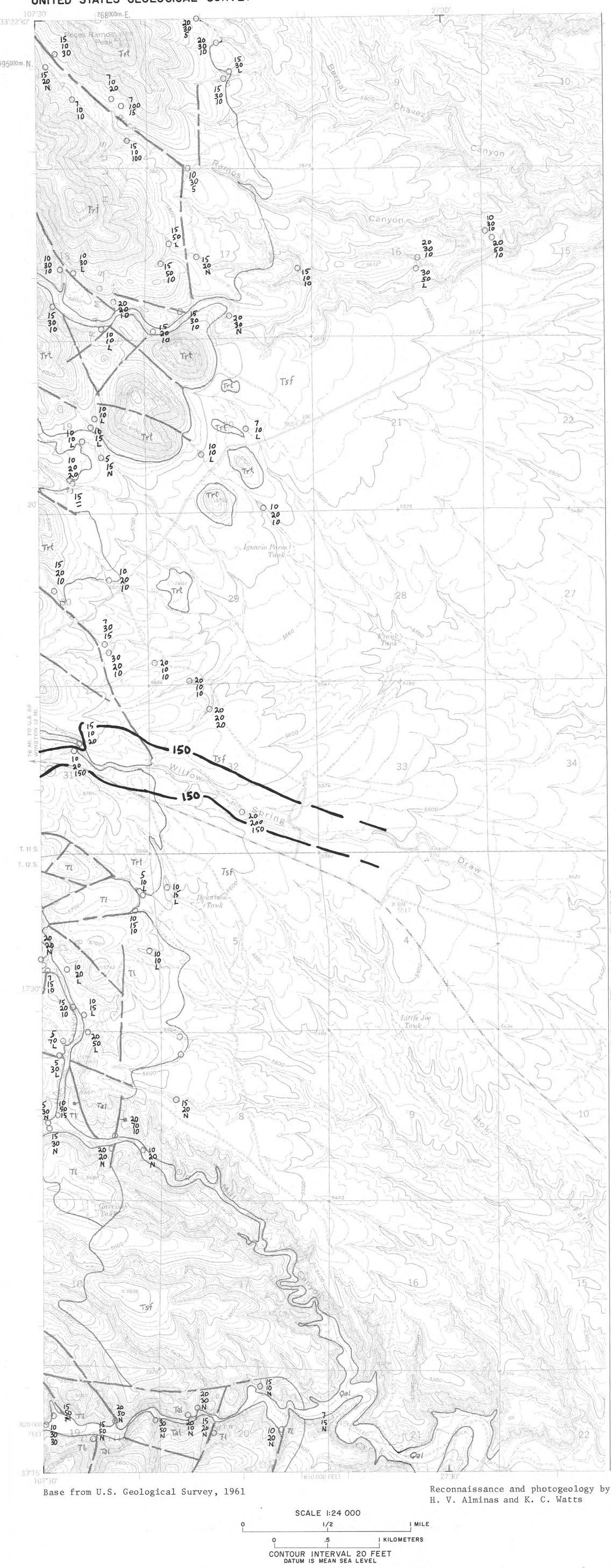
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY



Base from U.S. Geological Survey, 1961

Reconnaissance and photogeology by
H. V. Alminas and K. C. Watts

SCALE 1:24 000

0 1/2 1 MILE

0 .5 1 KILOMETERS

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

WEST PART OF THE PRIEST TANK QUADRANGLE

MAPS SHOWING COPPER DISTRIBUTION IN THE WINSTON AND CHISE QUADRANGLES AND IN THE WEST PART OF THE PRIEST TANK QUADRANGLE, SIERRA COUNTY, NEW MEXICO

By
Henry V. Alminas, Kenneth C. Watts, and David L. Siems

1973

For sale by U.S. Geological Survey, price $1.50 per set

EXPLANATION

QUATERNARY

Qal — Alluvium

Qb — Late basalt flow

TERTIARY

Tsf — **Santa Fe Group as used by Kelley (1955) Pediment alluvium, conglomerate, and volcanic sediments; includes Palomas gravels**

Tir — Intrusive rhyolite
Dominantly plugs and dikes

Ti — Dike
Unknown composition

Trt — Late rhyolite flows and ash-flow tuff
Medium gray; porphyritic, with phenocrysts of quartz and sanidine; tin bearing

Tim — Intrusive monzonite porphyry
Sills, dikes, and laccoliths

Tl — Biotite latite and biotite-quartz latite tuff flows, and related breccia

Tvr — Volcanic rocks
Eastern side of Black Range and adjacent areas

Tr — Early rhyolitic tuff
Eastern side of Black Range and adjacent areas

Tal — Early andesite and subordinate latite flows, flow breccia, tuff, and agglomerate

Pzr — **Paleozoic rocks**
Dominantly limestone of the Pennsylvanian Magdalena Group and Permian red beds

pЄm — **Precambrian metamorphic rocks**

Contact

Normal fault
Dashed where approximately located; dotted where concealed; bar and ball on downthrown side

Lineament traced from aerial photographs

Strike and direction of dip of beds and foliation

Quartz vein

Copper contents of three sample types (<80, M-1, NM-1) are given at each sample locality. The <80 sample consists of material finer than 0.177 mm sieved from the total stream-sediment. The other two sample types are the heavy portions of concentrates panned from stream-sediments and separated in bromoform. The M-1 fraction is that portion of such material not magnetic at 0.1-ampere, but magnetic at a 1.0-ampere setting on a Franz Isodynamic Separator (forward slope 25°, side slope 15°). The portion that is not magnetic at a 1.0-ampere setting is labelled NM-1.

Present study (20 / 50 / 30) — Black Range sample (10 / 30)

Stream-sediment sample
Showing spectrographically determined copper content in parts per million. Top number is copper value of the <80 fraction; middle number, copper value of the M-1 fraction; bottom number, copper value of the NM-1 fraction. N is copper not detected. L is copper detected below normal sensitivity. A dash means no data on fraction shown. Filled circle indicates sample locality at which the NM-1 fraction contains at least 1,000 parts per million copper. In present study, lower detection limit on copper is 5 parts per million in rocks and fine stream-sediment samples; 10 parts per million in pan concentrates. Histograms are shown accordingly. Black Range sample sites (Ericksen and others, 1970) shown by squares for parts of map area in which published Black Range data are used. Top number, <80 fraction, comparable to same fraction in present study. Lower value, pan-concentrated stream sediment with magnetite removed; approximately comparable to M-1 fraction of present study. A dash means no data on fraction shown.

—150— Isopleth
Approximately delineating areas containing at least 150 parts per million copper in the NM-1 fraction of concentrated stream sediments.

References

Ericksen, G. E., and others, 1970, Mineral resources of the Black Range Primitive Area, Grant, Sierra, and Catron Counties, New Mexico: U.S. Geol. Survey Bull. 1319-E, p. 49-157.

Jahns, R. H., 1955, Road log in Sierra Cuchillo and neighboring areas [and] Geology of the Sierra Cuchillo, New Mexico, in New Mexico Geol. Soc. Guidebook 6th Field Conf., south-central New Mexico, 1955: p. 25-46, 158-174.

Kelley, V. C., compiler, 1955, Geologic map of the Sierra County region, in New Mexico Geol. Soc. Guidebook 6th Field Conf., south-central New Mexico, 1955: In pocket.

HISTOGRAMS SHOWING COPPER DISTRIBUTION