

PROPOSED PROSPECTING IN THE
THISTLE MOUNTAIN DISTRICT
YUKON

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SUMMARY

Thistle Mountain, a source area for several placer creeks, shows favourable structure consisting of cross-folding and a zone of northwest faulting accompanied by nearby Tertiary intrusives. Gold and high grade silver-lead mineralisation occur in the area but it has not been prospected or geologically studied in any detail. I consider the area well worth closer prospecting. Moreover, gold and silver both have promising futures at present and have the high unit value necessary for mining in Yukon.

I propose to spend three weeks to a month or more with a good prospector to map and prospect this area, aided by geochemistry and geophysics where warranted. Cost of the program will be \$3000 per month with 10% vendor interest to be split between myself and the prospector in any resultant discovery.

INTRODUCTION

Elsewhere in the Cordillera many mining districts are characterized by some unique change, difference, irregularity or intensification in regional structure such as cross-folding, complex doming or uplift, plugs or rows of intrusives, serpentinites, fracture belts, or en echelon gaps or discontinuities in fault systems, etc.

Such localities have tended to become the loci of prolonged, hindered, and repeated deformation; formation and differentiation of magma; intensification of strain; formation of deep channelways for ore fluids; and complexity with

favourable tectonic conditions and structural traps for ore. Thus, if favourable rock types, alteration, and mineral occurrences are also found in such an area of "anomalous" structure, it constitutes a favourable mineral district well worth close investigation.

The Thistle Mountain district has such characteristics.

LOCATION AND ACCESS (See Figure 1)

Thistle Mountain lies between the junction of Yukon and Stewart Rivers at about latitude $65^{\circ}N$ and longitude $139^{\circ}W$, 70 miles due south of Dawson City and 220 miles northwest of Whitehorse.

The area can be reached very easily by river or by float plane and helicopter from Dawson City.

Roads lead up Ballarat, Kirkman, Thistle, Barker, and Soraggio Creeks in the general area.

GEOLOGIC SETTING (See Figure 1)

This district lies along a discontinuous regional lineament which extends from the Carmacks district, along Dig and Hayes Creeks, through this area, down Yukon River, and up Sixtymile River, a total distance of 150 miles. Along or near this lineament are the gold, silver-lead, and copper prospects of the Carmacks district; the gold prospects of Selwyn River; gold and silver-lead of Thistle Mountain; and gold and silver-lead of the Sixtymile. Thus the lineament may be a regional ore control.

NW?
The rocks in the Thistle Mountain district are chiefly schists and quartzites of the Yukon Group of Pro-Cambrian age, with minor lenses of intercalated limestone, and bodies and bolts of granite gneiss. Regionally these rocks strike northwesterly and dip steeply; but from Thistle Mountain EW to Mount Stewart, for a distance of about 20 miles, the schists and quartzites strike ESE and dip moderately to gently SE, cutting against a major NW fault. Rocks northeast of this fault strike northwest.

Mount Stewart, on the northwest end of this area of cross-structure, is a coarse gneissic stock of early Tertiary

age intruded into the NW end of the fault zone. The structural focus of the district, and apparently the focus of mineralization as well, appears to be at Thistle Mountain itself, perhaps also extending EW and SE along the ridge (elevation 3000-4000') which forms the divide between the Yukon and Stewart River watersheds.

SOURCE OF THE PLACER GOLD

Since 1898 Ballarat, Kirkman, Thistle, and Barker Creeks have all produced modest amounts of placer gold, concentrated near the heads of these creeks which are all within a short distance of one another on Thistle Mountain. Minor amounts of gold found on Telford, Brewer, Simmons and other creeks appear to have come from the northwest ridge along which the fault zone extends. Thistle Mountain itself, apparently characterized by a fold in the Yukon Group and by a change in direction of the main northwest fault, shows a few minor east-west lineaments running transverse to the major northwest faults and at a small angle to the quartzites and schists. If these minor lineaments, visible on air photos, are veins or fault zones, they are located in the right position to have thrown gold into the four main creeks.

LEAD PROSPECTS

Coarse placer gold is reported in Ballarat Creek and coarse, angular gold in quartz has been found at the head of Kirkman Creek; but virtually no lead prospecting has been done in the district, due to lack of interest and the characteristic residual overburden of this unglaciated region. However, the dredge at the head of Thistle Creek encountered galena in the gravels, reportedly assaying 40 to 60 oz/ton silver, and a small silver-lead prospect with values of 160 oz/ton silver is reported just above the dredge camp. This high silver content would make a silver-lead prospect of minable width very attractive.

Where only one such prospect occurs, others, probably better, almost certainly exist, and these could be found by further prospecting, especially since very little such work has been done in the area. The local limestones might be favourable host rocks.

CONCLUSION

1. Many mineral districts which have been first discovered as sources of placer gold, often only in modest amounts, have developed into substantial producers of other metals.
2. The Tumble Mountain vicinity shows several characteristics suggestive of a well-defined mineral district, but little or no prospecting has been done.
3. With concentrated work, deposits of gold and high grade silver-lead and perhaps other minerals of economic grade may be discovered in this area.

PROPOSED WORK

The area should be closely examined for favourable geologic conditions and mineralization which would indicate the potentialities.

I propose to spend three to four weeks or more with a good prospector to map, pan, and prospect the vicinity of Tumble Mountain with the aid of geochronology and geophysics where warranted, and to prepare complete reports and maps on this work.

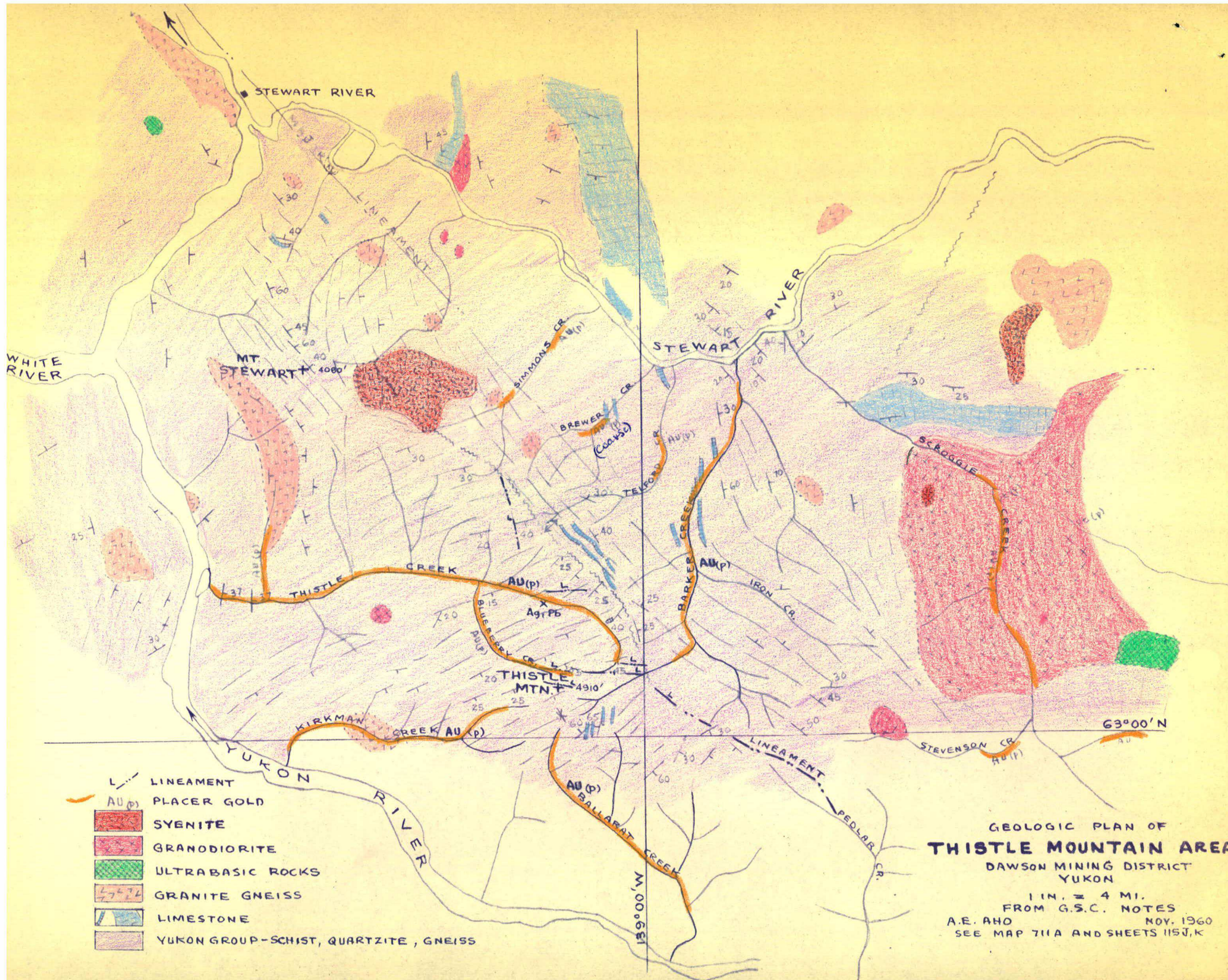
This preliminary work would be done at a complete cost of \$3000 per month, and 15% of the vendor interest or its equivalent would be granted to myself and the prospector on any resultant discovery.

Further work, if warranted, can be carried on under a similar contract or some other mutually agreeable arrangement.

Respectfully submitted,



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- L --- LINEAMENT
- AU(p) PLACER GOLD
- SYENITE
- GRANODIORITE
- ULTRABASIC ROCKS
- GRANITE GNEISS
- LIMESTONE
- YUKON GROUP-SCHIST, QUARTZITE, GNEISS

GEOLOGIC PLAN OF
THISTLE MOUNTAIN AREA
 DAWSON MINING DISTRICT
 YUKON
 1 IN. = 4 MI.
 FROM G.S.C. NOTES
 A.E. AHO NOV. 1960
 SEE MAP 711A AND SHEETS 115J,K