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A recent Hunter Dickinson compilation of geological, geochemical and geophysical surveys completed by Hunter Dickinson and Cominco has substantiated a much larger series of coalescing hydrothermal sulphide systems than previously defined. The principal objective of further exploration on the Pebble property is to locate and delineate additional higher-grade copper-gold resources to complement the higher-grade core to the known Pebble deposit and provide the mill feed required for rapid recovery of capital costs during the initial years of production. A major diamond drilling exploration program is planned by Northern Dynasty Minerals for 2002 to systematically assess the full potential of the Pebble Cu-Au porphyry district.

## Kena Property's Gold Mountain Zone - A New Gold Discovery in **British Columbia**

Linda Dandy, Sultan Minerals Inc.

The Kena Property, located in southeastern British Columbia, hosts bimodal gold mineralization consisting of both high grade bands and a unique, large, porphyry gold system. The gold mineralization is associated with lower Jurassic Rossland Group mafic volcanic flows and tuffs intruded by a mid Jurassic plagioclase porphyritic monzonite unit termed the Silver King intrusion. Both the volcanics and the Silver King intrusion have undergone post-emplacement deformation.

Historical work in the region concentrated on locating and testing disseminated gold mineralization in the volcanics using a deposit model for "conformable" gold deposits as described by Hoy and Dunne (1989).

In 2000 exploration work by Sultan extended an existing soil geochemistry grid from the volcanics into the Silver King intrusive, defining a large zone of highly anomalous gold mineralization in what is now termed the Gold Mountain Zone. The Gold Mountain Zone gold soil anomaly is presently 3.3 kilometres in length and from 700 to 1400 metres in width. Initial prospecting over the anomalous soil area returned numerous elevated gold values in rock chir and grab samples.

In November 2000, continuous chip samples from a series of trenches excavated in the Gold Mountain Zone "discovery area" showed broad zones of gold mineralization. A total trench length of 187 metres in six trenches averaged 1.43 g/t gold. The mineralization encountered by trenehing is confined to the Silver King intrusive, and is blocky fractured, silicified and potassic flooded with 2-5% disseminated and fracture controlled pyrite. No additional suphide minerals are present.

Due to the composition of the intrusive, an induced polarization geophysical survey was utilized to trace the extent of high resistivity (resulting from silica and K-spar flooding) and high chargeability (resulting from elevated sulphide content). The initial induced polarization survey showed chargeability and resistivity anomalies coincident with the gold soil geochemical anomaly throughout the length of the Gold Mountain Zone. A ground magnetometer survey showed that the "discovery area" has a low magnetic signature with a halo of higher magnetic response.

The high magnetic halo correlates well with the alteration zoning seen in the intrusive rocks. The core area exhibits intense potassium and silica alterations. The outer halo contains not only magnetite, but also classic propylitic alteration assemblages including enhanced epidote and chlorite, and hosts weak chalcopyrite and molybdenite. Pyrite is prominent in both the central core and the propylitic zone and more massive bands and patches often contain small tourmaline crystals.

Free gold grains found during petrographic studies show that the gold does not occur in a restrictive depositional environment. Gold grains up to 70 microns have been seen adjacent to ragged pyrite crystals in massive pyrite veinlets. Clusters of gold grains from 10 to 30 mircrons have been observed in recrystallized and foliated quartz veinlets. Within the volcanics, some very high-grade gold mineralization occurs as finely disseminated free gold grains as along an epidote rich band. Minor amounts of gold also occurs as inclusions in pyrite grains and along late fractures.

Two separate and distinct metallurgical tests conducted on the gold bearing intrusive rock indicate excellent recovery potential. The majority of the mineralization occurs as free gold grains, of which greater than 40 percent can be recovered by gravity methods. Recoveries of better than 90 percent can be obtained by weak cyanide leach. No deleterious elements (As, Sb, Hg, Cd, Pb, Bi) occur with the gold. The positive metallurgical results, combined with a potentially low stripping ratio and excellent infrastructure greatly enhances this project's chances for success.

Two distinct but overlapping gold targets have been identified in the Gold Mountain Zone. Diamond drilling to date has investigated the potential for both large low grade porphyry and high grade style mineralization. The gold porphyry system contains broad widths of lower grade gold mineralization, as for example in hole 01GM-05 which averaged 1.16 g/t gold over 134 metres. Very high grade gold mineralization occurs in several locations, as for example in hole 01GM-08 which returned 172 g/t gold over 2 metres.

In 2002 Sultan plans to cominue to drill test both styles of mineralization.

## El Morro Copper-Gold Project, Chile

Richard J. Hall, Metallica Resources Inc.

The El Morro copper-gold project, a joint venture between Metallica Resources Inc. and Noranda Chile Ltd, is located in north central Chile, Region III, about 80 kilometers east of the city of Vallenar. The El Morro property consists of approximately 16,400 hectares with 2,244 hectares controlled through existing option to purchase agreements and 14,156 hectares staked by Metallica. Noranda has applied for an additional 2,500 hectares of exploration claims that will become part of the joint venture.

The El Morro project consists of a cluster of Oligocene in age, gold bearing copper porphyry deposits. Three known deposits within the joint venture area have received the most attention. They are El Morro, El Negro and La Fortuna. In addition to the porphyry style of mineralization on the El Morro project, high-sulfidation, epithermal gold mineralization occurs near La Fortuna at the Cantarito deposit.

The porphyry copper-gold clusters at El Morro have extended the late Eocene-early Oligocene copper belt approximately 300 kilometers to the south of the El Salvador-Potrerillos region. This mineralization if