

EXPLORATION HISTORY

Prospecting activity in the Tahtsa District dates back to the early 1900's and lead to the discovery of a number of polymetallic, precious metal vein and shear zone occurrences which were worked intermittently into the 1960's. A few of these deposits had some limited production.

During the heydays of porphyry exploration in the 1960's and early 1970's, numerous companies carried out large scale, helicopter-supported, regional prospecting and stream sediment sampling programs in the Tahtsa District which lead to the discovery of a large number of deposits including the Berg (400 million tons grading 0.4% Cu and 0.05% MoS₂, Bergette, Huckleberry (87 million tons grading 0.4% Cu, 0.025% MoS₂), Troitsa, Coles Creek, Poplar Lake, Whiting Creek, Ox Lake, Red Bird, Lucky Ship and Nanika.

In 1972 Hudson Bay Oil and Gas Limited completed an airborne magnetic survey covering about 1000 square miles including the area presently covered by the Sibola and Twinkle Lake claims. This survey was followed up the same year with preliminary reconnaissance mapping and geochemical sampling. Magnetic highs concealed by overburden were the primary targets selected for follow-up work by HBOG.

In 1973, HBOG carried out a large scale, reconnaissance type, induced polarization survey to evaluate a number of magnetic features in a broad, low-relief area around the northern

and eastern flanks of the Sibola Range. Based on the result of this work, HBOG staked a number of claim blocks including three claim blocks (Slide, Sylvania and Pam) which covered three separate, coincident induced polarization/magnetic anomalies, all of which are located within the present boundaries of the Sibola property.

During 1974 and 1975 HBOG carried out follow-up geological, geochemical and geophysical surveys on the Slide, Sylvania and Pam claims and drilled 56 small-diameter, percussion holes totalling 9,815 feet. This drilling led to the discovery of low-grade, porphyry-type, Cu/Mo mineralization on both the Sylvania and Pam claims. The best drill hole averaged 0.34% Cu and 0.033% MoS₂ over the entire bedrock interval of 207 feet.

During 1975 Noranda Exploration Company Limited drilled 5 core holes totalling 526 metres in the southwest corner of the Sibola #3 claim on ground then held by Noranda between HBOG's Slide claims to the west and the Sylvania claims to the east. Four of the Noranda holes intersected strongly altered feldspar porphyry with zones of low-grade copper mineralization. No further work is reported by Noranda.

In 1976, Rio Tinto Canadian Exploration Limited carried out a four-line induced polarization/magnetic survey over part of the Sylvania claims on ground that is now covered by the Sibola #1 claim. This survey, which was carried out as part of an orientation study over significant mineralization inter-

sected in HBOG drill holes, confirmed the presence of a broad, very strong, easterly-trending, chargeability anomaly extending beyond the area tested by drilling. No further work was carried out by Rio Tinto or HBOG.

There is no record of any further exploration work having been carried out within the Sibola and Twinkle Lake claim areas up to the present time.

PROPERTY GEOLOGY

Results of the geological survey are presented in Map 1056-4 at a scale of 1:25,000. Government air photos at a scale of 1 inch equals $\frac{1}{4}$ mile (1:15,840) and standard 1:50,000 topographic maps were used for control. Prior to commencing the survey, a stereoscope study of the air photos was completed which was useful in identifying possible outcrop areas, lineaments, fracture patterns, domal structures and ice flow direction.

The claim area is underlain by a diverse package of shallow marine and continental volcanic and sedimentary rocks of Jurassic and Cretaceous age which are intruded by several diorite to granodiorite/quartz monzonite plutons of Late Cretaceous age and a high level, porphyritic felsic stock of probably Tertiary age. The felsic stock is flanked by, and may have acted as a feeder to two circular rhyolitic domes which may

correlate with subaerial felsic volcanic rocks of the Eocene Ootsa Lake Group.

Porphyry-type Cu/Mo mineralization and associated moderate to strong argillic phyllic and potassic alteration zones occur within and peripheral to a small Late Cretaceous granodiorite stock on the Twinkle Lake #1 and Twinkle Lake #2 claims.

A boomerang-shaped pyritic zone, approximately 2.0 km long and up to 500 metres wide, straddles the south edge of a Late Cretaceous granodiorite/quartz monzonite stock on the Sibola #1 claim. Volcanics adjacent to the stock are hornfelsed and cut by numerous dykes. A zone of significant Cu/Mo mineralization occurs within the stock, along the inside edge of the pyrite halo.

The Tertiary felsic intrusive contains a altered, pyritic zone about 1.0 km wide. Low grade, porphyry-type Cu mineralization has been intersected in two widely spaced drill holes and outcrops in one area near the central part of the zone. Samples from the mineralized outcrop returned anomalous values for Au, Ag, As and Sb.

Volcanic and Sedimentary Rocks

Hazelton Group - Telkwa Formation

The Lower Jurassic Telkwa Formation is the oldest succes-