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ITEM 30

NORTHUMBERLAND—GOLD

Alternate names: Cyprus Northumberland
Ore body names: Chipmunk, Main

Commodities: Au, Ag
(Au-Ag ratio = 2:1)

LOCATION-OWNERSHIP

County	Nye.	General location	About 120 km northeast of Tonopah.
Mining district	Northumberland.	Meridian	Mount Diablo.
Elevation	2,600 m.	Tract	Sec. 24, T 13 N, R 45 E (unsurveyed).
Topography	Rugged.	Latitude	38°57'29" N.
Domain	National forest.	Longitude	116°50'44" W.

Owner-operator Cyprus Northumberland Mining Co., Austin, NV (subsidiary of Amoco Metals Co., Englewood, CO) (1983).

GEOLOGY

Type of ore body	Disseminated, stratabound, replacement.	Host formations	Vinini.
Origin	Hydrothermal.		Roberts Mountains.
Shape of ore body	Irregular, relatively tabular or flat.	Geologic ages	Ordovician.
Ore controls	Faults, igneous contact, fractures, lithology.		Silurian.
Strike of mineralized zone.	West-northwest.	Rock relationships	Tuff, lies above ore.
Age of mineralization ...	Late Cretaceous (84.6 million yr).		Carbonaceous shales, contains disseminated gold (Vinini).
Mineralized zone average dimensions			Calcareous siltstone, contains disseminated gold (Vinini).
Length	1,100.		Jasperoid replaced limestone, portions are ore, lies above ore.
Width	240.		Jurassic granitic intrusive, occurs as sills in host rocks, is mineralized.
Thickness	18 to 21.	Alteration	Silicification, argillic (Paleozoic), sericitic (intrusive).
Depth	0 to 9 (Main).	Size	Small.
Mineral names	Gold, arsenopyrite, pyrite, stibnite, realgar, orpiment, cinnabar, calcite, quartz, jasperoid, dolomite, barite, carbon.		

DEVELOPMENT

Current status	Active-producer.	Distance to water supply ...	On-site, 3 wells at mill.
Type of operation	Surface.	Distance to power supply ...	On-site, diesel electric generator.
Mining method	Conventional open pit; mine about 4,500 t/d ore.	Mill location	Off-site, 14 km.
		Mill status	Active.
Year of discovery	1936 (low-grade gold in district).	Milling method	Cyanide heap leach, carbon adsorption columns, stripping, electro-winning, smelting.
Discovery method	Surface sampling and drilling.	Process rate	Crusher—4,500 t/d (5,000 ton/d), 5 d/wk.
Initial production	Early 1981 (Cyprus-Amoco).	Product type	Au-Ag dore bullion.
Annual production rate ..	About 620 kg Au (20,000 tr oz).		

PUBLISHED RESERVES-RESOURCES

Class	Quantity	Grade	Year	Reference
1..Proven	6,000,000 tons	0.065 tr oz/ton Au	1979	831
2..Not reported in reference	17,000,000 tons	0.045 tr oz/ton Au	1981	61

REFERENCES

60, 61, 207, 222, 232, 338, 357, 368, 403, 404, 405, 461, 480, 539, 599, 601, 616, 623, 624, 630, 692, 752, 761, 773, 831.	USGS quad maps	Tonopah, 1:250,000.
	USBM sequence number	Northumberland Pass, 7.5'.
	Mid number	0320230403.
		2601661.

Comments: Ore reportedly occurs in and adjacent to a thrust fault separating lower plate Roberts Mountains Formation from upper plate Vinini Formation. Amoco 1983 operational plans were to mine the Main ore body to completion in 1985, then mine the Chipmunk ore body from 1985 to 1993. The crusher is co-located with the ore bodies; crushed ore is hauled west to the leaching facility at the mouth of West Northumberland Canyon in Big Smoky Valley. Ore heaps for leaching will be constructed at the rate of 5 to 6 per year. Heaps measure about 1,000 m long, 46 m wide, and 6 m high.

Information Circular 9035

Principal Deposits of Strategic and Critical Minerals in Nevada

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