

4599

GEOCHEMISTRY REPORT
ON THE
TENAKIHI CREEK PROPERTY
GAIL GROUP

56° 08' N, 125° 31' W

A.D. Pearse, B.Sc.
under the supervision of
G.E. DIROM, P. ENG.,

NORANDA EXPLORATION COMPANY, LIMITED

OMINECA MINING DIVISION

AUGUST 1972 - AUGUST 1973

Department of	
Mines and Petroleum Resources	
ASSESSMENT REPORT	
NO. 4599	MAP

TABLE OF CONTENTS

	<u>Page</u>
A. INTRODUCTION	1
B. CLAIMS AND OWNERSHIP	1
C. LOCATION AND ACCESS	2
D. REGIONAL GEOLOGY	2
E. LOCAL GEOLOGY	3
F. SOIL GEOCHEMISTRY	4
1. Collection and Treatment	
2. Results and Discussion	
G. ROCK GEOCHEMISTRY	5
1. Collection and Treatment	
2. Results and Discussion	
H. SUMMARY	
I. APPENDICES	
1. Qualifications of Field Personnel	
2. Statement of Qualifications	
3. Statement of Exploration Expenses	

LIST OF ILLUSTRATIONS

Follow Page

FIG. 1 #1	LOCATION MAP (1" = 4 mile scale)	1
FIG. 2 #2	CLAIM MAP (1" = 1/2 mile)	2

PLATES IN POCKETS

PLATE # 1 #3	CLAIM LOCATION (1" = 400')
PLATE # 2 #4	ROCK GEOCHEMISTRY (1" = 400')
PLATE # 3 #5	SOIL GEOCHEMISTRY (1" = 100')

A. INTRODUCTION

The Tenakihi Creek Property, comprising 14 GAIL Mineral Claims and fractions, is a copper-molybdenum prospect situated (in a small north-facing cirque at the headwaters of Tenakihi Creek) approximately 41 miles northwest of GERMANSSEN Landing and lying wholly within differentiated intrusive phases of the Hogem Batholith. Work from the period of August 4, 1972 to August 2, 1973 included line cutting, soil sampling, rock geochemistry, prospecting, and the preparation of a topographic map at 1" = 400' scale.

B. CLAIMS AND OWNERSHIP

The property consists of 14 contiguous mineral claims and fractions situated at 56° 08' N. latitude, 125° 31' W longitude in the Omineca Mining Division. The claims are fully owned by Noranda Exploration Company, Limited (No Personal Liability) and are listed as follows:

<u>Claims</u>	<u>Record #</u>	<u>Record Date</u>	<u>Owner</u>
GAIL # 3	114050	Aug. 2, 1972	Noranda Exploration Company Limited
GAIL # 5	114052	"	" "
GAIL # 6	114053	"	" "
GAIL #19	114066	"	" "
GAIL #20	114067	"	" "
GAIL #21	114068	"	" "
GAIL #22	114069	"	" "
GAIL #23	114070	"	" "
GAIL #24	114071	"	" "
GAIL # 5 Fr.	114083	"	" "
GAIL # 6 Fr.	114084	"	" "
GAIL #12 Fr.	114090	"	" "
GAIL #13 Fr.	114091	"	" "
GAIL #14 Fr.	114092	"	" "

C. LOCATION AND ACCESS

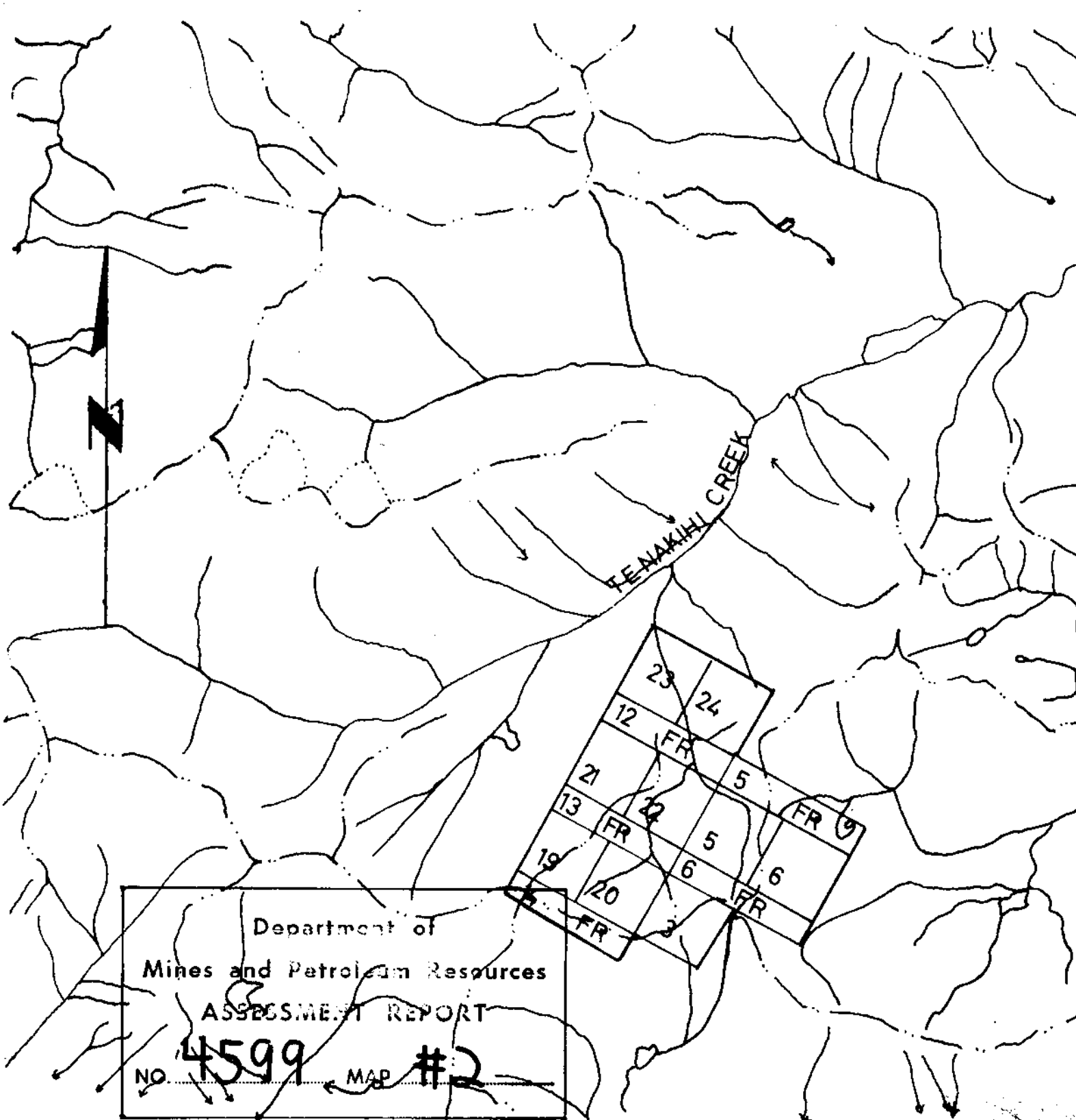
The GAIL GROUP is located on the headwaters of Tenakihi Creek (N.T.S. map sheet 94 C/4E) which flows northeasterly to join the Osilinka River approximately 4 miles below Uslika Lake.

The general terrain is rugged and mountainous and composed of alpine glaciated valleys, cirques and arrêtes typical of the Osilinka Ranges. The claim group centers overmineralized showings located in a small north-facing cirque and, since almost the entire area is above 5,000' (tree-line), abundant rock exposure facilitates geological work. Shin-tangle, talus slopes, and precipitous rock faces, on the other hand, are prohibitive to easy hiking.

Access is by helicopter from Germansen Landing (41 miles southeast) or from the B. C. Department of Mines road which comes to within 12 miles of the property to the northeast. Either of 2 small lakes which are located downstream about 3 - 4 miles on Tenakihi Creek and about 4,000' above sea level could serve as a fixed-wing drop-off point.

D. REGIONAL GEOLOGY

The GAIL GROUP lies along the eastern margin of the Hogem Batholith approximately 2 miles from the Hogem/Takla contact and thus is underlain entirely by Hogem granitoid rocks. These rocks are diverse in textures and mineralogies and comprise a suite of assemblages from granites to holomafic members. The more mafic phases are thought to be early differentiates of the Hogem parental magma and the granite-syenite phases associated



Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. **4599** MAP # **2**

To Accompany Geochemical Report of the
 Gail Group of Mineral Claims, Tenakihi
 Creek Property, Omineca Mining Division,
 by T. Pearse, under the supervision of
 G.E. Dirom, P.Eng. August 1973.

A.D. Pearse

CLAIM STATUS
 Scale 1" = 1/2 mile

with later intrusive activity. Interaction with the Takla volcanic cover is generally negligible over any distance greater than a few feet. See G.S.C. Memior #274 "Aiken Lake Map-Area, B.C." in which Roots gives an excellent accounting of the petrography of the Hogem rocks.

E. LOCAL GEOLOGY

The predominant rock type underlying the property is a medium to coarse-grained monzo-diorite with varying feldspar/mafic ratios and heterogeneous textures. The mafic mineral in fresh rock is hornblende but complete biotitization and/or chloritization of fresh hornblende crystals have occurred. Locally, intense k-feldspar alteration has affected these rocks giving them a salmon-pink overtone. Through irregular concentration of mafics these rocks grade into hornblende-diorites, appinites, feldspathic hornblendites, and finally, hornblendites. The end product is a holomafic holocrystalline rock containing fine-grained hornblende prisms - some varieties have an almost pure epidote groundmass cementing the hornblende grains together. Epidote is common in all rock types both as fine stringers or irregularly concentrated clots. Fine-grained granitic or syenitic lithologies are present as small dykes. Generally discordant structural relationships exist between all phases and gradations of the Hogem rocks; breccias, xenoliths and wall-rock assimilation, multiphase dyking, etc.

Sulphide mineralization consists of pyrite, chalcopyrite, molybdenite, and bornite as irregularly distributed blebs and

smears in quartz veins or as sporadic disseminated mineralization adjacent to them.

F. SOIL GEOCHEMISTRY

1. Collection and Treatment

Soil development in the area is poor and limited in extent - however, a small grid was established in the floor of the cirque and approximately 40 C-horizon soil samples were collected. Soils were placed in "Hi Wet Strength Kraft 3½" x 6½" Open End" envelopes and the location marked on the envelopes with indelible felt pens. All samples were analyzed for copper, molybdenum, and zinc in the Noranda Exploration Company, Limited laboratory located at 1050 Davie Street, Vancouver 5, B. C.

The samples were first hung in a drying cabinet for a period of twenty-four to forty-eight hours and then mechanically screened and sifted to obtain a -80 mesh fraction. The determination procedure for total copper and total molybdenum was as follows; 0.2 grams of -80 mesh material was digested in 2 ml. of HClO₄ and 0.5 ml. of HNO₃ for approximately 4 hours. Each sample was then diluted to 5 ml. with demineralized water and analyzed with a Varian Techtron Model AA-5 Atomic Absorption spectrophotometer to determine the parts per million Copper and Molybdenum.

2. Results and Discussion

Soil values range from 110 ppm. total copper and 0 ppm total molybdenum to 2100 ppm total copper and 75 ppm total molybdenum.

Zinc values ranged erratically from 52 ppm total zinc to 350 ppm total zinc showing little correlation, if any, to copper molybdenum abundances. Almost the entire grid is considered to be anomalous in copper and molybdenum with the south and southeast portions being the most interesting. The high copper and molybdenum values are believed to be a residual anomaly in soils developing directly from the underlying rock in a well-drained, low organic environment.

G. ROCK GEOCHEMISTRY

1. Collection and Treatment

Approximately 30 chip samples were obtained from talus slopes surrounding the cirque and area of interest. Each sample represents a 200' long transverse section of talus and is comprised of approximately 200 chips each taken about 1' apart. Small cairns were erected at the midway point of each sample length to mark sample location. The chips were placed in plastic sample bags and the location marked with indelible felt pens. All samples were analyzed for copper in the Noranda Exploration Company, Limited laboratory located at 1050 Davie Street, Vancouver 5, B. C.

The samples were first crushed, pulverized, to -200 mesh fraction. Then .5 grams of the sample were weighed out into 10 ml. marked test tube; digested in 4 ml. of HClO_4 and 1 ml. HNO_3 for approximately 4 hours. Each sample was then diluted to 10 ml. with demineralized water and analyzed with a Varian Techtron Model AA-5 Atomic Absorption spectrophotometer to determine the parts per million Copper.

2. Results and Discussions

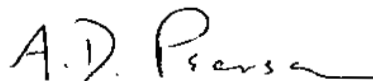
Total copper values for the crushed chip samples ranged from 35 ppm to 710 ppm with those values exceeding 150 ppm being

considered anomalous. These results outline (in a broad way) most of the lower cirque and the entire south southeast portion of the cirque as an area of increased primary dispersion of copper. They are consistent with the presence of observed copper sulphide mineralization on the cirque walls to the south and southeast and its noted absence on the walls to the west.

H. SUMMARY

The Tenakihi Creek property is a copper-molybdenum prospect situated 41 miles northwest of Germansen Landing within quartz-deficient granitoid rocks of the eastern margin of the Hogen Batholith. Several showings of chalcopyrite-molybdenite-bornite mineralization occur as blebs in quartz veins and as disseminations within the Hogen country rock in a small, north-facing cirque. A preliminary soil sampling and talus sampling program has shown a large primary dispersion halo for copper and molybdenum that greatly exceeds the area of known mineralization.

Respectfully submitted



A.D. Pearse B.Sc.

Endorsed by



G.E. DIROM, P. Eng.

APPENDIX # 1

QUALIFICATIONS OF FIELD PERSONNEL

Messrs. K. Bond and A. McKillop have been employed by Noranda Exploration Company, Limited as Senior Field Assistants and were, during the time of the field operations described herein, both employed for their second season with the company.

Both have been instructed in the necessary field procedures by J. D. Knauer, Geochemist, and Gavin E. Dirom, P. Eng.



Gavin E. Dirom, P. Eng.

APPENDIX # 2

STATEMENT OF QUALIFICATIONS

I, Anthony D. Pearse of the Town of Smithers, Province of British Columbia do certify that:

1. I have been an employee of Noranda Exploration Company, Limited, since March 1971.
2. I am a graduate of the University of British Columbia with a Bachelor of Science Degree in Honours Geology.
3. I am a member of the Geological Association of Canada - Cordilleran Section and a Junior Member of the Canadian Institute of Mining and Metallurgy.
4. I have held the positions of field geologist and geological assistant for various companies over the past eight field seasons.

Dated at Smithers
this 30th day of
August 1973



A. D. Pearse,
Geologist,
Noranda Exploration Company, Limited.

DOMINION OF CANADA:
PROVINCE OF BRITISH COLUMBIA.

To WIT:

In the Matter of a statement of exploration expenses on 14 contiguous mineral claims in the Omineca Mining Division, having record numbers: 114050, 114052, 114053, 114066-114071, 114083, 114084, 114090-114092 GAIL CLAIMS

I, A. D. Pearse, (F.M.C. 109139 issued April 28th, 1972) of P.O. Box 2169, Smithers, B.C. agent for Noranda Exploration Company, Limited (No Personal Liability) (F.M.C. 109102 issued April 28th, 1972) of 1050 Davie Street, Vancouver 5, B. C.

of

in the Province of British Columbia, do solemnly declare that the costs accrued by exploration on the aforementioned claims from August 4, 1972 to August 2, 1973 include the following:

- A. Topography: 1 sq. mile @ \$175.00 plus tax per sq. mile = 196.00
- B. Line Preparation:
 - 1. Labour - 2 man-days with Noranda crew
 - T. Pearse @ \$50.00/day = \$50.00
 - J. Seyward @ \$30.00/day = \$30.00
 - Total Labour = 80.00
 - 2. Transportation - Noranda contract helicopter 2.0 hrs. @ \$130.00/hr. 260.00
 - 3. Room, board and supplies - 2 man-days @ \$10.00/man-day 20.00
- C. Soil Geochemistry:
 - 1. Labour (sample collection) - 2 man-days with Noranda crew
 - T. Pearse @ \$50.00/day = \$50.00
 - J. Seyward @ \$30.00/day = \$30.00
 - Total Labour = 80.00
 - 2. Room, board and supplies - 2 man-days @ \$10.00/man-day 20.00
 - 3. Sample Determination:

Cost/sample	\$1.00/Cu determination	}	= \$1.50
	.25/Mo "		
	.25/Zn "		

 Number of samples = 41
 Total cost = 41 x \$1.50 61.50

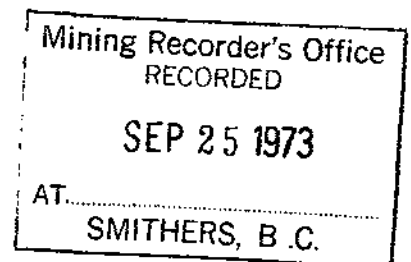
And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the town
of Smithers, in the
Province of British Columbia, this 25th
day of September, 1973, A.D.

A. D. Pearse

R. L. L...

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



DOMINION OF CANADA:
PROVINCE OF BRITISH COLUMBIA.

To Wit:

In the Matter of a statement of exploration expenses on 14 contiguous mineral claims in the Omineca Mining Division, having record numbers: 114050, 114052, 114053, 114066-114071, 114083, 114084, 114090-114092 GAIL CLAIMS

I, A. D. Pearse, (F.M.C. 109139 issued April 28th, 1972) of P.O. Box 2169, Smithers, B.C. agent for Noranda Exploration Company, Limited (No Personal Liability) (F.M.C. 109102 issued April 28th, 1972) of 1050 Davie Street, Vancouver 5, B. C.

of

in the Province of British Columbia, do solemnly declare that the costs accrued by exploration on the aforementioned claims from August 4, 1972 to August 2, 1973 include the following:

D. Rock Geochemistry:

1. Labour (sample collection) - 12 man-days with Noranda crew	
K. Bond @ \$30.00/man-day (6 man-days) = 180.00	
A. McKillop @ \$20.00/man-day (6 man-days) = 120.00	
Total Labour	300.00
2. Transportation - Noranda contract helicopter 2.0 hrs @ \$130.00/hr.	260.00
3. Room, board and supplies - 12 man-days @ \$10.00/man-day	120.00
4. Sample Determination -	
Cost/sample	
pulverizing = .50	
\$1.00/Cu determination	
.25/Mo " }	\$2.00
.25/Zn " }	
Number of samples = 35	
Total cost = \$70.00	70.00

Total Costs \$1,467.50

Of this amount \$1,400.00 is claimed for assessment

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."

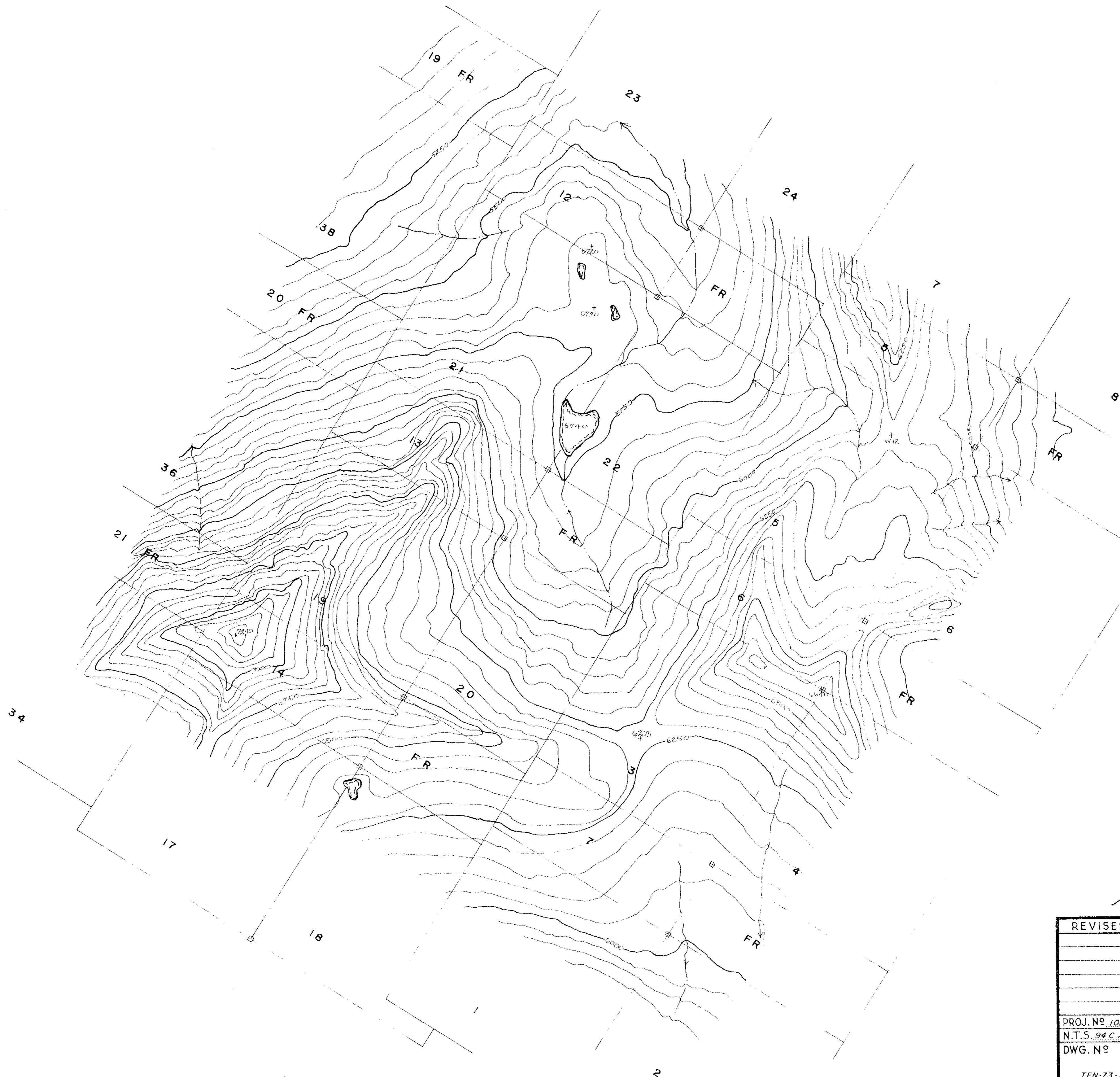
Declared before me at the town
of Smithers, in the
Province of British Columbia, this 25th
day of September, 1973, A.D.

A. D. Pearse

D. Lubbock

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

Mining Recorder's Office
RECORDED
SEP 25 1973
AT
SMITHERS, B. C.



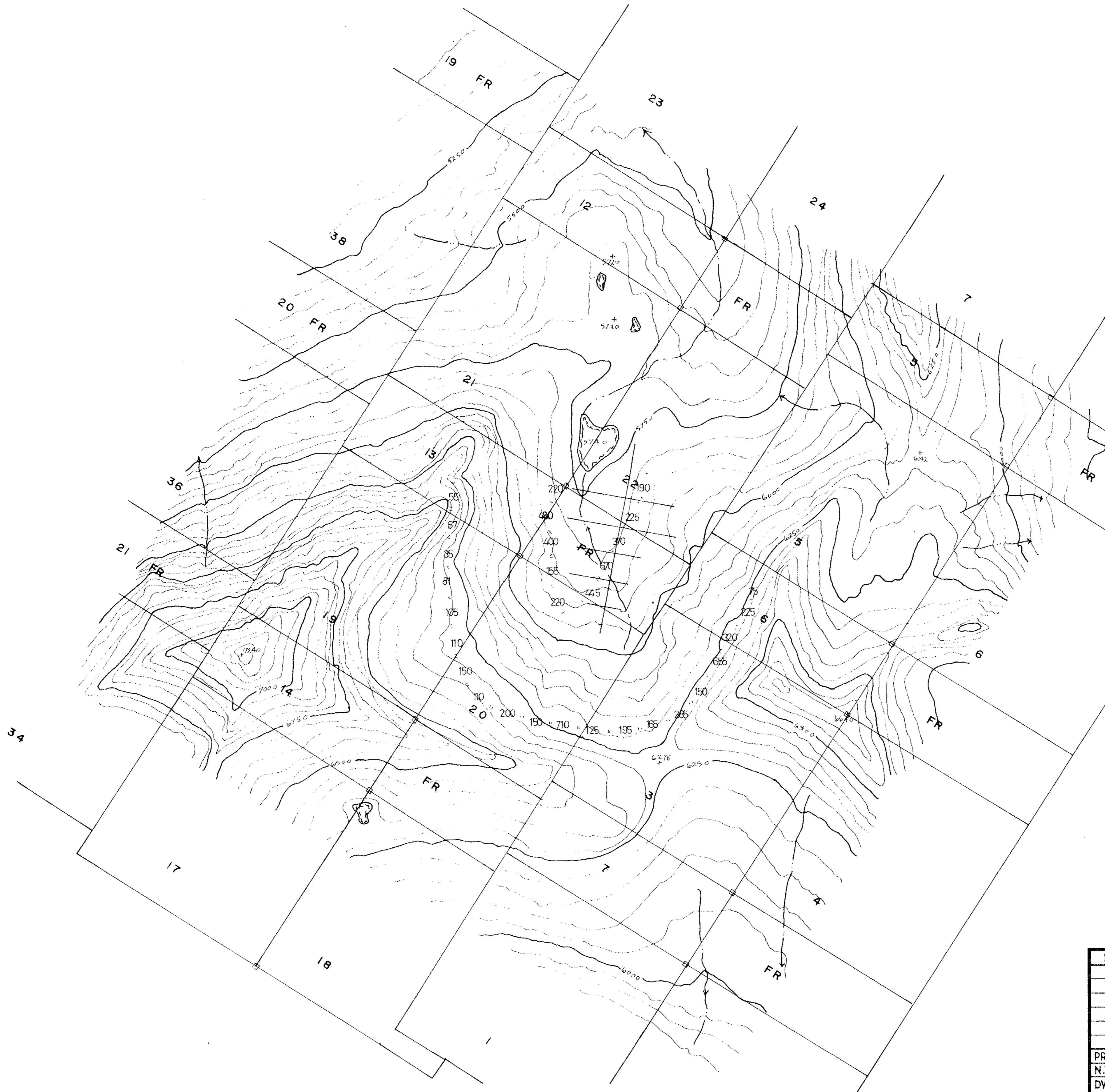
**4599
M3**

D. 10/1/67
Mines and Geology Branch
Assessment of Resources
NO. **4599** Map # **3**

Accompany Geotechnical Report of the
G.R.L. Group of Mineral Claims, Tenakhi Creek
Property, Inuvik Mining Division, by T. Pearce,
August 1973.
under the supervision of G.E. Dirom, P. Eng.

A.D. Pearce

REVISED	CLAIM	
	LOCATION	
	PLATE I	
	PROJECT: TENAKHI CREEK	
PROJ. NO. 1018	SURVEYED BY:	DATE: 1972
N.T.S. 94C/4E	DRAWN BY: A.P.	SCALE: 1" = 400'
DWG. NO.	NORANDA EXPLORATION CO. LTD.	
TEN-73-2	OFFICE: SMITHERS	



4599

M4

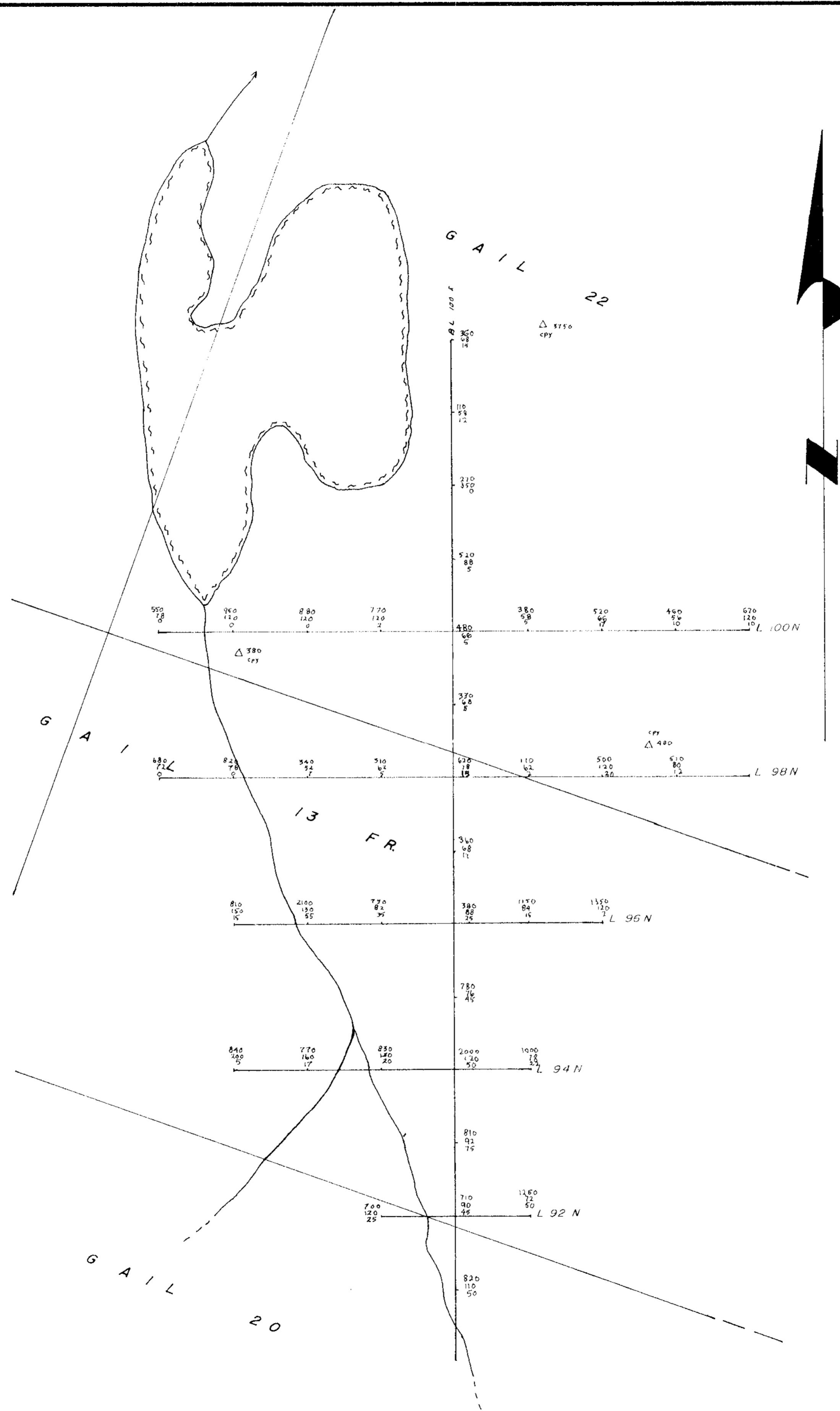
67—Sample location
Cu in ppm.
35—Sample interval 200'

District of Columbia
 Mining and Geology Resources
 Division of Geology
 Report
 NO. 4599 #4

To Accompany Geochemical Report of the
 GAIL Group of Mineral Claims, Tenakih Creek
 Property, Ontario Mining Division, by T. Pearce,
 August 1973.
 under the supervision of G.E. Dixon, P.Eng.

A.D. Pearce

REVISED	ROCK	
	GEOCHEMISTRY	
	PLATE II	
	PROJECT: TENAKIHL CREEK	
PROJ. NO. 1018	SURVEYED BY:	DATE: 1972
N.T.S. 94 9/4E	DRAWN BY:	SCALE: 1" = 400'
DWG. NO.	NORANDA EXPLORATION CO. LTD.	
TEN-73-2	OFFICE: SMITHERS	



**4599
M5**

Department
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4599 MAP #5

700 - ppm Cu
145 - ppm Zn
20 - ppm Mo

To Accompany Geochem. Report of the GAIL Group
of Mineral Claims, Tenakih Creek Property, Ontario
Mining Division, by T. Pearce,
under the supervision of GEDrom. ¹⁹⁷³ AUG 20 1973

A.D. Pearce

REVISED	SOIL GEOCHEMISTRY PRELIMINARY MAP TENAKIHI CREEK PLATE III	
	PROJECT: GAIL GROUP	
PROJ. NO.	SURVEYED BY: T. Pearce	DATE: October '72
N.T.S. 94/4e	DRAWN BY:	SCALE:
DWG. NO.	NORANDA EXPLORATION CO. LTD.	
/	OFFICE: SMITHERS	

SOIL GEOCHEMISTRY
Scale: 1" = 100'