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STAR POINTER GOLD DEPOSIT

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INTRODUCTION

The Star Pointer epithermal near-surface gold deposit is located 4.5 miles west of Ely and 1.5 miles south of Ruth in White Pine County, Nevada. The deposit lies at the southwest corner of the Ruth copper pit in section 15, T.16N, R.62E. The deposit is a hydrothermal breccia-related gold deposit currently being mined from silicified Rib Hill Sandstone at the edge of the Ruth Pit in the Robinson Mining District.

Famous as a porphyry copper producer, the district is now a gold property leased from Kennecott (now owned by RTZ) and operated as a joint venture between Alta Gold (60%) and Echo Bay Mines (40%). Alta Gold (formerly Silver King Mines and Pacific Silver Corp.) is the operator and has been processing plus 0.050 oz Au/ton ore at the mill while 0.010 to 0.050 rock is put on the heap leach pad.

EXPLORATION AND RESERVES

Prior to mining, the Star Pointer deposit outcropped on the western flank of the #9 Hill as a reddish brown, knobby silicified sandstone. The south and west flanks of the #9 Hill were covered by Kennecott waste dump.

Kennecott had identified a gold geochemical anomaly in the area and had considered using the Star Pointer rock as high silica flux for their smelter operations. Rotary drilling by Bear Creek Mining Company in 1981 and 1982 in 49 holes (9828 ft) indicated geologic reserves totalling 500,000 tons averaging 0.140 oz Au/ton. Bear Creek decided that Star Pointer was too small for their interests and left the district in early 1983.

Alta Gold acquired a lease on the Robinson District from Kennecott (now part of RTZ) in September 1985 and immediately embarked on an aggressive exploration drilling program at Star Pointer to expand the reserves. The Star Pointer orebody went into production in September 1986 as an open pit and is not expected to be mined out until the summer of 1991.

Additional drilling in early 1988 north of Star Pointer identified the Zack Extension and North Star Pointer Zone as satellite orebodies (FIGS. 1 and 2). The Star Pointer Pit will ultimately measure 1700 feet by 1400 feet and will be 400 feet deep. The total gold inventory (including already mined ore) is 4.7 million tons averaging .045 oz Au/ton (210,000 oz) using a cutoff grade of .010 oz Au/ton. About 8.3 miles (44,667 feet) of conventional and reverse circulation drilling in 173 holes has been completed by Alta Gold.

GEOLOGY

The section of interest at Star Pointer includes the Permian Rib Hill Sandstone and the overlying Lower Arcturas Formation. Unaltered Rib Hill Sandstone consists of light to medium gray calcareous sandstone that frequently weathers to

pastel yellow and pink colors. Interbedded with the sandstones are subordinate beds of sandy gray-brown limestone. The Lower Arcturas Formation is composed of massive argillaceous limestone and medium-bedded calcareous sandstone.

Three major structures have been identified at Star Pointer (FIG.1). The #9 Fault is the dominant structure. All of the Star Pointer ore is in the hanging wall of this pre-mineral fault, which strikes N60E and dips 60NW. A second lower angle fault strikes N77E and dips 35N. These two faults are interpreted to be segments of a single fault. The Arcturas Fault strikes N71W and dips 77N. This post-mineral normal fault has down-dropped the Zack Extension by 60 feet relative to the Star Pointer orebody (FIG.2). The #9 Fault and Arcturas Fault conspicuously cut the southeast and east wall respectively in the pit.

A post-mineral fault set down-drops the Star Pointer orebody to the west in a stair-step manner. This normal fault set strikes north-south and dips 75W. This down-stepping has induced the 25W plunging geometry of the orebody, even though the sandstone beds strike east-west and dip 20N.

MINERALIZATION

The Star Pointer ore occurs in weakly silicified to intensely silicified and brecciated Permian Rib Hill Sandstone. In western areas the Lower Arcturas Formation appears to have acted as an impermeable caprock. An advanced argillic to argillic alteration assemblage is present, with silicification being dominant. Gold mineralization correlates well with silver, arsenic and tellurium and lower levels of antimony and thallium. Zinc and lead are highly anomalous peripheral to the gold zone. Supergene copper is present but erratically distributed. The silica content of the ore zone ranges from 80 to 90% and gold recovery averages 90 to 95%. The ore is completely oxidized and no sulfide minerals have been identified.

While the gold ore is nearly always associated with strongly silicified rocks, the converse is not necessarily true. However, the strong correlation of gold values with silicification indicates that the gold was introduced into the permeable decalcified sandstone by iron and silica-rich oxidizing hydrothermal fluids.

Gold mineralization occurs as three distinct pods (FIG.1 and 2) known as Star Pointer (averaging .100 oz Au/ton), the Zack Extension (averaging .050 oz Au/ton) and North Star Pointer (averaging .030 oz Au/ton). Intense hydrothermal silicification and brecciation has produced the higher gold grades at Star Pointer. In the highest grade breccias assaying .500 oz Au/ton or better, the matrix is nearly black with carbonaceous matter or iron oxides, while in the lower grade breccias the matrix usually contains hematite.

The Star Pointer and Zack Extension ore zones are sub-parallel cylindrical bodies which strike S70W and dip 25W. The North Star Pointer Zone is a tabular stratabound orebody which dips to the southwest at 30 degrees. The highest gold grades at North Star Pointer occur in clean, white silicified sandstone.

STILLWATER
DUMP

RUTH
COPPER
PIT

NORTH STAR
PONTER

ZACK

85°

ARCTURUS FAULT

STAR PONTER

UNECONOMIC
MINERALIZATION
AT DEPTH

35°

#9 HILL

#9 FAULT

60°

A

LEGEND

PIT OUTLINE

MAJOR FAULT WITH DIP

0.02 OZ Au/TON ORE

KENNECOTT WASTE DUMP

PERMIAN ARCTURUS

PERMIAN RIB
HILL SAND-
STONE

CRETACEOUS
QUARTZ MON-
ZONITE POR-
PHYRY



ALTA GOLD Co.

Ely, Nevada

ROBINSON PROJECT

STAR PONTER PLAN MAP

0 250'

