115A/6

1720 - 1055 W. Hastings St.,
Vancouver, 1, B.C.

February 24th, 1970.

Mr. H.E. Jacques, President,
Kathex Mining Co. Ltd.,
807 - 409 Granville St.,
Vancouver, 2, B.C.

Dear Sir:

Dr. Bacon and I have reviewed the report written by Paul Sawyer on the Bob claim group in the Dalton Creek area, Yukon Territory.

We do not think that this area is worthy of much further attention apart from basic prospecting. It would appear that a number of copper showings have been found but these are too small and too insignificant to be of much value.

We would be glad to discuss this further with you should you so desire.

Yours very truly,

BACON & CROWHURST LTD.

J.J. Crowhurst

JJC/ic

Report on Copper Occurrences on the Bob Claim Group
Dalton Creek Area, Yukon Territory

Introduction

During the summer of 1967 the writer was engaged in directing and supervising an exploration program in northern British Columbia and the Yukon Territory. As part of this program one of the field projects undertaken was a search for copper mineralization in Triassio volcanic rocks. Prospecting was begun in the areas adjacent to Mush Lake and Bates Lake and later in the season was extended to the north of Mush Lake. Interesting copper mineralization was discovered along the valley of Virgin Creek and on the ridge separating the valleys of Virgin Creek and Dalton Creek. As far as is known these showings were not previously known.

In August 1967 seventy two Husky claims were staked to cover the known copper showings and the main area of interest. These claims were abandoned by the owners in 1968 and have now been restaked, either wholly or in part, as the Bob claims.

The following report is based on observations made by the writer and on the results of work carried out, during the 1967 field season. To the best of the writer's knowledge no field work has been done since 1967 and the recommendations for a further work program made at that time, and repeated below, have never been carried out.

Geology and Mineralization

Along the western flank of the valley of Virgin Creek chalcopyrite is almost exclusively the only copper mineral found. A few small zones of quite heavy malachite staining were also found in volcanic rocks along this side of the valley, but in general the amount of copper mineralization on the western side of Virgin Creek appears to be minor in amount, and

importance. On the east side of Virgin Creek chalcopyrite, bornite, chalcocite, cuprite, native copper, mineralization occurs in intermediate to basic volcanic rocks over a considerable area along both sides of the dividing ridge which rises to over six thousand feet between Virgin Creek and Dalton Creek. Prospecting coverage in 1967 was not exhaustive along the whole length of the ridge, due mainly to poor weather conditions which restricted work at the higher elevations in late August and early September, but copper mineralization was found in outcrop in at least eight separate places. In addition, several areas of well mineralized float and/or loose frost heaved material were also located. These are usually located fairly high up on the ridge and are thus probably locally derived.

Within the host rocks the distribution of copper mineralization appears to be quite erratic, and specific controls for its localization are not apparent. In some instances fracturing appears to be important and chalcocite is frequently more abundant in fractured or brecciated rock. This is not, however, always true and chalcocite also occurs in irregular aggregates and patches in a massive host. Amygdaloidal phases are fairly commonly represented among the volcanic assemblage and in some instances chalcopyrite and/or its oxidation products fill the amygdules. For the most part, however, the copper minerals, particularly bornite, occur in randomly distributed, irregular "blebs" and patches within the mass of the volcanics. Native copper is more rare, but occurs finely dissaminated through the volcanics in some places. Cuprite, though not abundant also occurs in some places and is almost certainly secondary in origin, as are malachite and azurite which accompany the copper sulphide minerals on some weathered and exposed surfaces. These latter (chalcopyrite, bornite, chalcocite) are probably all of primary origin.

Geological work was limited to observations made while prospecting and visiting showings located by the prospecting

team. No detailed or systematic geological mapping was possible with the time and personnel available. The following generalizations are pertinent.

1. Textural variations e.g. presence or absence of vesicles, grain size, etc. reflect differences in cooling conditions within individual flows. Alternation of these textural variations indicate that several separate flows are represented within this volcanic sequence and from the limited field work done there is a suggestion that they have been affected by regional tectonic movements and are no longer flat lying. This would certainly be favourable from the point of view of a mining operation should sufficiently high grades be established in any particular section.

2. Sedimentary rocks are not abundant in this immediate area. Towards the north end of the ridge a narrow band of shale striking 095° true is exposed in outcrop. Dip is 34° N.E. This is separated by about seventy feet of volcanics from a more steeply dipping (60°) limestone band. Further south, cherty, possibly tuffaceous, rocks are to be found among the volcanics. These are mineralized in places.

Geochemistry

Fairly detailed silt sampling coverage was obtained on Virgin and Dalton Creeks and their tributaries. The threshold value for HCL copper for this whole area of volcanics is of the order of 70 p.p.m. The results of this work indicate that several of the streams draining from the ridge on which the copper mineralization was found are anomalous in copper and that the greater part of the area from which they are draining was covered by the original Husky Claim Group. The highest values in the centre of the original claim group are about three times background. The headwaters of Dalton Creek which drain from the area to the north of the original claim group are also anomalous and would suggest that further prospecting to the north might

be rewarding. Four samples collected from the lower part of Beloud Creek are highly anomalous, possibly due to native copper which is known to occur in gravels on this creek. Acid to intermediate volcanic rocks outcropping in this immediate area carry fairly abundant disseminated pyrite, but no copper minerals were observed.

Pyrite is not very common in the copper bearing volcanics with the result that there has been, apparently, very little leaching. This is reflected in the relatively low order of values obtained in the geochemical work done in this area.

Reconnaissance soil sampling was carried out on a trial basis using claim lines for control. In general, results were not useful, values being of a uniformly, relatively low order, with no anomalous values being detected. This is probably a reflection of the lack of leaching action and also of the poor soil development along the ridge.

Lithogeochemical techniques might be helpful in tracing possible trends of mineralization within the volcanic sequence, and thus providing useful guides for more sophisticated work, conventional sampling, drilling, etc.

Conclusions

1. The prospecting program carried out in the Mush Lake area in 1967 was successful in locating copper mineralization in rocks of the Mush Lake volcanic series.

2. Bornite, chalcocite, chalcopyrite, native copper, cuprite, occur irregularly distributed within andesitic and basaltic lavas. The occurrences appear to be erratic and more detailed work is required to establish (a) what the controls for this distribution might have been, (b) whether an economic grade of mineralization overall could be obtained.

3. The number of occurrences of copper mineralization in place, as well as occurrences of mineralized float, over a considerable area, indicate that further work as indicated in 2 above is justified. Assays of up to 10% copper have been obtained from grab samples. For a large tonnage

operation an overall grade of around 1% might be reasonable and realizable from this type of occurrence.

4. Indications from the limited work done are that the geological and structural conditions are favourable.

5. Geochemical results from stream silt sampling are positive.

6. Access to the area can be had by road from Dezadeash and Dalton Creek, thus transportation would not be a costly factor in the performance of further work.

7. The amount of mineralization visible in this area exceeds that seen in the Burwash area where Newmont Mining Corporation carried out an extensive program in 1967. The seventy two Husky claims staked in this area cover the most favourable part of the mineralized sequence as presently known.

Recommendations:

It is recommended that a full assessment of the copper occurrences in the area of the Husky Claim Group in Virgin and Dalton Creek area of the Yukon be carried out. This should include the following work:

1. Prospecting coverage should be completed.

2. Geological mapping on a scale of four hundred feet to the inch should be carried out to determine if possible, the factors controlling the mineralization, the most favourable zones, the thickness and attitude of the flows, etc.

3. Careful and detailed sampling of all the showings should be carried out to determine what grades might be expected.

The above work could be achieved with the following personnel:

1. One geologist and assistant to carry out the geological mapping and to supervise and co-ordinate the sampling and prospecting;

2. A first class powderman/sampler and say two assistants;

3. One prospector.

A small base camp with a cook could be set up easily, right on the property. Supplies could be brought in by road.

It is probable that work could be commenced on this project in mid-June and it should be possible to complete enough work with the crew outlined above by early August to reach some definite and well founded conclusions on the merits of these occurrences.

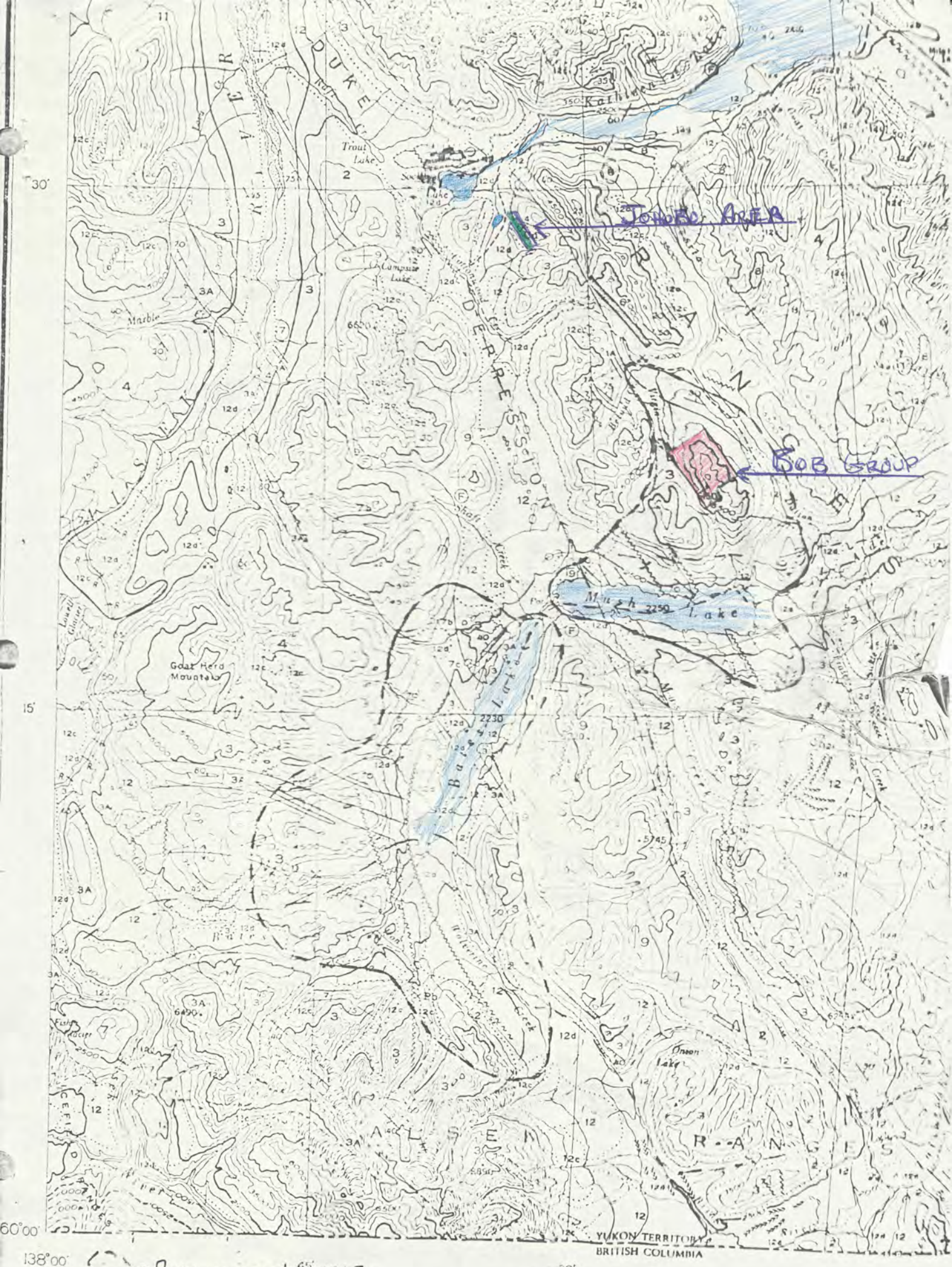
Respectfully submitted,

J.B.P. Sawyer M.Sc., F.G.A.C.

A suggested budget for such a program is as follows:

Duration of work program - say two months

Geologist @ $1000.00/mo.	$ 2000.00
Assistant @ $500.00/mo.	$ 1000.00
Powderman sampler @ $750.00/mo.	$ 1500.00
2 assistants @ $600.00/mo.	$ 2400.00
Prospector @ $750.00/mo.	$ 1500.00
Groceries and supplies	$ 2000.00
Transportation and Travel	$ 1500.00
Assaying	$ 750.00
Misc. and Contingencies	$ 1850.00
Total	$ 14,500.00



( ) = Area prospected 1967

Figure 1.

Approximate area of BOB claims shown in red

mineralization in place : X = Copper mineralization in float.