# UNIONVILLE DISTRICT

## LOCATION

The Unionville district is located on the east flank of the Humboldt Range in T29 and 30N, R34E. It is accessible by Nevada State Highway 400 and numerous dirt roads leading from the highway.

## HISTORY

According to Johnson (1977) the Unionville district was first organized as the Buena Vista district in 1861. The town of Unionville was the county seat of Humboldt County from 1861 to 1873. The Arizona Mine, the main silver producer in the district, was discovered in 1862 and worked on an intermittent basis, until 1959. The production in the early days from the Arizona Mine is variously estimated to be between $5 and $13 million in silver. Tungsten was produced from the Arizona Mine between 1919 and 1959. A number of other silver deposits including the Inskip Mine, and the Wheeler Mine were worked for silver during the period between 1861 and 1880.

Antimony mineralization was discovered at the Black Warrior Mine in 1870. The mine has produced approximately 83 tons of antimony metal during two main periods of production, 1916-18 and 1940-41 according to Lawrence (1963).

Several other small mines and numerous prospects are located in the Unionville district. The Marigold Mine has produced a small amount of gold ore and the Pflueger Mine has produced a small tonnage of silver-lead ore. Minor production of placer gold has been derived from placer-gravels in Buena Vista Canyon.

## GEOLOGICAL SETTING

All of the rocks exposed in the district are of Triassic age. The oldest unit is the Rochester Rhyolite and intrusive rhyolite porphyry of the Koipato Group, which is overlain unconformably by clastic and carbonate rocks of the Prida Formation which in turn is overlain by carbonate rocks of the Natchez Pass Formation. The district is located on the faulted east limb of a major anticline. The carbonate rocks are intruded by diabase sills. The Triassic rocks are cut by numerous north to northwest trending normal faults.

## ORE DEPOSITS

The ore deposits in the Unionville district occur in two distinct geologic settings, as veins and replacement deposits in the lower clastic and shaly limestone member of the Prida Formation and as veins in the Rochester Rhyolite and rhyolite porphyry.

At the Arizona Mine, flat-lying quartz-calcite veins follow bedding in shaly, carbonaceous limestone of the Prida Formation near its contact with rhyolite porphyry of the Koipato Group. The veins range in thickness

from a few cm to 3 m but averaged less than 1 m thick. Ore minerals include pyrite, jamesonite, tetrahedrite, scheelite, silver haloids and copper carbonates. Argentite, covellite, chalcocite and native silver are also reported to be present in the ores. Some high-grade scheelite occurs in vein calcite.

At the Wheeler Mine, the workings explore the contact between the Prida Formation and rhyolite of the Koipato Group. Narrow (1-30 cm) quartz veins occur along bedding planes in thin-bedded, silty, carbonaceous limestone of the Prida Formation. They contain pyrite, sphalerite, jamesonite and tetrahedrite. Presumably the high-grade ore mined in the early days contained abundant acanthite as sooty coatings and was supergene enriched.

At the Lucky Dog Mine, a quartz vein in limestone of the Prida Formation, trends N-S, dips 35°E and is parallel to bedding in the limestone. The vein is approximately 1/2 meters thick and occurs about 10 m above the contact between the Prida Formation and Rochester Rhyolite. The vein contains pyrite, sphalerite, galena, tetrahedrite and various base-metal oxide minerals.

The Marigold Mine has been described in detail by Cameron (1939). Quartz veins, 1/3 to 1 m wide cut Rochester Rhyolite. According to Cameron they contain adularia, quartz, pyrite, sphalerite, bournonite, boulangerite and gold. Quartz seen on the dumps contained iron and manganese oxides, pyrite and oxide copper minerals. The main adit is caved and the mine has been idle for many years.

The Inskip Mine is located on quartz and calcite stringers in silicified rhyolite porphyry of the Koipato Group. The silicified rhyolite porphyry contains pyrite, but no other minerals were found during a brief examination of the property.

The Pflueger Mine in Cottonwood Canyon, is located on a quartz-barite vein which cuts sericitized ignimbrite of the Rochester Rhyolite. Fine-grained base-metal sulfides occur in the barite. The quartz seen on the dump contained only pyrite. The mine has been idle for many years.

The Black Warrior Mine in Jackson Canyon is located on several quartz veins which cut both Rochester Rhyolite and clastic rocks of the Prida Formation. The veins strike N40W, dip 65-80°SW and range from 10-40 cm wide. The wallrocks adjacent to the veins are pyritized and silicified. The quartz veins contain stibnite, pyrite, sphalerite and tetrahedrite plus various oxide minerals. The property has been idle since the 1940's.

## GEOCHEMISTRY

Samples from the Arizona Mine contained over 30 ounces of silver, anomalous arsenic, copper, molybdenum, lead, antimony, tungsten, zinc, and 0.25 ppm gold. A sample collected at the Wheeler Mine contained almost 100 ounces of silver and anomalous manganese, cadmium, copper, molybdenum, lead, antimony, zinc and 0.60 ppm gold.

A sample from the Lucky Dog Mine, is highly anomalous in silver (16 ounces/ton) and contains anomalous cadmium, copper, molybdenum, lead, antimony, zinc and 0.55 ppm gold. Quartz from the Marigold Mine is anomalous in silver, barium, cadmium, chrome, copper, lead (2 percent), antimony, zinc and contained 0.35 ppm gold. A sample from the Inskip Mine is anomalous in silver, barium and lead. A sample collected at the Pflueger Mine contained over 30 ounces of silver per ton and is anomalous

in arsenic, barium, copper (2 percent), molybdenum, lead, antimony, strontium (1/2 percent), zinc and contained 0.20 ppm gold.

Quartz from the Black Warrior Mine is anomalous in silver, arsenic, copper, lead, and zinc, contains over 2 percent antimony and 0.20 ppm gold.

SELECTED REFERENCES

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