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GEOLOGICAL, GEOCHEMICAL REPORT
NORTHSTAR COPPER MINES LTD.
OMINECA MINING DIVISION

N.T.S. 94-D-1

By: T. Kikuchi

November 10, 1969

GEOLOGICAL, GEOCHEMICAL REPORT
NORTHSTAR COPPER MINES LTD. (N.P.L.)
OMINECA MINING DIVISION, B.C.

for
NORTHSTAR COPPER MINES LTD. (N.P.L.)

Toru Kikuchi, Ph.D., P. Eng.
Consulting Geological Engineer

November 10, 1969.

Vancouver, B.C.

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GEOLOGICAL, GEOCHEMICAL REPORT
NORTHSTAR COPPER MINES LTD. (N.P.L.)
OMINECA MINING DIVISION, B.C.

I. INTRODUCTION AND GENERAL STATEMENT

At the request of Mr. R.M. Tait, President of Northstar Copper Mines Ltd. (N.P.L.), the writer was at the property during 9th - 12th September, 1969, with his partner geologist Motomu Kiyokawa, in the company of Mr. Tait for general investigation and its further consideration.

The following references are used by the writer:

C.S. Lord: McConnell Creek Map-Area, Cassiar District, B.C.
G.S.C., Memoir 251, 1948

W.H. White, Ph.D., P. Eng.: Report on Mining Property of Northstar Explorations Ltd., in Caribou Heart Range, July, 1966

Minister of Mines and Petroleum Resources, B.C.: Annual Report for the year ended Dec. 31, 1966. Pp. 82

W.H. White, Ph.D., P. Eng.: Northstar Copper Mines Limited. Progress Report #3, Dec. 15, 1967.

Minister of Mines and Petroleum Resources, B.C. by A. Sutherland-Brown, Ph.D., P.Eng.: Annual Report for the year ended Dec. 31, 1967. Pp 86-88.

W.H. White, Ph.D., P. Eng.: Report of Current Mineral Explorations for Further Development of the Mining Properties of Northstar Copper Mines Ltd. (N.P.L.) Oct. 4, 1968.

Minister of Mines and Petroleum Resources, B.C.: Annual Report for the year ended Dec. 31, 1968. Pp 118

The property investigated at this time consists of 1267 mineral

claims, wholly owned by Northstar Copper Mines Ltd. (N.P.L.), in good standing in the Omineca Mining Division, British Columbia, as listed below. The writer checked them at the Vancouver Mining Recorder's Office on October 30th, 1969.

<u>Name of Mineral Claim</u>	<u>Record Number</u>
Bobo 1 - 12 inclusive	33706 - 33717
Bobo 13 - 16 inclusive	60731 - 60734
Can 1 - 15 inclusive	48584 - 48588
May 1 - 4 inclusive	59310 - 59313
Fred 1 - 12 inclusive	33694 - 33705
Ged 1 - 12 inclusive	40650 - 40661
John 1 - 8 inclusive	41222 - 41229
Kiwi 1 - 8 inclusive	42498 - 42505
Marg 1 - 6 inclusive	33718 - 33723
Maori 1 - 8 inclusive	42490 - 42497
Ski 2 - 10 inclusive	48590 - 48598
Sun 1 - 8 inclusive	42159 - 42166
Tina 1 - 4 inclusive	51846 - 51849
Tina 9 - 13 inclusive	51851 - 51855
Tina 14	51857
Har 1 - 14 inclusive	60751 - 60764
Wick 1 - 4 inclusive	48580 - 48583
Trail 1 & 2	48489 & 48490

This property is located at about 56° 02' N, 126° 16' W, in the Cariboo Heart Range, approximately 25 miles north of the north end of Takla Lake. That is, it is at the north of Kaza Lake, which is in the southeast corner of the McConnell Creek area, about 95 air miles north-northeast of Smithers. There is a cat road from Bulkley House at the north end of Takla Lake via Kaza property at the south of Kaza Lake. The last 10 miles is a good truck road. Access by float fixed-wing plane is convenient at the present. The property surface which ranges in elevation from 4,000' to above timberline at 5,500' is densely forested and bedrock is largely concealed beneath a comparatively thin mantle of soil and unconsolidated glacial till.

Mr. R.M. Tait, President of Northstar Copper Mines Ltd., first found the original showings in September of 1965, and staked the original claims. In 1966 preliminary exploration including geological mapping and some hand trenching in the vicinity of the main showing and further prospecting in the area had been done. In 1967 a field laboratory and camp were established at the north end of Kaza Lake and systematic grid soil-sampling was carried out with geological mapping. Nine holes (AQ) of diamond drilling, totalling 2091', had been finished in this season. In 1968 a tractor-trail from Bulkley House was built, about 30,000' of cat trenching was done, 2624' of diamond drilling was done in 11 holes (AQ), and about 50 shallow pits were blown. In 1969 4074' of diamond drilling (13 holes, AQ) has been done.

II. GEOLOGY, MINERALIZATION AND COPPER-DEPOSIT

This area is mainly underlain by Jurassic volcanics and marine sediments. There is some diorite intrusive in the area. They consist of shale, siltstone, phyllite, sandstone, slate, agglomerate, limestone, tuff, tuff-breccia, porphyritic basalt, porphyritic andesite, etc. (See pp. 86 - 87, Annual Report 1967, by Dr. Sutherland-Brown for more detailed academic lithological explanations.)

The first found copper showing which has been called "Main" showing (by Dr. White, 1966) or "A" showing (by Dr. Sutherland-Brown, 1967) is on the eastern slope of the mountain on the rim of a landslide scar around which exposure is good in contrast to the surrounding area. The rim consists of some alternated beds of limestone, agglomerate, shale, sandstone,

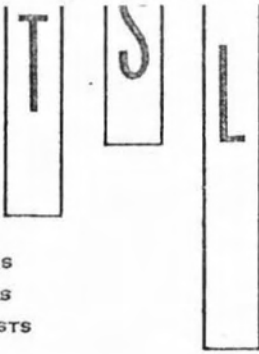
siltstone, tuff, basalt, andesite, etc. They are usually fine-grained and clastic. The general strike and dip are N 60° E and 45° - 60° SE respectively. Some faults which have their general strike and dip as N 70° E and 70° NW cut the beds.

The copper bearing bed of the "Main" or "A" showing is composed of mainly clastic shale or tuff, the thickness of which is not yet known. The color is green, brown or red. Some green copper stain can be seen, but bornite, chalcocite and chalcopyrite disseminated in the rock are too small to see by a hand lens. Some cuts of the copper bearing bed were sampled by the writer and assayed as on the next page. Dr. White (1966) informed an assay data of his sample from the same place as;

0.005 oz/t Au, 0.20 oz/t Ag, 2.65% Cu, for 6' true width and Dr. Sutherland-Brown (1967) reported his case as;

Sample No.	Stratigraphic Thickness	Lithology	Copper Assay
	Ft.		Per Cent
6968	3½	Green lapilli tuff somewhat sheared	0.48
6967	4	Main beds - mostly laminated siltstone	1.45
6966	4	Main beds - mostly laminated siltstone	2.79
6965	4	Interlaminated siltstone and coarse tuff	1.35
6964	3	Laminated siltstone and sheared lapilli tuff	1.01
6963	2	Basal laminated siltstone and tuff	0.65
6962	4	Basal malachite - stained sheared lapilli tuff	0.46

Gold and silver occur in trace amounts in each sample.



Laboratories Limited

325 HOWE STREET - VANCOUVER 1, B.C.

TELEPHONE 688-3504

ASSAYERS
CHEMISTS
GEOCHEMISTS

CERTIFICATE OF ANALYSIS

SAMPLE(S) FROM DR. TORU KIKUCHI

REPORT NO.

V-6738

SAMPLE(S) OF ROCK from NORTHSTAR COPPER MINES LTD.

Sample No.	Copper (Cu)%	Cut Length	Cut Direction
NS-1	1.50	5'	E-W
NS-2	2.33	4'	N80°W
NS-3	0.96	3'	N20°W
NS-4	0.89	15'	N20°W
NS-5	13.25	20'	E-W

(See Fig.2 for locations.)

Toru Kikuchi, P.Eng.

TE September 19, 1969.

SIGNED R. J. Fletcher

Veinlets of calcite and limonite are common in the bed. There is epidote, but no magnetite nor pyrite.

There is a wide cat-strip at the "B" showing which is about 2,000' southeast of the Main showing above mentioned. The strip extends to the north up to the other chalcocite vein showing. At the southern place of the wide excavation, where the original natural "B" showing was seen and Dr. Sutherland-Brown reported (Annual Report, 1967) his sample of 20' cut as 1.98% Cu, there is a copper deposit exposure. Main rock of the exposure is clastic porphyritic andesite and some clastic shale/tuff at the west side. The writer took a chip sample of 15' cut length with an assay result of 0.89% Cu. (See page 5.) At the northern part of the excavation, there are some chalcocite parallel veins, NS - N 15° E of strike and Vertical - 80° E of dip in general, a half inch to three inches of width in general, in Porphyritic Andesite. The writer took a 20' wide cut across some parallel chalcocite veins and got 13.25% Cu. (See page 5.) The relationship of these two types of deposit has not yet been seen.

A number of other showings, mostly of small size at the moment, have been found in the property, but none of them has been explored.

Diamond drill holes which have been done by the company during 1967 to 1969 are seen on page 7, and their locations are in Fig. 2. The writer had no time to log the cores, but had a short look at some of them.

DIAMOND DRILLING DATA

NORTHSTAR COPPER MINES LTD. 1967 - 1969

(Hole Size: AQ)

Hole No.	Depth	Angle	Azimuth	Remarks
1	248	-50°	295°	
2	328	-50	340	
3	468	-45	290	
4	94	Vert.	-	
5	450	-45	195	101' - 145'; 1.38% Cu
6	125	-30	295	
7	102	-30	295	42 - 102 0.64
8	126	-20	250	
9	<u>150</u>	-20	350	
Total, 1967 2091				
10	306	-45	240	140 - 188 1.68
11	355	-45	130	
12	132	Vert.	-	0 - 7½ 1.52
13	490	-45	195	17 - 25 0.40
14	80	Vert.	-	
15	271	-45	240	
16	252	-45	280	
17	105	-30	290	
18	227	-30	315	
19	174	-30	285	110 - 111 0.85
20	<u>178</u>	-45	270	0 - 10 0.28
Total, 1968 2624				
21	361	-45	285	247 - 287 1.14
22	194	-55	260	177 - 193 1.97
23	186	-55	240	120 - 156 1.50
24	57	-70	240	
25	324	-45	165	
26	386	-55	240	{ 237 - 239 4.32 311 - 317 1.35
27	427	-65	240	268 - 294 2.79
28	496	-65	285	
29	498	-60	268	
30	51	Vert.	-	
31	193	-60	45	{ 71 - 85 0.83 126 - 135 0.35 149 - 159 1.51
32	447	-60	200	
33	<u>454</u>	-65	245	
Total, 1969 4074				
Total, 1967 - 1969		8789'		

(See Fig. 2 for locations)

(This data was given by Mr. R. Tait to the writer.)

As the anomalies of the geochemical work done in 1967 were not sharp enough to guide further work, cat trenching and/or drilling, the writer had the idea of re-assaying the soil-rejects using a complete extraction method and an Atomic-Absorption method. This was because the writer supposed that there should be many fine un-oxidized (insoluble) copper minerals in the soil and lots of the organic material also. Thirty-two selected soil-rejects therefore were tested by two different kinds of method. The results are on page 9.

The basic differences between these three methods are:-

	Method <u>A</u>	Method <u>B</u>	Method <u>C</u>
Extraction	Complete	Hot Acid	Complete
Determination	Color - Comparison	Atomic - Absorption	Atomic - Absorption

("Complete Extraction" means a method which can dissolve all the copper minerals, even bornite, chalcocite and chalcopyrite, in the soil, being almost the same method as for rock assaying. "Hot Acid Extraction" means a method usually used by a commercial assayer and a common method for geochemical soil testing only for oxide (soluble) copper in the soil.)

COMPARATIVE RESULTS OF THE SAME SOIL SAMPLES

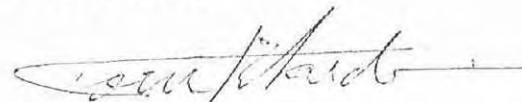
NORTHSTAR COPPER MINES LTD.

Soil Sample No.	Method <u>A</u>	Method <u>B</u>	Method <u>C</u>
116N, 36E	90 ppm Cu	98 ppm Cu	236 ppm Cu
116N, 38E	60	165	373
116N, 40E	50	96	230
116N, 42E	40	43	45
116N, 44E	80	87	226
116N, 46E	35	48	62
116N, 48E	15	27	40
116N, 50E	50	19	39
116N, 51E	no data	415	986
116N, 52E	150	210	391
116N, 53E	100	110	205
116N, 54E	10	68	29
116N, 55E	100	59	82
116N, 56E	200	94	236
116N, 57E	180	88	230
116N, 58E	200	64	253
116N, 59E	150	81	220
116N, 60E	200	96	245
116N, 61E	140	118	301
116N, 62E	50	50	55
116N, 64E	60	38	50
116N, 66E	40	39	50
116N, 68E	40	39	50
116N, 70E	30	23	35
116N, 72E	40	28	41
116N, 74E	50	42	57
116N, 76E	40	52	63
116N, 78E	50	42	46
116N, 80E	50	30	39
116N, 82E	30	42	47
116N, 84E	60	47	46
116N, 86E	50	32	41

Method A: At the field laboratory, 1967.

Method B: By a commercial assayer in Vancouver, "Hot HCl Acid Extraction and determined by Atomic Absorption."

Method C: By M. Kiyokawa under supervision of the writer at Britton Research's Laboratory, Vancouver, complete extraction with HNO_3 and HClO_4 and determined by Atomic Absorption.



In comparative consideration of the results from the three methods, the writer found that there are some differences. There are reasons for the results of each method, i.e.:-- Method A carries high extraction but cannot determine the higher ppm correctly by color comparison method. Method B does not extract all the copper in the soil. Therefore, with the permission of Mr. R. Tait, the writer tried to re-test all the available soil-rejects (449 soil-rejects including 32 above-mentioned) by Method C and got the new geochemi map (Fig. 3) with some sharper anomalies.

III. CONCLUSION AND RECOMMENDATIONS

The copper deposit of this property is not a simple one. All the data we have had indicates that there are three kinds of copper deposits, that is, (1) copper-bearing clastic shale/tuff bed of Main showing, (2) disseminated copper deposit in porphyritic-andesite/shale/tuff of the south of B showing and (3) clean cut chalcocite vein in porphyritic andesite north of B showing. These three types of copper occurrences seem to be, to the writer, not very much different in their genetical consideration. They are all some kind of epigenetic low temperature hydrothermal copper mineralization, though they have different modes of occurrence in their different host rocks. They should have some relationship and/or connection with each other under the ground, because they seem to the writer to be from almost the same source.

The copper mineralization of this property is strong, and the assay data we have had shows comparatively high copper content. 1 - 2% of copper is not high enough for underground mining, but it is high enough to consider open pit mining after getting further data of the

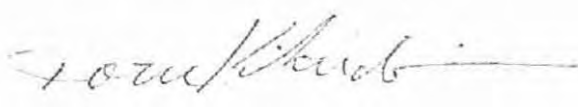
full mode of copper mineralization in the property.

The exploration work which had been done is only in the limited places of Main showing and B showing - therefore more systematic work will be needed to find the mode of copper mineralization, relationship and connection of showings and geochemi anomalies.

Therefore, the following is recommended for next season:-

Preparation Topographical Map (1" = 500') from Government Air Photo (Contract) covering the Fig. 3 area	\$ 1,500.00
Contract surveying for drill sites (#1 - 33) and trenches and stripping	2,000.00
Contract geological investigation for Fig. 3's anomalies and core logging (Holes #16 - 33 and #1 - 15 if possible)	1,500.00
Cat trenching and stripping for the anomalies of Fig. 3	5,000.00
Some suitable kind of E-M survey on the limited areas	3,000.00
Systematic surface rock sampling in the trenches and stripping	2,000.00
Diamond drilling (BQ Wireline) for the recommended sites after all work above mentioned, 10 holes x 300'	25,000.00
Overhead, transportation, camp accomodation, consulting, etc.	<u>19,000.00</u>
TOTAL	\$61,000.00

Repectfully submitted,


Toru Kikuchi, Ph.D., P. Eng.
Consulting Geological Engineer

Vancouver, B.C.
November 10, 1969.

STATEMENT OF QUALIFICATIONS

I, Toru Kikuchi of the City of Vancouver, B.C. hereby certify that:-

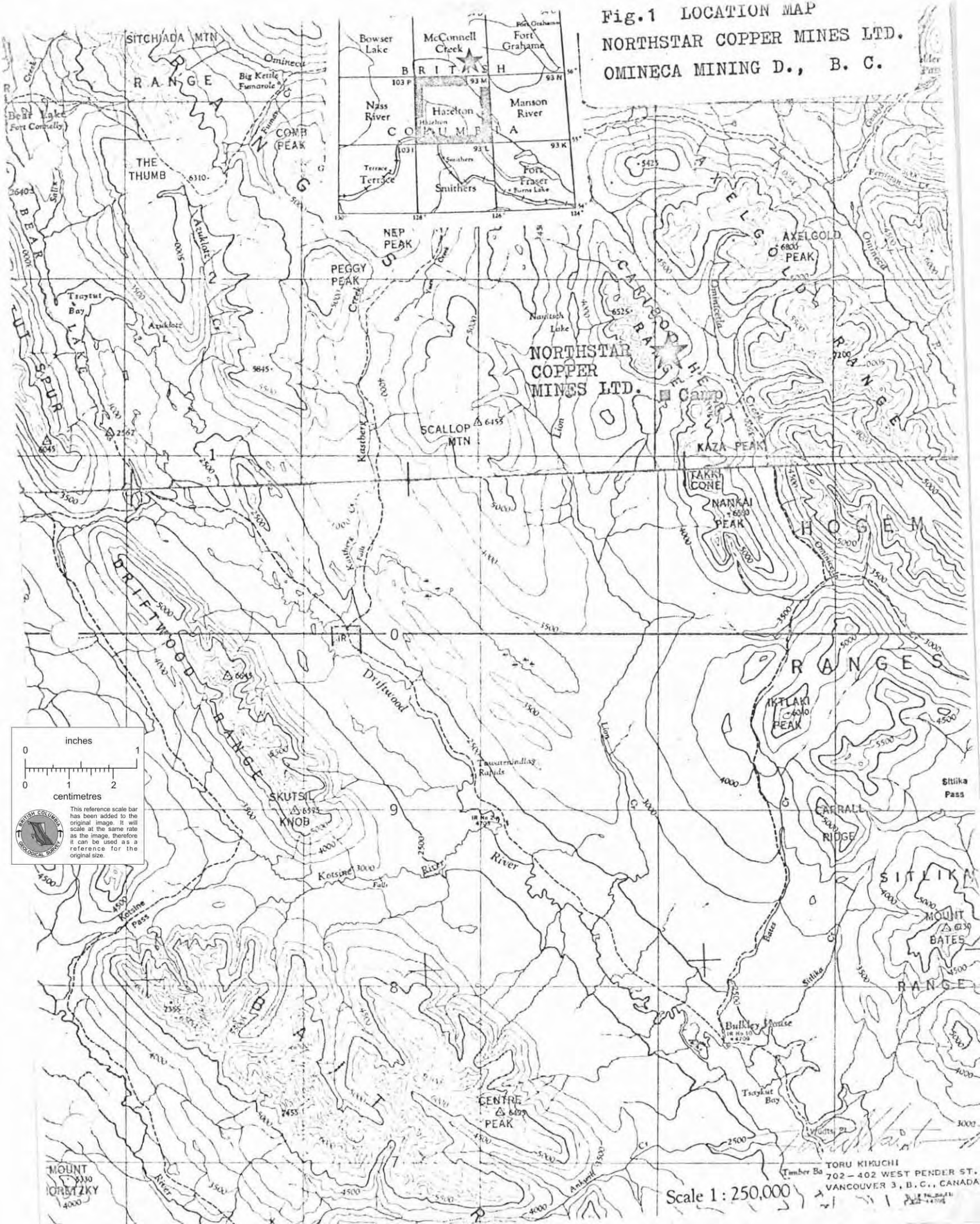
1. I am a graduate of the Hokkaido University, Japan (B.Sc., Geology and Minerology, 1946) and of the Tohoku University, Japan (Ph.D., Economic Geology, 1963).
2. I am a "GIJUTSUSHI" (a qualification for a consulting engineer authorized by the Japanese Government) and a member in good standing of The Association of Professional Engineers of the Province of British Columbia and of the Yukon Territory.
3. I am a member of The Society of Mining Geologists of Japan, and of The Canadian Institute of Mining and Metallurgy and of The Engineering Institute of Canada.
4. I have been practising my profession continuously for the past twenty-three years, and am an independent Consulting Geological Engineer with my office at Room 702 - 402 West Pender Street, Vancouver 3, B.C.
5. I have no direct or indirect interest in the property, nor do I anticipate receiving any such interest.
6. This report is based on my personal study and work at the property on September 9 - 12 inclusive, 1969.



Toru Kikuchi, P. Eng.

Vancouver, B.C.
November 10th, 1969.

Fig.1 LOCATION MAP
 NORTHSTAR COPPER MINES LTD.
 OMINECA MINING D., B. C.



inches
 0 1
 centimetres
 0 2

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

Scale 1 : 250,000

TORU KIKUCHI
 702-402 WEST PENDER ST.
 VANCOUVER 3, B. C., CANADA

Vancouver Stock Exchange

Vancouver, British Columbia

APPLICATION FOR LISTING

INTERIM
LISTING

Application is hereby made by the undersigned company for the listing of its shares on Vancouver Stock Exchange.

1. Full corporate name	NORTHSTAR COPPER MINES LTD. (N.P.L.)
2. Under what law Incorporated	British Columbia
3. Date of Incorporation	July 7th, 1966
4. Head Office Address	c/o Robert M. Tait 1214 Eastview Road North Vancouver, B.C.
5. Address in British Columbia	124 East 15th Street North Vancouver, B. C.
6. Name and Address of Company's Lawyers	Messrs. Forrest, Gray & Munro 124 East 15th Street, North Vancouver B.C.
7. Names, Addresses and Occupations of Company's Directors	Reference is made to the Schedule hereto annexed.
8. Names, Addresses and Titles of Company's Officers	Reference is made to the Schedule hereto annexed.
9. Full particulars of authorized Share Capital	Authorized Capital - \$2,500,000.00 divided into 5,000,000 shares, all of one class, with a par value of 50¢ each
10. Total number of issued shares of each class	a total of 1,116,105 shares are issued and outstanding, of which 712,500 shares are escrowed
11. Number of shares issued for other than cash (this includes shares issued for property or services or to settle debts)	750,000 shares - allotted for mining properties
12. Number of shares sold for cash showing total cash received and total commission paid	Reference is made to the Schedule hereto annexed
13. Table of shares sold for cash showing by month and year each block of shares sold, price per share, total price and total commission	Reference is made to the Schedule hereto annexed
14. Number of shares remaining in Treasury	3,883,895 shares remain in the Treasury

(ATTACH SCHEDULES ON SEPARATE SHEET WHERE SPACE INSUFFICIENT)

15. Particulars of shares held in escrow or in trust for company's benefit or subject to pooling or voting trust agreement or otherwise subject to restriction on transfer	A total of 712,500 shares are held in escrow by Guaranty Trust Company of Canada, 624 Howe Street, Vancouver, British Columbia, pursuant to the usual form of escrow agreement required by the British Columbia Securities Commission.
16. Particulars of shares subject to underwriting or option. Where underwriter or optionee is acting as agent give names and addresses of all individuals who have (directly, indirectly or by reason of corporate shareholding) more than 5% interest in underwriting or option	No shares are now under option or are subject to any underwriting agreement.
17. Particulars of any bonds, debentures, mortgages, charges, liens or hypothecations	There are no bonds, debentures, mortgages, charges, liens or hypothecations outstanding
18. List showing date of each prospectus or amendment issued by Company during past three years and name of securities administration(s) which accepted them	Prospectus dated November 8th, 1966 which was accepted for filing by the British Columbia Securities Commission.
19. Name and Address of all Transfer Agents (including Transfer Agent in Vancouver)	Guaranty Trust Company of Canada 624 Howe Street Vancouver, B.C. - Transfer Agent of Company
20. Name and Address of all Registrars	Guaranty Trust Company of Canada 624 Howe Street Vancouver, B.C. - Registrar of Company
21. Particulars of any law suits pending against the Company or in respect of any of its property and particulars of any other circumstances which might affect the Company's position or title adversely	No law suits are pending against the Company and there are no other circumstances which might affect the Company's position or title adversely
22. Full description (under separate heading for each area) of all Properties owned, leased or held under option, showing price, amount paid, amount owing or unpaid, nature and state of title or interest, plant and equipment on property, work done, work planned, cost of work planned, date and author of report by Engineer or Geologist, and royalties or other charges against production	Reference is made to the Schedule hereto annexed.

INTERIM LISTING

INTERIM LISTING

- 2 -

22. The Company is the recorded and beneficial owner free from encumbrances of the following mineral claims located near the Cariboo Heart Range in the Omineca Mining Division approximately 100 Miles north of Smithers in the Province of British Columbia:

<u>Claim name</u>	<u>Record Number</u>	<u>Expiry Date</u>
Fred 1 - 5 inclusive	33694 - 33698	September 17, 1974
Fred 6 - 12 inclusive	33699 - 33705	September 17, 1973
Bobo 1 - 9 inclusive	33706 - 33714	October 15, 1972
Bobo 10 - 12 inclusive	33715 - 33717	October 15, 1973
Marg 1 - 6 inclusive	33718 - 33723	October 15, 1972
Ged 1 - 6 inclusive	40650 - 40655	July 4, 1975
Ged 7 - 12 inclusive	40656 - 40661	July 4, 1976
John 1 - 8 inclusive	41222 - 41229	July 18, 1973
Kiwi 1 - 8 inclusive	42498 - 42505	August 12, 1969
Maori 1 - 8 inclusive	42490 - 42497	August 12, 1973

The above described mineral claims together with mineral claims Dream 1 & 2 were acquired by the Company from North Star Explorations Ltd. for 500,000 fully paid and non-assessable shares of the Company of which 475,000 remain in escrow with Guaranty Trust Company of Canada. Mineral claims Dream 1 & 2 have been allowed to lapse.

The Company is also the recorded and beneficial owner free from encumbrances of mineral claims SUN 1 to SUN 8 inclusive, record numbers 42159-42166 inclusive, located near the said Cariboo Heart Range in the Omineca Mining Division contiguous to the mineral claims hereinbefore described. These claims along with mineral claims Brad 1-10 and Tiki 1-6 were acquired from Robert Miller Tait, North Vancouver, British Columbia, Gerald B. Phillips, Smithers, British Columbia, and Lorimer S. Thompson, West Vancouver, British Columbia, in consideration of the allotment of 250,000 fully paid and non-assessable shares of the Company which were placed in escrow with Guaranty Trust Company of Canada for the following persons:

<u>Name of Shareholder</u>	<u>No. of Shares Allotted to the Vendors</u>	<u>Shares Remaining in escrow after 5% release</u>
Robert Miller Tait	180,000	171,000
Gerald Beverly Phillips	39,500	37,525
Lorimer S. Thompson	35,000 30,500 AT	28,975.

The foregoing mineral claims have not been surveyed and accordingly their position, size and existence on the ground must be regarded as subject to adjustment on survey. Mineral claims Brad 1-10 and Tiki 1-6 have been allowed to lapse but the following additional mineral claims have been staked and the Company is the recorded and beneficial owner of them, free from all encumbrances:

<u>Claim name</u>	<u>Record Number</u>	<u>Expiry date</u>
Bobo 13 - 16 inclusive	60731 - 60734	July 12, 1975
Har 1 - 14 inclusive	60751 - 60764	July 12, 1975
Tina 1 - 4 inclusive	51846 - 51849	July 31, 1970
Tina 9	51851	July 31, 1979
Tina 10	51852	July 31, 1975
Tina 11	51853	July 31, 1980
Tina 12 - 14 inclusive	51854 - 51856	July 31, 1975

INTERIM LISTING

- 3 -

<u>Claim name</u>	<u>Record Number</u>	<u>Expiry date</u>
Can 1 - 5 inclusive	48584 - 48588	April 17, 1971
May 1 - 4 inclusive	59310 - 59313	May 16, 1975
Wick 1 - 4 inclusive	48580 - 48583	April 17, 1971
Ski 2 - 4 inclusive	48590 - 48592	April 17, 1970
Ski 5 - 7 inclusive	48593 - 48595	April 17, 1973
Ski 8	48596	April 17, 1972
Ski 9 and Ski 10	48597 & 48598	April 17, 1971
Trail 1 & 2	48489 & 48490	April 5, 1976

The above described mineral claims are located near the said Cariboo Heart Range in the Omineca Mining Division contiguous to the mineral claims hereinbefore described.

The Cariboo Heart range is a western outlier of the Hogem mountains, approximately 25 miles north of the north end of Takla Lake, at latitude 56 degrees 2 minutes north, longitude 126 degrees 16 minutes west. The surface which ranges in elevation from 4000 feet to above timber-line at 5500 feet is densely forested and bedrock is largely concealed beneath a comparatively thin mantle of soil and unconsolidated glacial till.

The area of interest is most accessible by float planes which can land on Kaza Lake near the property. A tote road has been constructed between Takla Lake and Kaza Lake, some thirty miles in length. Takla is the northermost of a chain of lakes navigable for seven months of the year that connects with rail head and the highway system at Fort St. James.

Between June, 1967, and the end of September, 1967, a crew of eight men was engaged in line-cutting, soil sampling and analysis, geological mapping, hand trenching and diamond drilling on the Company's mining properties.

A geochemical soil survey was conducted to cover above 1600 acres. This involved cutting and surveying 168,000 feet of grid lines, and collecting and making copper analyses in a field laboratory of 800 soil samples. An area of about 600 acres was geologically and topographically mapped by plan table at a scale of one inch to 100 feet. More detailed maps at larger scales were made of mineralized showings. Small pits and trenches were excavated by hand on four mineralized showings, but none of these was sufficiently deep to reach unweathered material. Nine AQ size diamond drill holes totalling 2090 feet were drilled on a widely-spaced pattern. The purpose was to gain more information about the stratigraphy and structure and to identify targets for later more detailed sub-surface exploration.

In 1968 the Company constructed the tote road between Takla Lake and Kaza Lake (described above), bulldozed about 10,000 feet of trenches, and completed ten AQ diamond drill holes totalling 1399 feet. Particulars of the 1968 program are contained in the progress report of Wm. H. White, P.Eng., dated October 4th, 1968.

The following engineering reports deal with the history and development of the Company's mining properties and recommendations for its future development:

- (a) report of Dr. William H. White, dated July 30, 1966;
- (b) report of Dr. William H. White dated March 28, 1968;
- (c) report of Dr. William H. White dated October 4th, 1968.

THIS IS THE SCHEDULE REFERRED TO IN THE
ANNEXED APPLICATION FOR LISTING THE SHARES
OF NORTHSTAR COPPER MINES LTD. (NON-PERSONAL
LIABILITY) ON THE VANCOUVER STOCK EXCHANGE

7. The names, addresses and occupations of the Company's Directors are as follows:

<u>Name</u>	<u>Address</u>	<u>Occupation</u>
Robert Miller Tait	1214 Eastview Road, North Vancouver, B.C.	Prospector
Gerald Beverly Phillips	Smithers, B.C.	Chartered Accountant (in private practice)
Lorimer Sidney Thompson	1480 Tyrol Place West Vancouver, B.C.	Comptroller of Simpson- Sears Ltd.
Logan Miller Tait	1040-14th St. South, Lethbridge, Alberta	Chartered Accountant

INTERIM
LISTING

8. Robert Miller Tait - President
Lorimer Sidney Thompson - Vice-President
Gerald Beverly Phillips - Secretary-Treasurer.

12. The Company has allotted and issued a total of 366,105 fully paid and non-assessable shares for cash as follows:

<u>Date of Sale</u>	<u>No. of Shares</u>	<u>Price per Share</u>	<u>Discount per Share</u>	<u>Cash Received</u>
1966	163,005	10¢	40¢	\$ 16,300.50
1967	159,350	75¢	Nil	\$119,512.50
1968 (August)	43,750	\$1.50	Nil	\$ 65,625.00
TOTAL-----				\$201,408.00

Commissions in the total sum of \$250.00 were paid or allowed by the Company in respect of the sale of the above shares. The 43,750 shares sold in August of 1968 were purchased as an investment and these transactions were exempted from the provisions of the Securities Act, 1967 of British Columbia.

13. Particulars of the shares of the Company sold for cash are as follows:

<u>Month & Year of Sale</u>	<u>Number of Shares sold</u>	<u>Price per Share</u>	<u>Total price paid</u>	<u>Total commission</u>
July, 1966	5	10¢	\$.50	Nil
August, 1966	163,000	10¢	\$16,300.00	Nil
December, 1966	32,946	75¢	\$24,709.50	Nil
January, 1967	28,533	75¢	\$21,399.75	Nil
February, 1967	20,396	75¢	\$15,297.00	Nil
March, 1967	4,916	75¢	\$ 3,687.00	Nil
April, 1967	39,475	75¢	\$29,606.25	Nil
May, 1967	10,318	75¢	\$ 7,738.50	Nil
June, 1967	22,766	75¢	\$17,074.50	\$250.00
August, 1968	43,750	\$1.50	\$65,625.00	Nil

Second Annual General Meeting held
on November 29th, 1968.

23. Date of Last Annual Meeting and of last
Report to Shareholders

24. Particulars of Stock Exchange listings as
follows:
Present listings on other Stock Exchanges
with date of admittance to trading.
Is an application for listing on any other
Stock Exchange pending or contemplated?
Give details.
Have Company's Shares ever been delisted
or suspended by any Stock Exchange?
Give details.
Has any application for listing the Com-
pany's Shares on any Stock Exchange ever
been refused or deferred? Give details.

The Company's shares have not
been listed on any Stock Exchange
and no application for listing has
been refused or deferred. No applica-
tion on any other Stock Exchange is
pending or presently contemplated
by the Company.

LISTING AGREEMENT

The Company shall pay an application fee of \$2,000. The application, supporting material and application fee shall belong to the Exchange even if the application is not accepted.

The Exchange may refuse the application and shall not be required to say on what ground or for what reason they refused.

If this application is accepted,

1. The Company shall give the Exchange a certified copy of everything sent to (and at the same time as sent to) its shareholders, bondholders or debenture holders.

2. The Company shall report to the Exchange in prescribed form (a) every proposed allotment or issue of shares, (b) every proposed agreement to allot or issue shares, (c) every proposed underwriting or underwriting and option agreement, (d) every proposed management stock option, (e) every proposed acquisition or disposition (by one transaction or a series of transactions) of real or personal property at a cost or for a price exceeding \$25,000, (f) every proposed change of Corporate Name and (g) every other material change in the Company's organization, business, property or affairs. The Company shall not proceed with any of the foregoing transactions without prior approval by the Exchange.

3. The Company shall from time to time give or procure and give to the Exchange such material, information and/or explanations as may be required by the Exchange and within such time as may be required by the Exchange.

4. Everything from time to time given to the Exchange by the Company shall become the property of the Exchange and may be published by the Exchange.

5. From time to time and without notice the Exchange may suspend trading in the Company's shares and the Exchange shall not be required to say what ground or for what reason they suspended.

6. At any time and without notice the Exchange may delist the Company's shares and the Exchange shall not be required to say on what ground or for what reason they delisted.

7. The Company shall be bound by and observe all existing and future bylaws, rules and regulations of the Exchange which apply to companies whose shares are posted for trading.

8. The Company shall pay the fees from time to time prescribed by the Exchange.

9. The Company certifies that the information contained in this application is true and correct.

Dated at Winnipeg, B.C. this 10th day of March 19 69

NORTHSTAR COPPER MINES LTD. (N.P.L.)

Corporate Name

(Corporate Seal)

By Robert M. Tait
President

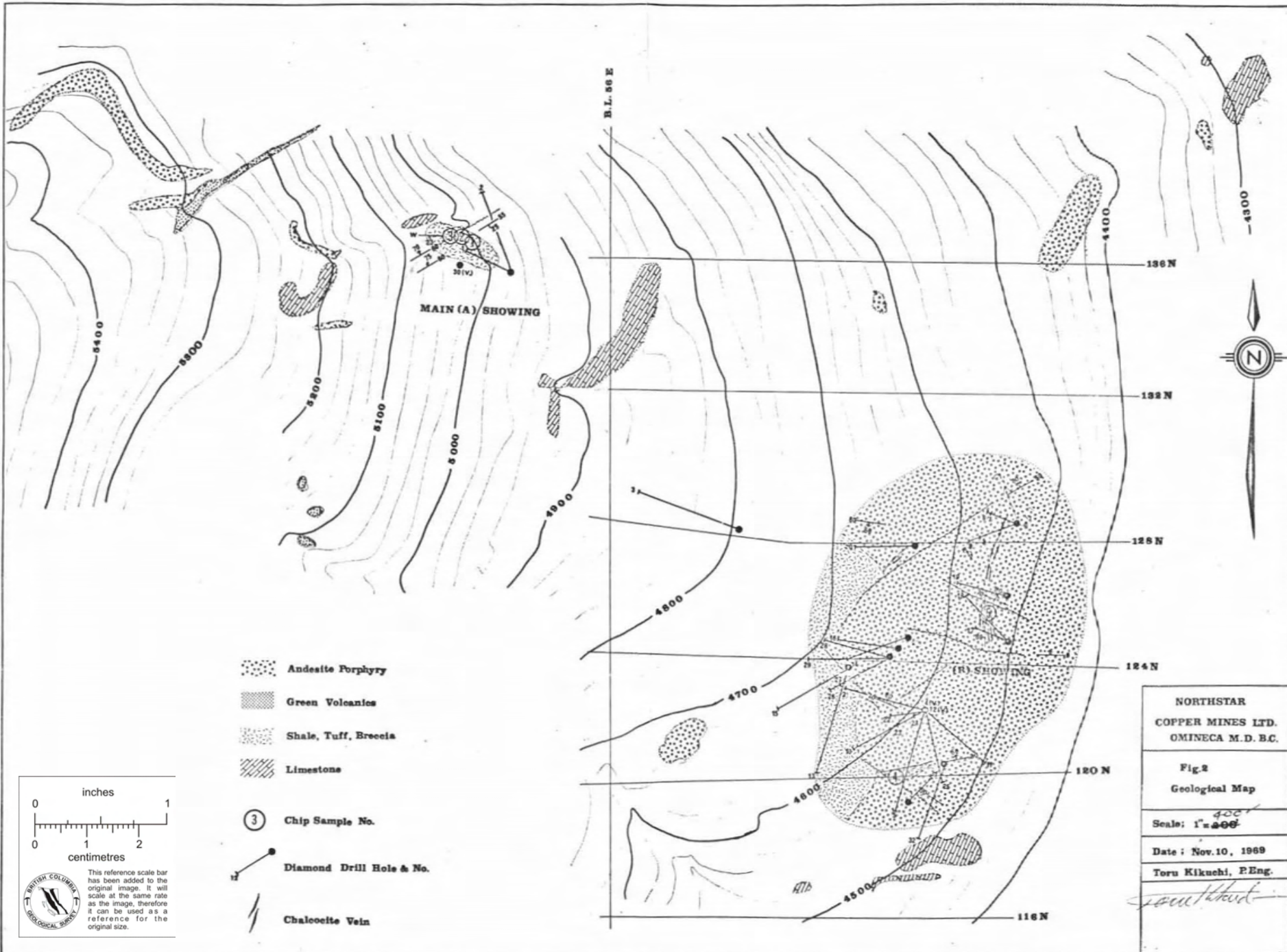
Loimes J. Thompson
Secretary

We agree to sponsor the applicant's shares.

RYAN INVESTMENTS LTD.

Name of Seatholder

By [Signature]
Signature of Member



NORTHSTAR
COPPER MINES LTD.
OMINECA M.D. B.C.

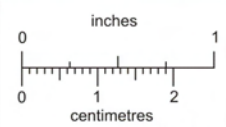
Fig. 2
Geological Map

Scale: 1" = 200'

Date: Nov. 10, 1969

Toru Kikuchi, P. Eng.

Toru Kikuchi

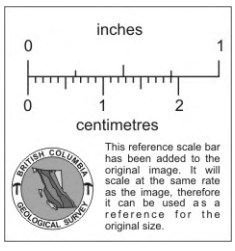


BRITISH COLUMBIA
GEOLOGICAL SURVEY

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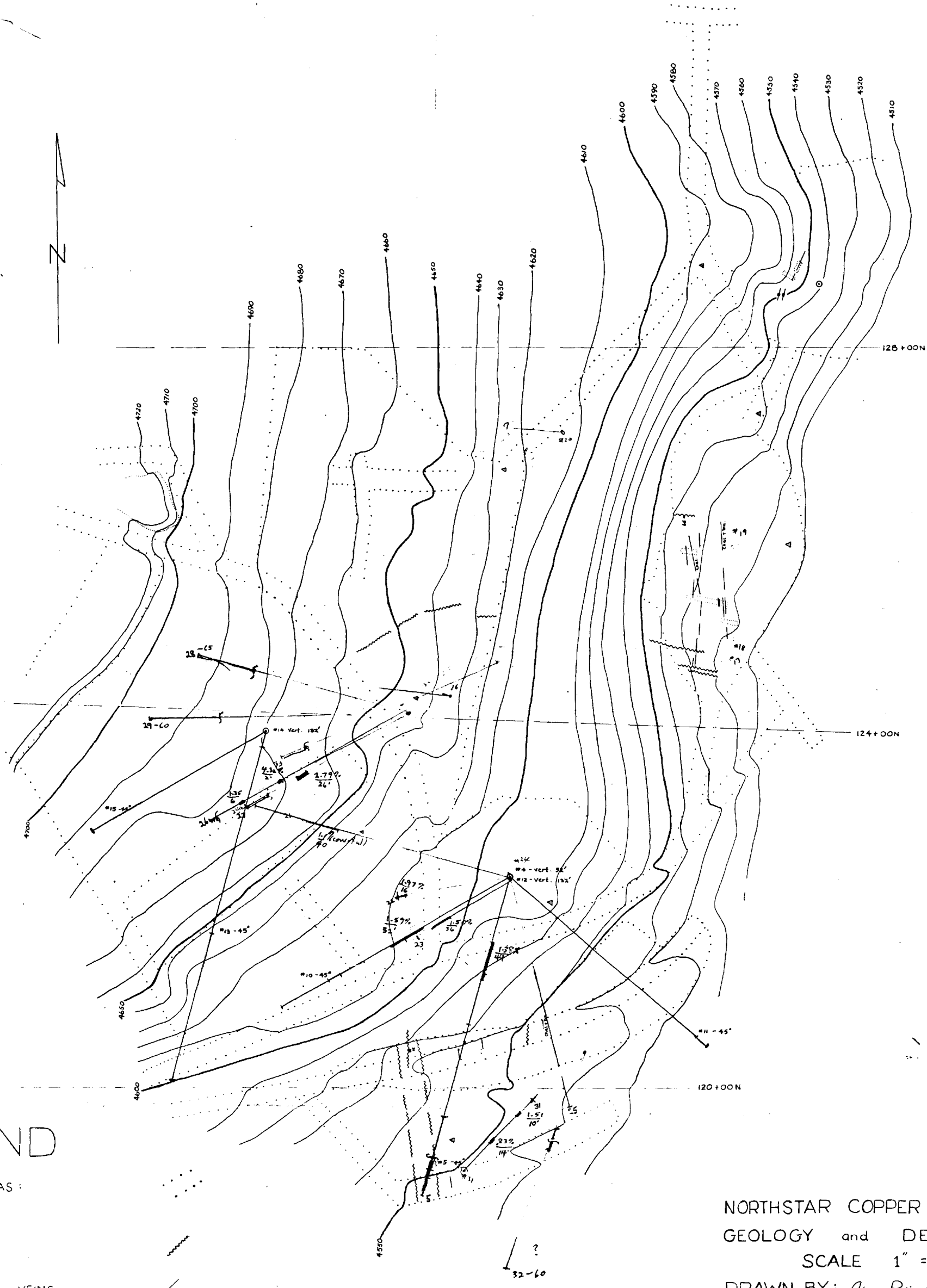
- Andesite Porphyry
- Green Volcanics
- Shale, Tuff, Breccia
- Limestone

- Chip Sample No.
- Diamond Drill Hole & No.
- Chalcoite Vein

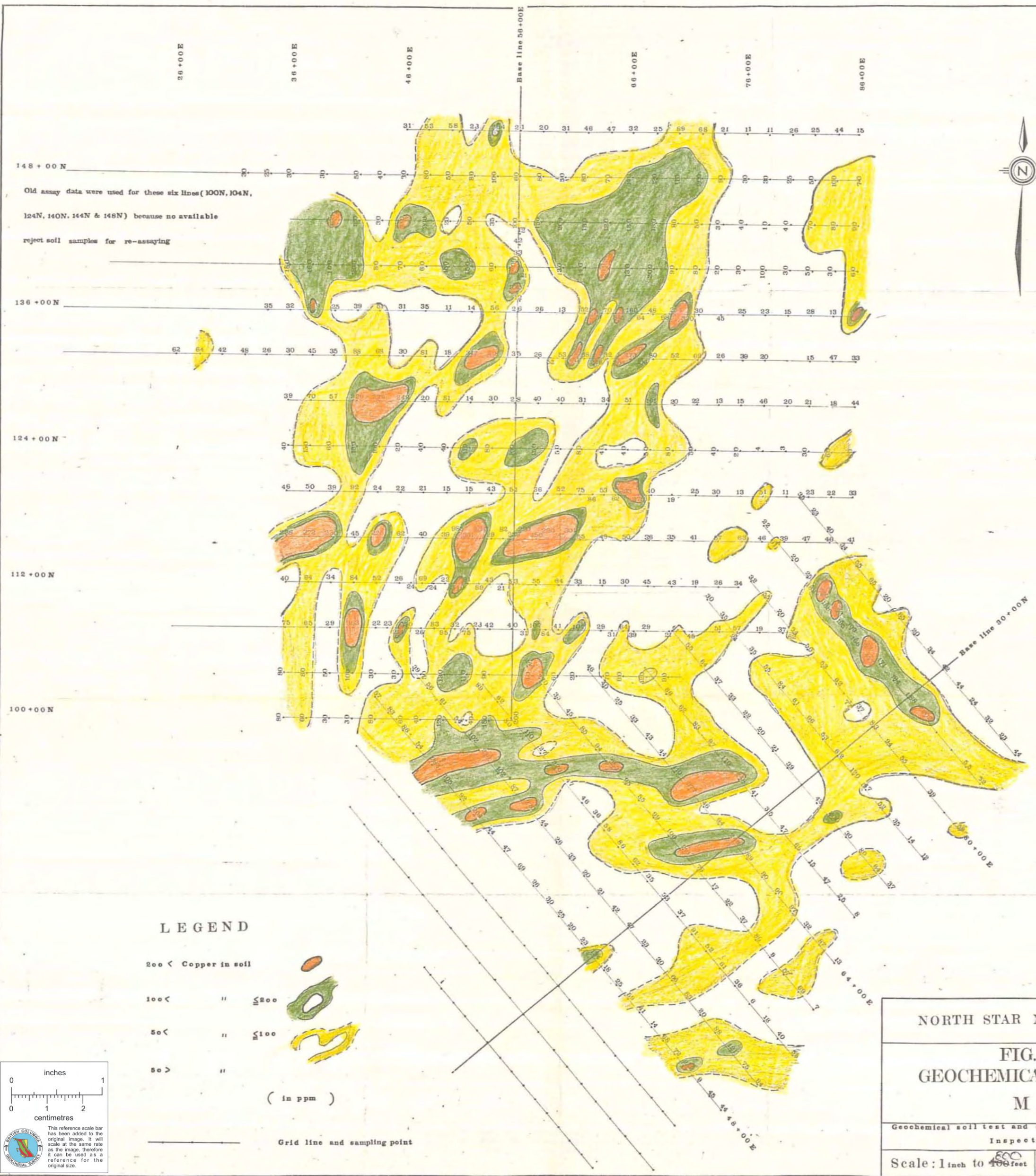


LEGEND

- BULLDOZED AREAS :
- EXPOSED ROCK :
- FAULTS :
- MINERALIZATION: - VEINS
- DISSEMINATION
- DRILL HOLES :



NORTHSTAR COPPER MINES LTD.
 GEOLOGY and DEVELOPMENT
 SCALE 1" = ~~50~~ 100'
 DRAWN BY: *Arne Rimsbakken*
 CHECKED BY:
 DATED :



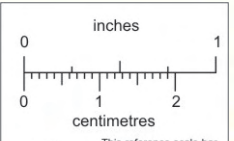
148 + 00 N
 Old assay data were used for these six lines (100N, 104N, 124N, 140N, 144N & 148N) because no available reject soil samples for re-assaying

LEGEND

- 200 < Copper in soil
- 100 < " ≤ 200
- 50 < " ≤ 100
- 50 > "



(in ppm)



This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

Grid line and sampling point

NORTH STAR MINES LTD.	
FIG. 3 GEOCHEMICAL CONTOUR MAP	
Geochemical soil test and contour line by M. KIYOKAWA	
Inspected by T. KIKUCHI, P. Eng.	
Scale: 1 inch to 400 feet	DATE: Oct. 24, 1969