitic. Includes some diabase, mafic tuff, and breccia. Locally has a cataclastic texture and is metamorphosed to prehnite-pumpellyite facies. Locally pillow structures are present. Metamorphosed gabbro is dark greenish black; coarse to fine grained. Includes some metadiabase and metahornblendite. Principal primary minerals are hornblende and plagioclase; principle secondary minerals are chlorite, epidote, blue-green amphibole albite, sphene, and rutile. Locally cumulate texture in the gabbro is present.

Pzg GREENSTONE (Paleozoic)
Dark green mafic rocks of igneous origin, mostly massive but locally foliated. In places contain amygdules and pillow. Includes greenschist, minor green and pink quartzite, chert, phyllite, and small areas of serpentinized rocks; in the Kechumstuk Creek area includes gabbro and basalt that is relatively unaltered.

Metamorphic Rocks, Stratigraphic Relations Unknown

Pq PERMIAN METASEDIMENTARY (Permian)
Includes phyllite, metaconglomerate, chert, limestone and (or) marble, graywacke and metagraywacke. Some areas of unmetamorphosed rocks are present, but most areas are slightly metamorphosed but may be metamorphosed as high as lower greenschist facies. Brachiopods found in quartzite at two localities south of Seventymile River and are Permian in age and may correlate with the Tahkandit Limestone north of the Tintina fault in the Charley River quadrangle.

Pzq PALEOZOIC GREENSCHIST-FACIES METAMORPHIC ROCKS (Paleozoic)
Includes quartzite, marble, quartz phyllite, phyllite, and quartz-graphic schist, quartz-muscovite schist, chlorite schist, calcareous schist, and greenstone. Locally includes cataclastic rocks and hornfels. Includes retrograded gneissic rocks, particularly near granitic contacts. Biotite present locally but mostly not abundant. Garnet rarely present. Mostly greenschist facies but may locally include rocks of epidote-amphibolite or amphibolite facies. Poorly persevered crinoid columnals found in marble at several localities.

um UNMAPPED AREA

Other

GEOLOGY OF AN ALPINE-TYPE PERIDOTITE IN THE MOUNT SORENSON AREA, EAST-CENTRAL ALASKA

by

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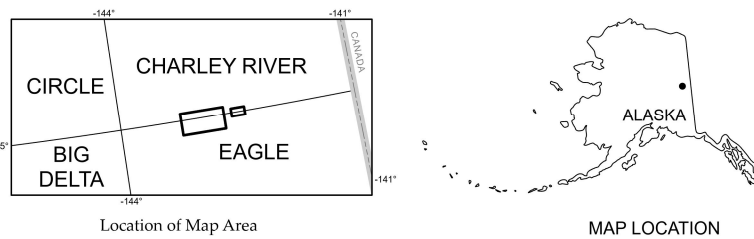
1981

EXPLANATION OF MAP SYMBOLS

- Contact- Long-dashed where approximately located
- ==> Fault- Arrows indicate apparent direction of relative movement
- ▲³⁵ Strike and dip of foliation
- ↗⁵ Bearing and plunge of lineation
- ▲ Outcrop of chert
- ◆ Quartz-carbonate vein

Affiliations:

- ¹ United States Geological Survey
- ² Cache Creek Exploration Company, Reno, Nevada
- ³ Skyline Labs., Inc., Wheat Ridge, Colo.
- ⁴ Hawley and Hawley Assayers and Chemists (Division Skyline Labs., Inc.), Tucson, Ariz.



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Projection:

Universal Transverse Mercator Zone 7N

Datum:

North American Datum of 1927

GIS data by:

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GIS data review by:

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This map was created with data from GeMS (Geologic Map Schema) converted from the original cartographic product.

Basemap streams and waterbodies from:

National Hydrography Dataset, U.S. Geological Survey, Reston, Virginia. 2002-2016

Basemap hillshade from:

U.S. Geological Survey, EROS Data Center, 2013, Digital Elevation - Interferometric Synthetic Aperture Radar (IFSAR) - Alaska