



EXPLANATION

Area having high mineral resource potential (H)
Area having moderate mineral resource potential (M)
Area having low mineral resource potential (L)

Levels of certainty of assessment

B Data indicate geologic environment and only suggest level of resource potential
C Data indicate geologic environment and give indication of resource potential but do not establish activity of resource-forming processes
D Data clearly define geologic environment and level of resource potential and indicate activity of resource-forming processes in all or part of area

Commodities

Ag	Silver	Pb	Lead
Au	Gold	Sb	Antimony
Cu	Copper	W	Tungsten
Geo	Geothermal energy	Zn	Zinc
Mo	Molybdenum		

Types of deposits

[1] Polymetallic veins or disseminated minerals of silver, gold, and base metals
[2] Calc-silicate skarn deposits in calcareous sedimentary rocks near contacts with granitic rocks
[3] Placer gold and (or) silver deposits
[4] Geothermal energy—Hot water or steam

Mines and prospects

- Golden Mile prospect
- Hanlon (Hamlin) mine
- Summit group prospects
- Yellow Gold and Hole-in-the-Wall prospects
- Groundhog No. 1 prospect
- Mackay No. 7 prospect
- Grass mine
- Dallimore-Douglas claims
- Murphy (Ophir) mine
- Grizzly prospect
- New Year group (Bobby Bottoms mine)
- Bobby No. 4 mine
- Unnamed prospects
- Broken Arm mine
- Unnamed quarry
- Unnamed placer prospect
- White Horse prospect
- Korf mine
- Unnamed prospects
- Teichert mine
- Unnamed prospects
- Tom Cu prospect
- Nob Hill prospect
- K claims
- Unnamed prospect
- Unnamed prospect
- Broad Creek prospect
- Ledbetter Canyon (Fenir) mine
- Unnamed prospect
- Valley Group prospects
- Jet Canyon (Nicely) prospect
- Gibbler-Silver Hill prospects
- Unnamed prospect
- Unnamed prospect
- Last Chance (Wall Canyon) mine
- Darrough Hot Springs

Correlation of map units

Qa	Quaternary	CENOZOIC
Qtb	Quaternary and (or) Tertiary	
Ta	Miocene	CENOZOIC AND (OR) MESOZOIC
Tt	Upper Miocene	
Tad	Lower Miocene	MESOZOIC AND (OR) OLDER
Tn	Oligocene	
Tot	Tertiary and (or) Cretaceous	CENOZOIC AND (OR) MESOZOIC
TKp	Cretaceous and (or) Jurassic(?)	
Mgd	Cretaceous and (or) older	MESOZOIC AND (OR) OLDER
Mzd	Permian to Late Proterozoic	
PzZs	Permian to Late Proterozoic	PALEOZOIC AND LATE PROTEROZOIC

Description of map units

Qa Alluvium, colluvium, landslide, and glacial deposits (Quaternary)

Qtb Basalt of Black Mountain (Quaternary and (or) Tertiary)—Black aphyric lava erupted from Black Mountain or nearby vents

Ta Andesite of Ledbetter Canyon (Lower Miocene)—Sparsely porphyritic medium-gray basaltic andesite lava flows and flow-banded hornblende andesite intrusive rocks

Tt Tuff of Toyabe (Lower Miocene)—Densely welded and devitrified crystal-rich rhyolite ash-flow tuffs and coarser grained intrusive rock of same mineralogy that fills plugged vents

Tad Tuff of Arc Dome (Upper Oligocene)—Densely welded, devitrified, crystal-rich rhyolite ash-flow tuff, biotite-bearing lapilli ash-flow tuff, volcaniclastic sedimentary rocks, crystal-poor ash-flow tuff, and densely welded, crystal-poor to moderately crystal-rich ash-flow tuff

Tn Tufts of North Fork (Upper Oligocene)—Silicic tufts and volcaniclastic sedimentary rocks. Includes, from youngest to oldest: crystal-poor lithic ash-flow tuff, biotite-bearing lapilli ash-flow tuff, volcaniclastic sedimentary rocks, crystal-poor ash-flow tuff, and densely welded, crystal-poor to moderately crystal-rich ash-flow tuff

Tot Older tuffs (Upper Oligocene)—Primarily several distinct, densely welded crystal-rich ash-flow tuffs, mostly derived from sources outside of Toyabe Range. Includes weakly welded crystal-poor lithic ash-flow tuff at top of sequence, derived from Peavine volcanic center just south of study area, and rhyolite flows and dikes in lower part of sequence

TKp Granite porphyry (Tertiary and (or) Cretaceous)—Granite porphyry sills, dikes, and stocks with phenocrysts of K-feldspar, plagioclase, quartz, and locally biotite and hornblende in very fine to fine-grained groundmass. Border phases include nonporphyritic, very fine grained to aplitic rocks. Map unit also includes diabase dikes that intrude porphyry and older rock

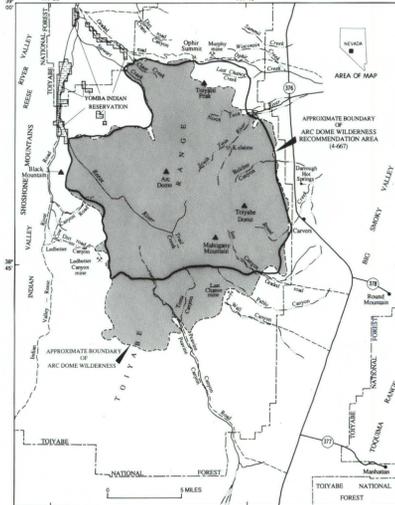
Mgd Granite rocks (Cretaceous and Jurassic?)—Granite, quartz monzonite, granodiorite, quartz diorite, and diorite. Composite Cretaceous Ophir pluton along eastern range front consists of, from youngest to oldest, medium-grained biotite granodiorite, biotite-hornblende quartz diorite, garnet-muscovite granite, and gneissic biotite granodiorite. Map unit also includes biotite granodiorite on east side and hornblende diorite on west side of Ophir Summit

Mzd Darrough Felsite (Cretaceous and (or) older)—Primarily silicified and variably metamorphosed, crystal-rich to lithic-rich silicic ash-flow tuffs and volcaniclastic sedimentary rocks. Map unit also includes intrusive hornblende andesite porphyry south of Toyabe Dome

PzZs Sedimentary and associated rocks (Paleozoic to Late Proterozoic)—Highly deformed and variably metamorphosed argillite, siltstone, quartzite, gneiss, conglomerate, limestone, dolostone, chert, pillow lavas, and serpentinite. Includes, from youngest to oldest: Permian to Mississippian allochthonous rocks, of which the upper part is unnamed and the lower part is the Pueblo Formation (Mississippian); Permian and Pennsylvanian parautochthonous rocks, of which the upper part is the Diablo Formation (Permian) of Poole and Wardlaw (1978) and the lower part (Pennsylvanian) is unnamed; Lower Cambrian allochthonous rocks equivalent to the more westerly facies Harkless Formation (Lower Cambrian) and more easterly facies Lower Cambrian part of the Gold Hill Formation; Silurian to Late Proterozoic parautochthonous rocks that are equivalent to the lower part of the Roberts Mountains Formation (Silurian), the Toiyabe and Zanzibar Formations (Ordovician), and the Gold Hill Formation (Cambrian, but presumably includes Late Proterozoic)

Base from U.S. Geological Survey, 1:24,000: Carvers, Carvers NW, Pablo Canyon Ranch, 1971; Corral Wash, Toyabe Peak, 1979; Arc Dome, Bakeoven Creek, Farrington Canyon, Toms Canyon, 1980 Universal Transverse Mercator projection

Geology modified from G.F. Brem, F.G. Poole, and D.A. John (unpub. data, 1985)



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2. Toyabe Peak
3. Carvers NW
4. Bakeoven Creek
5. Arc Dome
6. Carvers
7. Farrington Canyon
8. Toms Canyon
9. Pablo Canyon Ranch

SCALE 1:63 360

1 1/2 0 1 2 3 4 5 MILES

1 1/2 0 1 2 3 4 5 KILOMETERS

CONTOUR INTERVALS 20 AND 40 FEET
DOTTED LINES REPRESENT 10-FOOT INTERVALS

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 deposit.

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 permissible. 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	A	B	C	D
	U/A	H/B	H/C	H/D
		M/B	M/C	M/D
	UNKNOWN POTENTIAL	L/B	L/C	L/D
			N/D	
			NO POTENTIAL	

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Contact

Fault—Dashed where approximately located, dotted where concealed

Thrust fault—Sawtooth on upper plate

Caldera boundary—Approximately located, dashed where inferred

Mine

Prospect

Hot spring

MINERAL RESOURCE POTENTIAL AND GEOLOGIC MAP OF THE ARC DOME WILDERNESS RECOMMENDATION AREA, NYE COUNTY, NEVADA

By
Gerald F. Brem, David A. John, J. Thomas Nash, Forrest G. Poole, and David B. Snyder

Brem, G.F., John, D.A., Nash, J.T., Poole, F.G., and Snyder, D.B., 1991. Mineral resources of the Arc Dome Wilderness Recommendation Area, Nye County, Nevada: U.S. Geological Survey Bulletin 1961.