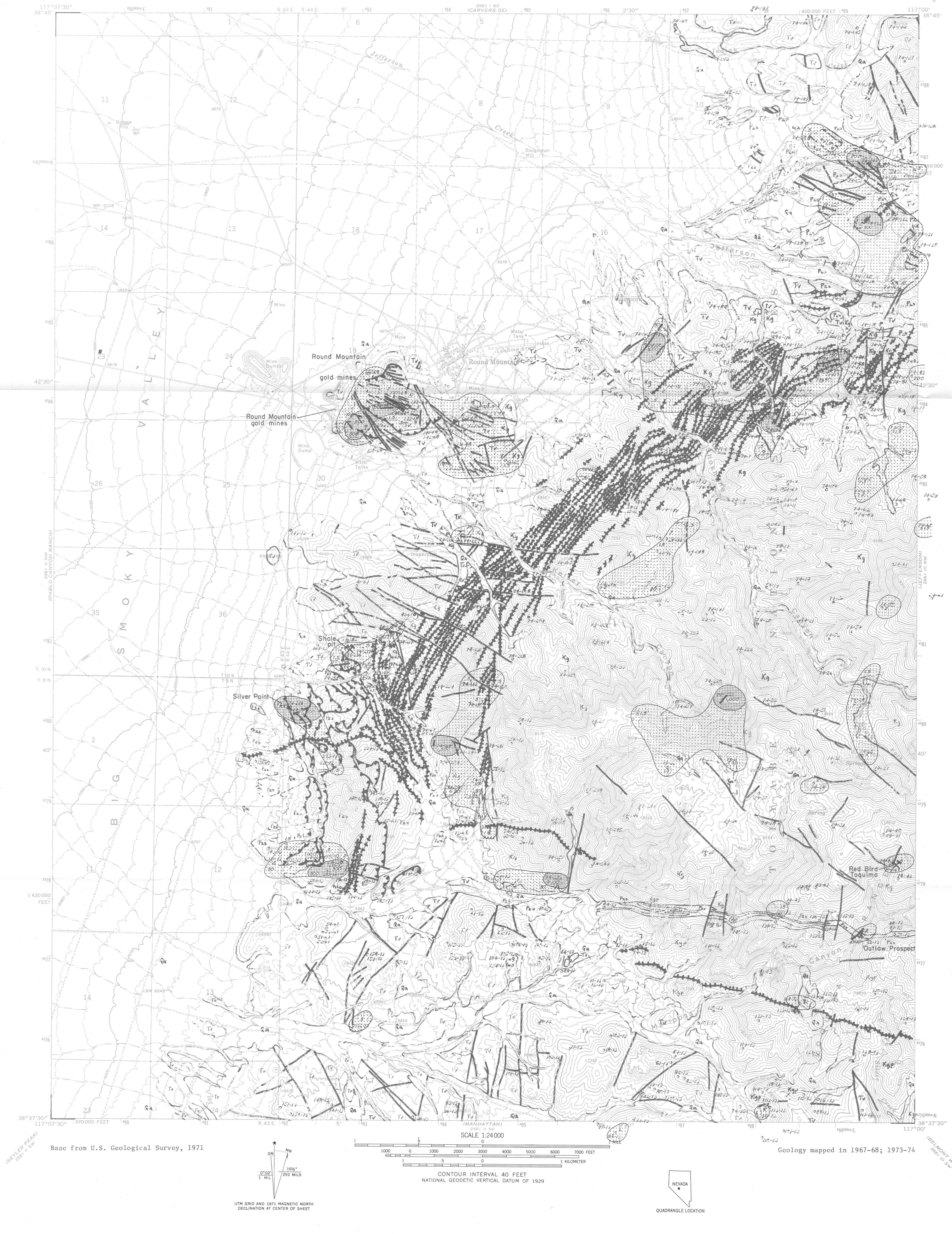
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS FIELD STUDIES MAP MF-835E
Ag, ROUND MTN. QUAD., NEVADA



Base from U.S. Geological Survey, 1971

Geology mapped in 1967–68; 1973–74

EXPLANATION

Qa	ALLUVIUM (QUATERNARY)
Tv	VOLCANIC ROCKS (TERTIARY)
Td	DIORITE (TERTIARY)
	RHYOLITE (TERTIARY)
Kg	GRANITE (CRETACEOUS)
Kgp	PORPHYRITIC GRANITE (CRETACEOUS)
Pzs	SEDIMENTARY ROCKS (PALEOZOIC)
	HIGH-ANGLE FAULT
	LOW-ANGLE FAULT
	CONTACT
123-73	SAMPLE LOCALITY

ISOPLETHS--Separate areas characterized by the reported element concentrations. Number shows silver content in parts per million. L, detected below limit of determination

- Ag not detected
- L-50 ppm Ag
- 100-1,500 ppm Ag

DISCUSSION

This series of geochemical maps shows the distribution and abundance of iron, copper, lead, zinc, molybdenum, silver, antimony, arsenic, tungsten, barium, potassium, and boron in the Round Mountain quadrangle, Nye County, Nevada. These maps are intended to provide help in exploration for possible concealed mineral deposits in the quadrangle.

Samples were collected from bedrock throughout the quadrangle to assess the abundance and distribution of metals and other elements that outline mineralized systems and may indicate exploration targets. The samples were collected from the most intensely mineralized rock in any given locality, and are from shear or fault zones, fractures, jasperoid bodies, veins, and altered rocks. None of the samples necessarily represents a body of rock large enough to be mined economically.

Iron-oxide stain is the most conspicuous effect of mineralization in the rocks of the quadrangle, and most of the geochemical samples were collected because of the presence of iron-oxide stain. The iron oxide is almost certainly the result largely of weathering of pyrite in mineralized rocks. Accordingly limonite pseudomorphs after cubic pyrite are widespread.

All the elements discussed were determined by the semiquantitative spectrographic method by H. G. Neiman, M. W. Solt, and J. C. Hamilton. The elements were reported in the series 1, 0.7, 0.5, 0.3, 0.2, 0.15, 0.1, and so on. Approximate lower limits of determination for the elements reported here are: Fe, 0.001 percent; K, 0.7 percent; Cu, 1 ppm (parts per million); Pb, 10 ppm; Zn, 300 ppm; Ag, 0.5 ppm; Mo, 3 ppm; Sb, 200 ppm; As, 1,000 ppm; W, 100 ppm; Ba, 2 ppm; and B, 20 ppm. Under favorable conditions greater sensitivity is attainable for some of these elements.

Areas of probably anomalous values, and areas of highly anomalous values are outlined on the map. I emphasize that the isopleth lines surround areas in which the collected samples show the indicated values; most rock adjacent to and between sample localities may contain much lower elemental values than do the collected samples.

Most of the geochemical samples collected in the Round Mountain quadrangle contain less than 0.5 ppm silver, probably a background value for the types of rocks sampled. A few samples contain detectable silver, but below the limit of determination. Samples that contain 0.5-50 ppm are numerous, located mostly in the vicinity of the northeast-striking Oligocene rhyolite dike swarm; along the northwest-trending faults in the northeast corner of the quadrangle; and along the northwest-trending faults in the central part of the quadrangle, particularly on Round Mountain and to a lesser extent near faults farther southeast. The highest amounts of silver (100-1,500 ppm) are in samples from some of the veins on Round Mountain, from the vicinity of the northwest-trending faults in the northeast corner of the quadrangle, from the vicinity of the small diorite stock east of Round Mountain, from the vicinity of a postulated stock south of Round Mountain, and from a northeast-striking vein in the zone of northwest-striking faults in granite 3-5 mi (4.5-8 km) southeast of Round Mountain.

The distribution of anomalously high silver is similar to that of iron, copper, lead, and zinc; this similarity in distribution suggests that silver may have been deposited during the same episode of mineralization as the other metals. If so, the distribution of silver like that of the other metals may indicate peripheral zones of a porphyry system. The silver- (and gold-) bearing veins at Round Mountain may thus be thought of as low-temperature structures in the distal parts of a porphyry-copper system. However, it is not known whether or not the precious-metal mineralization at Round Mountain and the porphyry-type mineralization nearby took place at the same time.

None of the high-silver samples are accurate representations of the average tenor of veins and other mineralized structures from which they were taken. Nevertheless their grades are high enough, considering current silver prices, to suggest that some of the sampled structures may be of economic value.

GEOCHEMICAL AND GENERALIZED GEOLOGIC MAP SHOWING DISTRIBUTION OF SILVER IN THE ROUND MOUNTAIN QUADRANGLE, NYE COUNTY, NEVADA

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