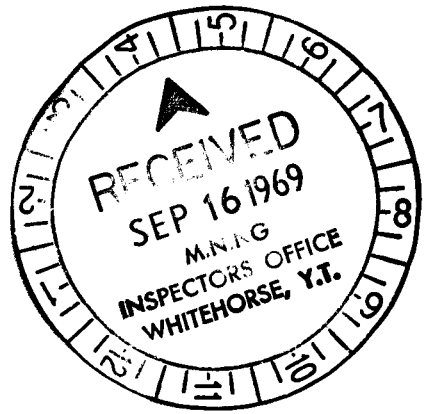
PRELIMINARY GEOCHEMISTRY

OF

QUILL LAKE AREA PROPERTY

FROM YUKON EXPLORATIONS



by

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INTRODUCTION

The following report was requested to evaluate the potential of using geochemical samples to assist in delineating the possible metaliferous zones in the sub-crop of the Quiet Lake property.

The writer did not design the sample program, supervise the sampling or become involved in the project other than the following interpretation of the data. The values were determined by Atomic Absorption method used by C. Spaulding of the Whitehorse Assay Office.

SUMMARY

Several problems in interpretation resulted from the method of soil sampling. The depth of soil particularly hinders the evaluation of the use of geochemistry in the area. Assuming that the sampling method does not influence the interpretation too drastically, the statistical interpretation of the ppm values of copper and nickel was attempted.

The resulting two maps are based on the following contour lines. For the copper map: Contour 1 is 13 ppm Cu, Contour 2 is 20 ppm Cu. For the nickel map: 16 ppm Ni for Contour 1, and 26 ppm Ni for Contour 2.

By examining the two maps, it is evident that there is good correlation between copper and nickel. The copper outside of Zone "A" tends to have two possible trends. The predominate is NE-SW

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with a secondary trend of NW-SE. The hydrology explains the first trend as the stream flow over the flat area is NE-SW. And as the predominant trend for the nickel outside of Zone "A" is NW-SE it is assumed the NE-SW trend for copper is superimposed on the true one of NW-SE by the hydrology.

Zone "A" should be the predominate target for follow-up work. It has the largest surface area and the most anomalous condition.

Zone "B" probably represents a lenticular or sill structure in the sub-crop of the same material in the sub-crop of Zone "A". It definitely warrants examination as it is significantly anomalous over the barren areas.

It is the writer's opinion that the geochemistry is usable in the area and that the anomalies are significant and useful as an aid to exploring for mineralized zones in this region.

SAMPLE VALUES

The samples were taken by taking pieces of soil from the bottom of cat trenches along the lines. This procedure results in tremendous chances for contamination by soil mixing from sample area to area. Also, the depth of sample from the surface tends to be very irregular resulting in erratic values in the samples not explainable by anomalous values due to concentrations of copper or nickel in the sub-crop.

It must also be pointed out that the soil cover in the area is very thick. On lines L0+00 to L20+00E it was estimated

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by trenching to be 60' thick. Thus any anomalous values must be due to soil mixing, e.g., frost boiling or convolutions. These two mechanisms will mix the soil at the sub-crop with surface to near surface soil even if the overburden is many feet thick.

The other problem in the area is that the sample region is very flat swamp but having a drainage direction to the north-east.

Any interpretation of the anomalous zones is going to be hindered by the above factors, and the complete lack of noting of the basic parameters influencing soil geochemistry, e.g., soil composition, water content, vegetation, slope and the acidity of the soil. These factors are important in considering the relationship of one sample to another.

STATISTICAL INTERPRETATION

When working with groups of numbers to determine some fact about their relation, it is imperative to use the mathematics of the interrelation of numbers. Thus statistics was applied to the ppm values. By this procedure it is possible to denote which values are statistically anomalous rather than just high values of the elements being analyzed.

It is also important to note that it is logically and mathematically incorrect to take two or more maps each contoured in one analyzed element and compare them without contouring each on the basis of its own values rather than some arbitrary contouring scheme. One may be lucky and hit on a contour interval and starting value which delineates, to the best advantage of the data itself, the anomalous

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zones and their shape but this has an extremely low probability of occurrence.

The values are then contoured on the following basis: (a) The mean is determined by summing the values and dividing by the number of values. This value is noted and a contour line of the value is drawn on the map. (b) The standard deviation of the values is determined. This is a measure of how the values fall about the average value. It is also called the first moment of the values about the mean. This is determined by subtracting the mean from all the values one at a time and squaring this value and summing it, dividing by one less than the number of values, and then taking the square root of this number. This later value is the contour interval upwards and downward from the sample mean.

CONTOUR PATTERN INTERPRETATION

For the copper and nickel ppm maps the mean and standard deviation were determined as follows:

Copper .... mean = 13 ppm standard deviation = 7 ppm

Nickel .... mean = 16 ppm standard deviation = 10 ppm

Two things are very apparent. The area has a very low copper and nickel content in the horizon sampled, and there is not much fluctuation of the values (i.e., a low standard deviation).

The two maps show a high in the south-west corner of the map. This area is the most promising of the localities. Even though the values of copper and nickel are low I feel they are significant

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statistically. What I mean is, they are low due to the overburden thickness, swampy conditions and high water content. High overburden masks the sub-crop, swampy conditions interfere with the acidity of the soil making ion motion difficult and swampy conditions result in waterlogged soils cutting down on the motion of ions in the environment.

The tendency for the copper on the rest of the map to have a NE-SW trend (mixed with, I believe, a masked NW-SE trend) is due to the hydrology of the area. The drainage is NE-SW; copper is a highly mobile element as ions, thus I feel the copper map is a result of hydrology effects on a NW-SW copper trend.

The nickel, on the other hand, has a decided NE-SW trend. It is generally a fairly un-mobilized ion (although its characteristics in the Yukon are not well known). Thus I believe it shows best where the sub-crop is enriched in this element.

Since the overburden is thick and since little is known of the geology I feel that the anomalous zone in the south-west corner of the sampled area bears first examination. I would also suggest that the stripped nature of the nickel anomalies is indicative of ultra-basic differentiation as sills or lenses of mineral rich sub-crop (as noted in other areas along this belt) and these deserve at least trenching if not exploratory drilling.

CONCLUSIONS

There is good correspondence of the copper to the nickel in degrees of anomalous condition and position over the sampled area.

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Thus I feel that the high anomalous zone in the south-west represents an excellent target for follow-up drilling.

The other anomalies may represent lenticular deposits of the same mineralized zone and should be investigated on a secondary basis.

I do suggest any future work utilizing geochemistry be undertaken with much more care and use of proper sampling techniques.

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ZONE "A"

ZONE "B"

ZONE "B"

ZONE "B"

0+0 2 E. 4 E. 6 E. 8 E. 10 E. 12 E. 14 E. 16 E. 18 E. 20 E. 22 E. 24 E. 26 E. 28 E. 30 E. 32 E. 34 E. 36 E. 38 E. 40 E.

Contours- 0 is 13 p.p.m. Cu.
1 is 20 p.p.m. Cu.

TRANS YUKON EXPLORATION Ltd. (N.P.L.)

-QUIET LAKE GEOCHEMISTRY SURVEY-
COPPER DETERMINATIONS

DR. BY.- R.C.	APP'D.- R. HILKER	REVISIONS.
DATE.- 11-6-69	SCALE.- 1"=200 ft.	

ZONE "A"

ZONE "B"

ZONE "B"

ZONE "B"

Claim Line 86 S.

0+0 2 E. 4 E. 6 E. 8 E. 10 E. 12 E. 14 E. 16 E. 18 E. 20 E. 22 E. 24 E. 26 E. 28 E. 30 E. 32 E. 34 E. 36 E. 38 E. 40 E.

Contours- "0" is 16 p.p.m. Ni.
"1" is 26 p.p.m. Ni.

TRANS YUKON EXPLORATION LTD. (N.P.L.)

-QUIET LAKE GEOCHEMISTRY SURVEY- NICKEL DETERMINATIONS

DR. BY.- R.C.	APP'D.- R. HILKER	REVISIONS.
DATE.- 11-6-69.	SCALE.- 1"=200 Ft.	