

2933

GEOCHEMICAL REPORT

ON THE

CHUCHI GROUP - COL CLAIMS

LAT. 55°20'00"N. LONG. 124°45'00"W.

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT

NO. 2933 ..... MAP .....

Vancouver, B. C.

Dr. R. B. Band

February 10, 1971

C O N T E N T S

	<u>P a g e</u>
INTRODUCTION .....	1
LOCATION AND ACCESS .....	1
TOPOGRAPHY .....	2
SOILS .....	2
METHOD OF SURVEY .....	2
LABORATORY TECHNIQUES .....	2
GEOLOGY - After R. Wares .....	3
INTERPRETATION AND CONCLUSIONS - After R. Band .....	3
STATEMENT OF WORK .....	5
STATEMENT OF QUALIFICATIONS .....	7
ILLUSTRATIONS .....	In pocket
<i>A1</i> Map 876A Location map of Col Claims Scale 1" = 4 mi. ....	Following page 1
<i>A2</i> 161-70-16 Relationship of Soil Grid to Col Claims Scale 1" = 1,500 ft. ....	In pocket
<i>A3</i> 161-70-10 Hot Extractable Copper Scale 1" = 400 ft. ....	In pocket
<i>A4</i> 161-70-11 Distribution of Silver in p.p.m. Scale 1" = 400 ft. ....	In pocket
<i>A5</i> 161-70-12 Cold Extractable Copper Scale 1" = 400 ft. ....	In pocket
<i>A6</i> 161-70-13 Distribution of Molybdenum in p.p.m. Scale 1" = 400 ft. ....	In pocket

DOMINION OF CANADA:  
 PROVINCE OF BRITISH COLUMBIA.  
 To Wit:

**In the Matter of**

Geochemical Report on  
 Chuchi Group mineral claims.

I, David H. Brown

of 504 - 1112 W. Pender St., Vancouver 1, B. C.

in the Province of British Columbia, do solemnly declare that the following work was done:

28.6 mi of geochemical survey grid cut and flagged and sampled on a 200 ft. spacing. The following personnel were involved:

Band, R. B.	Geochemist	Sept. 15-17/70	3 days @ \$100/day	\$300.00
Dawson, A. H.	Field geologist & supervisor	Sept. 12-14/70	3 days @ \$45/day	135.00
Bjerring, R.	Prospector and geo-chemical operator	Sept. 9-14/70	6 days @ \$40/day	240.00
Johnstone, L	Party chief & geo-chemical operator	Sept. 9-12/70	4 days @ \$40/day	160.00
Mahood, J.	Sampler	Sept. 9-11/70	3 days @ \$35/day	105.00
Murray, S.	Sampler	Sept. 9-10/70	2 days @ \$35/day	70.00
Samuelson, R.	Prospector & geo-chemical operator	Sept. 9-11/70	3 days @ \$40/day	120.00
Westfall, K.	Sampler	Sept. 9-12/70	4 days @ \$35/day	<u>140.00</u>
				\$1,270.00
Laboratory Charges	748 soil samples @ \$4.00/sample			2,992.00
Helicopter charges	- 2 hrs. @ \$230.00/hr			<u>460.00</u>
			Total	<u><u>\$4,722.00</u></u>

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the City  
 of Vancouver, in the  
 Province of British Columbia, this 31st  
 day of March 1971, A.D.

*D. H. Brown*

*G. Phillips*

A Commissioner for taking Affidavits within British Columbia or  
 A Notary Public in and for the Province of British Columbia.

SUB-ASSISTANT REGISTRAR

# FALCONBRIDGE NICKEL MINES LIMITED

1112 WEST PENDER STREET

VANCOUVER I. B. C., CANADA

TELEPHONE: 682-6242

TELEX: 04-5938

February 10, 1971

The Chief Mining Recorder  
Omineca Mining Division  
Smithers, B. C.

Dear Sir:

Re: Statement of Qualification

This is to certify that the geochemical work done on the Col M.Cs. and presented in this report was done under my supervision.

The geochemical field work was performed under the guidance of Mr. A. H. Dawson of Vancouver, B. C. Mr. Dawson attended Washington State University, Pullman, Washington from 1964 to 1968 and was awarded a Bachelor of Science Degree in Geology. Mr. Dawson has been with Falconbridge for two years during which time he has been thoroughly instructed in geochemical techniques and procedures.

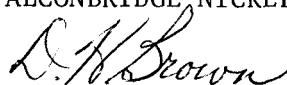
Messrs. Bjerring, Johnstone and Samuelson are geochemical operators trained by the Company geochemist. Messrs. Mahood, Murray and Westfall are competent samplers trained in the field in geochemical techniques.

The analysis and evaluation of the results were done under the direction of Dr. I. L. Elliott, Chief Geochemist, and Dr. R. B. Band, Assistant Geochemist, both of whom received their Doctorates from the Royal School of Mines, Imperial College, London, England.

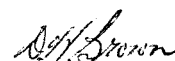
I am a graduate in engineering geology from the University of British Columbia and a member of the Association of Professional Engineers of Ontario and British Columbia.

Yours very truly,

FALCONBRIDGE NICKEL MINES LIMITED



D. H. Brown, P. Eng.



GEOCHEMICAL REPORT ON  
CHUCHI GROUP - COL CLAIMS  
93-N-2

INTRODUCTION

During September 1970, a geochemical soil and reconnaissance program was carried out on the Chuchi Groups 1 and 2 of Col Mineral Claims held under option from Colin J. Campbell and Heather Campbell by Falconbridge Nickel Mines Limited.

Seven hundred and forty-eight (748) samples were collected and analyzed for silver, copper, and molybdenum. The geochemical results of the above are plotted on maps 161-70-10, 11, 12, and 13.

LOCATION AND ACCESS: Lat. 55°20'00''n. Long. 124°45'00''W.

The groups of Col claims are located 55 miles north of Fort St. James (on Stewart Lake) and four miles north of Chuchi Lake between the Klawli River and Klawdetelle Creek. Elevations on the property range from 2,800 feet to 4,400 feet. A secondary road from Fort St. James to Germansen Landing passes within two miles of the east end of Chuchi Lake. A short connecting road links the main road with the Nation Lake Lodge on Chuchi Lake. The distance from Fort St. James to Chuchi Lake by road is 67 miles. Reaching the west end of the lake involves a 16 mi. boat trip which takes about 1½ hours. The property is then reached by four miles of cut trail.

Vanderhoof, 41 miles south of Fort St. James, is on the Canadian National Railway line. A branch of the Pacific Great Eastern Railway, when completed, will pass about 35 miles west of the property.

The geochemical soil survey described in this report was carried out on





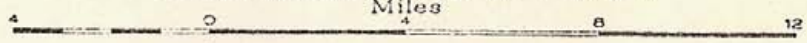
MAP 876A

# MANSON CREEK

CASSIAR DISTRICT  
BRITISH COLUMBIA

LOCATION MAP  
COL CLAIMS  
93-N-2

Scale, 25,000 or 1 Inch to 4 Miles



Approximate magnetic declination, 30° East.



Anomalous hot extractable copper values are concentrated in the west half of the grid and in the north-east quadrant (Map 161-70/10). Anomalous values are less common in the south-east.

Cold extractable copper shows a broadly similar distribution of anomalous values (Map 161-70/11), although the anomalous areas are slightly more restricted in extent than was the case with hot extractable copper.

Silver (Map 161-70/12) and molybdenum (Map 161-70/12) show very restricted anomalous areas. Both metals show a strong correlation with hot extractable copper. The correlation between anomalous molybdenum and silver values is not so well marked.

The ratio of cold extractable to hot extractable copper provides a useful method of distinguishing secondary accumulation anomalies from those more closely related to bedrock mineralization. On this basis, the copper anomaly between lines 4N and 16S and lying up to 2000' west of the baseline is regarded as the principal target zone. The remaining anomalies, on the other hand, appear to be mainly of secondary accumulation origin. These anomalies occur in topographic lows bordering or extending from the principal anomalous zone, suggesting a common copper source.

#### CONCLUSIONS

The anomalous zone between lines 4N and 16S and up to 2000' west of the baseline is the prime target on the Col property. Further surface geochemistry is unlikely to provide significant additional information and a trenching programme over the anomalous zone, with profile sampling of the trenches, is recommended.

Vancouver, B. C.

February 10, 1971



R. B. Band

a grid as shown on the accompanying map 161-70-16. The work was carried out on Col claims 1-12, 14, 16-20, 22, 24, 29-34, 43-46, 51, 52, 53, and 55 of Chuchi Groups 1 and 2.

#### TOPOGRAPHY AND SOILS

The topography is one of generally steep but lightly-wooded slopes, locally broken by deep valleys and ridges. The slopes flatten toward the southern part of the grid.

On the steep upper slopes, soils are shallow and well drained and there is abundant outcrop. Talus fans of restricted extent also occur on the upper slopes. Overburden cover is thicker on the lower slopes, particularly in the flat, swampy area in the extreme southern part of the grid.

#### METHOD OF SURVEY

A baseline 8,800 feet long bearing N45° E was established by chain and compass. Grid lines were turned off at 90° to the baseline at 400 foot intervals. Twenty-three soil samples were collected on both sides of the baseline at 200 foot intervals for a total width of 9,200 feet, except where there was deep overburden cover in the valleys or on the talus-covered slopes.

Soil samples were taken from the "B" horizon at a depth of approximately 10 inches, using grub hoes. All soil samples were placed in water resistant paper packets on which the following information was recorded: sample number, date, location, sample width, horizon, colour and moisture content. The samples were shipped to Vancouver for analysis by the Falconbridge Laboratory.

#### LABORATORY TECHNIQUES

The samples were dried in a gas-fired hot air drier and hand-screened through 80 mesh standard nylon screens.

The minus 80 mesh portion of the dried samples was analyzed for silver, copper, and molybdenum by standard geochemical techniques.



Silver and copper were determined by standard atomic absorption techniques, following digestion of the sample with boiling 10% nitric acid. Total molybdenum was determined by fusing 250 m.g. of sample with alkaline flux to render the molybdenum soluble. The fused product was then leached with demineralized water and an aliquot of the leach liquor treated with a 2.5% solution of hydroxylamine hydrochloride in hydrochloric acid and 1% zinc dithiol solution. After shaking to develop the coloured molybdenum complex, the samples were compared with previously prepared standards to obtain the molybdenum concentration. Cold extractable copper was determined after shaking 1.0 gram of sample with 10 ml. of buffer solution for two minutes in a mechanical shaker. The buffer solution has a pH of 4.0 and consists of 100 g. of hydroxylamine hydrochloride dissolved in one litre of demineralized water. The copper content of the leach solution was determined by standard atomic absorption methods.

GEOLOGY - After R. Wares

The Col claims (Campbell option) are located at the southern margin of the Hagem Batholith, a major structural and lithological feature of the eastern crystalline belt of British Columbia.

The property is located close to a syenite plug (as mapped by the G.S.C.). This intrusive is actually a composite granite/syenite plug that has been forcefully emplaced into the Hagem Batholith. The host rock for the Chuchi mineralization is monzonitic and generally deficient in free quartz. Its relationship to the overall character of the Hagem rocks is unknown.

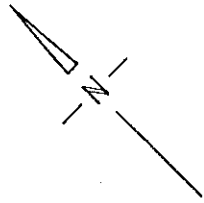
RESULTS AND INTERPRETATION

Concentration ranges for the various metals are summarized in the table below:

	<u>Reg. Bkd.</u>	<u>Local Bkd.</u>	<u>Anom.</u>	<u>Very Anom.</u>	<u>Range</u>	<u>Mode</u>
Cu	<100	100-150	100-150	>300	2-2500	11-20
Ag	<0.7	0.7-0.9	>1.0	N.A.	0.1-2.2	0.2-0.5
Mo	<2	2-5	>5	N.A.	<2-31	<2
CxCu	<20	20-40	40-100	>100	1-920	<5

MAP REF. No.: 161-70-16

N.T.S.: 93-N-2



Perimeter of Soil Grid

Col 25	Col 23	Col 21	Col 15	Col 13	Col 18	Col 20	Col 34	Col 36	Col 38
Col 26	Col 24	Col 22	Col 16	Col 14	Col 17	Col 19	Col 33	Col 35	Col 37
Col 28	Col 30	Col 32	Col 2	Col 4	Col 6	Col 8	Col 43	Col 41	Col 39
Col 27	Col 29	Col 31	Col 1	Col 3	Col 5	Col 7	Col 44	Col 42	Col 40
Col 59	Col 57	Col 55	Col 9	Col 10	Col 11	Col 12	Col 46	Col 48	Col 50
Col 60	Col 58	Col 56	Col 54	Col 53	Col 52	Col 51	Col 45	Col 47	Col 49

Chuchi #1 Group

Chuchi #2 Group

RELATIONSHIP OF SOIL GRID TO COL CLAIMS

M. 2

FALCONBRIDGE NICKEL MINES LTD.

PROPERTY: CHUCHI COPPER

LOCATION: CHUCHI LAKE, B.C.

TYPE OF MAP:

BASED ON:

DATE OF WORK:

DATE: Jan. 1971

DRAWN BY: H.G.T.

*H.G.T.*

SCALE: 1 INCH TO 1500'

Department of  
Mines and Petroleum Resources

ASSESSMENT REPORT

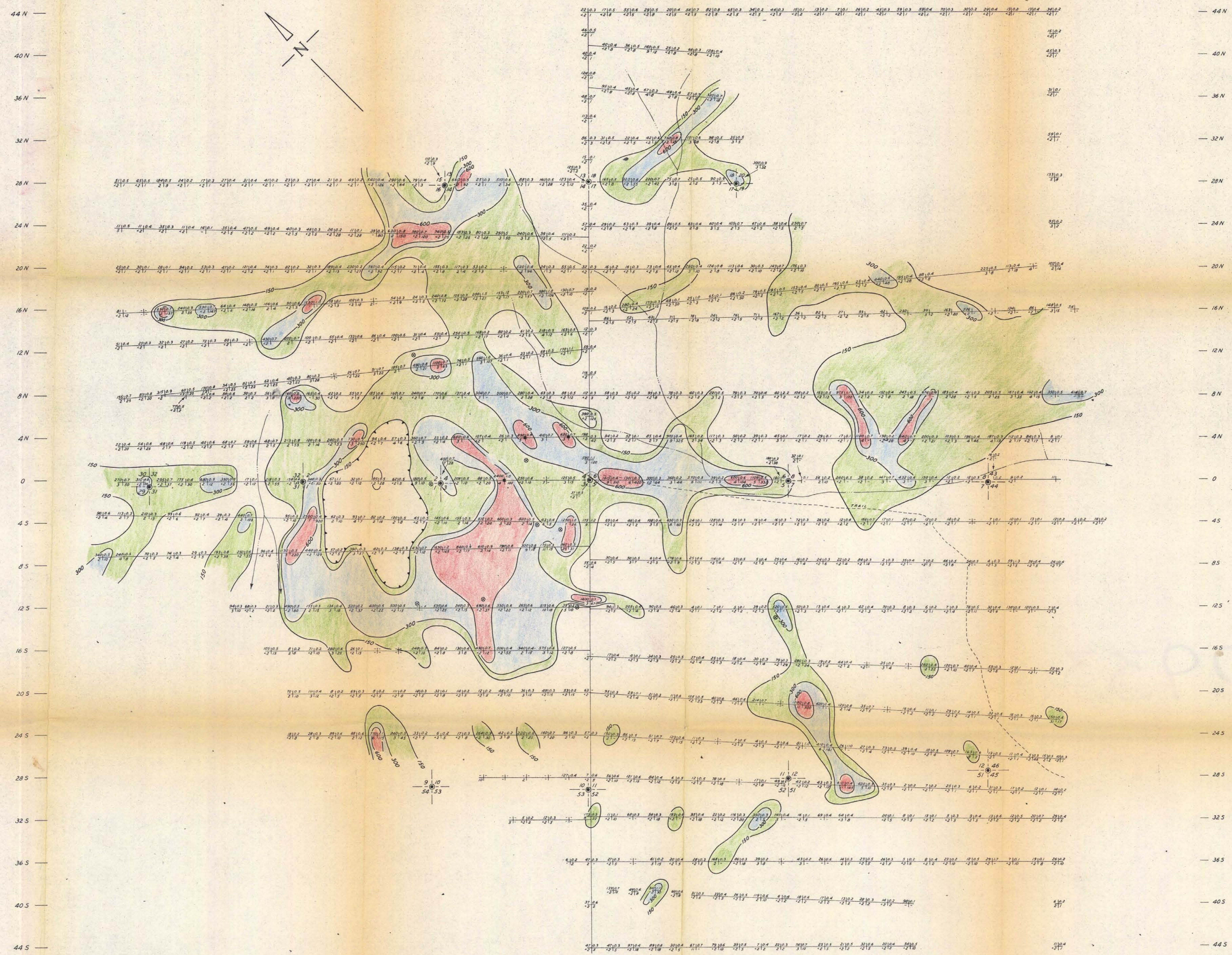
NO. 2933

MAP #2

2933



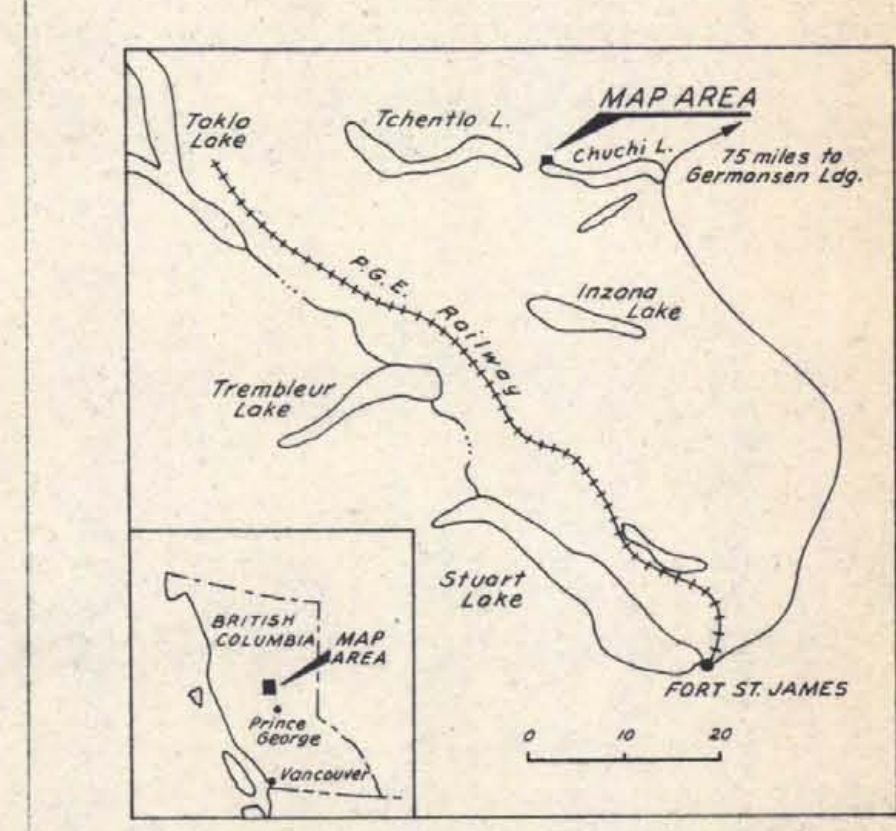
Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO. 2933 MAP **M-3**



**Hot Extractable Copper**  
 150 Local background  
 300 Anomalous  
 600 Highly anomalous

**Legend**  
 Cu Ag  
 Mo/Cu  
 ○ Cu showing  
 □ Trial profiles  
 ≡ No sample, or insufficient sample  
 12/56  
 41/23 Claim post, showing claim numbers

Note: Map based on initial geochemical grid



2933  
 M-3

COMPANY . . . FALCONBRIDGE NICKEL MINES LTD.  
 PROPERTY . . . CHUCHI COPPER  
 LOCATION . . . CHUCHI LAKE, B.C.

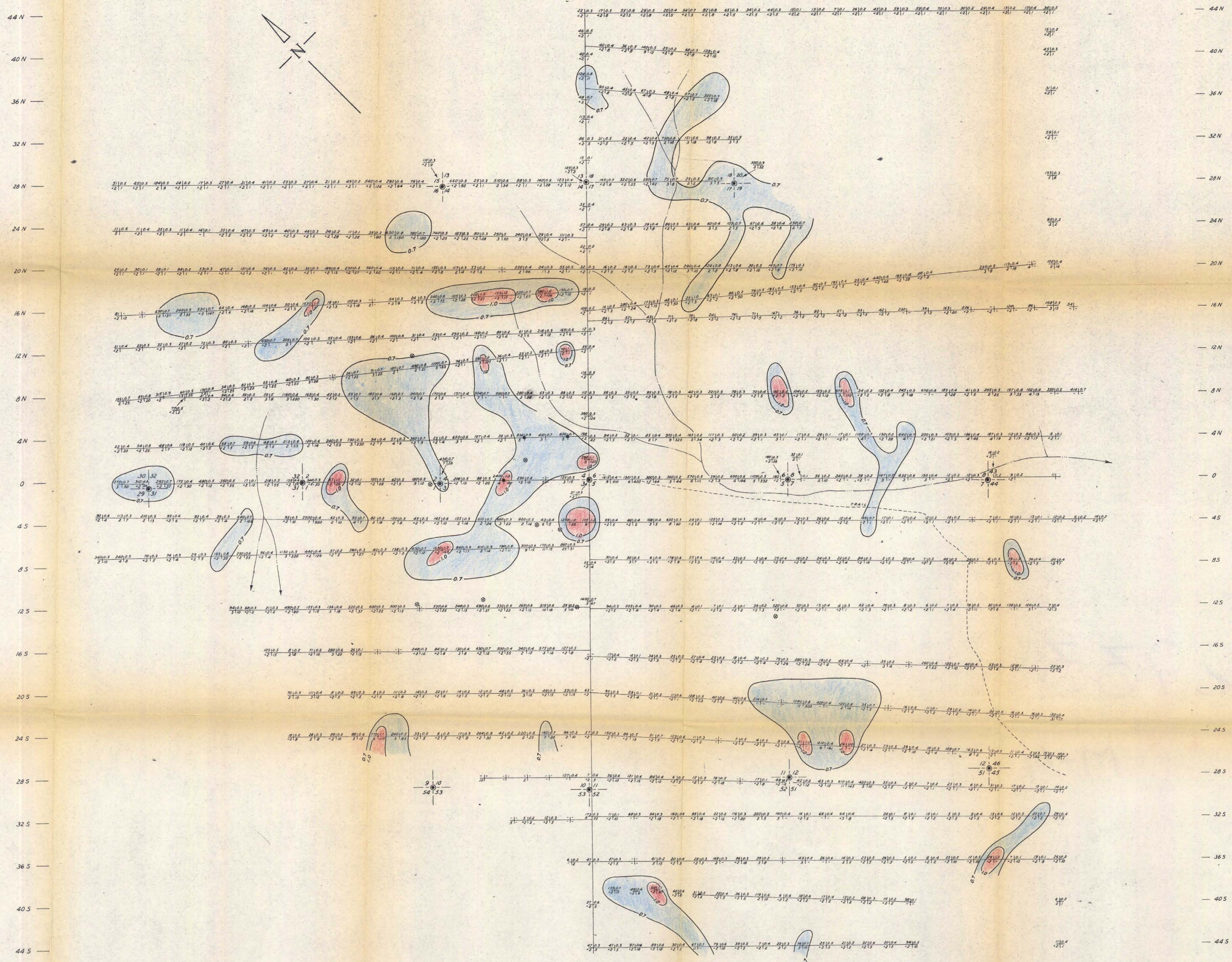
WORKING PLACE . . . Col group of Claims  
 TYPE OF MAP . . . GEOCHEMICAL  
 BASED ON . . . Soil Sampling

DATE . . . Dec., 1970  
 DRAWN BY . . . H.G.T.  
 DATE OF WORK . . .

*H. G. T.*



Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO 2933 MAP #4



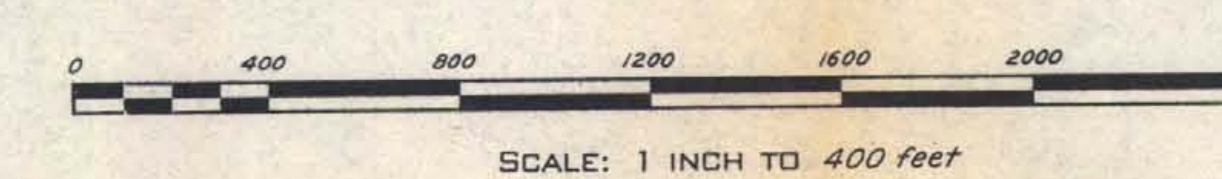
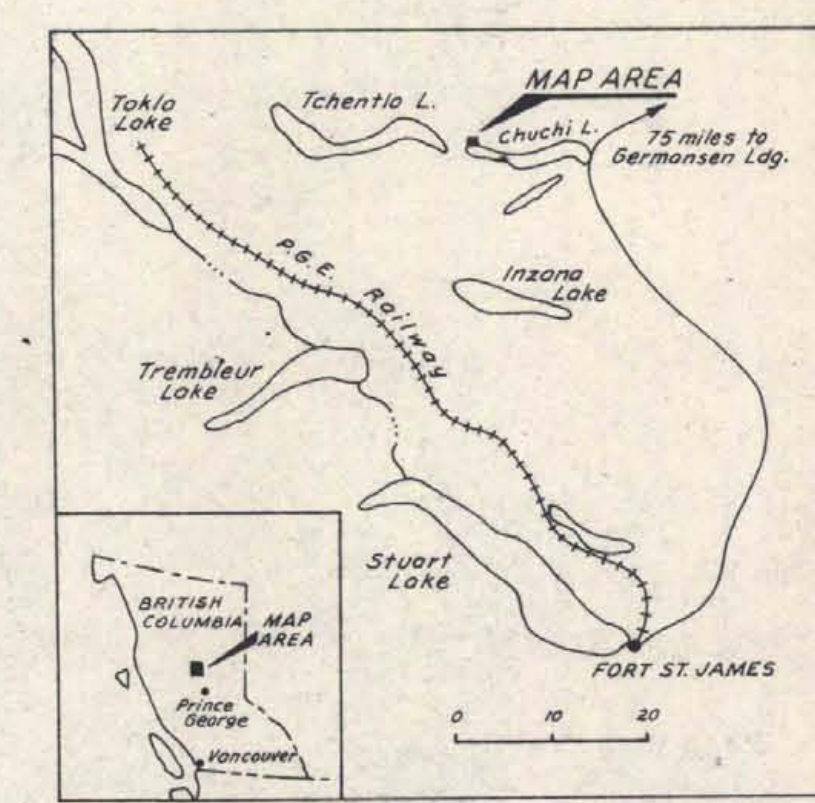
Distribution of Silver in ppm  
 0.7-0.9 Local background  
 >1.0 Anomalous

2933

Legend  
 Cu/29  
 Ni/Cu  
 Cu showing  
 Trial profiles  
 No sample, or insufficient sample  
 Claim post, showing claim numbers

M-4

Note: Map based on initial geochemical grid



COMPANY . . . FALCONBRIDGE NICKEL MINES LTD.  
 PROPERTY . . . CHUCHIL COPPER  
 LOCATION . . . CHUCHIL LAKE, B.C.

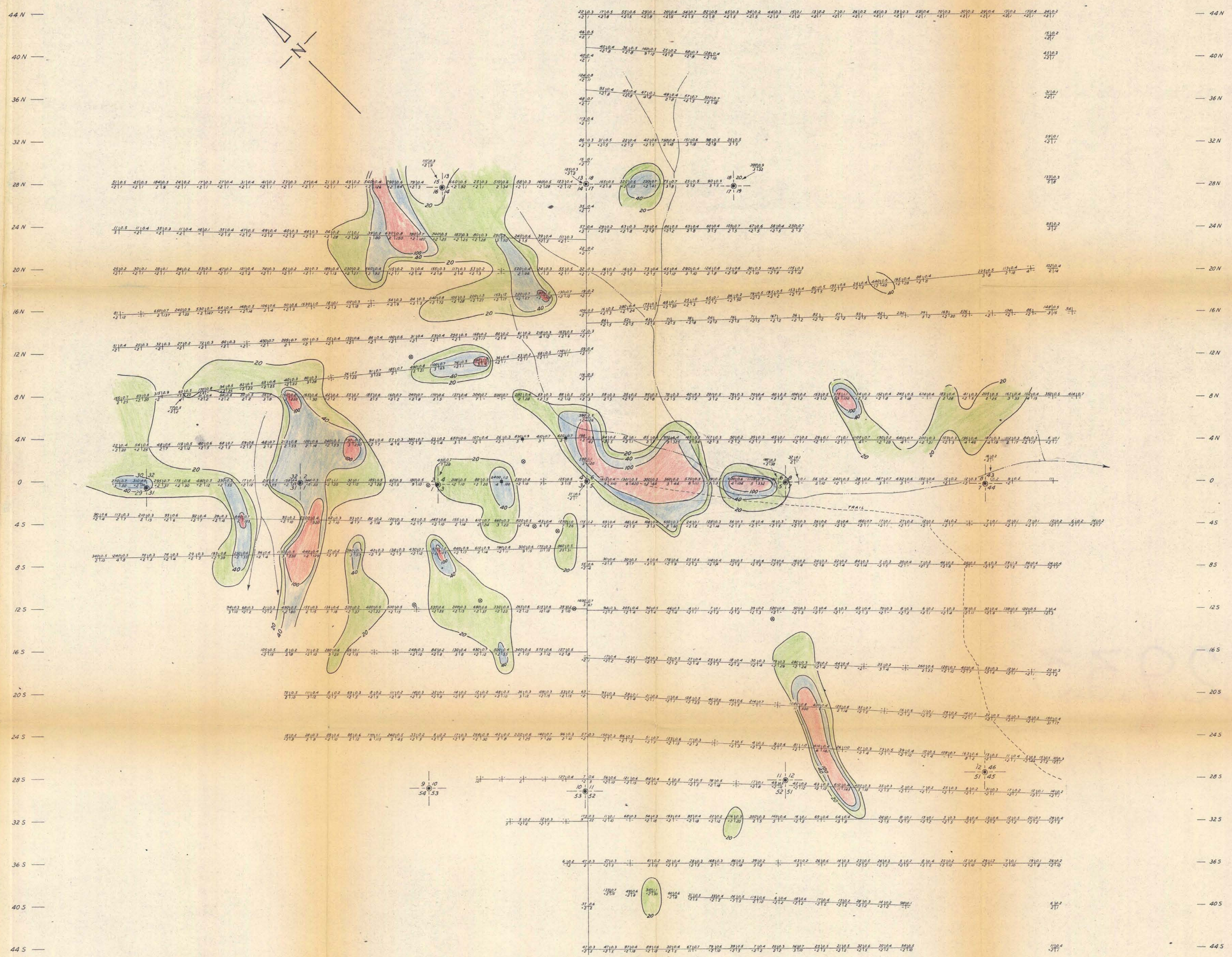
WORKING PLACE . . . Col group of Claims  
 TYPE OF MAP . . . GEOCHEMICAL  
 BASED ON . . . Soil Sampling

DATE . . . Dec. 1970  
 DRAWN BY . . . H.G.T.  
 DATE OF WORK . . .

A.H. Brown



Department of  
 Mines and Petroleum Resources  
 ASSESSMENT REPORT  
 NO 2933 MAP #5



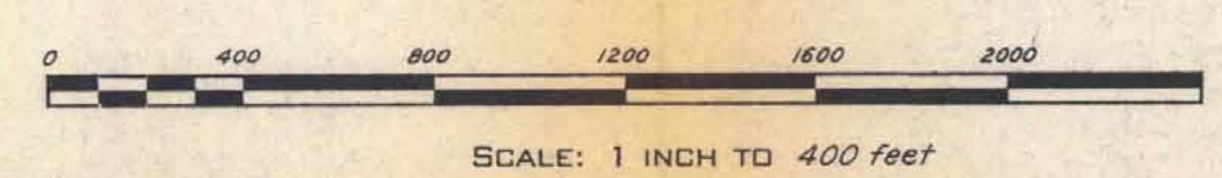
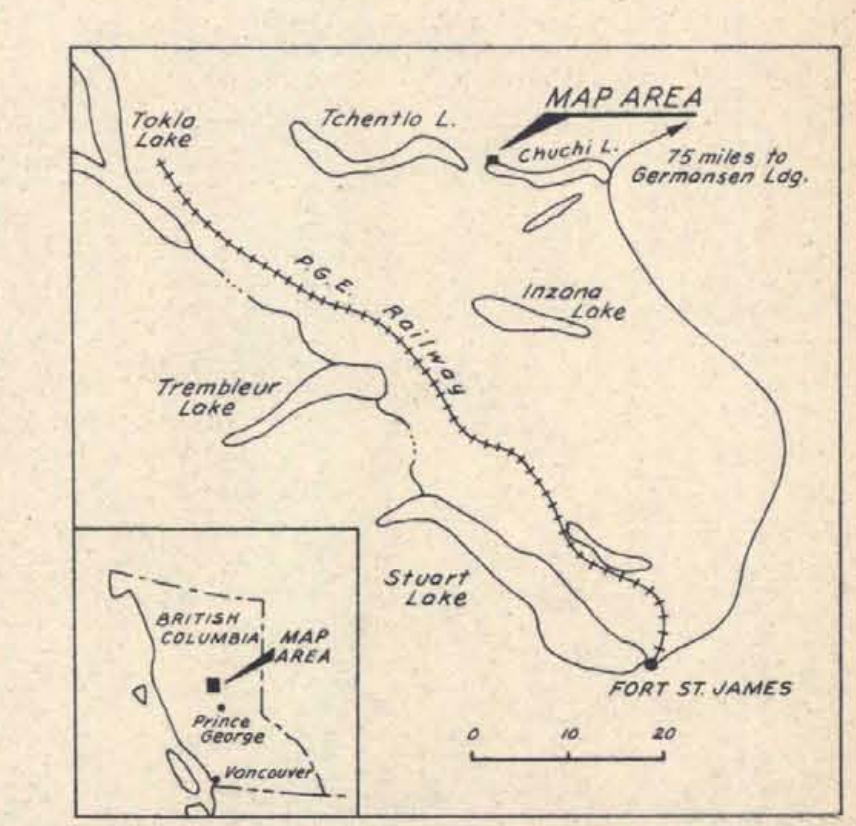
*Cold extractable Copper*  
 20-40 — Local background  
 40-100 — Anomalous  
 >100 — Highly anomalous

2933

M-5

**Legend**  
 Cu/Ag  
 Mo/Cr/Cu  
 □ Cu showing  
 ■ Trial profiles  
 ± No sample, or insufficient sample  
 12 56  
 41 43 Claim post, showing claim numbers

Note: Map based on initial geochemical grid



COMPANY . . . FALCONBRIDGE NICKEL MINES LTD.  
 PROPERTY . . . CHUCHI COPPER  
 LOCATION . . . CHUCHI LAKE, B.C.

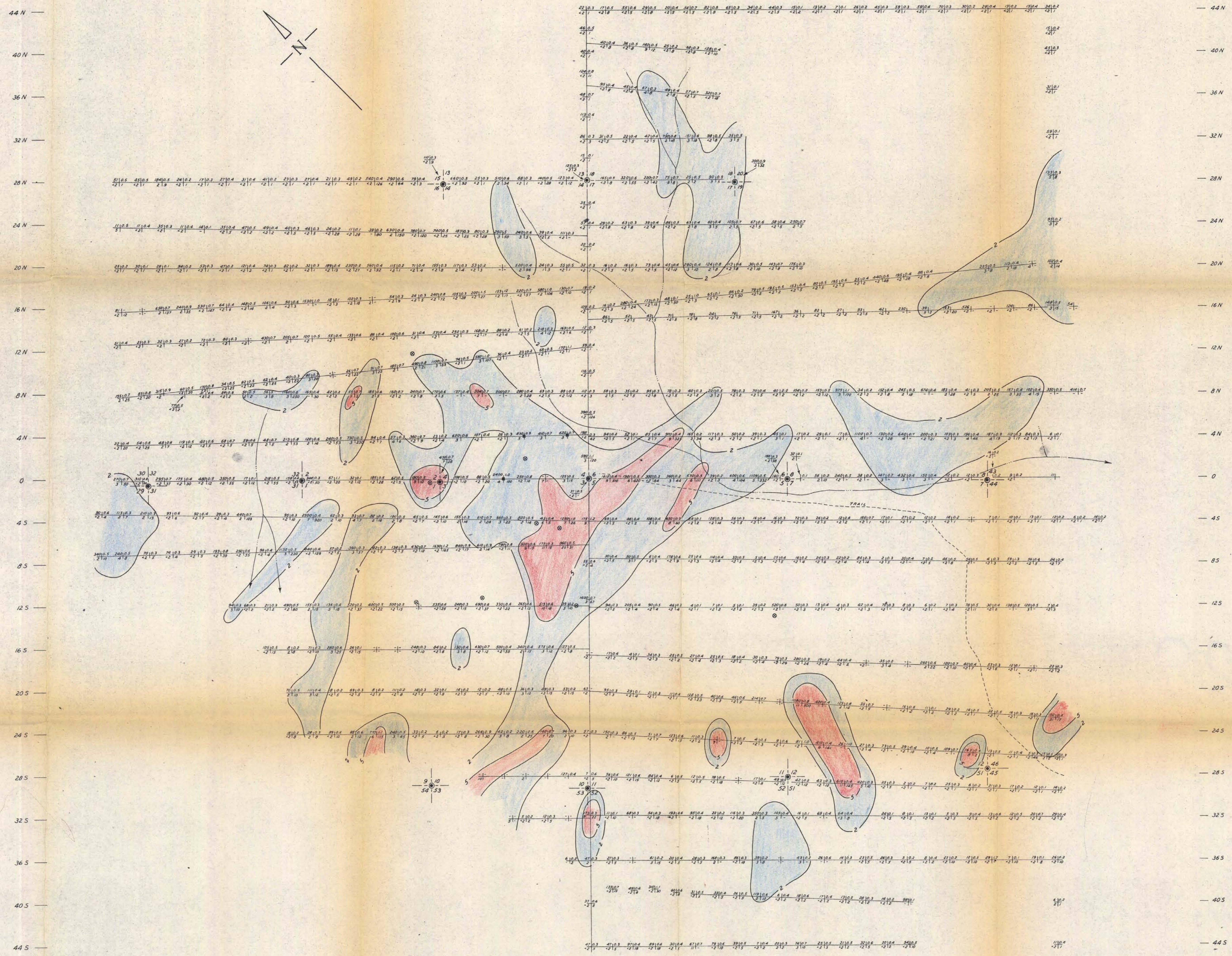
WORKING PLACE . . . Col group of Claims  
 TYPE OF MAP . . . GEOCHEMICAL  
 BASED ON . . . Soil Sampling

DATE . . . Dec. 1970  
 DRAWN BY . . . H.G.T.  
 DATE OF WORK . . .

*H. G. T.*



Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 2933 MAP # C



Distribution of Molybdenum in p.p.m.  
—2-5— Regional background  
—5— Anomalous

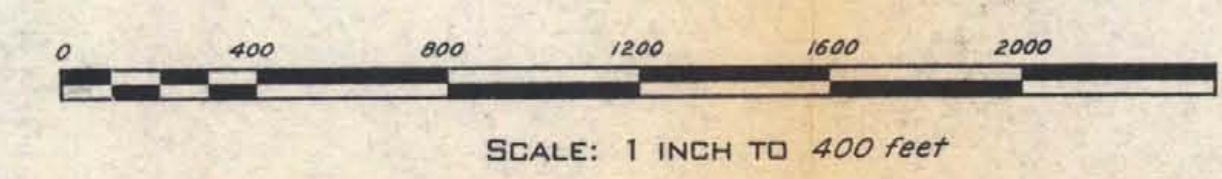
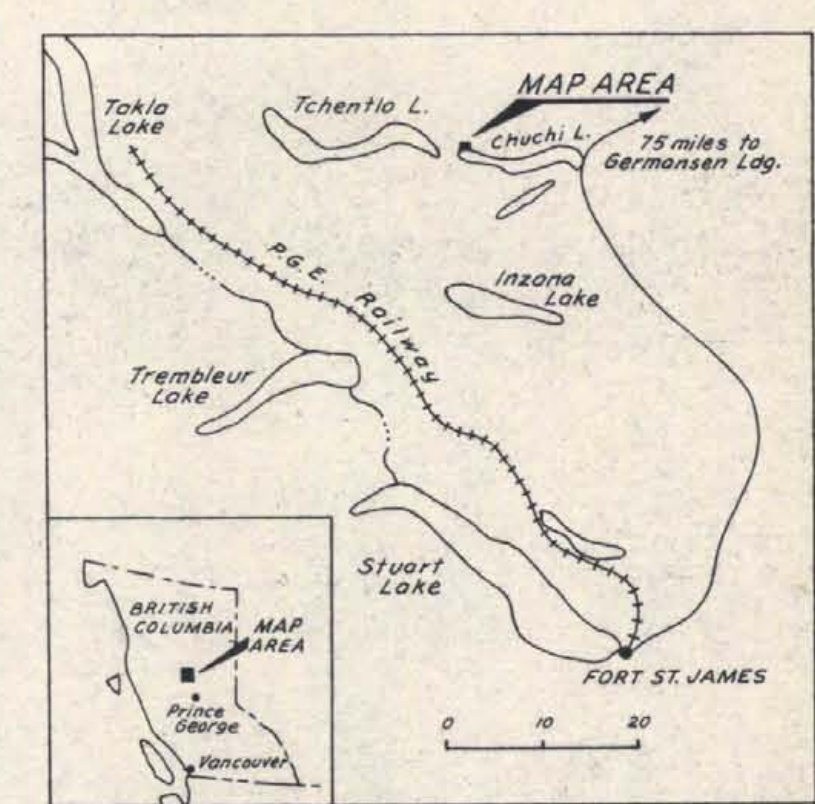
2933

M-6

Legend

- Cu showing
- Trial profiles
- ≡ No sample, or insufficient sample
- 12/56  
41/43 Claim post, showing claim numbers

Note: Map based on initial geochemical grid



COMPANY . . . FALCONBRIDGE NICKEL MINES LTD.  
PROPERTY . . . CHUCHI COPPER  
LOCATION . . . CHUCHI LAKE, B.C.

WORKING PLACE . . . Col group of Claims  
TYPE OF MAP . . . GEOCHEMICAL  
BASED ON . . . Soil Sampling

DATE . . . Dec., 1970  
DRAWN BY . . . H.G.T.  
DATE OF WORK . . .

*H.G.T.*