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093 → Gibraltar

BL - Nov. 20/03

Gibraltar copper-molybdenum mine, near McLeese Lake

Owned by Gibraltar Mines Ltd. (Taseko Mines Ltd.)

Mine commissioned in March, 1972. Reserves at start-up were 326.6 million tonnes grading 0.371 per cent copper and 0.016 per cent molybdenum. These reserves included: Gibraltar East, 136.0 million tonnes; Granite Lake, 108.9 million tonnes; Pollyanna, 73.5 million tonnes; and Gibraltar West, 8.2 million tonnes.

Mine put on 'care--and–maintenance' in December, 1998 by then owner Boliden Limited.

Was the lowest grade copper mine in North America; effieciencies—

- use of large haul trucks;

- in-pit crusher and conveyor belts;
- computerized automated process control circuits in crushing and milling operations

- implemented SX-EW* copper processing plant

(*Commissioned solvent extraction-electrowinning plant in 1986 that produces 99.9% pure copper metal (cathode copper) at lower overall cost/pound versus conventional mining/milling. Used for processing of low grade and oxidized mineralization).

Production: average annual production of 32,000 - 33,000 tonnes copper & 300 – 400 tonnes of molybdenum in concentrate form

Milling rate 38,0000 tonnes/day

Current Reserves: 135 million tonnes grading 0.306% Cu & 0.010% Mo

Geological Setting

The Gibraltar porphyry deposit occurs in the Early Triassic Granite Mountain pluton, a zoned subalkalic body that intrudes* Permian Cache Creek group rocks. Four orebodies have been mined at Gibraltar: Gibraltar East (093B 012), Pollyanna (093B 006), Gibraltar West (093B 007) and Granite Lake (093B 013). Other notable deposits include Gibraltar North (093B 011) and Sawmill (093B 051). The orebodies are almost entirely confined to the Mine Phase Tonalite portion of the Granite Mountain pluton within a broad, easterly trending zone of shearing and alteration. The Mine Phase Tonalite (approx. 30% quartz, 50% saussuritized plagioclase & 20% chlorite) appears to form a thin outer shell about the main body of the pluton. Economic sulphide mineralization in the Mine Phase Tonalite is usually associated with sericitization and chloritization. The tonalite has been strongly deformed by shearing and mineralization is associated with this deformation. Mineralization is generally accompanied by alteration and is confined to deformational structures. These structures comprise small and large shear zones, foliation planes, short veins and various dilatant structures.

* Some workers argue that the Granite Mountain pluton was tectonically emplaced into the Cache Creek Complex (MEM Fieldwork 1998).

Mineralization consists of pyrite, chalcopyrite, molybdenite, magnetite, bornite and cuprite. Associated alteration minerals are quartz, sericite, chlorite, epidote and carbonate. The Gibraltar deposits all show secondary oxidation and secondary enrichment with the formation of chalcocite as coatings and as replacement of pyrite and chalcopyrite.

Recent Exploration:

Major IP program in 2000 identified prominent IP chargeability anomaly east of Pollyanna pit

Estimated 30,000 m diamond drilling program in 2003