

1490 0004

DIVIDE MINING DISTRICT

(87) 1.
Item 4

Location and Access. The Divide mining district is at Gold Mountain 5 miles south of Tonopah along U. S. Highway 95 in T. 2 N., R. 42 E. in northeast Esmeralda County (see Army Map Service, Goldfield and Tonopah topographic quadrangle maps).

History and Production. Silver was discovered in 1917. The area earlier had been explored unsuccessfully for gold, however this activity accidentally lead to the discovery of the silver deposits. Over 3 million dollars worth of ore has been produced with values principally in silver with minor gold and lead. Much of the production came from the Tonopah Divide mine.

Previous Work. Knopf (1921) described the geology of the district.

The Rocks. In the district, Miocene (?) Fraction rhyolite breccia of the Siebert formation has been intruded by Divide andesite and Oddie rhyolite. These rocks are capped by Pliocene (?) latite flows.

The Fraction rhyolite breccia is massive, and consists of angular fragments of andesite and rhyolite in a groundmass of broken quartz and feldspar crystals and sporadic flakes of biotite. A few beds of white tuff and flows of rhyolite are interstratified with the breccia. Although the breccia and tuff are commonly soft, locally they have been silicified to a hard, resistant rock.

Intrusive bodies of Oddie rhyolite are present throughout the district. The rhyolite is a white to pale cream rock containing abundant quartz and sanadine, and some biotite, phenocrysts. The contacts show that much, if not all, of the rhyolite is intrusive, however the prominent flow banding and streaking, the selvages of glass along contacts, and the aphanitic groundmass suggests that the rhyolite was intruded at shallow depths and cooled rapidly. Knopf (1921) provisionally considered the Oddie rhyolite to be older than the Divide andesite, although they have not been found in contact.

A stock of Divide andesite crops out southeast of the Tonopah Divide mine. The andesite is a gray, porphyritic rock consisting of glassy sodic labradorite ($Ab_{50}An_{50}$) and biotite phenocrysts in a cryptocrystalline groundmass ^{of} plagioclase, biotite, and accessory magnetite, apatite, and zircon. Dikes of andesite also crop out in the district.

Structures. Numerous faults cut the rhyolite breccia. The faults form an extremely complex pattern, in this respect being a southward extension of the faulting at Tonopah.

Veins. The silver-bearing veins are zones of fracturing and shearing in the rhyolite breccia. Most of the shear zones trend north and are vertical, but a few have other random trends. The walls of the zones usually are well defined.

The primary vein material is leanly mineralized fragments of rhyolite breccia containing a small amount of fine, disseminated pyrite and minor thin veinlets of quartz. The rarity of quartz and silicification contrasts with the abundance of introduced silica in the Tonopah district.

Supergene enrichment has resulted in the downward concentration of silver as "sooty" argentite, which subsequently has been almost entirely converted to cerargyrite. The cerargyrite occurs as masses along irregular seams of sericite.

Molybdenum Minerals. Molybdenum minerals occur in one area of the Tonopah Divide mine, but have not been reported elsewhere in the mine or district. A considerable amount of bright yellow molybdenite is present as aggregates of minute needles ⁱⁿ the 165-foot level at the point where the discovery crosscut cut the main lode. The molybdenite disappears with depth, and at the corresponding position on the next lower level there is abundant powellite.

from Mr. Schilling's notes (1968)