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ITEM 23

SIXTEEN-TO-ONE—SILVER

Alternate names: None

Commodities: Ag, Au

LOCATION-OWNERSHIP

County	Esmeralda.	General location	About 100 km southwest of Tonopah.
Mining district	Red Mountain.	Meridian	Mount Diablo.
Elevation	2,130 m.	Tract	Sec. 32, T 2 S, R 38 E.
Topography	Rugged, mountainous.	Latitude	37°42'57" N.
Domain.....	BLM administered.	Longitude	117°47'06" W.

Owner-operator Sunshine Mining Co., Dallas, TX, 66-2/3% (1985).
 Owner Mid-Continent Mining Co., Denver, CO, 33-1/3% (1984).

GEOLOGY

Type of ore body	Fissure vein.	Host formation	Volcanics.
Origin.....	Hydrothermal.	Geologic age.....	Miocene.
Shape of ore body	Tabular.	Rock relationships.....	Quartz vein, portions are ore.
Ore controls.....	Faulting.		Andesite (tuff flows and tuffaceous sediments), primary host to vein.
Strike and dip of mineralized zone.	N 40° to 70° E: 65° to 90° SE.		Rhyolite (tuff, flow breccias), host to vein in uppermost levels.
Mineralized zone average dimensions, m:			Silicification (footwall), argillite (hanging wall).
Length	580.	Alteration	Small.
Thickness	6.7.	Size	
Development depth ..	240.		
Mineral names	Argentite-acanthite, proustite, pyrargyrite, marcasite, chalcocite, tetrahedrite, native silver (minor), native gold, galena, sphalerite, pyrite, quartz, calcite, barite (minor), siderite (minor).		

DEVELOPMENT

Current status.....	Active-producer.	Distance to water supply	At millsite, 400-m well.
Type of operation	Underground.	Road requirement	14-km road improvement.
Mining method	Sublevel blasthole stoping; 685 t/d ore (1983).	Distance to power supply	8 to 14 km, 24.6 kV.
Year of discovery	1985 (first staked).	Mill location	5.6 km east of mine.
Discovery method	Ore mineral in place.	Mill status	Active.
Initial production	February 1982.	Milling method	Cyanide leach tank, CCD, zinc dust precipitation.
Past production	19,490.8 kg (626,643 tr oz) Ag; 138.5 kg (4,453 tr oz) Au (1982) (698). 28,065.8 kg (902,321 tr oz) Ag; 218.9 kg (7,037 tr oz) Au (1983) (700).	Process rate	685 t/d (700 ton/d).
		Product type	20- to 30-kg dore buttons.
		Destination	Airlifted to Sunshine's Big Creek Refinery, Kellogg, ID.

PUBLISHED RESERVES-RESOURCES

Class	Quantity	Grade	Year	Reference
1..Not reported in reference ¹	1,100,000 tons	8.38 tr oz/ton Ag; 0.03 tr oz/ton Au	1982	847
2..Proven and probable	1,077,572 tons	5.4 tr oz/ton Ag; 0.028 tr oz/ton Au	1984	700

REFERENCES

7, 8, 124, 171, 224, 307, 338, 483, 487, 489, 653, 684, 688, 699, 700, 765, 847.	USGS quad maps	Goldfield, 1:250,000.
	Piper Peak, 15'.	
	USBM sequence number	0320090134.
	Mid number	2601638.

Comments: 1983 metal output recovered from ore averaging 1.65 g/t Au and 187 g/t Ag. 1983 mill output averaged 564 t per operating day. Sunshine's 1983 annual report states the potential for additional reserves is excellent as drilling on the western and downdip extensions of the Sixteen-to-One Vein has intersected mineralization. Sunshine reports the nearby Nivloc Mine, under its control, contains up to 900,000 t of minable ore.

¹Reserve is minable reserve; includes 10% dilution of 1 tr oz/ton Ag, 0.01 tr oz/ton Au, and represents reserves above 6,650-ft elevation.

Information Circular 9035

Principal Deposits of Strategic and Critical Minerals in Nevada

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