

Map Unit (2): Intrusives

The claims overlie part of the intrusives of Greenwood stock which consist mostly of granodiorite. Small crops of diorite, in the Spokane and Elkhorn claims, are seemingly contained about the margins of the stock. Contact relations of the diorite and granodiorite are not exposed. In the Spokane claim, the diorite is veined by quartz and calcite belonging to the mineralization of the nearby ground.

The granodiorite is light coloured, equigranular and compared of potash and plagioclase feldspars, quartz, hornblende, and biotite. Femic minerals amount to 15 to 20%. quartz about 25% and feldspars to the remainder. Laths of clear plagioclase indicate partial alteration and recrystallization. Hornblende, the major femic, is part chloritized. Biotite, is in varying proportions, less than 5%, and mostly unaltered.

The granodiorite shows some variations towards its contact; more replacement of hornblende by chlorite, tendency to foliation marked by hornblende, a decrease in femic components, and phases of intergrowth of feldspars and quartz in places. Sheared bands of granodiorite near the contact are chloritized and lined with epidote. A contact, or adjacent phase of the

Map Unit (3): Dykes and Sills

The unit includes Tertiary intrusives which take the form of dykes, sills and plugs. They can be referred to two types, - felspar porphyry; and a basic lamprophyre.

The felspar porphyry is dark grey, fine crystalline with large insets of clear plagioclase: the ground is composed of felspar and femics, with a fine felt of interlocking amphibole laths, and set with flakes of biotite in varying proportion. The felspar-porphyry forms inclined sills along the north wall of Providence Creek, in the Admiral claim: other exposures in the Freemont and Admiral claims may represent plugs. The intrusive relations of the felspar porphyry are evident - as sills in Unit (1) with lower and upper contact and baked wall exposed along Providence Creek, and exposures of discrete mass within the granodiorite.

The generalized term, lamprophyre, applies to dyke rocks exposed in Freemont and Warwick claims. It is composed of felspar set in a choritic base, amphibole in felted growth of interlocking spindles, and coarse, lustrous flakes of biotite of sub-idiomorphic outline. Marginal facies of the dykes appear as greenish, chloritic, femic felt; and selvages are black and aphanitic. The lamprophyre occurs in dykes, cutting granodiorite and chert of Unit I. In one exposure

it is adjacent to felspar porphyry, either in contact or
emplaced within a few feet.

Structure

The outline of the granodiorite intrusive is closed to the north and east. Its contact crosses the south boundary of the Warwick claim, at elevation 3,450 feet and descends on a northwest trend to levels about 2,500 feet subsurface in the second Providence mine. Diorite outlies the north closure of granodiorite.

Cross joints in the granodiorite trend 010° to 020° : inclined diagonal joints are less prominent. Veining with mineralization follows trends 040° to 060° , and 010° to 020° - however inferences on the relation of jointing, veining, and ore deposits are left open at present view.

Mineralized veins in the Elkhorn and Providence mines were dislocated, by low angle slips and faults, and offsets to 80 feet (McNaughton, 1945). A fault break between diorite and Unit (1) is inferred, on ground in Claim L 2068, 1,000 feet north of the east corner of the Spokane claim.

Lack of exposure, and indistinct and indeterminate bedding in Unit (1), allows only tenuous observations for other structures. A synform of north-northwest trend with parallel faulting is inferred to cross claim L 2289 : the structure may terminate along the margin of the granodiorite on the south. Faulting along Providence Creek may explain discontinuity, or lack of exposure of felspar prophyry sills to the south.

granodiorite, is dense, fine crystalline and granular, with insets of quartz, chloritized traces of hornblende, and sericitized fringes of biotite.

The diorite is grey, and dark coloured, composed of opaque felspar, and black hornblende in intergrown and sub-idiomorphic forms: colour index is in the range of 45 to 55.

Pyroxenite, occurs in a small exposure in the west quarter of the Providence claim.