

Figure 1. Mines, prospects, and areas with mineral potential.

ASSESSMENT OF MINERAL RESOURCE POTENTIAL

The Virgin Mountains Instant Study Area contains about 30,000 acres (12,000 ha) in southeastern Nevada. In accordance with the Federal Land Policy and Management Act (P.L. 94-270), the U.S. Bureau of Mines examined mines, prospects, and mineralized zones, and the U.S. Geological Survey made regional geologic, geophysical, and geochemical investigations. Tungsten and sheet mica have been produced from the study area, and oil and gas lease applications have been filed on 20,300 acres (8,200 ha). Sixteen mining claims are presently held.

About 140,000 tons (130,000 t) of tungsten resources exist within, and a copper-nickel resource containing significant amounts of byproduct palladium and platinum exists just outside the Virgin Mountains Instant Study Area. Both deposits in the Bunkerville mining district occur in a northeast-trending belt of Precambrian metamorphic rocks at the northeast and northwest corners of the study area. This spottily mineralized Precambrian terrane is present at various depths beneath the Paleozoic cover of the study area. Studies by Griscam (1980) show magnetic anomalies that probably originate in this terrane below the Paleozoic cover. Copper, lead, and zinc minerals occur in the southern part of the area, but inadequate exposures preclude an estimate of resource potential. Mica, beryllium minerals, stone, and sand and gravel are also present in the study area, but no minable deposits have been identified. Potential for uranium, geothermal, and coal resources is low.

Major oil companies are currently performing seismic work in and near the study area to locate geologic structures favorable for oil and gas accumulation. The region is being prospecting as a possible southern extension of the Overthrust Belt of Montana, Idaho, Wyoming, and Utah, an area of active oil and gas exploration. Potential has not yet been fully assessed.

Analyses of heavy mineral concentrates of stream sediment samples (Carlson and Tripp, 1980) show anomalously high amounts of beryllium, thorium, tungsten, and copper derived from the Precambrian terrane. Stream sample concentrates from the Paleozoic terrane show barium contents greater than 5,000 ppm in a small area in the northwest corner of the area and one in the southwest corner of the area. Another section in the west-central part of the area shows anomalously high values in the stream concentrates of lead, barium, and molybdenum.

REFERENCES

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- Carlson, R. R., and Tripp, R. B., 1980, Analytical and mineralogical results of geochemical sampling in the proposed Virgin Mountains Instant Study Area, Clark County, Nevada: U.S. Geological Survey Miscellaneous Field Studies Map MF-1204-B, scale 1:62,500.
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- Longwell, C. R., Pampayan, E. H., Bowyer, Ben, and Roberts, R. J., 1965, Geology and mineral deposits of Clark County, Nevada: Nevada Bureau of Mines Bulletin 62, p. 122-132.

Mineral Surveys Related to Bureau of Land Management Instant Study Areas

In accordance with the provisions of the Federal Land Policy and Management Act (Public Law 94-270, October 21, 1976), the Geological Survey and the Bureau of Mines have conducted mineral surveys on certain areas, which formally had been identified as "natural" and "primitive" areas prior to November 1, 1975. This report discusses the results of a mineral survey of the western Virgin Mountains Instant Study Area, Clark County, Nevada.

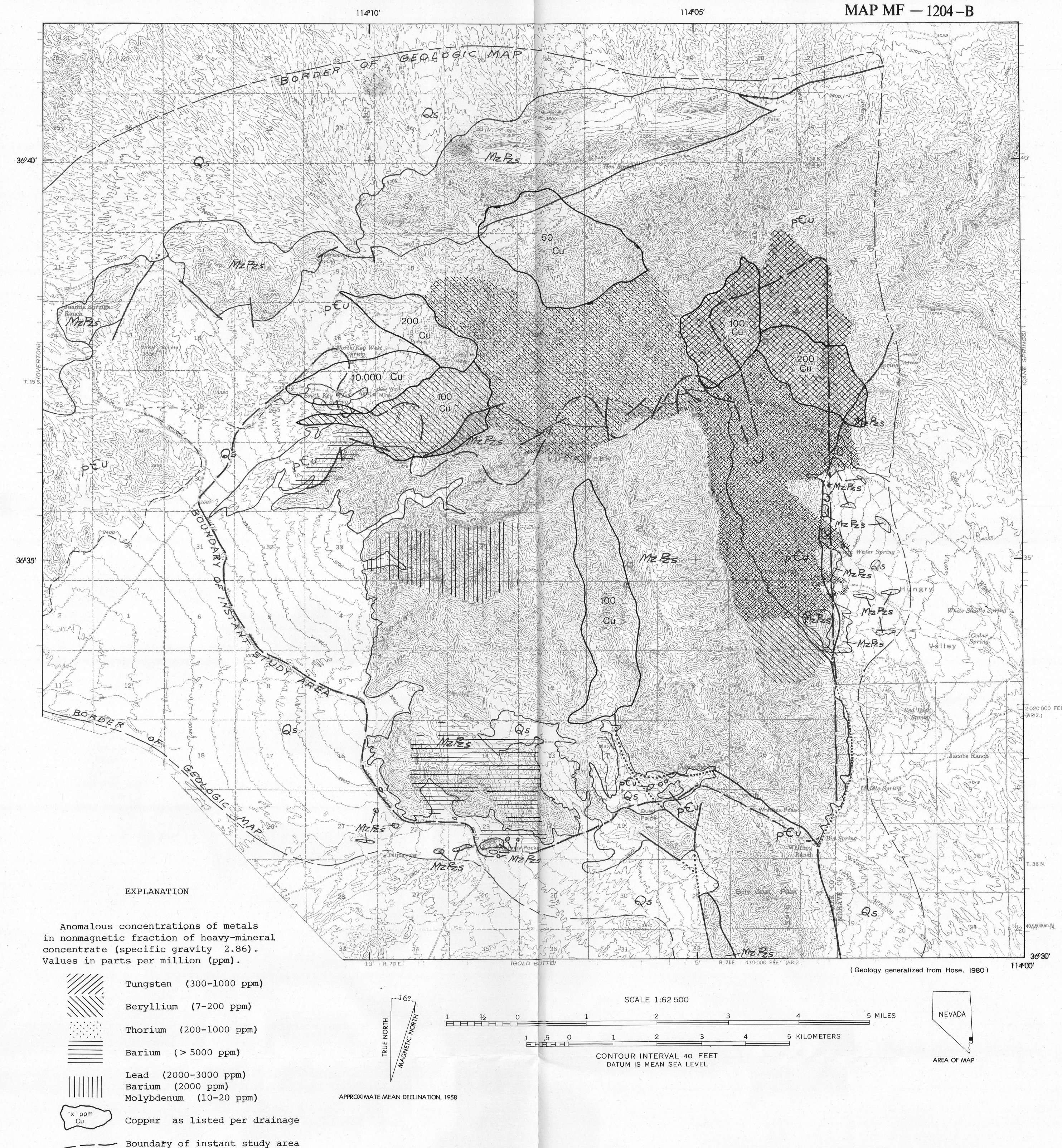


Figure 2. Map showing anomalous zones of trace metal occurrences based on analysis of stream-sediment concentrates.

MAPS SHOWING MINERAL RESOURCE POTENTIAL OF THE VIRGIN MOUNTAINS INSTANT STUDY AREA, CLARK COUNTY, NEVADA

by

Richard K. Hose and Robert R. Carlson

U.S. Geological Survey

Francis E. Federspiel and James D. Huffsmith

U.S. Bureau of Mines

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