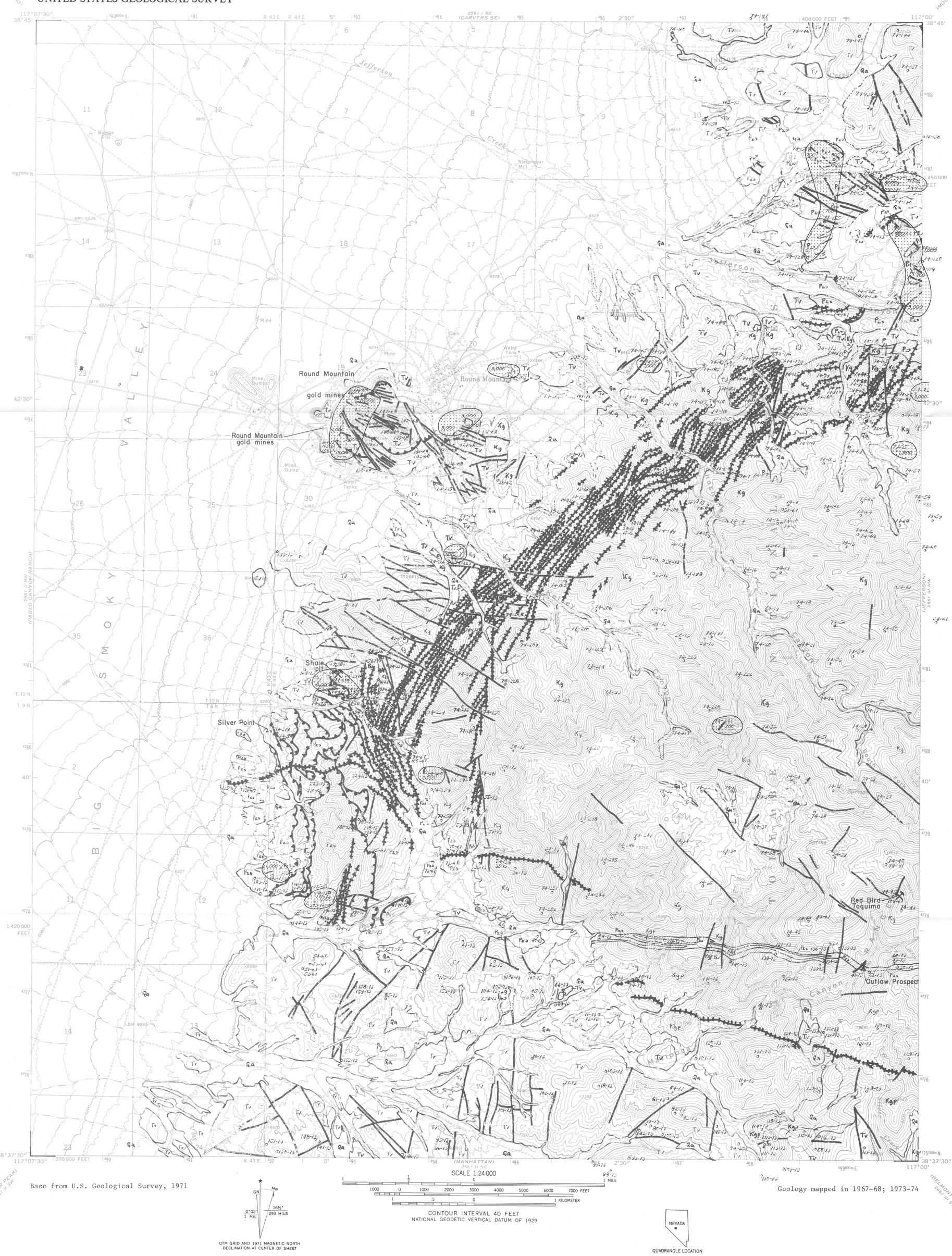
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS FIELD STUDIES MAP MF-835H
As, ROUND MTN. QUAD., NEVADA



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 arsenic content in parts per million. L, detected below limit of determination

As not detected

500-15,000 ppm As

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 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 no arsenic detectible by the semiquantitative spectrographic method. Inasmuch as the lower limit of determination for arsenic is high (generally 1,000 ppm), samples in which arsenic was detected are clearly anomalous. Most anomalous samples, ranging from 500 to 15,000 ppm (1.5 percent), were collected in the vicinity of the small diorite stock east of Round Mountain, at Round Mountain, and in the vicinity of a postulated buried stock south of Round Mountain. One anomalous sample (700 ppm) was collected from a northeast-striking vein about 3 mi (5 km) southeast of Round Mountain and is also anomalous in copper, lead, antimony, tungsten, and silver.

Most of the anomalous arsenic in the quadrangle is attributed to the mineralizing event (or events) that introduced iron, copper, lead, zinc, silver, molybdenum, and antimony, and may represent mineralization in the periphery of a porphyry-copper-molybdenum system. High amounts of arsenic in the gold-bearing veins at Round Mountain also may suggest that the gold deposits are distal parts of a porphyry-copper-molybdenum system. High arsenic values at the Shale Pit gold mine is suggestive of gold mineralization of the Carlin type.

Base from U.S. Geological Survey, 1971

Geology mapped in 1967-68; 1973-74

UTM GRID AND 1971 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

1 MILE

1 KILOMETER

CONTOUR INTERVAL 40 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

QUADRANGLE LOCATION

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

By
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1977

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