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P R E L I M I N A R Y

REPORT

ON

ATLIN AREA PROSPECTS

1965



ATLIN

MINING DIVISION

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PRELIMINARY REPORT ON

ATLIN AREA PROSPECTS

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MAPS

Map GL C 1/65 - Willison (Glacier Claims)	In pocket
104 (M) & (N) - topographical) Bennett and	" "
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PRELIMINARY REPORT ON

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- A. General Area
- B. Kim Copper (Al Claims)
- C. Willison Silver-Lead-Zinc (Glacier Claims)

This preliminary report contains short descriptions of prospecting work carried out in the Atlin Area during 1965. With included maps and photo-traces of areas of continuing interest, the report is meant primarily as a compact reference for future field work. Copies of topographical and geological maps 104 N and 104 W are included and reference should be made to them.

A. General Area

The Atlin area (which in this report includes the Bennett Lake (Skagway) map area also) was suggested for prospecting by several including Earl Dodson who had done considerable ground work there a few years ago. Much of his work required follow-up which he was not equipped to do at that time. In addition, recce-combined ferry trips, particularly via helicopter in 1960, resulted in the locations of several small mineralized zones which were recorded for follow-up at a later date. With C. E. & S. exploration on an Atlin Lake molybdenite property in progress at the time, prospecting for similar deposits seemed warranted, especially since the writer had noted similar occurrences while in the area previously and had, in addition, been told by the "oldtimers" of several "unprospected" molybdenite occurrences. With the exception of the valleys and glacial areas, percentage outcrop in the steep country is relatively high. Adavac

After completion of the Homathko work, prospectors Nickle, Kimball and Christensen were moved north and, with the writer, between the period July 26 to September 3, carried out helicopter supported work from four main camps. Gas caches had previously been made at Atlin, Bennett and Carcross. Supplies were obtained at Whitehorse and Atlin. Although based at Dezadeash, ferry flights were usually prospecting trips with different routes being used as weather permitted.

Prospect (and float) locations are shown on accompanying Map AP 1/65 and short descriptions occur in tabulated form. Working from Camp A, Kimball discovered a copper prospect (1) (A1 Group) described separately in B. of this report.

East of the camp some interesting zinc float samples (2) assaying from 5 oz. silver and 2.3% zinc to 8.7% zinc were taken. These were believed to have originated in small mineralized pockets related to sedimentary inclusions caught up in igneous rock. As shown, a number of other samples were taken but the showings were generally too small to warrant staking.

While constructing Camp B (on the south side of Warm River) the first two large skarnified volcanic or granitic rocks moved contained coatings of molybdenite; chip samples of the rocks ran 0.3% MoS₂. With the exception of some inaccessible, vertical cliffs a couple of thousand feet above camp, most of the likely source areas were checked without success. Small sulphide showings (low Ag, Pb, Sb), however, were discovered (3) as was a graphitic zone (4) having slight values in Ag and Sb.

From Camp C in a well prospected area northeast of Atlin, Mickle spent ten days examining molybdenite prospects. The few such located were either small high-grade quartz veins (i.e. three at 0.04 Au, 1.9 Ag, 2.8% Pb) or consisted of random and rare scattered molybdenite flakes (MoS₂ was the primary target in this area) in the red weathering granitic rocks. The writer had previously (1958 ?) flown scintillometer over this section and found an unusually high radioactive background. Uranium occurrences (i.e. Cracker Creek Zeunerite) were examined at this time. A minor nickel occurrence is reported in the same locale.

Copper-rich specimens were presented to Mickle by various residents or placer operators in the district but lack of appreciable gold-silver values made searching for the source undesirable at the time. Included were those obtained from Pete Delcosso (.02 Au), Luigi Picoco (.04 Cu) and Allan Mattson (0.13% Sn). The latter occurrence is worth noting although cassiterite does occur around the old Black Diamond tungsten property. Small amounts of molybdenite were found by the writer in the Willison area (5) southeast of the C. M. & S. Camp.

A
D
A
N
A
C

A large rusty weathering felsite and/or rhyolite deposit on Mt. McCallum (6) was examined. Pyrite is visible in every specimen of the many million ton outcropping but chalcopyrite is recognizable in only about one specimen of twenty occurring on the half-mile wide talus slide. (Were this in southern B.C., Kennco or South West Potash would probably have had a few drill holes into it.)

Northwest of Mickle's Camp C, Alrae Explorations were actively engaged doing consultant work with a view towards re-opening the old Atlin Ruffner Mine (7). The writer, accompanied by former Wesfrob geologist, Mike Stadnyk, now working for Alrae, looked over the surface workings. The main ore control at this old silver-lead property is interesting and consists of persistent lamprophyre (?) dykes along whose contact the mineralization occurs. The property has never been thoroughly explored and the current program calls for surface and underground work along the projected dyke extensions.

C. M. & S., drilling a molybdenite property (MoS_2 in banded rusty weathering granitic rock) - Husselbee/Versloos 1964 option, east of Willison Bay (8) - had a miserable summer drilling-wise (one hole partially completed) and little was accomplished other than a 5-foot intersection of low-grade (?) material late in the season. Being a dead-ringer physically for the Southwest Potash Serb Creek deposit near Smithers, long drill holes are likewise required to reach the target - thus the trouble. The grade is believed to be in the $\frac{1}{2}\%$ MoS_2 range, but width is unknown. Length of zone appears sufficient, however.

Operating from Camp D, not far removed from the C. M. & S. camp, and looking more for MoS_2 , Mickle and Christensen discovered numerous occurrences of silver-lead-zinc-antimony mineralization and these prospects are treated under Section C. included. MoS_2 occurrences discovered in this area could not be enlarged upon.

In the Wann River area, we were unable to re-locate a copper prospect (9) previously discovered by the Hepworth-Robertson-Smith trio, or able to find and trace up copper-bearing conglomerate float (10) reported by Dodson. However, a number of previously unreported occurrences were discovered and for the most part checked out, including a weak MoS_2 -bearing float at (11) and muscovite mica (up to 3" sheets) in pegmatite (12).

A few air spottings of interest (i.e. (13) to (15)) remain untested.

After an examination of the nickeliferous hornblende (0.74 Ni, .16 Cu and 0.11 Ni, 2.82 Cu) deposit (16) found apparently while excavating for the Engineer Mine dansite, an air mag MF1 check was made of the surrounding mile-square area without results. Ground magnetics over the known deposits were very poor, thus airborne detection was not expected unless an extremely large deposit existed. A recce flight was made around a "lost asbestos deposit" said to occur near tree-line in the central Mt. Chikoida area (17). Prospecting safaris into this locale have been numerous but the story is still good.

In general, although geology in the Atlin-Bennett area looks good on a map, most deposits found are "teasers" lacking either size or grade, or lacking both. The Engineer Mine was one of Canada's highest value per ton properties (i.e. up to 50% Au) and because of this, the area was well prospected in the past. However, retreat of the ice since the last serious prospecting attempts of the 1930's has bared a few "new" areas and our work in prospecting these "new localities" is justified, as is our re-examining for previously neglected molybdenite and low grade copper deposits. On this basis there is some justification for continuing such a program in a minor way.

B. KIM COPPER (Al Claims)

Six claims (AL 1 to 6) were staked late in the Fall to cover a showing (1) discovered by Kimball in a small unnamed creek immediately below his tent camp. The writer saw the showing from the air only and the description is that obtained from Kimball. Interest has been generated only by the fact that a large sack of samples (30 - 50 pieces) assayed a surprising 4.03% copper with a 3.2 oz. silver and 0.82% zinc content.

The claims were named after Al Pelletier, Herman Peterson's helicopter pilot who flew Kimball in following United Keno Hill work and after assay values were obtained.

Location & Access:

In and paralleling Kim (our name) Creek, 4½ miles from its junction with Swanson River. The junction is 5½ miles east of Ben-My-Chree (a former, but now abandoned, B.Y.N. tourist port of call) on Taku Arm, Tagish Lake.

Property is at timber line - elevation 3800'. Access by helicopter or, if required, by 8-mile walk from Ben-My-Chree.

History:

The prospect was discovered by Dave Kimball while working out of Camp A during a week's stay late in July. Claims were staked and recorded in Atlin during early September. No published discoveries exist in this area although "a geological survey" reportedly picked up well mineralized molybdenite float in one of the valleys to the north-east. No work has been done on the property.

Airphoto coverage (photos A 11392-369-371 on hand) is poor because of snow cover during the flights. This is typical of most photographic work done by the R.C.A.F. in the past.

General Geology:

The property occurs at or near the northwesterly trending stock-littered, irregular contact of what is left of the main Coast Range (northern) batholith with rocks mapped as metamorphosed pre-Permian quartzites, gneisses, schists and limestones. Essentially it is in the granitic rocks near the local northern terminus of a "prong" of the metamorphosed rocks.

Local Geology:

Locally the mineral deposit is located in one of several paralleling, poorly exposed, fault (or shear?) zones in granitic rock containing meta-sediment or meta-volcanic remnants. The latter are now best termed as amphibolite. The trend of the structure is north-westerly and the resulting depression is now the course of Kim Creek.

Description of Property:

The main showing occurs in sheared granitic rock at the junction of Kim Creek and a subsidiary a few hundred feet below Camp A. Although a minor amount of malachite staining is visible, the size and the shape of the showing is not readily outlined. It may be limited to a 20-foot length with a width only slightly less (all that is clearly shown at present) or copper values may continue along strike in the apparently unmineralized granitic rock. Overburden is not heavy and the creeks have cut the bedrock in most cases.

Assays & Reserves:

Kimball's 30-50 piece sample taken across a 15-20 foot width

of the only visibly mineralized section assayed 0.02 Au, 3.2 Ag, 0.82 Zn and 4.03 Cu.

The above assay was surprising, judging from the appearance of the samples which contained chalcopyrite and quartz disseminated in both a grayish amphibolite and a fine grained gneissic rock resembling a quartz diorite or quartz monzonite. Some finely crystalline magnetite may be present. The copper content must have been contributed by "innocent" secondary oxides or chalcocite and/or bornite as only 1-2% chalcopyrite was visible. A second large sample collected in the same general area was composed of a tannish weathering biotitic granitic rock, possibly a syenite in which chalcopyrite was visible. This assayed 0.60% copper.

Summary & Conclusions:

Kimball believes the showing to be a "local blowout" only, but at the same time admits that grade is higher than anticipated and recognizes that with this in mind, the surrounding rock should be more carefully checked for disseminated copper.

Recommendations:

The surrounding rock should be more carefully checked in conjunction with other work next year and allowance made for use of the Cobra (and/or the packsack) drill early in the program. Little difficulty should be encountered. Our own helicopter, or Herman Petersons, can be used. Two men working for ten days should be able to show up anything of importance.

References:

1. Monthly Report - July, J. J. McDougall
August,
September, 1965
2. Bennett Lake Mp. Sheet (G.S.C.) 1" = 4 miles
3. N.T.S. 1" = 4 Miles topographic map sheet - 104 N (Shagway)

C. Willison Silver-Lead-Zinc-Antimony (Glacier Claims)

The following preliminary report on the Willison property is prepared by the writer on prospectors' information only, as discovery occurred late in the season. The only direct involvement besides setting camp up initially in this particular area was the examination of specimens obtained. Included sketch map GLC 1/65 and topographical map 104 M should be referred to.

Property:

Property includes the Glacier Claims #1 to 20, located as a group, and in good standing to September, 1966.

Location & Access:

The property is 37 miles southwest of Atlin, B.C. and approximately 10 miles up the south fork of Willison Creek from its mouth at Willison Bay, an arm of Atlin Lake.

The showings occur just above timber line on a partially gravelled flat creek bottom (elevation 4300' - 5500') immediately below a few small, rapidly receding glaciers which are remnants of the main Chilkoote Range ice mass which commences about 2 miles to the west.

Access is either by foot from Atlin-based boats or float planes, or more efficiently, by helicopter from Atlin where Herman Peterson has a base. During the past season our own helicopter was in the area most of the summer, but Peterson's G-4 was used during claim staking later on.

Timber is small and scarce and restricted to the narrow valleys. Water supply should be persistent and adequate. Airphoto coverage, again poor because of R.C.A.F. indifference to snow cover, centres around photos A 11449-173 to 175.

History:

The showings of interest were discovered by prospectors Mickle and Christensen during routine work from a 2-week camp set up at timberline (elevation 4500') on the south fork of Willison Creek. The writer had previously discovered weak MoS_2 mineralization nearby and the area, not far removed from C. M. & S. optioned holdings south of Willison Bay, appeared to warrant ground prospecting.

The main showings were staked in August but not recorded as the prospectors could not conveniently reach the recorder's office before United Keno Hill work started. After a few interesting assays were received, the claims plus a few extra were restaked and recorded.

Except for the sampling of some 40 or 50 separate sulphide lenses and the preparation of sketch map GLC 1/65, no work has been done on the property.

General Geology:

As shown on the G.S.C. "Bennett Lake" sheet (Bob Christie - 1950?) the section of interest occurs in metamorphosed pre-Permian rocks several miles east of the northern ice capped remnants of the Coast Range Batholith. The granitic rocks occur on the Alaska side of the border to the west and southwest but the irregular contact brings the main granitic boundary in more rapidly towards the northwest. Small stocks are common and one of these, about 4 miles in diameter, occurs approximately 4 miles northeast of the property.

The metamorphosed rocks consist of quartzites, gneisses, schists and limestones (marble). The latter occur as long (1-2 miles) narrow (several hundred foot width maximum) discontinuous bands in the metasediments and are important as the ore deposits occur within them. They reflect structure to a certain extent and show a system of north-westerly trending folds (4 mile crest to crest spacings) to be continuous for 15 or 20 miles in this locality.

Local Geology:

The property occurs approximately on the axis of an anticline in the folds referred to. The local limestone band the prospectors report is not shown, however, nor are attitudes, but 45° dips nearby may be projected. As the occasional band of limestone is shown cutting across the regional folding at a high angle, the structural history is more complex than at first indicated.

Description of Property:

According to the prospectors the deposits occur in a narrow 100-200 foot wide limestone band and may be related to a system of paralleling dykes or sills (argillaceous or metasediment bands?). This unmapped limestone band (unexposed prior to ice recession within

the recent past) is probably similar to those shown regionally and described above.

From descriptions, the mineral deposits would appear to be of several types with (a) pyrite and/or pyrrhotite, either massive or with quartz, being the most widespread and (b) consisting of medium grained galena and sphalerite, with or without quartz. Related to (b), type (c) consists of near massive stibnite (antimony sulphide). Minor chalcopyrite occurs with most types. Type (a) may occur as separate "cores" within type (b) pods.

As a rule the showings consist of a system (?) of small elongate northwesterly trending pods in the limestone (probably replacement) although some of those of type (a) can reportedly be traced as 3-foot wide "veins" for 1000 feet or more. Also massive and disseminated pyrrhotite occurs over relatively large areas, assuming continuity under numerous acres of glacial debris which prevent a clear overall picture. A few of the samples taken were from talus slides with a source not readily in evidence.

Structure is not known. From the description one might expect the pods to be local "blow outs" along steep strike slip faults.

Assays & Reserves:

Some difficulty has been experienced in getting reliable assays but in general the range has been probably correctly established. United Keno Hill Mine silver checks made were considerably and consistently higher but this is to be expected. Silver values (a must in this location) appear important only in type (b). Including two highs of about 120 oz., 45 samples taken of this type averaged 10.6 oz. silver (about 25 of these were within the 3 to 30 oz. range). Gold assays are low (max. 0.30 oz. in high silver samples) as is the copper content (not assayed). Two samples of type (c) returned antimony values of 7.5% and 18.4% respectively, the former showing high silver, the latter none.

Within the larger and more persistent type (a) deposits, silver values are negligible. Lead and zinc content should be appreciable (est. 30% combined).

The largest pod of near massive type (b) is probably in the order of 5' x 20'. Two zones (A & B) containing concentrations of these

Pods are recognized but as yet the individual pods in either zone have not been found close enough together to constitute a lode.

Conclusions & Recommendations:


The Willison discoveries are not of major importance as the silver content is too low to make up for the widespread spacing of the individual (baby Pine Point type) bodies. However the presence of persistent pyrrhotite and pyrite showings of greater dimensions offer some hope that similar sized silver-lead deposits could be found in the largely gravel-covered locality. Favourable but unrecognized structural conditions might exist and the property must be held until the absence of such can be established. The absence of nearby and often controlling granitic rock can be considered important as far as continuity is concerned.

It is recommended that the property receive a couple of weeks additional prospecting during the summer of 1966 and that the discoveries be mapped and interpreted. Float areas require checking and more prospecting of the known zones is required. 1965 work was a "last minute" rush as the showings were not found until the camp was due to be closed. As at the Al Group, some Cobra and packsack work would be in order. It is not known how effective soil sampling or geophysics would be in this situation. Certainly an S.P. check would be in order. Any sizeable massive sulphide body should react to E.M. if talus cover is not too great. Should signs of mineralization be found along strike in more cultivated areas containing soil cover, soil sampling could be worthwhile.

As ready helicopter transportation is available at Atlin, our own machine will not necessarily have to be scheduled and thus the timing need not be inflexible.

Silver prospects are a rarity and as the metal has an assured future, work on prospects such as those of the Willison is warranted.

Vancouver, B. C.
January 19, 1966.


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