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NEVADA WONDER MINE

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Item 16

Location and Access. The Nevada Wonder (Wonder) mine is in the Wonder mining district near the south end of the Clan Alpine Mountains in Secs. 4 (?) and 9 (?), T. 18 N., R. 35 E. in west-central Churchill County (see Army Map Service, Reno topographic quadrangle map), 11 miles north of the junctions of U. S. Highway 50 and State Highway 23.

History and Production. The Wonder district and the deposits of the Nevada Wonder mine were discovered in 1906, and development of the mine began that year. From 1911 to 1919 when the mine closed, it produced over 390,000 tons of ore, the ore assaying about 18 ounces of silver and 0.25 ounces of gold per ton during the first half of the period of mining. Almost the entire production of the district came from the Nevada Wonder mine.

Development. The mine is developed to a depth of more than 2,000 feet and horizontally to an extent of 3,400 feet (see Schrader, _____ for plans of the workings). Workings total more than 66,000 feet, which is very large in relation to the amount of ore produced.

Previous Work. Schrader (_____) has described the geology of the mine and district in some detail.

The Rocks. The veins of the Nevada Wonder mine are almost entirely in the Tertiary Wonder rhyolite, which is the most widely distributed and oldest rock unit in the Wonder district. At the mine, the rhyolite is over 2,000 feet thick, its lower limits not being exposed. It is remarkable uniform throughout its thickness. The rhyolite apparently was deposited as flows. Phenocrysts, and fragments of phenocrysts, of quartz, orthoclase, andesine-oligoclase, and biotite with accessory magnetite, apatite, and zircon, and angular fragments of slate, basalt, granite, and other rocks, occur in a microcrystalline to cryptocrystalline devitrified groundmass. It actually ranges from a quartz latite to a trachyte. Nearly everywhere the feldspars are altered to sericite, calcite, and kaolinite, and the biotite to chlorite.

Dacite, rhyolite, andesite, and basalt intrude the Wonder rhyolite. All the intrusive rocks except the basalt are "pre-vein".

Veins. In the Wonder district there are over 50 veins along fractures and shear zones in the Wonder rhyolite, and to a minor extent in the other Tertiary volcanic rocks. Nearly all the veins are roughly parallel, trending northwest and commonly dipping steeply. The veins are less than a foot to over 40 feet wide, have been worked to depths of more than 2,000 feet, and are up to 3 miles long. There are 4 parallel veins at the Nevada Wonder mine, having a lateral extent of over a mile.

The veins consist principally of quartz, and lesser adularia, gouge, and fragments of wall rock. Fluorite is present locally. In places, the veins are fairly well banded.

Pyrite, chalcopyrite, and minor galena and sphalerite occur in the unoxidized portions of the vein. Here, argentite is the principal ore mineral, and the gold values are associated with the argentite.

The veins have been deeply oxidized, oxidation in the Nevada Wonder mine extending quite uniformly to a depth of 1300 feet. The gold and silver values are chiefly in the quartz-adularia vein material, but also are present as replacements in the gouge and wall rock. The silver occurs chiefly as cerargyrite, stephanite, embolite, iodobromite, and iodyrite. The gold occurs as native gold and in combination with argentite. Copper, lead, and zinc minerals are almost completely absent in the oxidized zone.

Molybdenite Minerals. Wulfenite occurred from 800- to 1,300-foot level in the Nevada Wonder mine in the Extension ore shoot which is in the oxidized portion of the vein. Molybdenite reportedly is present in the district (Schrader, ____), but its occurrence is not described.

*from John Schilling's Notes
(1968)*