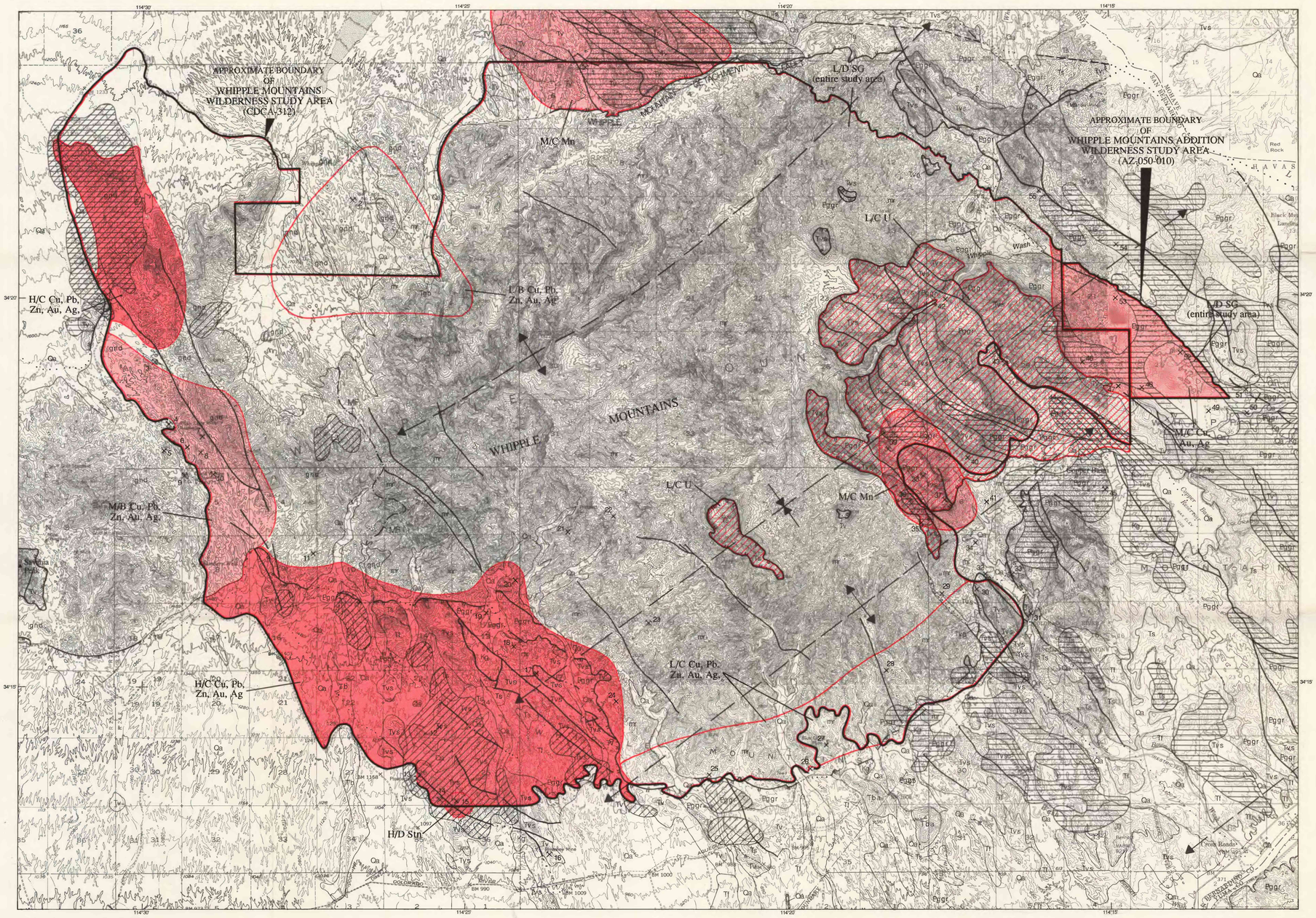


Base from U.S. Geological Survey, 1:62,500: Savahia Peak, 1950; Whipple Mts, 1950; Parker Dam, 1959; Vidal, 1949; Parker, 1949; and Black Peak, 1959

Geology compiled by C.M. Allen and K.A. Howard, 1982. See index to geologic mapping.

13°
TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION, 1988

SCALE 1:48 000
1 ½ 0 1 2 3 MILES
1 .5 0 1 2 3 KILOMETERS
CONTOUR INTERVAL 40 AND 80 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

AREA OF MAP

EXPLANATION

- Area with high mineral resource potential (H)
- Area with moderate mineral resource potential (M)
- Area with low mineral resource potential (L)—Diagonal lines show areas of low potential for Uranium
- Mine
- Prospect

Commodities

Ag	Silver
Au	Gold
Cu	Copper
Mu	Manganese
Pb	Lead
SG	Sand and gravel and other rock products
Stn	Decorative building stone
U	Uranium
Zn	Zinc

Areas of alteration and alteration type

- Argillic
- Propylitic
- Solfataric
- Contact
- Fault – Dashed where inferred; dotted where concealed
- Whipple Mountains detachment fault – Hachures of upper plate; dotted where concealed
- Antiform – Showing plunge
- Synform – Showing plunge
- Mylonitic front

DEFINITION OF LEVELS OF MINERAL RESOURCE POTENTIAL AND CERTAINTY OF ASSESSMENT

LEVELS OF RESOURCE POTENTIAL

H **HIGH** mineral resource potential is assigned to areas where geologic, geochemical, and geophysical characteristics indicate a geologic environment favorable for resource occurrence, where interpretations of data indicate a high degree of likelihood for resource accumulation, where data support mineral-deposit models indicating presence of resources, and where evidence indicates that mineral concentration has taken place. Assignment of high resource potential to an area requires some positive knowledge that mineral-forming processes have been active in at least part of the area.

M **MODERATE** mineral resource potential is assigned to areas where geologic, geochemical, and geophysical characteristics indicate a geologic environment favorable for resource occurrence, where interpretations of data indicate reasonable likelihood for resource accumulation, and (or) where an application of mineral-deposit models indicates favorable ground for the specified type(s) of deposits.

L **LOW** mineral resource potential is assigned to areas where geologic, geochemical, and geophysical characteristics define a geologic environment in which the existence of resources is permissive. This broad category embraces areas with dispersed but insignificantly mineralized rock, as well as areas with little or no indication of having been mineralized.

N **NO** mineral resource potential is a category reserved for a specific type of resource in a well-defined area.

U **UNKNOWN** mineral resource potential is assigned to areas where information is inadequate to assign a low, moderate, or high level of resource potential.

LEVELS OF CERTAINTY

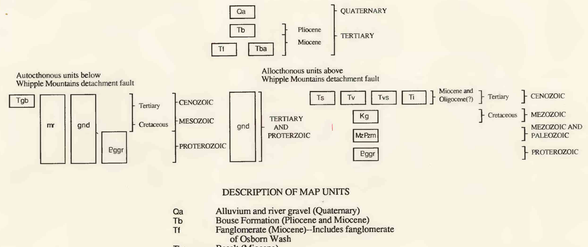
A Available information is not adequate for determination of the level of mineral resource potential.
B Available information only suggests the level of mineral resource potential.
C Available information gives a good indication of the level of mineral resource potential.
D Available information clearly defines the level of mineral resource potential.

LEVEL OF RESOURCE POTENTIAL ↑ / LEVEL OF CERTAINTY →	A	B	C	D
	U/A	H/B HIGH POTENTIAL	H/C HIGH POTENTIAL	H/D HIGH POTENTIAL
		M/B MODERATE POTENTIAL	M/C MODERATE POTENTIAL	M/D MODERATE POTENTIAL
	UNKNOWN POTENTIAL	L/B LOW POTENTIAL	L/C LOW POTENTIAL	L/D LOW POTENTIAL
				N/D NO POTENTIAL

Abstracted with minor modifications from:

Taylor, R.B., and Steven, T.A., 1983, Definition of mineral resource potential: Economic Geology, v. 78, no. 6, p. 1268-1270.
Taylor, R.B., Stoneman, R.J., and Marsh, S.P., 1984, An assessment of the mineral resource potential of the San Isabel National Forest, south-central Colorado: U.S. Geological Survey Bulletin 1638, p. 40-42.
Goudarzi, G.H., compiler, 1984, Guide to preparation of mineral-survey reports on public lands: U.S. Geological Survey Open-File Report 84-0787, p. 7, 8.

CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

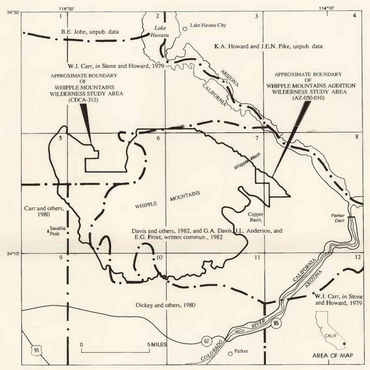
Qa	Alluvium and river gravel (Quaternary)
Tb	Bouse Formation (Pliocene and Miocene)
Tf	Fanglomerate (Miocene)--Includes fanglomerate of Osborn Wash
Tba	Basalt (Miocene)

AUTOCHTHONOUS UNITS BELOW WHIPPLE MOUNTAINS DETACHMENT FAULT

Tgb	Gabbro (Tertiary)
mr	Mylonitic rocks (Tertiary, Cretaceous, and Proterozoic)
gnd	Gneiss (Proterozoic) with subordinate granitoid rocks (Tertiary, Cretaceous, and Proterozoic) and dikes (Tertiary)
Eggr	Gneiss and granitoid rocks (Proterozoic)

ALLOCHTHONOUS UNITS ABOVE WHIPPLE MOUNTAINS DETACHMENT FAULT

Ts	Sedimentary rocks (Miocene and Oligocene?)
Tv	Volcanic rocks (Miocene and Oligocene?)
Tvs	Volcanic and sedimentary rocks (Miocene and Oligocene?)
Ti	Intrusive rocks (Miocene and Oligocene?)
Kg	Granite and granodiorite (Cretaceous)
MzPzm	Metasedimentary rocks (Mesozoic and Paleozoic)
gnd	Gneiss (Proterozoic) with subordinate granitoid rocks (Tertiary, Cretaceous, and Proterozoic) and dikes (Tertiary)--Same as unit gnd in autochthonous units block (see above) except that Cretaceous and Tertiary granitoid rocks are absent
Eggr	Gneiss and granitoid rocks (Proterozoic)



MAP SHOWING LOCATION OF STUDY AREA, INDEX TO GEOLOGIC MAPPING (DASH-DOT LINES), AND 1:24,000-SCALE QUADRANGLES (LIST BELOW)

1. Savahia Peak NE
2. Havasu Lake
3. Lake Havasu City south
4. Standard Wash
5. Savahia Peak
6. Whipple Mts. SW
7. Whipple Wash
8. Gene Wash
9. Vidal Junction
10. Parker NW
11. Parker
12. Cross Roads

MINERAL RESOURCE POTENTIAL MAP OF THE WHIPPLE MOUNTAINS AND WHIPPLE MOUNTAINS ADDITION WILDERNESS STUDY AREAS, SAN BERNARDINO COUNTY, CALIFORNIA