

Nov. 1968

FROM: MASTODON-HIGHLAND BELL MINES LTD.
SUMMARY REPORT OF 1968 FIELD WORK
by E. R. WIZNIAK

NICH GROUP: - The Nich Group consists of 54 claims and is located on the northside of Thoen Mountain, approximately 45 miles north of Smithers. The showing is situated along a steep northerly trending spur of Thoen Mountain at the 6,700 foot elevation. This being well above timberline, outcrops are plentiful except in areas of talus slides.

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The Claims are underlain by Upper Jurassic sediments which belong to the Bowser Group and consist principally of argillite and shale. Some of the argillite beds are quite impure, containing abundant arkosic and tuffaceous material. This sedimentary sequence has been intruded by the Thoen Mountain stock which is essentially a diorite to monzonite in composition. This contact has an E-W trend except in the vicinity of the mineralization where there is a large northerly trending offshoot. Thermal metamorphism has converted the argillite for up to 1,000 feet from the contact to a dense chocolate brown hornfels.

The mineralization is confined chiefly to the hornfels zone and consists mainly of pyrite, chalcopyrite, chalcocite, molybdenite and bornite listed in order of decreasing abundance. The chalcopyrite and molybdenite mineralization occurs along shears, fractures and as disseminations in the highly siliceous sections of the hornfels.

Several geological factors appear to have an important bearing on the localization of mineralization. Probably the most important of these is the physical make-up of the sediments, that is the size of the individual particles and their chemical composition. Proximity of the intrusive contact together with the degree of metamorphism and hydrothermal alteration are of major importance. Lastly, the competency of the individual beds which determines the intensity of shearing and fracturing, is a major controlling factor of the mineralization.

Initial sampling of the better mineralized sections gave an average of 0.35% Cu., 0.03% MoS₂, 0.2 Oz. Ag., and 0.01 oz. Au. over an area approximately 200 x 400 feet along the spur of a ridge. Subsequent systematic channel sampling of the same zone returned approximately the same grade.

"NICH SHOWING"

THIN SECTION STUDY OF A
TYPICAL HORNFELS SPECIMEN
by H.T. CARSWELL JAN/68

Specimen 19 - Hornfels

| | | |
|-----|---|--|
| 10% | - | Quartz porphyroblasts and/or fragments |
| 20% | - | Plagioclase porphyroblasts and/or fragments slight, continuous normal zoning. |
| 70% | - | F.g. matrix, less than 0.03 mm, containing:- |
| | | 5% anhedral biotite - red-brown |
| | | 1% white mica in veinlets |
| | | 1% anhedral opaques |
| 65% | { | (?) anhedral plagioclase |
| | | (?) anhedral K-feldspar |
| | | (?) anhedral quartz |

The rock contains angular to round, some chip-like, less than 0.1 mm quartz grains; less than 0.2 anhedral, elongate, inclusion-bearing plagioclase in a f.g. groundmass composed mainly of interlocking quartz and feldspars. Minor intergrowths of quartz and plagioclase are present. Some plagioclase is replaced in part by f.g. K-feldspar. Much f.g. biotite is interstitial.

Plagioclase has been slightly altered to v.f.g. saussurite with albite, and to white mica. Minor chlorite replaced biotite.

Opaques occur as v.f.g., disseminated grains to less than 1 mm octopus-like crystals in vague, linear zones. Minor, thin, white mica veinlets cut the rock.

The groundmass is characterized by clastic and recrystallized textures -- metamorphism has not proceeded far in this rock.

O.K. Group (13)

References: Ann. Repts., Minister of Mines, B.C.: 1921, pp. 91-100; 1929, p. 160.

This group is situated on the north side of Thoen Basin between elevations of 5,500 and 6,500 feet. A pack-trail $3\frac{1}{2}$ miles long leads to the property from Twentynine Mile Creek crossing on the Hazelton-Babine trail. Twentynine Mile Creek is a southerly flowing tributary of Suskwa River approximately 29 miles east of Hazelton. Development work consists of a 40-foot crosscut adit and surface strippings.

The country rock is tuffaceous sandstone and argillite cut by alaskite and porphyritic granodiorite dykes and sills. The stratified rocks strike approximately north 40 degrees east and dip 20 to 30 degrees northwest into the face of the mountain. To the west of the property the sediments are intruded by a stock of granodiorite. A tongue projects from this stock to within 300 yards of the more important veins.

The mineral occurrences consist of small, irregular veins occupying shear zones that for the most part parallel the bedding. The veins are considerably leached, so that the filling now consists largely of iron oxide. The adit cuts through one vein 6 inches wide that is entirely leached and contains no sulphides. Another vein, varying in width from 6 inches to 2 feet, is exposed above the adit, which has not been driven far enough to cut it. This vein contains galena, light and dark brown sphalerite, and tetrahedrite, with some quartz, carbonate, and pyrite. According to the Minister of Mines Report for 1921, a sample of the solid galena assayed: gold, 0.02 ounce a ton; silver, 190 ounces a ton; lead, 70 per cent; and a sample taken across 10 inches of leached-vein filling returned: gold, 0.02 ounce a ton; silver, 80 ounces a ton; lead, 36 per cent. Several other veins 2 to 6 inches wide have been exposed by surface strippings.

Several other veins were discovered about 1920 in Bergsten Basin immediately north of Thoen Basin. The Minister of Mines report for 1929 describes a shear zone 6 feet wide in the centre of Bergsten Basin at elevation 5,060 feet, 1 foot of which carries galena, sphalerite, arsenopyrite, and pyrite. Three thin rhodonite veins occur above this point on the west side of the basin; all are well mineralized with galena and sphalerite but they are only a few inches wide. At elevation 6,300 feet, west of the pass between Thoen and Bergsten Basins, a small granodiorite tongue is mineralized with chalcopyrite. A sample across the best 2 feet of this zone, assayed: gold, 0.30 ounce a ton; silver, 11 ounces a ton; copper, 2.1 per cent.

Pole Star Claim (9)

The Pole Star claim is between the Silver Cup mine and the peak of Nine Mile Mountain, on the south side of Silver Cup Basin. The claim was staked by Joe Miller in 1909, and for a number of years small veins were prospected by open-cuts and by stripping on the gently rising ground between elevations of 5,100 and 5,400 feet above Silver Cup Basin.

The main vein is exposed for about 100 feet along the face of the bluff at the top of the basin. It ranges from 6 to 24 inches in width, strikes north 30 degrees west, and dips 15 degrees southwest. The vein

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