

APPROXIMATE BOUNDARY OF
NOPAH RANGE WILDERNESS
STUDY AREA (CDCA-150)

EXPLANATION

Area with moderate mineral resource potential

Area with low mineral resource potential with some indication of resource-forming processes

Area with low mineral resource potential with no indication of resource-forming processes

COMMODITIES

Ag	Silver	Pb	Lead
Au	Gold	Mo	Molybdenum
Cu	Copper	Zn	Zinc
Geo	Geothermal		
O/G	Oil and gas		

[] TYPES OF DEPOSITS AND OCCURRENCES

1 Hydrothermal deposits along faults and fracture systems

2 Zeolitized tuff

3 Fluvial accumulation

LEVELS OF RESOURCE POTENTIAL

H High mineral resource potential

M Moderate mineral resource potential

L Low mineral resource potential

U Unknown mineral resource potential

LEVELS OF CERTAINTY

A Available data not adequate

B Data indicate geologic environment, and suggest level of resource potential

C Data indicate geologic environment, indicate resource potential, but do not establish activity of resource-forming processes

D Data define geologic environment and level of resource potential and indicate activity of resource-forming processes in all or part of area

LEVEL OF RESOURCE POTENTIAL	LEVEL OF CERTAINTY			
	A	B	C	D
H/B	H/B	H/C	H/D	
M/B	M/B	M/C	M/D	
L/B	L/B	L/C	L/D	
U/B	U/B	U/C	U/D	
				NO POTENTIAL

DESCRIPTION OF MAP UNITS

- Qal Alluvium (Quaternary)—Fanglomerate, sand and gravel, spring deposits, and volcanic ash
- Qd Tacopa Lake Beds of Sharp (1972) (Quaternary)—Pale-red to dark-orange conglomerate, siltstone, and quartzite; lower part, yellow to pale-olive shale, mudstone, limestone, tuff, basaltic sandstone
- Twt Welded tuff (Tertiary)—Light-grey to brown tuff with pumice fragments. Some interbedded lake sediments
- Tb Basalt (Tertiary)—Grey to brown-grey, some pumice fragments
- Pb Bird Spring Formation (Pennsylvanian)—Light- to dark-grey fossiliferous limestone, containing corals, brachiopods, and fusulites. Nodular chert present
- Mm Monte Cristo Limestone (Mississippian)—Light-grey to medium-grey dolomite to crinoidal limestone, lime mudstone to oolitic grainstone
- Dib Lost Burro Formation (Devonian)—Light- and medium-grey dolomite. The lower and upper one-third of unit are marked by dark-grey beds. Basal beds are sandy and sandstone stringers persist in the lower 200 feet. The upper 800 feet consists of well-bedded limestone, partly dolomitized
- Shv Hidden Valley Dolomite (Silurian)—Light- to medium-grey dolomite in alternating bands 23 to 43 feet thick. The upper 98 feet consist of light-grey dolomite
- Oes Ely Springs Dolomite (Ordovician)—Medium- and dark-grey dolomite. Grey nodular chert present. Age is Late Ordovician
- Oe Eureka Quartzite (Ordovician)—Silica-cemented, white or slightly pink quartz sandstone. Commonly upper and lower parts of unit consist of dolomitic quartzite
- Op Popsip Group (Ordovician)—Lower part of unit consists of light-grey and tan, well-bedded silty and sandy dolomite; upper part consists of dark-grey dolomite that becomes sandy upwards
- Cn Nopah Formation (Cambrian)—Basal 100 to 130 feet of unit consist of green-, grey-, and brown-weathering shale with limestone interbeds. These shale strata are lithologically correlative with the Dunderberg Shale, but are here mapped as the Nopah Formation. The Nopah Formation consists of coarsely crystalline, tan dolomite. Age is Late Cambrian
- Cb Bonanza King Formation (Cambrian)—Lower part consists of predominantly grey, mottled limestone and dolomite. Upper part consists of a thick sequence of interbedded dark-grey to black and light-grey dolomite
- Cc Carrara Formation (Cambrian)—Lower part consists of green and grey shale and siltstone with interbeds of quartzite. Grey, mottled limestone with silty interbeds are more common in the upper part of the formation
- Cz Zabriskie Quartzite (Cambrian)—Lower part consists of white and pale-green quartzite, sandstone, and siltstone. Upper part consists of white, pink, and maroon vitreous pure quartzite
- CZw Wood Canyon Formation (Cambrian and Late Proterozoic)—Lower part consists of green, red, and yellow siltstone and sandstone and brown dolomite. Middle part is composed of purple and maroon quartzite and conglomerate. Upper part is composed of sandstone and green, grey, and red shale and dolomite
- Zs Stirling Quartzite (Late Proterozoic)—Conglomerate, quartzite, siltstone, and purple, maroon, and green shale. Also, minor dolomite
- Zj Johnnie Formation (Late Proterozoic)—Shale, siltstone, and fine-grained sandstone and quartzite. Yellow- and brown-weathering dolomite is uncommon

CORRELATION OF MAP UNITS

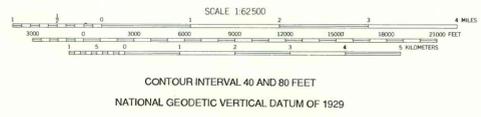
Qal	QUATERNARY
Qd	
Twt	TERTIARY
Tb	
Pb	PENNSYLVANIAN
Mm	
Dib	DEVONIAN
Shv	
Oes	SILURIAN
Oe	
Op	ORDOVICIAN
Cn	
Cb	CAMBRIAN
Cc	
Cz	LATE PROTEROZOIC
CZw	
Zs	
Zj	

- Contact
- Fault—Dotted where concealed. Bar and ball on downthrown side; arrow indicates direction of dip
- Thrust fault—Dotted where concealed, teeth on upper plate
- Strike and dip of inclined beds
- Mine—Numbers refer to table 1
- Prospect—Numbers refer to table 1



Base from U.S. Geological Survey
Topographic, 1950; Horse Thief Springs
1956; Fahrump, Stewart Valley, 1958

Geology north of lat. 36° N, generalized
from Burchfiel and others (1982); geology
south of lat. 36° N, mapped by A. K.
Armstrong, 1981-1983



MINERAL RESOURCE POTENTIAL MAP OF THE
NOPAH RANGE WILDERNESS STUDY AREA,
INYO COUNTY, CALIFORNIA