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NORTH STAR COPPER MINES, LIMITED

PROGRESS REPORT #5

by: Wm.H. White, P.Eng.

December 15th, 1967

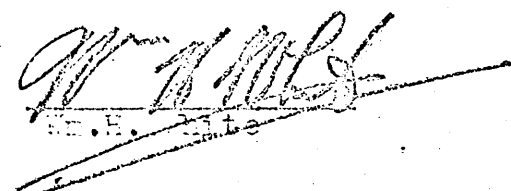
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PROPERTY FILE

DECLARATION

1. I, William Harrison White, am a registered member in good standing of the Association of Professional Engineers in the Province of British Columbia.
2. I am personally familiar with the subject matter of this report.
3. I have none but professional interest in North Star Copper Mines, Limited, nor in its mining properties.

  
W. H. White

## SUMMARY AND CONCLUSIONS

Exploration work during 1967 on the Kaza Lake property of North Star Copper Mines, Limited, has revealed several large, well-defined copper soil anomalies in an area almost devoid of outcrops, three previously unknown surface showings and two drill hole intersections of ore grade. A particularly favourable feature of the property is that the dominant ore minerals are bornite and primary chalcocite, for such minerals will make a comparatively high-grade concentrate.

Results to date are judged satisfactory. However, a good deal more work will be required to delineate minable ore bodies.

## RECOMMENDATIONS

It is strongly recommended that exploration work be continued next year. Such work should include: a magnetometer survey on existing grid lines; intensive prospecting, particularly those areas north and northeast of the area of current interest; bulldozer trenching across the geochemical anomalies, particularly in the vicinity of known showings; and finally, diamond drilling for extensions of known ore occurrences. This work should be done by a crew of seven or eight men under a competent engineer. The bulldozer recommended for this work is a D-8 equipped with ripper tooth and winch, but a D-7E machine would be satisfactory. Before break up the bulldozer could be walked in from Takla Lake and a fuel depot established on the flats east of Kaza Lake, which is suitable for landing large planes equipped with skis or wheels.

ESTIMATE OF EXPENDITURES FOR 1968

Air transport	15,000
Salaries and wages	26,000
Hoistover, 1200 hrs @ \$30/hr	36,000
Drilling, 5000' @ \$8.00/ft.	40,000
Expendible supplies, fuel, food etc.	5,000
Consulting fees, assaying etc.	5,000

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Total \$127,000

### PROGRESS REPORT #3.

During the 1967 season, from mid-June to mid-September, North Star Copper Mines, Limited, carried on mineral exploration of its mining claims at Kasa Lake, some 25 miles north-northeast of the head of Takla Lake, Omineca Mining District, British Columbia. In this area 131 claims are held by location by and for the Company. Exploration activities included line-cutting, soil sampling and copper analyses in a field laboratory, geological mapping, some trenching and diamond drilling. The results of all activities except the last have been described in two previous progress reports and need not be repeated herein. However, completed geological and geochemical maps are appended to this report. The geochemical map shows the large copper anomalies described in Progress Report #2. The scarcity of outcrops on the geological map may give some idea of the difficulties attending geological interpretation and economic evaluation of the property.

#### DIAMOND DRILL PROGRAM

In August a decision was reached to do some preliminary diamond drilling with the object of obtaining some information about the stratigraphy and structure of the area that would be of value in future exploration. The drill pattern was designed to take advantage of the fact that most mineralized bodies in the area are stratigraphically controlled. Drilling

began August 27th and finished September 20th. In this period nine A<sub>1</sub> holes totalling 2091 feet were drilled. Location data for these holes are tabulated below:

Hole #	Coordinates	Collar elev.	bearing	Inclination	Depth
1	136-65N 53-00E	4970	N65W	-50°	249
2	"	"	N20W	-50°	102
3	121-425N 50-00E	4750	N70W	-45°	461
4	122-425N 66-00E	4505	-	vert.	84
5	"	"	S15W	-45°	450
6	128-450N 69-75E	4510	N65W	-30°	102
7	128-75N 69-50E	4530	N65W	-30°	102
8	"	"	S70W	-20°	126
9	"	"	N10W	-20°	150

Because of the lateness of the season and departure of trained personnel returning to university the core could not be properly logged on the property. It was reported that from visual inspection of unsplit core no copper mineralization was present in any hole. Subsequently, the core was shipped to Vancouver where it was stored, logged and sections split for assaying by the writer or under his personal direction. Logging of this core was very difficult and time-consuming because the principal ore minerals, bornite and chalcocite, are so fine-grained as to be invisible by eye or hand lens. Consequently, most of the core was examined under a binocular microscope of sufficiently high magnification to reveal any copper sulphides. Drill hole logs will be appended to this report.

SUMMARY OF DIAMOND DRILL RESULTS

Holes Aq-1, Aq-2 and Aq-3, sited to intersect the downward extension of the RMT showing, failed to find the copper-bearing shale horizon. After penetrating andesite porphyry flows and tuffs, all three holes abruptly entered the barren greenstones that everywhere in the area seem to underlie the cupriferous section. Evidently the mineralized shale is displaced down-dip by one or more low-angle faults and more work will be necessary to locate its extension.

Hole Aq-4, a vertical hole in andesite porphyry at the OVH showing, had to be abandoned at 94 feet because of broken ground. The first 60 feet of this hole carried values ranging from 0.02 to 0.15% Copper, but the figures are meaningless because of extremely poor core recovery.

Hole Aq-5, drilled south-southwesterly at -45 degrees from the same set-up as Aq-4, cut several andesite porphyry flows and entered limestone at 230 feet. Significant assay results from this hole are as follows:

<u>Interval</u>	<u>% copper</u>	
89 - 101	0.02	} 44 feet @ 1.584% Cu
101 - 112	1.00	
112 - 120 $\frac{1}{2}$	2.62	
120 $\frac{1}{2}$ - 132	1.22	
132 - 145	1.05	
145 - 154	0.05	

Figure 1, a vertical cross-section along this hole, strongly suggests that the ore intersection from 101 feet to 145 feet is the down-dip extension of the CV surface showing, and, further, that it occupies a stratigraphic position in the andesite porphyry about 175 feet above the limestone horizon. Such information will be of great value in further exploration.

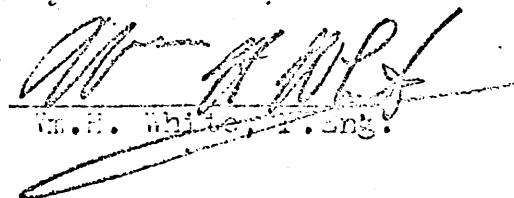
Holes A3-6 to 8 were short holes designed to intersect the high-grade vein of the EC showing at very shallow depth. Although all holes had sections that assayed from 0.05 to 0.37 % copper, only one, A3-7, had a well-defined section of ore grade:

<u>Interval</u>	<u>% Copper</u>	
42 - 49 $\frac{1}{2}$	0.50	
49 $\frac{1}{2}$ - 62	0.90	Av. 60 feet @ 0.635 % Cu
62 - 73	0.45	
73 - 86	0.72	
86 - 102	0.55 (end of hole)	

Figure 2, which is a vertical cross-section along holes A3-6 and A3-7, shows the peculiar relation between the high-grade vein on the surface and the intersection in A3-7. Perhaps the small high-grade vein represent a 'leak' along a fracture from a larger body of disseminated mineralization localized along a flow contact. Further drilling will be necessary to solve this problem.

Respectfully submitted,

December 15th, 1967

  
 W. H. White, P. Eng.



MAP 100.10 TO THE ROCK 49 0792  
MAY 1954  
METHUEN & PERSEY CO.

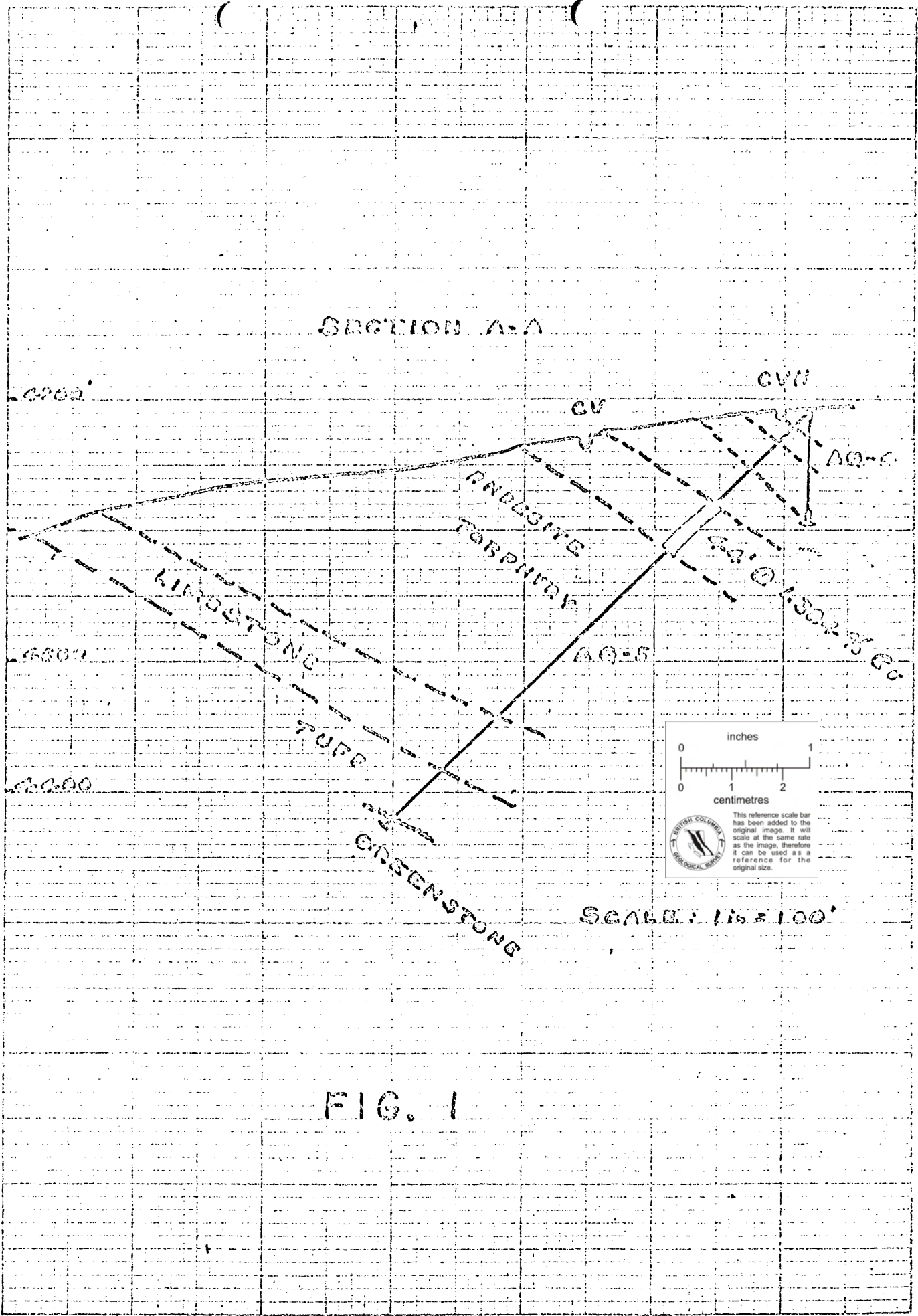
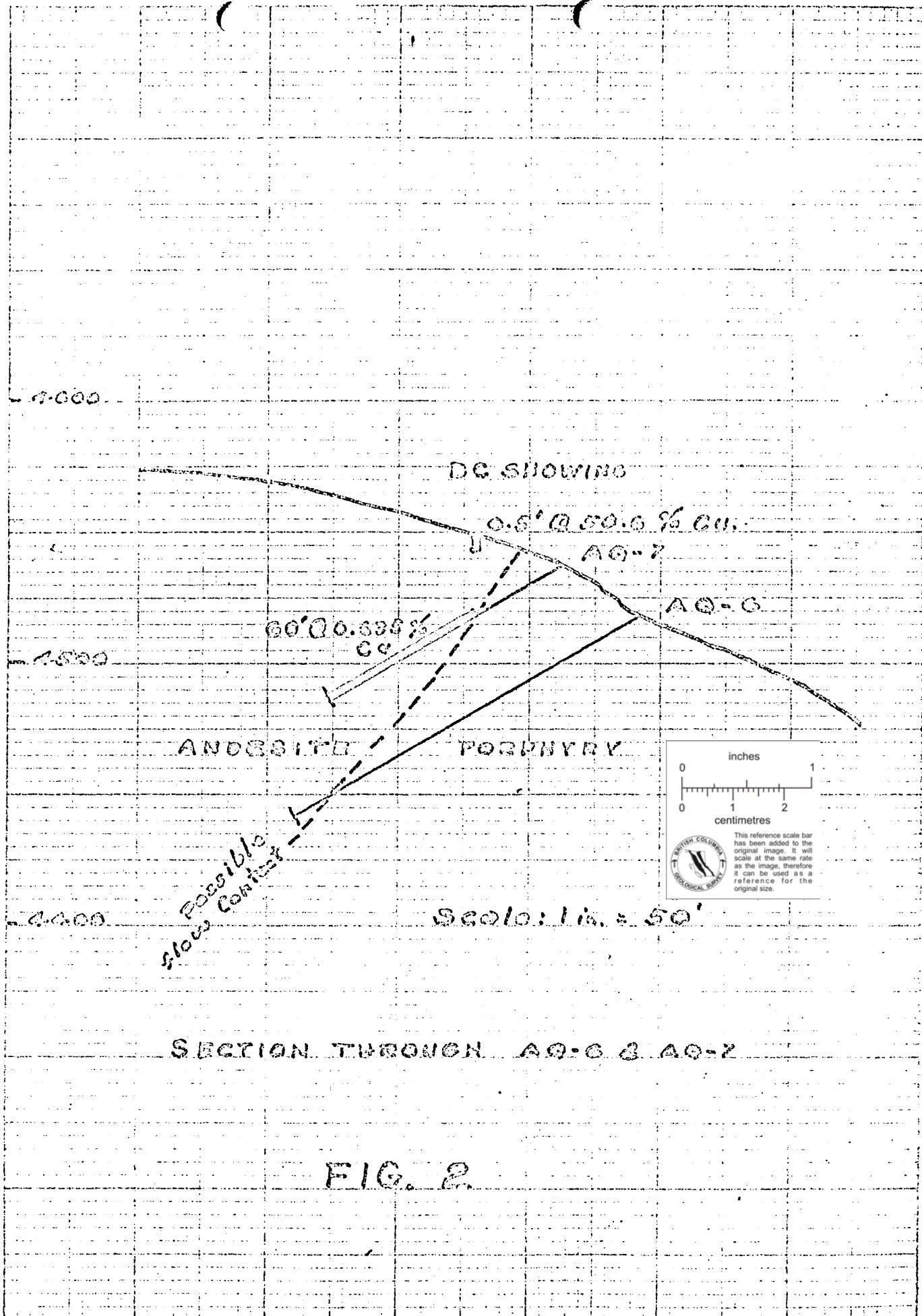


FIG. 1

10-55 7 1/2 x 10 1/2 INCH 75 0702  
U.S. GEOLOGICAL SURVEY  
WASHINGTON, D. C.  
MAILED 8 24 1949



SECTION THROUGH AQ-6 & AQ-7

FIG. 2