

LOG NO: 0409	PP
ACTION	
FILE NO:	

SUB-RECORDER
RECEIVED
APR 2 1990
M.R. # \$
VANCOUVER, B.C.

ASSESSMENT REPORT
GEOPHYSICAL SURVEY ON THE
ME3842 (REC) CLAIM
N.T.S. 82F/4
TRAIL CREEK MINING DIVISION
(NANCY GREENE RECREATIONAL AREA)
Latitude 49°08'N Longitude 117°50'W

GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,873

D.G. Gill (Project Geologist)
T. Wong (Geophysicist)
Noranda Exploration Company, Limited (no personal liability)
February 27, 1990

Table of Contents

	<u>Page</u>
I. INTRODUCTION	
1. Location & Access	4
2. Topography & Physiography	4
3. Previous Work	4
4. Owner - Operator	4-5
5. Economic Potential	5
II. SUMMARY OF WORK DONE	
1. Linecutting	5
2. Geophysical Survey	5
III. DETAILED TECHNICAL DATA	
1. Regional Geology	6
2. Geophysical Survey	
i) Purpose	7
ii) Data Presentation	7
iii) Discussion of Results	7
IV. CONCLUSIONS	8
REFERENCES	

APPENDICES

Appendix 1: Statement of Costs
Appendix 2: Statement of Qualifications

DRAWINGS

Drawing #1:	Claim Location	1:50,000
Drawing #2:	Regional Geology	1:50,000
Drawing #3:	Showing Location Map	1:1,000
Drawing #4:	Magnetometer Profiles	1:2,500
Drawing #5:	Contoured Magnetometer Data & Interpretation	1:2,500

I. INTRODUCTION

1. Location & Access

The ME3842 property is comprised of 16 units in the Trail Creek Mining Division on N.T.S. Mapsheet 82F/4W. The property is located on the east flank of Mount Kirkup and lies within the Nancy Greene Recreation Area. The town of Rossland, B.C. is situated 7 km south-southeast from the centre of the property.

Access to the property is obtained via Highway 3b which runs roughly north-south along the eastern boundary of the Recreation Area.

2. Topography & Physiography

The property lies directly over the east facing slopes of Mount Kirkup and is drained by Hanna Creek on the north edge and northeastern corner of the claim. Steepness of the terrain ranges from moderate to steep. Maximum relief on the property is 2900 feet with a maximum elevation of 6400 feet.

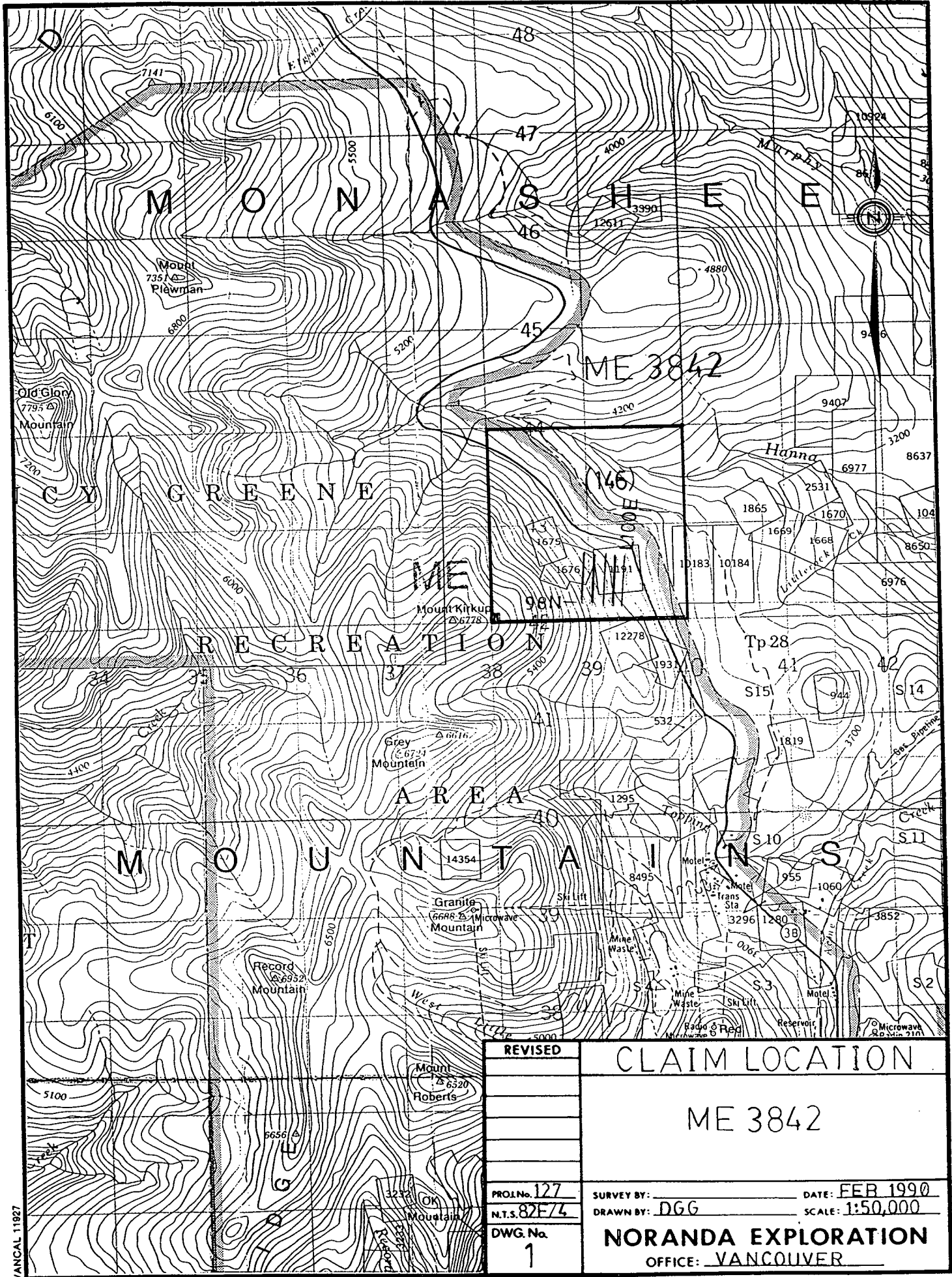
Vegetation is primarily comprised of secondary growth and stands of cedar, spruce and alder.

3. Previous Work

The existence of small pits, adits and crown grants within the property boundary and the proximity of the claim to the Rossland Mining Camp suggests this property has had considerable attention in the past. The only recently reported work was done by Royal Canadian Ventures Ltd. who conducted geochemical, geophysical (EM) and geological programmes in 1967.

4. Owner - Operator

All of the 16 units comprising the ME3842 claim are owned and operated by Noranda Exploration Company, Limited of 1050 Davie Street, Vancouver, B.C.



REVISED	CLAIM LOCATION	
	ME 3842	
PROJ. No. 127	SURVEY BY:	DATE: FEB 1990
N.T.S. 82E/74	DRAWN BY: DGG	SCALE: 1:50,000
DWG. No. 1	NORANDA EXPLORATION	
	OFFICE: VANCOUVER	

VANCAL 11827

<u>Claim Name</u>	<u>Record #</u>	<u>Anniversary Date</u>	<u>Owner</u>
ME3842	146	April 17, 1990	N o r a n d a Exploration Company, Limited.

5. Economic Potential

Showings on the ME3842 claim consist of pods of massive pyrrhotite, pyrite and minor chalcopyrite, pyrite veinlets conformable to foliation of hornfelsed sediments and stringers of semi-massive pyrite, pyrrhotite plus chalcedonic veinlets cutting extremely hornfelsed sediments. These showings are aligned along a 110° trend which is similar to that of some of the economic veins in the main Rosslund Camp (see Regional Geology).

It is believed that the showings are hosted by sediments of the Paleozoic Mount Roberts Formation which may be thrust upon younger and more competent volcanics of the Jurassic Rosslund Group. If the alignment of the surface showings represents a deep-seated structure there is the possibility that more massive copper-gold rich mineralization may exist where this structure meets the more competent underlying volcanic pile. Refer to Drawing #3 for a sketch map of the showings described above.

II. SUMMARY OF WORK DONE

1. Linecutting

A total of 3.6 line kilometres of flagged and metrically chained grid was emplaced in order to establish control for geophysical and geological surveys. The grid itself consists of nine, 400 m long winglines spaced 50 metres apart. An old skid trail which bisects the grid was used as a substitute baseline.

2. Geophysical Survey

A total of 3.6 line kilometres of magnetometer survey was conducted in order to aid in the delineation of the proposed 110° trending structure.

III. DETAILED TECHNICAL DATA

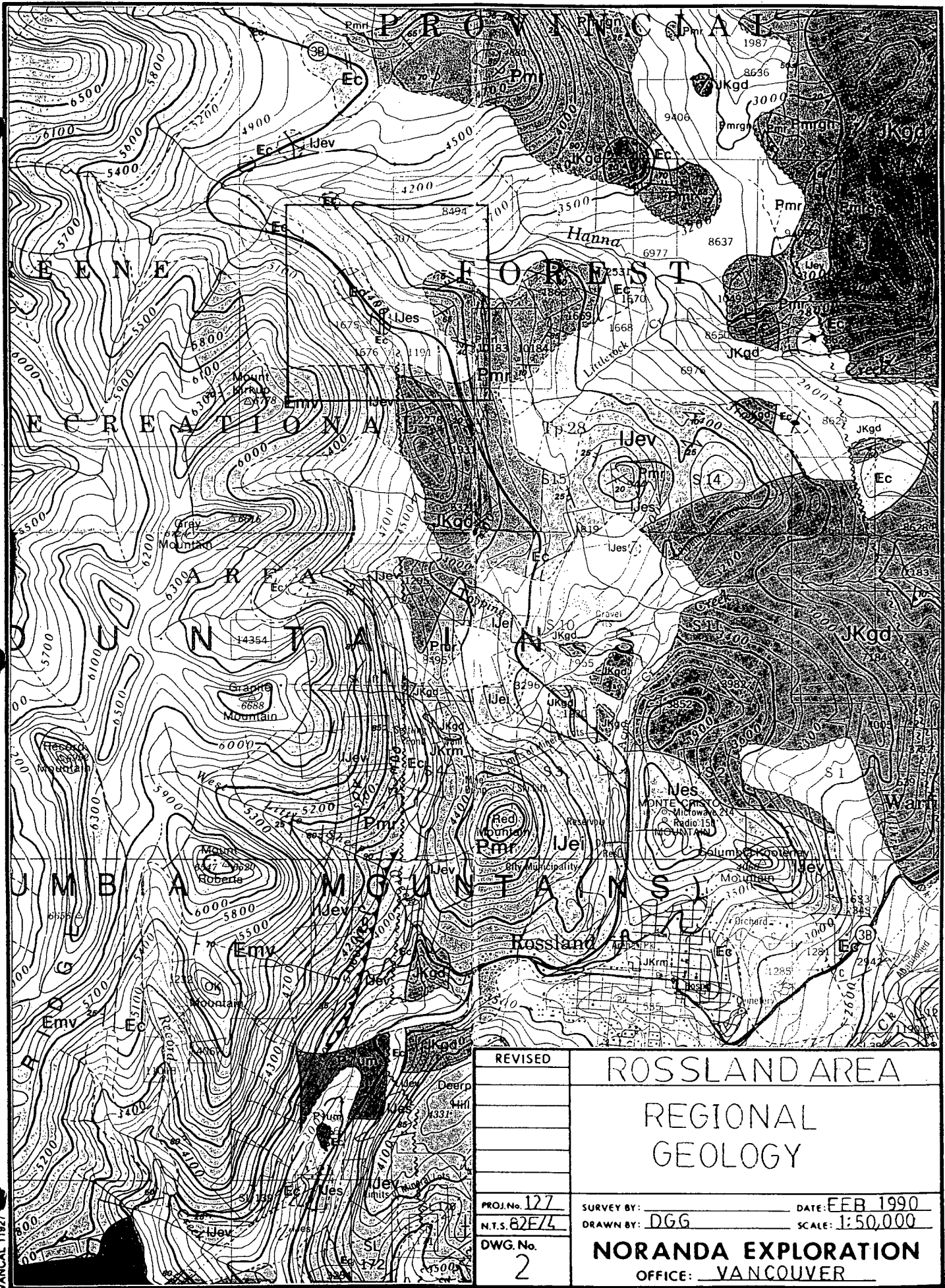
1. Regional Geology

The area concerning both the ME3842 and Rossland Camp itself is mainly underlain by the Rossland Group volcanics (Jurassic) which are intercalated with some sediments and contemporaneous intrusives. Underlying the latter are siltstones, shales, limestones and greywackes of the Paleozoic aged Mount Roberts Formation. Locally, this sedimentary package has been thrust upon the younger volcanic pile. The major intrusives are comprised of the Jurassic aged Nelson Intrusion and Rossland Monzonite (closely associated with mineralization found in the main Rossland veins) and the Tertiary Coryell intrusives which may also play an important role in economic mineralization.

Relative ages concerning the mineralizing event(s) in the Rossland Camp are confusing. Structure appears to be the controlling factor. Early east-west extension led to many north-south fractures and faults. Later compression in the same east-west direction resulted in the formation of shear zones at 060°, 090° and 115°. These shears were then mineralized by the Rossland Monzonite-Trail Pluton (Nelson) intrusives. Subsequent Tertiary intrusives may then have reactivated the shear zones allowing even more metal enrichment or at least remobilization of the existing mineralization. Evidence that ore is in part of Tertiary age is gained by the fact that some of the Tertiary aged lamprophyre dykes are cut by sulfide veins.

An important component of the Rossland Volcanic Group is a unit referred to as the augite porphyry sill. It is within this rock type that the larger and more numerous veins of the Rossland Camp are found due to the sills competence. Previous evidence from the camp suggests this sill may occur as a transgressive stock or feeder which appears to trend toward the ME3842 claim and may be overlain by eastwardly thrusting Mount Roberts sediments.





















Refer to Drawing #2 for the regional geology map.



REVISED	ROSSLAND AREA	
	REGIONAL GEOLOGY	
PROJ. No. 127	SURVEY BY:	DATE: FEB 1990
N.T.S. 82E/4	DRAWN BY: DGG	SCALE: 1:50,000
DWG. No. 2	NORANDA EXPLORATION	
	OFFICE: VANCOUVER	

VANCAL 11827

LEGEND

CENOZOIC	QUATERNARY		Unconsolidated sediments: till, sand, gravel, silt	
	TERTIARY			
	EOCENE			
	MIDDLE EOCENE		CORYELL INTRUSIONS: syenite, quartz monzonite; minor granite, pulaskite, and biotite-augite monzonite	
			SHEPPARD INTRUSIONS: granite, syenite	
			MARRON FORMATION: augite and/or hornblende and/or biotite andesite; trachyandesite	
MESOZOIC			Map unit Ti (Minor intrusions): hornblende-feldspar and hornblende porphyries	
			KETTLE RIVER FORMATION: tuffaceous arkose	
	CRETACEOUS			
	UPPER CRETACEOUS		SOPHIE MOUNTAIN FORMATION: coarse conglomerate with minor interbeds of siltstone and arenaceous argillite	
	JURASSIC AND/OR CRETACEOUS		Map unit Kqp: quartz-feldspar porphyry	
			NELSON INTRUSIONS: granodiorite; minor quartz diorite and diorite	
			ROSSLAND MONZONITE: biotite-hornblende-augite monzonite, mainly medium grained	
	JURASSIC			
	LOWER AND MIDDLE JURASSIC		HALL FORMATION: soft, carbonaceous shale, buff to brown argillaceous sandstone; some siltstone and minor greywacke	} ROSSLAND GROUP
	LOWER JURASSIC		ELISE FORMATION: flow breccia, massive andesites and basalts, agglomerate, tuff, breccia; black, laminated siltstone (Jjes); augite porphyry (Jjei)	
		ARCHIBALD FORMATION: black, hard, brittle, laminated siltstone, commonly tuffaceous, and arenaceous argillite		
PALEOZOIC	CARBONIFEROUS (?)			
	PENNSYLVANIAN (?)		ULTRAMAFIC INTRUSIONS: serpentinite; some dunite	THRUST BELT OF KOOTENAY ARC
			MOUNT ROBERTS FORMATION: black siltstone and argillaceous quartzite, slate, greywacke, chert, pebble conglomerate, lava; limestone (Pmrl); paragneiss (Pmrng)	CARBONIFEROUS (?)
			Map unit Cs: black argillite, slate, phyllite, minor chert and greenstone; grey to black limestone (Csl)	
	AGE UNKNOWN		Map unit gn (gneiss in Bonnington Pluton): layered granitoid gneiss and amphibolite	
		Map unit g: porphyritic leucogranite		
		Castlegar gneiss: augen gneiss		
		Trail gneiss: amphibolite and grey biotite gneiss, hornblende gneiss, mica schist, aplite and pegmatite; mylonitized gneiss (pCtgnm) (known to be pre-Pennsylvanian)		

2. Geophysical Survey

i) Purpose

A magnetometer survey was conducted over a portion of the ME3842 claim in an effort to delineate a proposed structural break trending 110° and expressed on surface by 4 sulfide bearing showings.

ii) Data Presentation

Magnetometer data is presented as profiles per line on Drawing #4 and in contoured form (with interpretation) on Drawing #5, both at 1:2,500 scale.

iii) Discussion of Results

A Total Field Magnetics survey was performed on the ME3842 grid during November, 1989 by Lloyd Geophysics utilizing EDA Omni 4 Plus magnetometers in the base station configuration which allowed for diurnal corrections to an accuracy of within 1 nT. Readings were recorded at 12.5 m intervals. The objective was to map potential mineralized zones overlain by sediments.

Three magnetic domains are shown on the magnetic map. A broad, quiet package which probably represents sediments trends north across the grid as shown by the magnetic contact. Small plug-like features are found in NE and SW areas of the grid. These features appear shallow sourced and are likely plutonic features. A large plutonic body appears to lie off the extreme SW edge of the grid. The third magnetic signature is the broad, linear feature as shown on the magnetic map. It is uncertain what these features represent but a massive sulfide showing in an adit driven south at the Baseline on Line 9900E intercepts one such feature. This may imply that the other features indicated on the grid may merit investigation. An interpreted magnetic break is shown trending along the baseline. The isolated magnetic high at the Baseline on Line 9700E appears to have been dragged to its present position. This break is significant in that it occurs at the same direction as an interpolated trend based on 4 showings that occur on the baseline.

IV. CONCLUSIONS

The magnetometer survey conducted on the ME3842 grid has revealed several interesting targets. The first consists of several linear magnetic features which may indicate possible massive sulfide occurrences as evidenced by one such feature coincident with a massive sulfide breccia zone on Line 9900E. Secondly a 300 m long, 110° trending magnetic break is interpreted along the baseline from Line 9650E to Line 9950E. Due to the existence of stringers, pods and brecciated zones of massive sulfide plus some evidence of epithermal quartz veining along this trend it is believed that this feature may represent a deep-seated structural break which may intersect more competent volcanic rocks at depth.

Recommended is further gridding and magnetometer surveying to the east and west of the existing grid, prospecting of the magnetic linears and a Pulse-EM survey over the known structural break to delineate any massive sulfide occurrence at depth.

REFERENCES

1. Fyles, J.T., 1984 Geological Setting of the Rossland Mining Camp.
2. Moreau, M.J., 1967 Assessment Report; Electromagnetic Survey for Royal Canadian Ventures Ltd. on the Kirkup Group.
3. Vollo, N.B., 1967 Assessment Report; Geological Report on the Kirkup Group for Royal Canadian Ventures Ltd.
4. Vollo, N.B., 1967 Assessment Report; Geochemical Report on the Kirkup Group for Royal Canadian Ventures Ltd.
5. Little, H.W., 1979 Geology Map No.1504A of the Rossland-Trail Area, B.C.

APPENDIX 1
STATEMENT OF COSTS

NORANDA EXPLORATION COMPANY, LIMITED

STATEMENT OF COSTS

PROJECT: ME 3842

DATE: February 22/90

TYPE OF REPORT: Geophysical

a) Wages:

No. of Days	4 mandays	
Rate per Day	\$ 115.00	
Dates From:	November 29 - 30, 1989	
Total Wages	4 x \$ 115.00	\$460.00

b) Food & Accomodations:

No. of Days	2 days	
Rate per Day	\$ 72.11	
Dates From:	November 29 - 30, 1989	
Total Costs	2 x \$ 72.11	\$144.22

c) Transportation:

No. of Days	2 days	
Rate per Day	\$ 46.85	
Dates From:	November 29 - 30, 1989	
Total Costs	2 x \$ 46.85	\$ 93.70

d) Instrument Rental:

Type of Instrument		
No. of Days		
Rate per Day	\$	
Dates From:		
Total Costs	x \$	

Type of Instrument		
No. of Days		
Rate per Day	\$	
Dates From:		
Total Costs	x \$	

e) Analysis:
(See attached schedule)

f) Cost of preparation of Report

Author:	\$ 150.00
Drafting:	\$ 120.00
Typing:	\$ 120.00

g) Other:

Contractor Lloyd Geophysics Ltd. November 29, 1989

Magnetometer Survey:	\$432.00
Food & Accommodation:	\$ 95.83
Transportation:	\$201.00

Total Costs	\$ 728.83
-------------	-----------

Total Cost	\$1,816.75
------------	------------

h) Unit costs for Linecutting

No. of Days	2 days
No. of Units	4 mandays
Unit costs	\$271.98/ manday
Total Cost	4 x \$271.98

\$1,087.92

i) Unit costs for Magnetometer Survey

No. of Days	2 days
No. of Units	3.6 kms
Unit costs	\$202.45/km
Total Costs	3.6 km x \$202.45

\$ 728.83

APPENDIX 2
STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

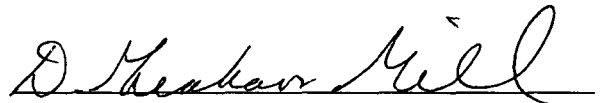
I, D. Graham Gill of the city of Vancouver, Province of British Columbia, hereby certify that:

I am a geologist residing at #509 - 4676 Yew Street, Vancouver, B.C.

I have graduated from the University of British Columbia in 1983 with a BSc in geology.

I have worked in mineral exploration since 1979.

I have been a temporary employee with Noranda Exploration Company, Limited since May, 1979 and a permanent employee since November, 1987.

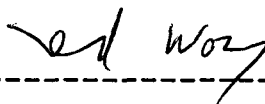
A handwritten signature in cursive script, reading "D. Graham Gill", written over a horizontal line.

D. Graham Gill

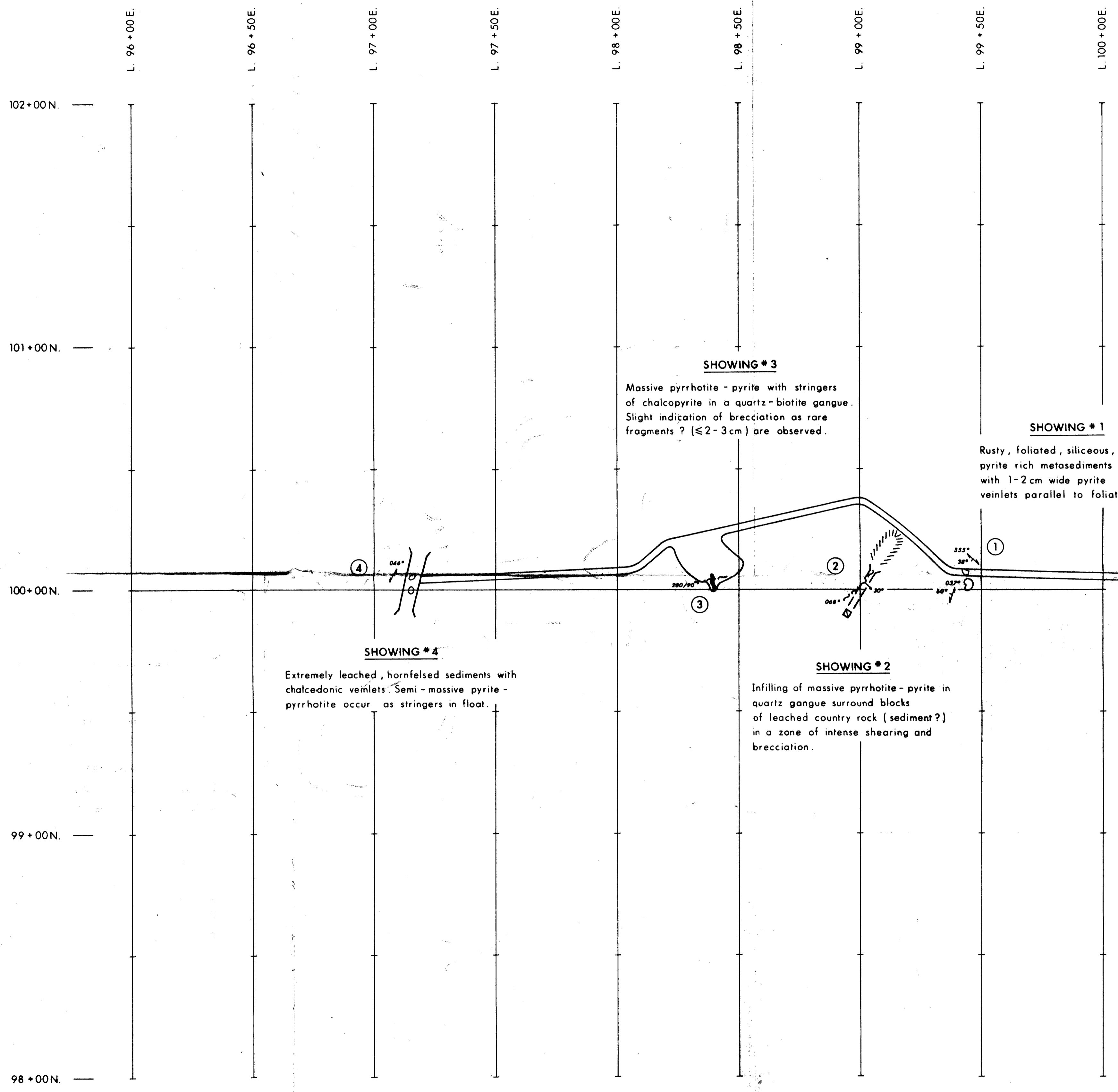
STATEMENT OF QUALIFICATIONS

I, Ted Wong, of the City of Vancouver, Province of British Columbia, hereby certify that:

1. I am a geophysicist residing in Burnaby, B.C.
2. I have graduated from the University of British Columbia in 1983 with a B.Sc. in Geophysics.
3. I am a professional geophysicist, registered with the Association of Professional Engineers, Geologists and Geophysicists of Alberta. I am a licensed professional geophysicist, registered with the Association of Professional Engineers, Geologists and Geophysicists of the Northwest Territories.
4. I have practised by profession on a continual basis since 1984.
5. I have been employed by Noranda Exploration Company, Limited since September, 1989.



Ted T. Wong, P. Geoph.



SHOWING # 3
 Massive pyrrhotite - pyrite with stringers of chalcopyrite in a quartz - biotite gangue. Slight indication of brecciation as rare fragments ? ($\leq 2-3$ cm) are observed.

SHOWING # 1
 Rusty, foliated, siliceous, biotite, pyrite rich metasediments with 1-2 cm wide pyrite veinlets parallel to foliation.

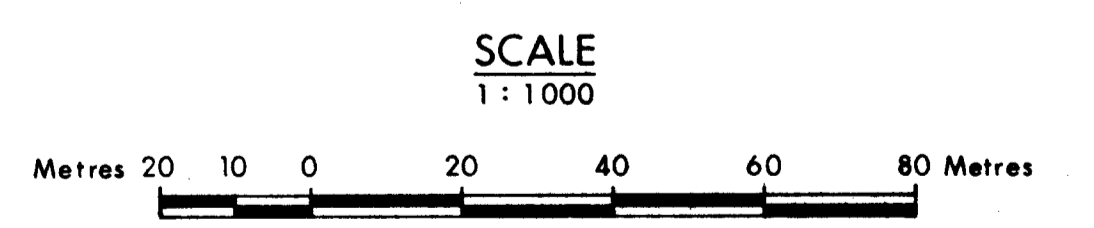
SHOWING # 4
 Extremely leached, hornfelsed sediments with chalcedonic veinlets. Semi-massive pyrite - pyrrhotite occur as stringers in float.

SHOWING # 2
 Infilling of massive pyrrhotite - pyrite in quartz gangue surround blocks of leached country rock (sediment?) in a zone of intense shearing and brecciation.

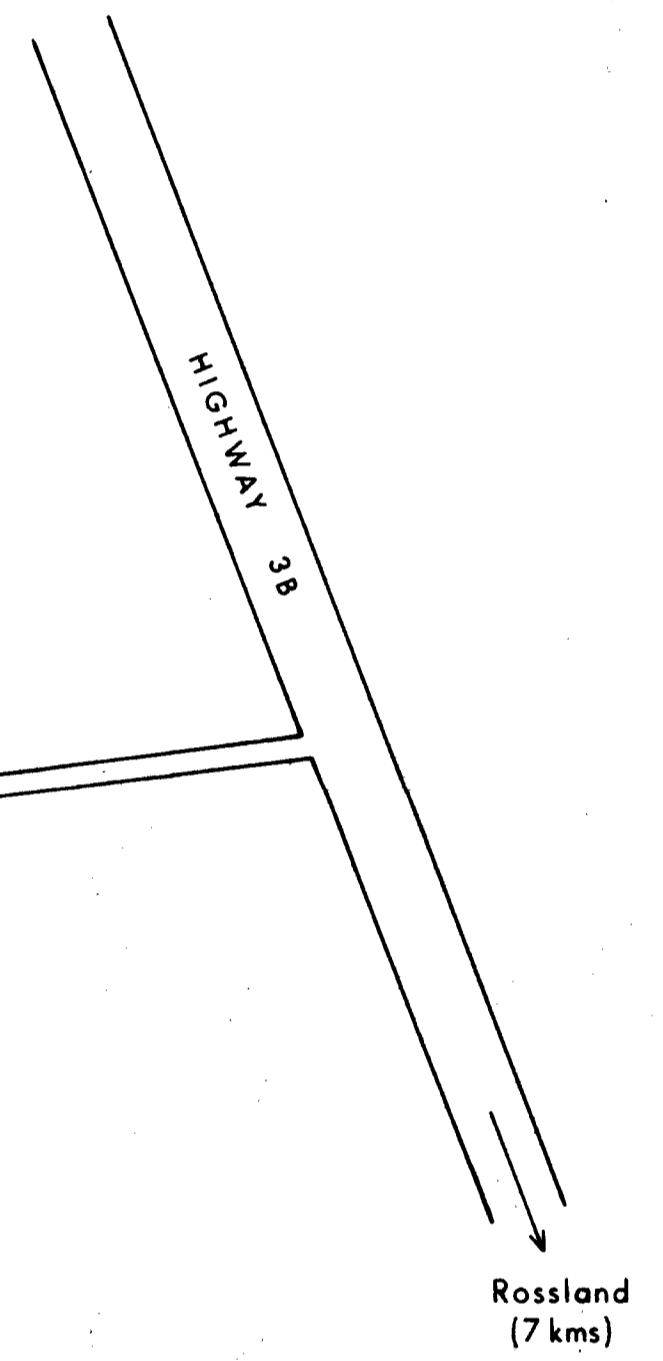
- LEGEND**
- ☐ Winze
 - Adit
 - ||| Trench
 - ||||| Dump
 - 60° 037' Foliation
 - Outcrop
 - ~ Fault
 - Sulfide body

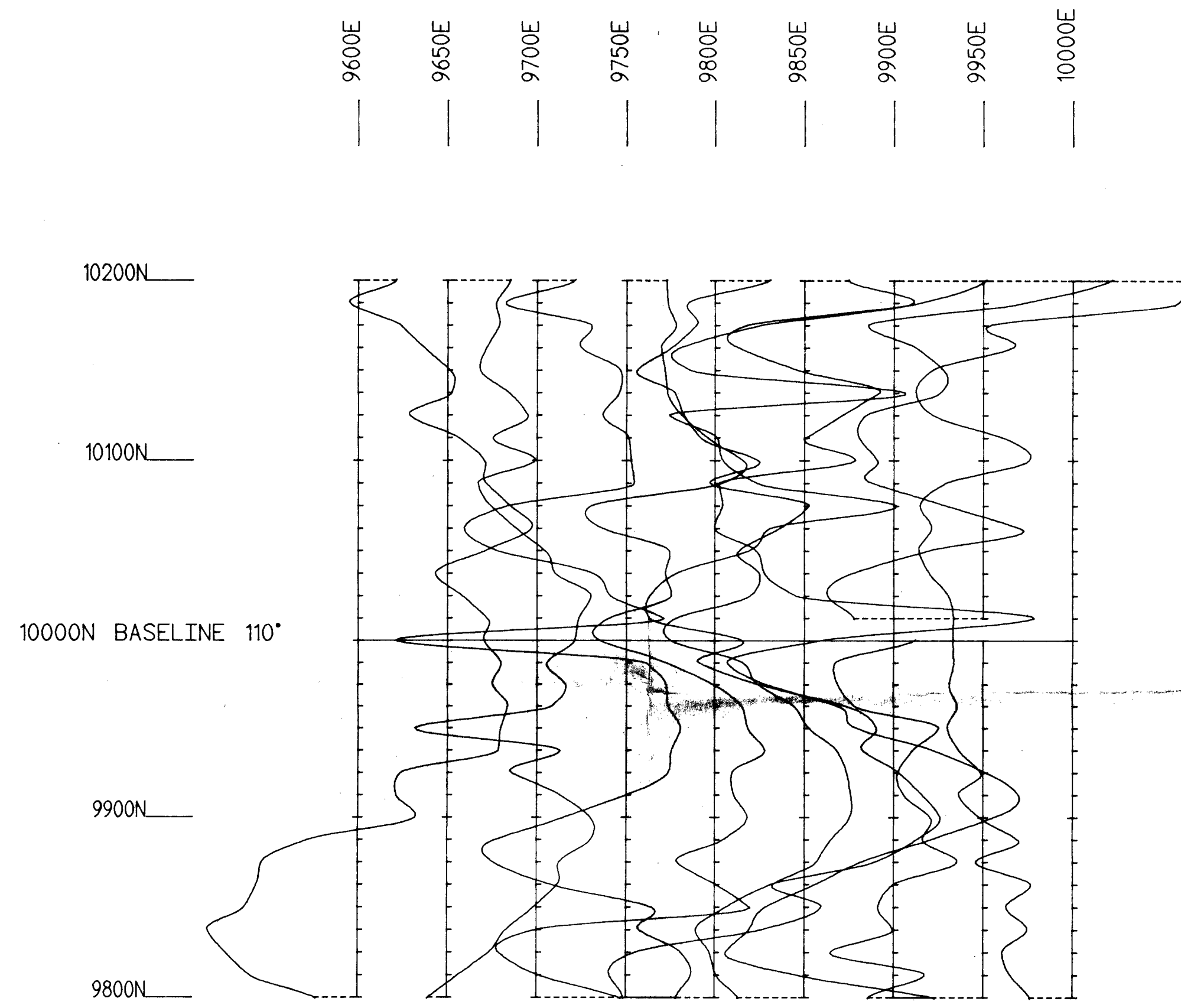
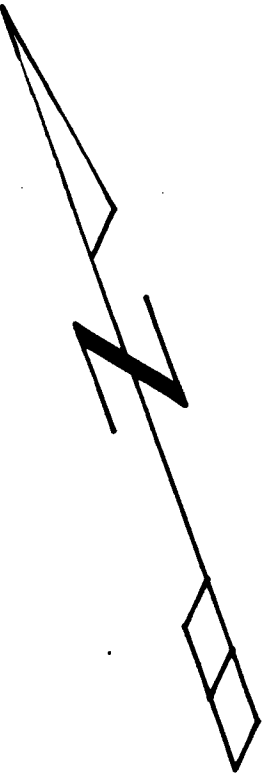
**GEOLOGICAL BRANCH
 ASSESSMENT REPORT**

19,873



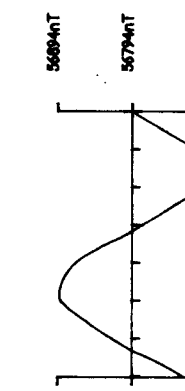
REVISED	ME 3842 CLAIM	
	SHOWING LOCATION MAP	
PROJ. No. 127	SURVEY BY: D.G.G.	DATE: February 1990
N.T.S. 82 F/4	DRAWN BY: J. Serwin	SCALE: 1:1000
DWG. No. 3	NORANDA EXPLORATION	
	OFFICE: VANCOUVER	





GEOLOGICAL BRANCH
ASSESSMENT REPORT

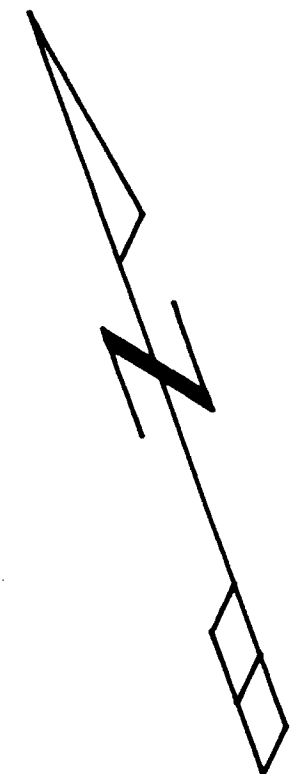
19,873



Instrument	: OMNI4
Field	: TOTAL
Datum	: 0.0 nT
Contour Interval	:
Profile Scale	: 100 nT / Cm
Conductor Axis	:

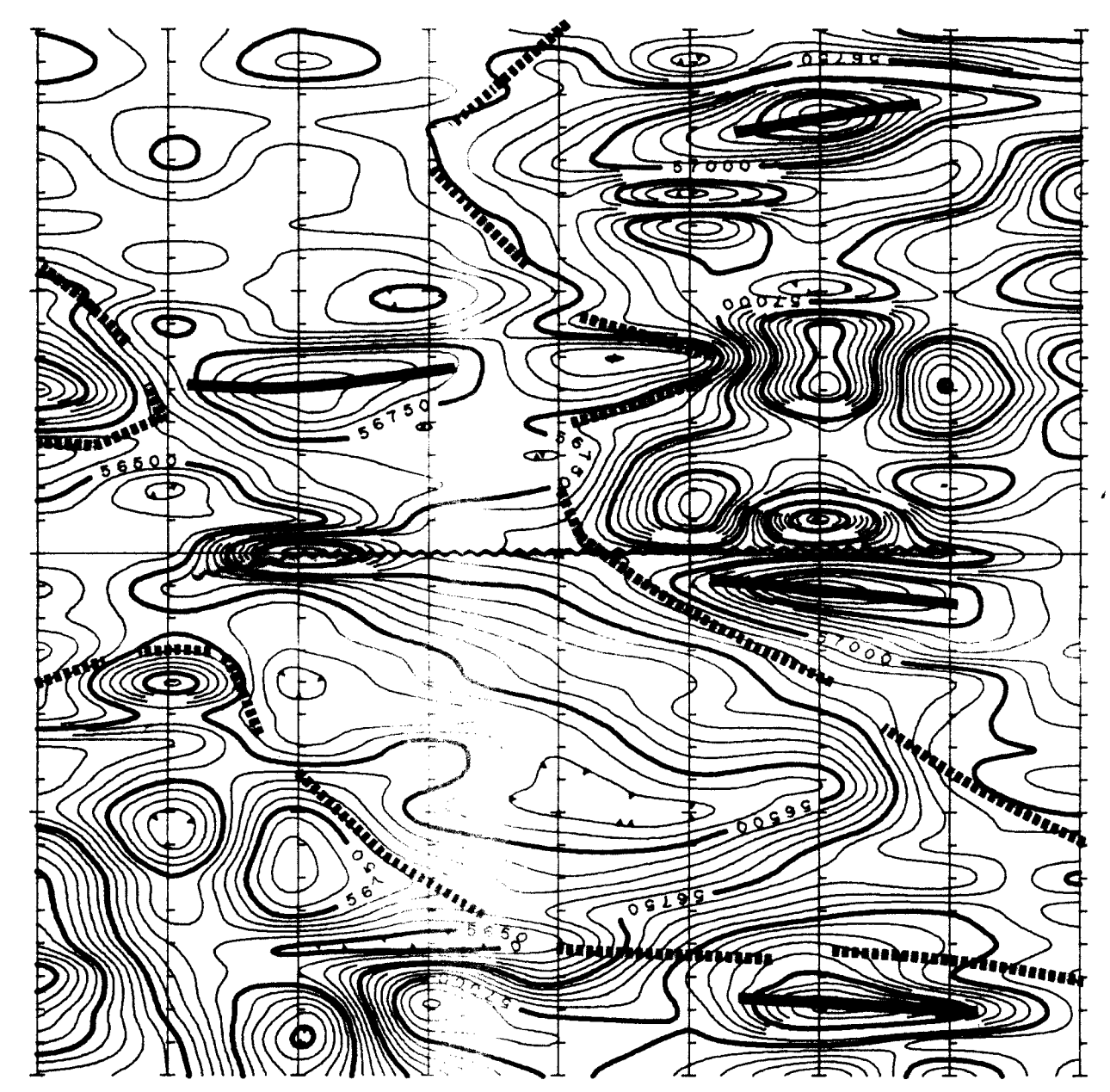


ME3842	
MAGNETOMETER SURVEY	
PROJECT: ME3842 PROJECT # :	
BASELINE AZIMUTH : 110 Deg.	
SCALE = 1 : 2500	DATE : 11/30/89
SURVEY BY : LLOYD	NTS :
FILE: mmerge	
NORANDA EXPLORATION	



9600E
9650E
9700E
9750E
9800E
9850E
9900E
9950E
10000E

10200N
10100N
10000N BASELINE 110°
9900N
9800N



GEOLOGICAL BRANCH
ASSESSMENT REPORT

19,873

- MAGNETIC CONTACT
- MAGNETIC FEATURE
- ~~~~~ INTERPRETED BREAK

Instrument	: OMNI4
Field	: TOTAL
Datum	: 0.0 nT
Contour Interval	: 50 nT
Conductor Axis	:



ME3842	
MAGNETOMETER SURVEY	
PROJECT: ME3842 PROJECT # :	
BASELINE AZIMUTH : 110 Deg.	
SCALE = 1 : 2500	DATE : 11/30/89
SURVEY BY : LLOYD	NTS :
FILE: ME3842	
NORANDA EXPLORATION	

5