



**SELF-POTENTIAL TESTS AT THE
SILVER QUEEN PROSPECT NEAR TILLICUM MOUNTAIN AND THE
HAILSTORM MOUNTAIN GOLD PROSPECT
(82F)**

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INTRODUCTION

Tillicum Mountain is 13 kilometres east of Burton and has a good truck road access via Caribou Creek. The Silver Queen zone occurs on Grey Wolf Mountain which is a further 2 kilometres southeast from Tillicum Mountain. While the Caribou Nos. 3 and 4 claims are only 3 kilometres east of Tillicum Mountain (or 1.5 kilometres northeast of the Silver Queen zone), access is via a logging road along Shannon Creek which starts 3 kilometres south of Hills. The road ends at the headwaters of Caribou Creek. A new cat road continues 1 kilometre to the workings.

The Silver Queen zone is part of the Tillicum Mountain project operated by Esperanza Explorations Ltd., a company that holds an option to acquire 100 per cent ownership of this 6 000-hectare property.

The Caribou Nos. 3 and 4 claims are wholly owned by Alex Strebchuck of Hills.

GENERAL GEOLOGY

All the geological information at the Silver Queen zone has been provided by Mr. J. McClintock of Welcome North Mines Ltd., and on the Caribou claims by Mr. T. R. Stokes.

Both areas are underlain by the Milford Group (Pennsylvanian to Triassic ?; Hyndman, 1968) sedimentary rocks which include a diorite porphyry. Both have been subjected to regional metamorphism believed to predate the Cretaceous Goatcanyon-Halifax Creeks stocks. At the Caribou claims this porphyry is described as 'light grey-brown syenite porphyry.' These units have been intruded by the plutonic rocks followed by small aplite-alaskite dykes, ultramafic dykes, and lamprophyre dykes. Younger faults (of unknown age) are mapped in the Silver Queen area, but have not been mapped at the Caribou prospect to date.

The gold and silver mineralization is believed to be associated with the 'sill-like' porphyries because of their spatial relationships, and in some cases because of the development of skarn minerals. While the Caribou claim geology is approximately on strike with the Silver Queen zone, it should be pointed out that Assessment Report 11141 (Smith, 1983) indicates a considerable zone of silver mineralization (61 metres) approximately 500 metres north of the Caribou claims.

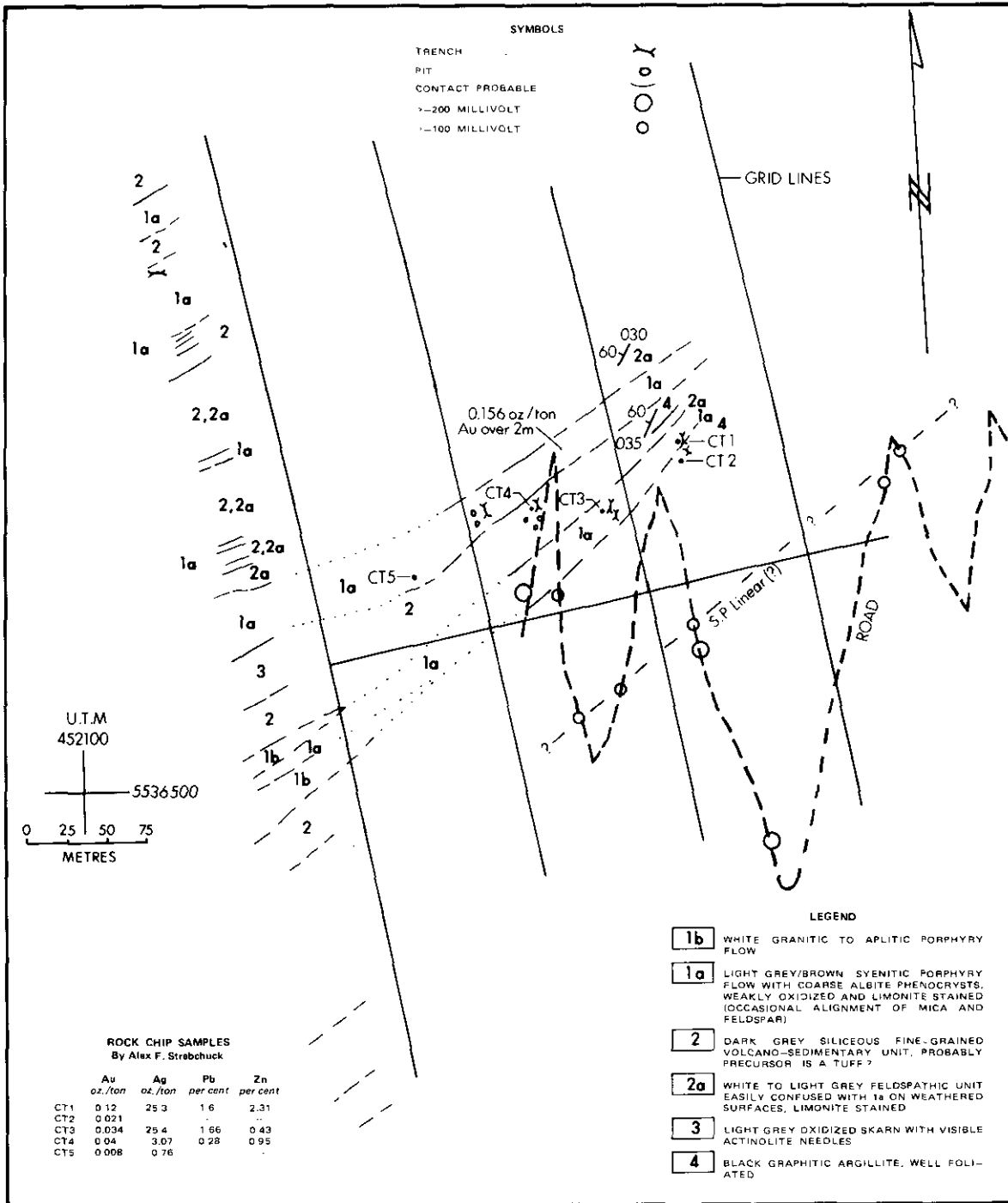


Figure 8. Self-potential road traverse of Caribou Nos. 3 and 4 claims. Geology after T. R. Stokes.

SELF-POTENTIAL (S.P.) TESTS

Past work at Tillicum Mountain has indicated long, continuous self-potential (S.P.) anomalies, some of which have been associated with mineral zones (for example, the Money pit and the Jennie zone). The following S.P. tests were conducted to further understanding of the causes of these anomalies, and at the same time to train new prospectors in this technique of exploration.

SILVER QUEEN SILVER ZONE

A 'long wire' (200 metres) prospecting method was used on the road crossing the Silver Queen mineral zone (Fig. 7). Although the survey was not closed, strong anomalies were identified in the footwall area, described as 'calcareous siltstone/shale.' This unit was also observed to contain graphite, which is probably the cause of some of the anomalies. On the other hand, one S.P. anomaly was right over the mineral zone, which assays 3.65 ounces silver per ton and is in a calcareous quartzite unit. Other S.P. anomalies in 'calcareous sandstone and calcareous quartzite' remain to be explained.

HAILSTORM MOUNTAIN

At this property (Fig. 8) gold particles have been obtained by panning the soil. A cat road has been made to reach these locations, and float from the last switchback assayed 1 ounce gold per ton. A bedrock sample at the same location, across 2 metres, was taken by Mr. J. McClintock for Esperanza; it assayed 0.156 ounce gold per ton. While doing an S.P. test on the cat road, a graphite shear zone containing calcite and galena and bearing north 40 degrees east-32 degrees west was noted. Some of the sediments also contain graphite.

A 'short wire' method was used in the S.P. test. Three strong anomalies of less than -200 millivolt were located, but the most interesting values are in the -100 to -200 millivolt range; these indicate a linear anomaly; the cause is not known.

RECOMMENDATIONS

SILVER QUEEN ZONE

The calcareous siltstone/shale unit (Cs) in the footwall area of the mineral zone apparently contains graphite. Outcrops in areas with S.P. anomalies should be assayed to determine if any precious metals are present. If so, further S.P. surveys should be carried out.

CARIBOU CLAIMS

Geological mapping along the cat road is required to explain the S.P. anomalies located by this survey. If bedrock is present at these locations, it should be assayed for gold and silver.

CONCLUSION

Self-potential tests at the Silver Queen and Hailstorm Mountain prospects were successful in obtaining S.P. anomalies, most of which are thought to be due to the presence of graphite. All should be checked by assaying available outcrops for precious metals. If the results are positive, further S.P. surveys would be warranted.

ACKNOWLEDGMENTS

Information about the Silver Queen geology and assay results was provided by Mr. J. McClintock of Welcome North Mines Ltd.; permission to use the Caribou Nos. 3 and 4 claims geology was given by Mr. T. R. Stokes. The S.P. equipment, except for the spool, came from Mr. J. M. Thornton of North Vancouver; the self-potential spool of wire was donated by Mr. Greg Filion of Cranbrook.

REFERENCES

- Hyndman, D. W. (1968): Petrology and Structure of Nakusp Map-area, British Columbia, *Geol. Surv., Canada, Bull.* 16.
- Smith, F. M. (1983): Geological Report for Assessment Credits, London 1 and London 2 Mineral Claims, *B.C. Ministry of Energy, Mines & Pet. Res.*, Assessment Report 11141.