84-#137 - 12180

REPORT OF WORK
GEOPHYSICAL SURVEYS
ON THE
MINERAL HILL PROPERTY
N.T.S. 93L/10

OMINECA MINING DIVISION

GEOLOGICAL BRANCH
ASSESSMENT REPORT

12,180
part 2 of 2

Submitted by : L. Bradish
Division Geophysicist
Western Division
Vancouver, B.C.
February 1984

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REPORT OF WORK
GEOPHYSICAL SURVEYS
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OMINECA MINING DIVISION

1.0 INTRODUCTION

Between June and October 1983 Geophysical surveys were carried out on the Mineral Hill Property in the Omineca mining district. Surveys consisted of Horizontal Loop EM, Magnetometer and Induced Polarization.

2.0 LOCATION, ACCESS AND GRID

The property is located approximately 20 Km. Northwest of the town of Houston, B.C. with access to the calims via dirt road (see fig 1). The grid consisted of chain and compass lines flagged at appropriate intervals.

The claims pertinent to the report are as follows:

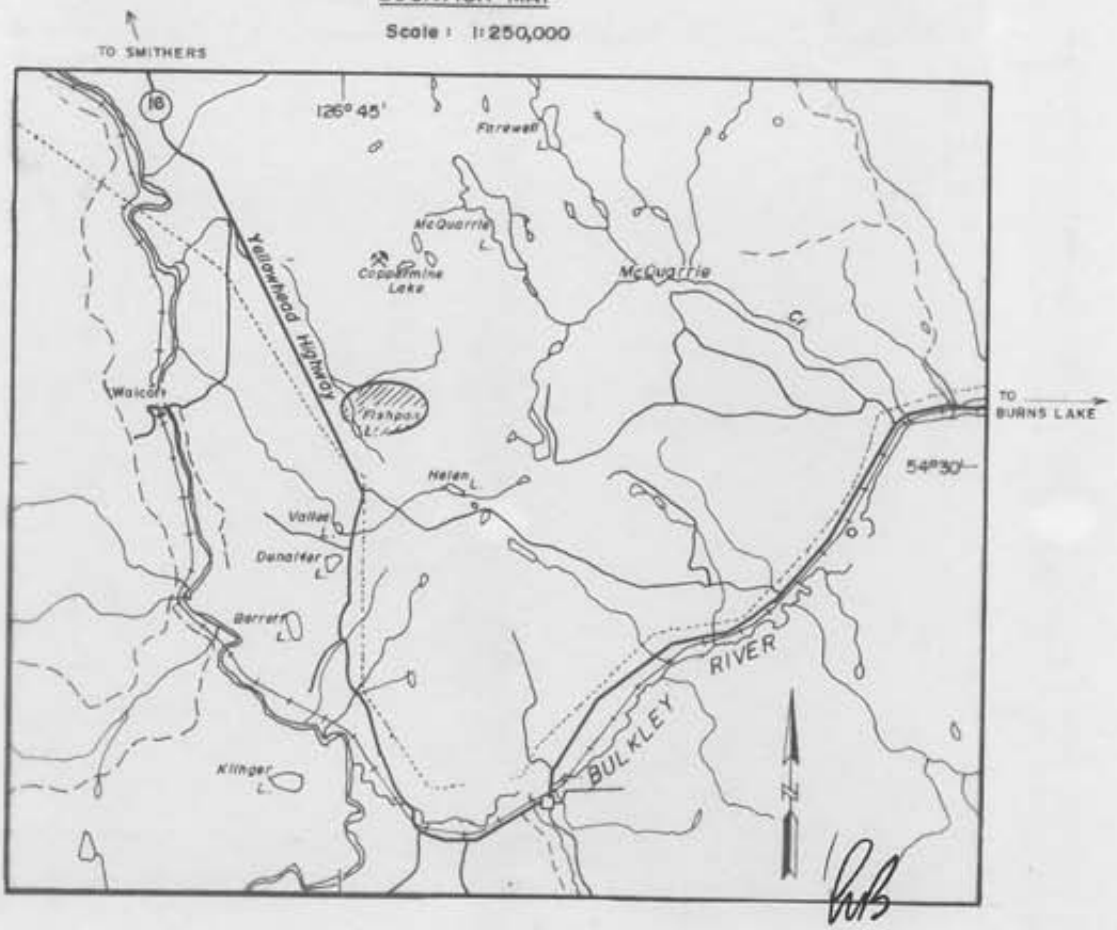
DATE STAKED	CLAIM	# UNITS	REC. No.
Mar 9/79	Mineral Hill C	4	1641
" "	" " D	2	1642
" "	" " E	4	1643
May 26/83	Mineral Hill F	12	5215
" 28/83	" " G	16	5216
Jan 6/83	Pete 1	2 post cl.	4956
" "	" 2	"	4955
" "	" 3	"	4953
" "	" 4	"	4954

3.0 PERSONNEL

The surveys were completed under the field supervision of Kevin Lillie, Geophysical Supervisor, who was assisted by various temporary employees.

LOCATION MAP

Scale : 1:250,000



N.T.S. : 93 L/10

Fig. 1

4.0 INSTRUMENTATION

4.1 GENIE SE-88

The SE-88 unit differs from the normal HLEM systems such as the MaxMin II above in that it measures without regard to phase, the difference in signal amplitude between two frequencies which are transmitted and recieved simultaneously. A low frequency of 112 Hz is used as a reference frequency. The signal difference is integrated or averaged over a period of time in order to improve the signal to noise ratio thus giving a sensitivity that rivals the normal HLEM methods.

The survey parameters employed on the program are as follows

Coil separation	: 100 meters
Frequencies	: 3037, 1012, 337 Hz.
Reference frequency	: 112 Hz.
Integration period	: 16 or 8 seconds
Reading interval	: 25 meters
Measurement	: difference in amplitude between reference and signal frequencies (%).

4.2 MAGNETOMETER

"UNIMAG" G.836 Proton Precession magnetometers manufactured by Exploranium Geometrics of Ontario were utilized for this survey. The Total Field measurement is read with a resolution of 10 gammas and all recorded values were corrected for diurnal and day to day variations. The correction values were determined from repeat readings taken at control stations which are established at the intersection of the wing lines and the Baseline. Readings were recorded at 25 meter intervals and plotted in plan at a datum of 57,000 gammas.

4.3 I.P.

The I.P. survey employed a low power frequency domain system manufactured by Sabre Electronics of Burnaby, B.C. A moving set-up in a dipole-dipole configuration was used to carryout the survey. The resistivity is measured in units of ohm-meters. The survey parameters were as follows:

array	: dipole-dipole
dipole	: 25 meters
frequencies	: 5.0 & 0.3 Hz
separations	: 1,2 & 3

5.0 GEOLOGY

The reader is referred to the report by Myers and Gill "Geology, Geochemistry and VLF-EM survey Report" (1984).

6.0 DISCUSSION OF RESULTS

Horizontal Loop E.M. Survey:

The HLEM survey did not record any response of interest over the five lines surveyed.

Magnetometer Survey:

The mag survey recorded values between 90 nT and 5620 nT on a datum of 57,000 gammas. The profiles presented on map 1 show rapid variations. This high spatial frequency coupled with the wide line spacing does not permit contouring thus the data is in profile form. The erratic nature of the mag suggests localized concentrations of magnetic mineralization.

Induced Polarization Survey:

The I.P. survey was plagued with low currents thus impressing a high noise level on the data. Approximately 40 readings were abandoned due to poor and insufficient signal which was primarily caused by frost in the ground denying good electrical contact. This problem could not be overcome due to the low power and capacity of the I.P. equipment

The data has defined two types of responses identified with the resistivity and the P.F.E. values. There is a high resisitivty ( ) 500 ohm-m) / high P.F.E. unit and a low resisitivty ((500 ohm-m)/ low P.F.E. unit. Throughout the survey area there appears to be a high P.F.E. background due to a widespread occurence of disseminated sulphide mineralization.

LINE 8900N (fig 2) :

This line of data has defined a narrow response at 9650E / 9700E . The pattern suggests the source to be at near surface .

A second area of interest occurs at 9850E/9950E where a wide zone is noted. The 'core' of the anomaly is not well defined due to the noisy readings and these are critical data to determine whether the cause of the anomaly is due to a wide source or a pair of discrete zones.

LINE 9000N (fig 3) :

This line is almost a repeat of the Line 8900N P.F.E. values. An offset of 25 meters west is noted for the west anomaly (9625E/9675E) and a 55 meter east offset is observed for the east anomaly (9800E/9875E). The east anomaly shows a substatial improvement in amplitude (P.F.E.) over its extension on Line 8900N. The resistivity patterns are also quite similiar.

LINE 9250N (fig 4) :

One response is noted at 9875E and extends to the east beyond the end of the line. From the resistivty data it is suggested that this anomaly occurs within a different rock type/texture and is not due only to the introduction of polarizeable material.

LINE 9500N (fig 5) :

As for Line 9250N, a broad anomaly starting at 9825E and extending to the east beyond the end of the line is defined. Within this zone, differentiation can be observed at 9980E where the P.F.E. values establish a solid background increase of 2 %. The resistivity within this package varies from 328 to 1774 ohm-meters.

LINE 9750N (fig 5) :

Anomalous P.F.E. values were recorded east of 9525E to the end of the line. The resistivity also has recorded a general increasing gradient towards grid east. At the west end of the line the depth of overburden is expressing itself in the data contributing to the P.F.E. and resisitivty gradient.

CONCLUSIONS

Of the surveys to date the I.P. has identified two 'zones' of interest. These anomalies (L.8900N/9650E-9700E, L.9000N/9625E-9650E and the area around L.8900N/9850E-9950E, L.9000N/9800E-9875E) do not have significant conductivity as the HLEM recorded no anomalous response over the zone on L.8900N and L.9000N.

Should any further interest be expressed in the property then these areas should be investigated .

L. Bradish
Division Geophysicist

APPENDIX I

PRODUCTION SUMMARY

PRODUCTION SUMMARY

SURVEY	LINE Km
HLEM	4.700
I.P.	2.600
Mag	6.800

APPENDIX II

STATEMENT OF COST

NORANDA EXPLORATION COMPANY, LIMITED

STATEMENT OF COST

DATE December 1983

PROJECT - MINERAL HILL
TYPE OF REPORT Geophysics

a) **Wages:**

No. of Days -	42 mandays	
Rate per Day -	$94.51	
Dates From -	November 30 1982 - November 30 1983	
Total Wages	42 X $94.51	$3,969.51

b) **Food and Accommodation:**

No. of Days -	42	
Rate per Day -	$32.45	
Dates From -	November 30 1982 - November 30 1983	
Total Cost -	42 X $32.45	$1,362.89

c) **Transportation:**

No. of Days -	42	
Rate per Day -	$35.65	
Dates From -	November 30 1982 - November 30 1983	
Total cost	42 X $35.65	$1,497.41

d) **Cost of Preparation of Report:**

Author	$ 94.51
Drafting	$ 114.96
Typing	$ 94.51

e) Other:

Total Cost $7,133.79

UNIT COSTS

Unit Costs for	**Geophysics**	
No. of Days -	42	
No. of Units -	14.10 Kilometers	
Unit Costs -	505.94 / Kilometer	
Total cost	14.10 X 505.94	$7,133.79
Total Cost		$7,133.79

APPENDIX III

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

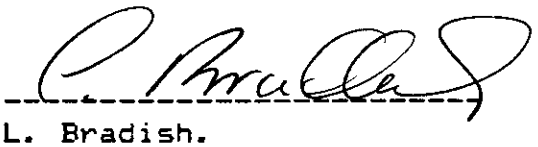
I, Lyndon Bradish of Vancouver, Province of British Columbia, do hereby certify that:

1. I am a Geophysicist residing at 1826 Trutch St. Vancouver, B.C.

2. I am a graduate of the University of British Columbia with a B.Sc. (geophysics).

3. I am a member in good standing of the Society of Exploration Geophysicists, Canadian Institute of mining and the Prospector's and Developer's Association.

4. I presently hold the position of Division Geophysicist with Noranda Exploration Co. Ltd. and have been in their employ since 1973.



L. Bradish.
Division Geophysicist
Noranda Exploration Co. Ltd.
(No Personal Liability)

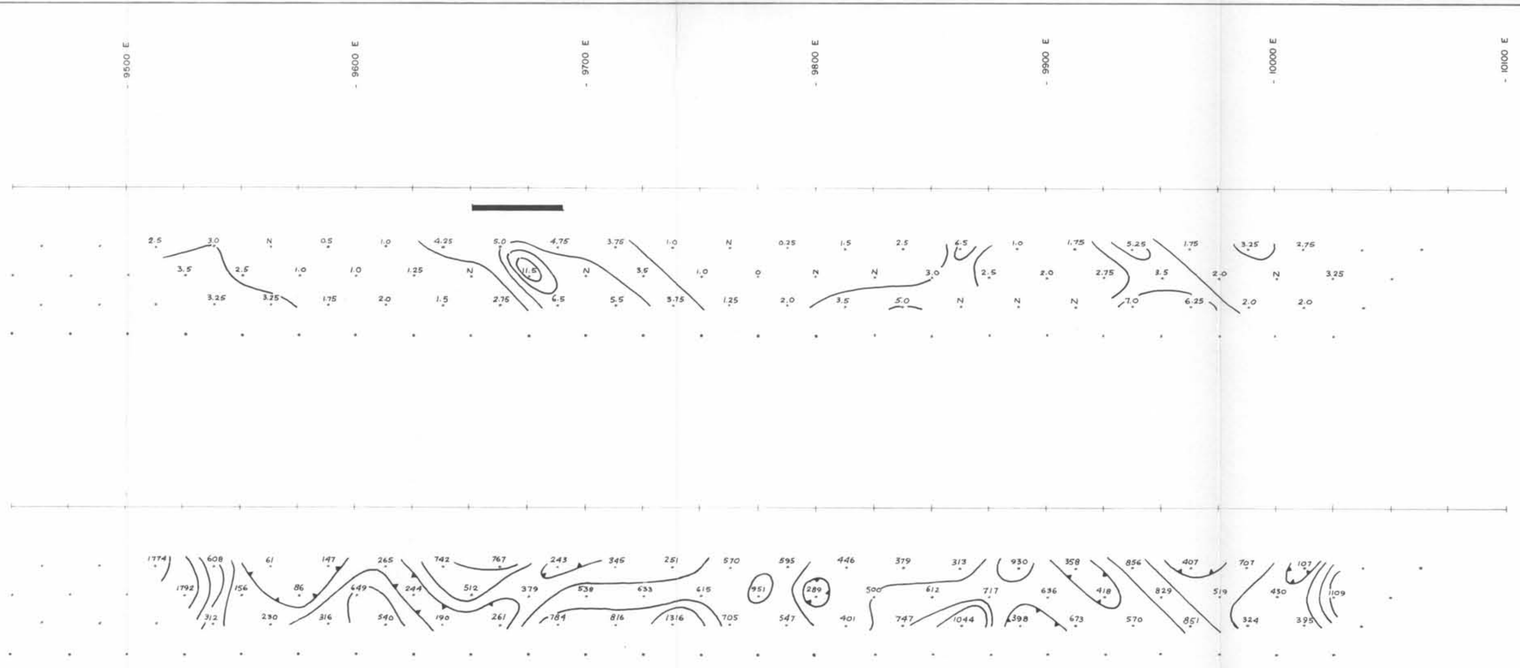


Fig. 2

L E G E N D

Array: Dipole - dipole

Frequency: 5.0 / 0.3 Hz

a: 225m

Contour Interval: P.F.E. 3.0, 5.0, 7.5

fa: 100, 300, 500, 1000, 1500

12180

PART 2 of 2

REVISED	MINERAL HILL CLAIMS I.P. SURVEY Line 8900 N.
DWG NO.	
PROJ NO. 1039	PROJECT TELKWA - TOPLEY
N.T.S. 93L/10	Drawn by (traced) WMR Date Oct/83
SCALE 1:1250	noranda NORANDA EXPLORATION CO. LTD. Vancouver

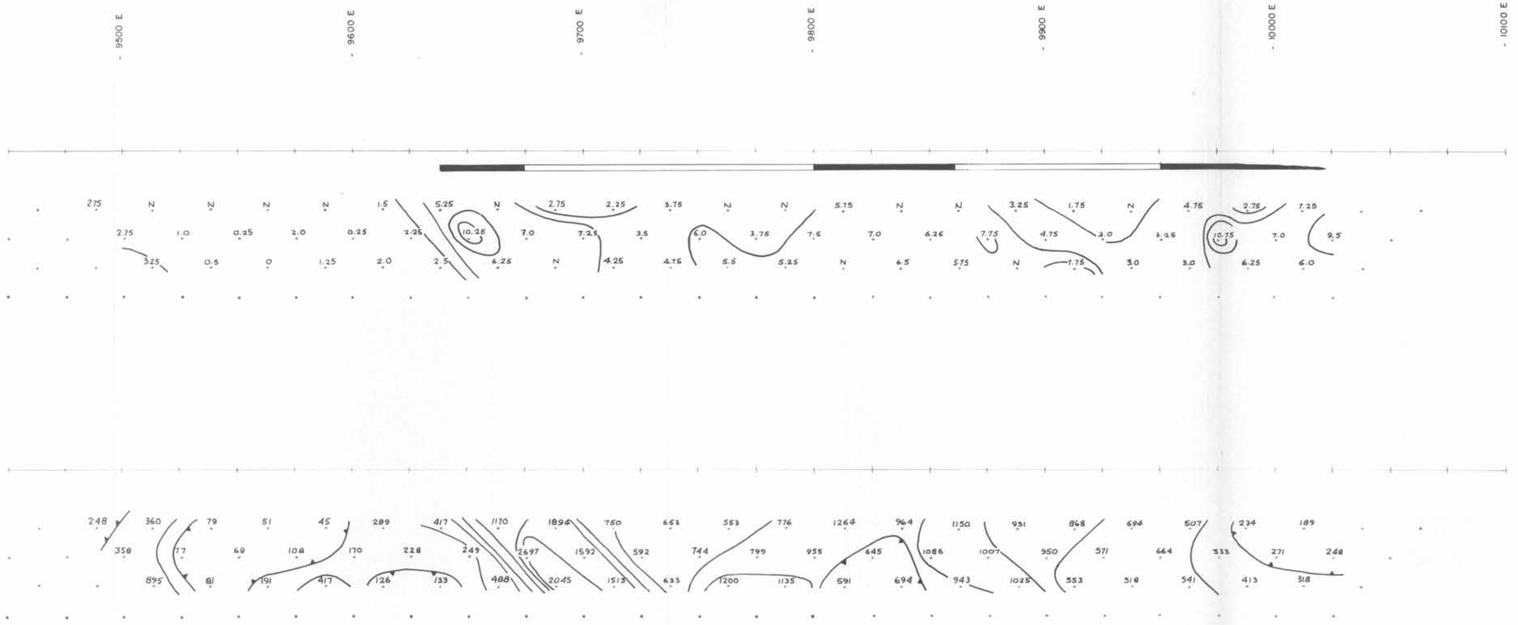


Fig. 3

LEGEND

Array: Dipole-dipole

Frequency: 5.0/0.3 Hz

a: 25m

PFE: 3.0, 5.0, 7.5

Contour Interval: fa 100, 300, 500, 1000, 1500

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PART 2 of 2

REVISE	MINERAL HILL CLAIMS I.P. SURVEY Line 9000 N.
OWNER	
PROJECT 1039	CAMP TELKWA-TOPLEY
N.T.S. 93L-10	(traced) W.M.R. Oct./83
SCALE 1:1250	noranda Vancouver

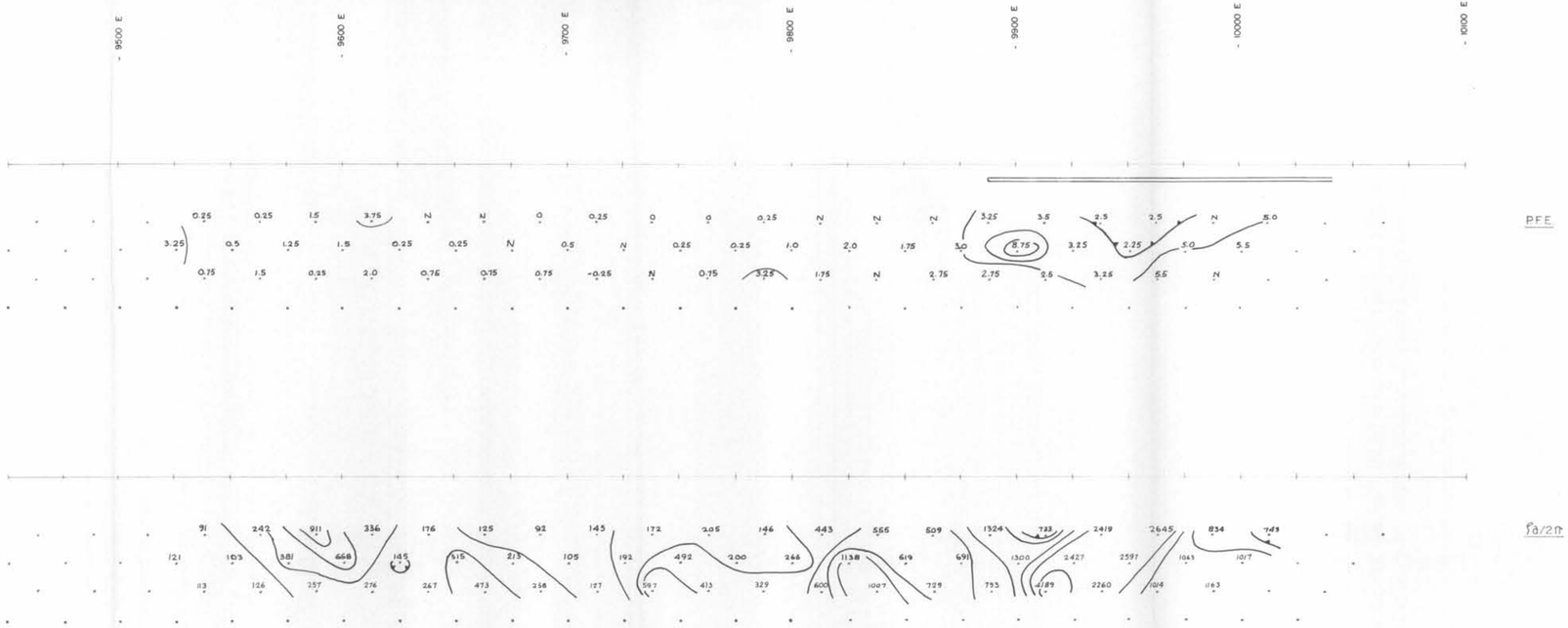

Fig. 4

LEGEND

Array: Gradient Array

Frequency: 0.5 / 2.5 Hz

a: 25m

PFE: 3.0, 5.0, 7.5

Contour Intervals:
Fa: 100, 300, 500, 1000, 1500

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REVISED	MINERAL HILL CLAIMS I.P. SURVEY Line 9250N
DWG NO. 06	
PROJ NO. 1039	PROJECT TELKWA-TOPLEY
NTS 93L/10	Drawn by (traced) W.M.R. Date Oct./83
SCALE 1:1250	noranda NORANDA EXPLORATION LTD. Vancouver

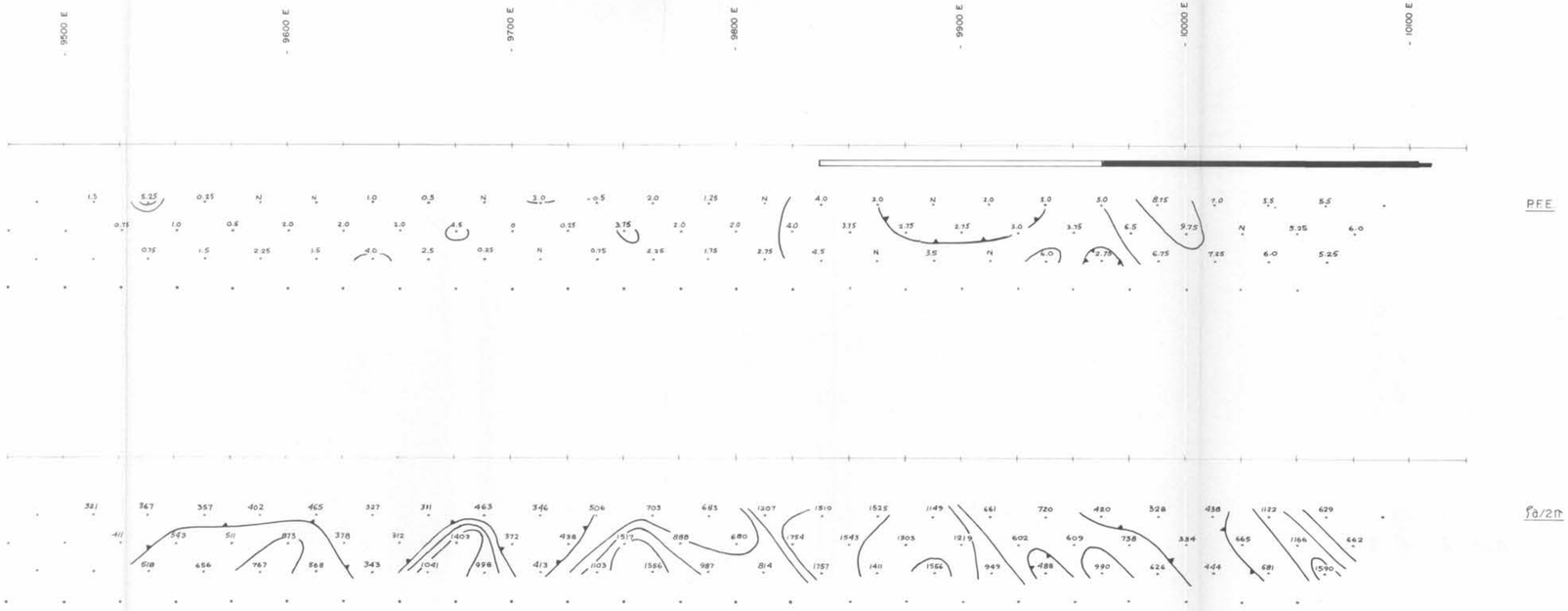

Fig. 5

LEGEND

Array ..... Dipole-dipole

Frequency ..... 5.0 / 0.3 Hz

a 25m

Contour Interval
PFE 3.0, 5.0, 7.5
Ra 100, 300, 500, 1000, 1500

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REVISED	MINERAL HILL CLAIMS I.P. SURVEY Line 9500N
DWG NO.	
PROJ NO. 1039	PROJECT TELKWA-TOPLEY
NTS 93L/10	Drawn by (traced) W.M.R. Date Oct./83
SCALE 1:1250	noranda NORANDA EXPLORATION CO. LTD. Vancouver

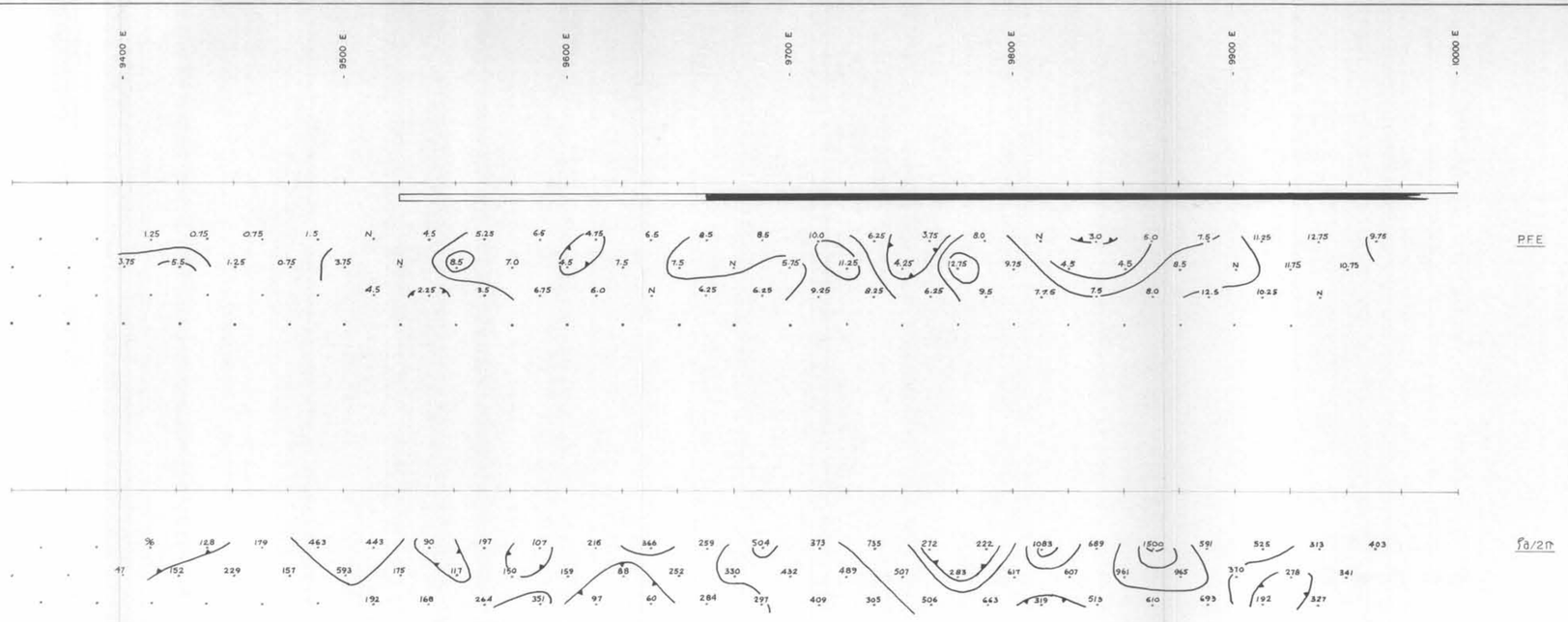

Fig. 6

LEGEND

Array: Dipole - dipole

Frequency: 5.0 / 0.3 Hz

a: 25 m

Contour interval: PFE: 3.0, 5.0, 7.5
Ra: 100, 300, 500, 1000, 1500

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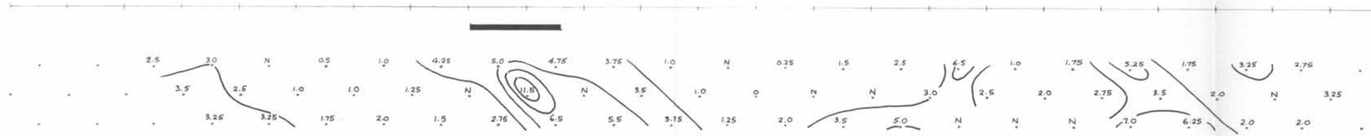
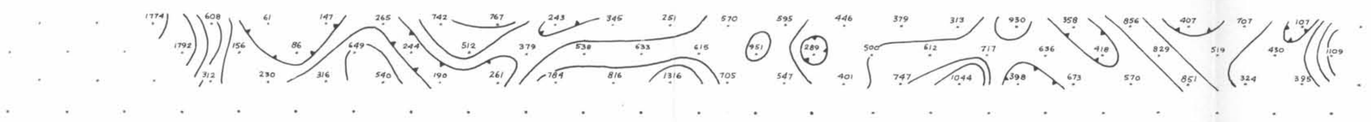
PART 2 of 2

REVISED	MINERAL HILL CLAIMS I.P. SURVEY Line 9750 N.
DWG NO	
PROJ NO 1039	PROJECT TELKWA - TOPLEY
N.T.S. 93L/10	(traced) W.M.R. Oct/83
SCALE 1:1250	noranda NORANDA EXPLORATION CO. LTD. Vancouver

9500 E 9600 E 9700 E 9800 E 9900 E 10000 E 10100 E



PFE



fa/2π

Fig. 2

LEGEND

Array: Dipole - dipole

Frequency: 5.0/0.3 Hz

a: 125m

PFE: 3.0, 5.0, 7.5

Contour Interval

fa: 100, 300, 500, 1000, 1500

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REVISED:	MINERAL HILL CLAIMS I.P. SURVEY Line 8900N
DWG NO: 03	
PROJ NO: 1039	PROJECT: TELKWA-TOPLEY
NTS: 93L/10	Drawn by: (traced) WMR Date: Oct/83
SCALE: 1:1250	noranda NORANDA EXPLORATION CO. LTD. Vancouver

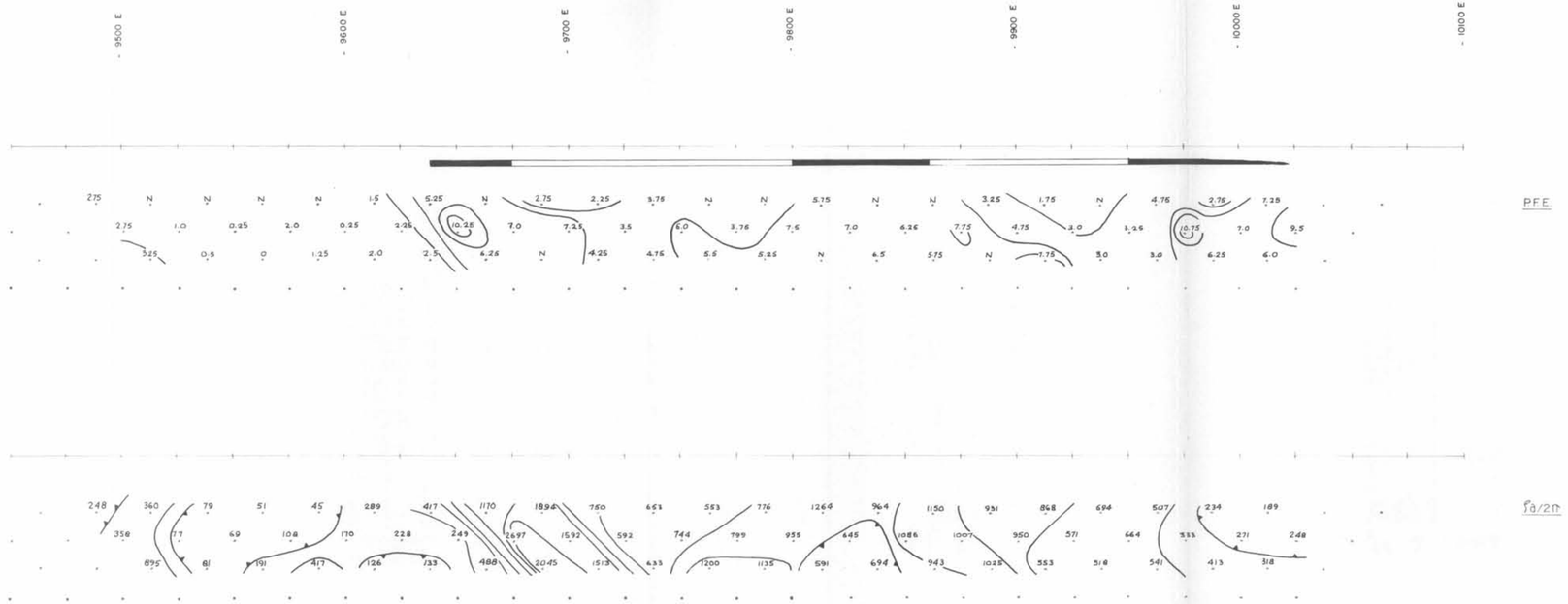

Fig. 3

LEGEND

Array: Dipole - Dipole

Frequency: 5.0 / 0.3 Hz

a: 25m

Contour Interval:
PFE: 3.0, 5.0, 7.5
RA: 100, 300, 500, 1000, 1500

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PART 2 of 2

REVISED:	MINERAL HILL CLAIMS I.P. SURVEY Line 9000 N
DWG NO:	
PROJ. NO: 1039	SURVEY BY: TELKWA-TOPLEY
N.T.S. 93L-10	PLOTTED: (traced) W.M.R. Oct./93
SCALE: 1:1250	noranda NORANDA EXPLORATION INC. Vancouver

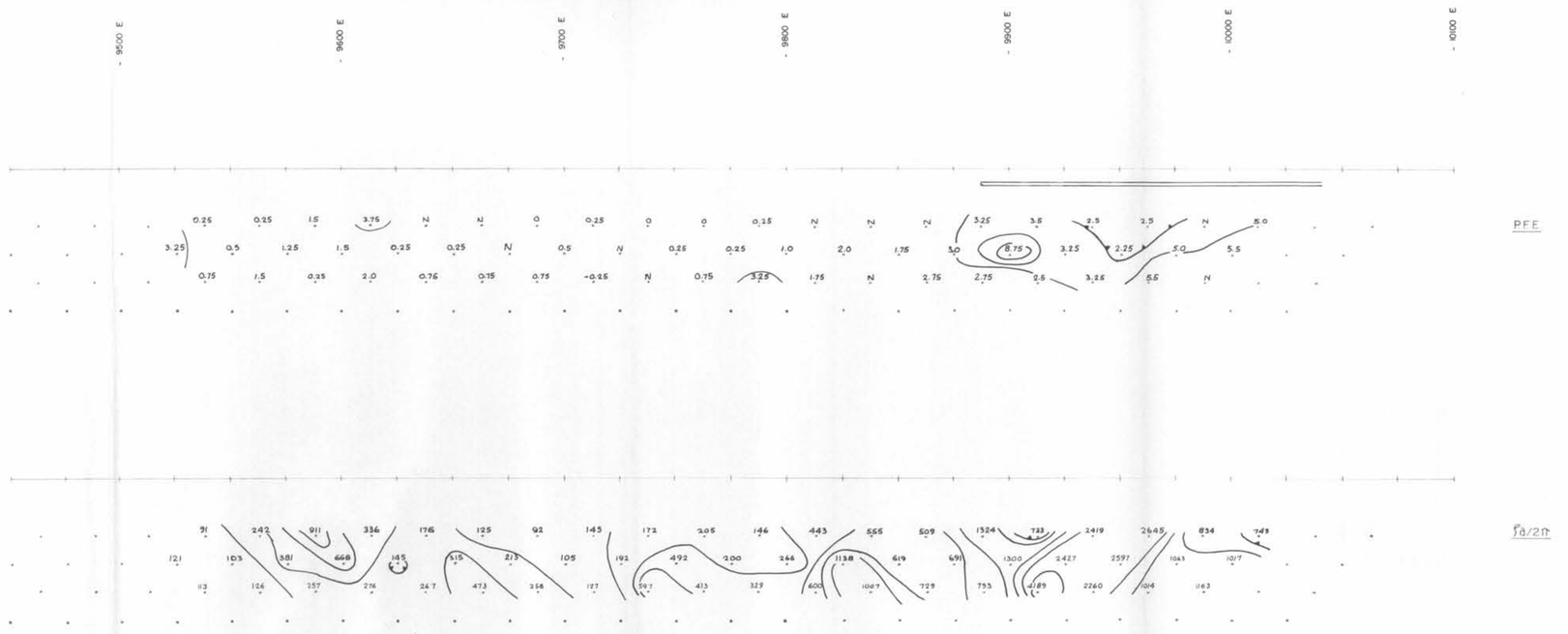

Fig. 4

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REVISED	MINERAL HILL CLAIMS I.P. SURVEY Line 9250N
DWG NO	
PROJ NO 1039	PROJECT TELKWA-TOPLEY
NTS 93L/10	(traced) W.M.R. Oct./83
SCALE 1:1250	noranda Vancouver

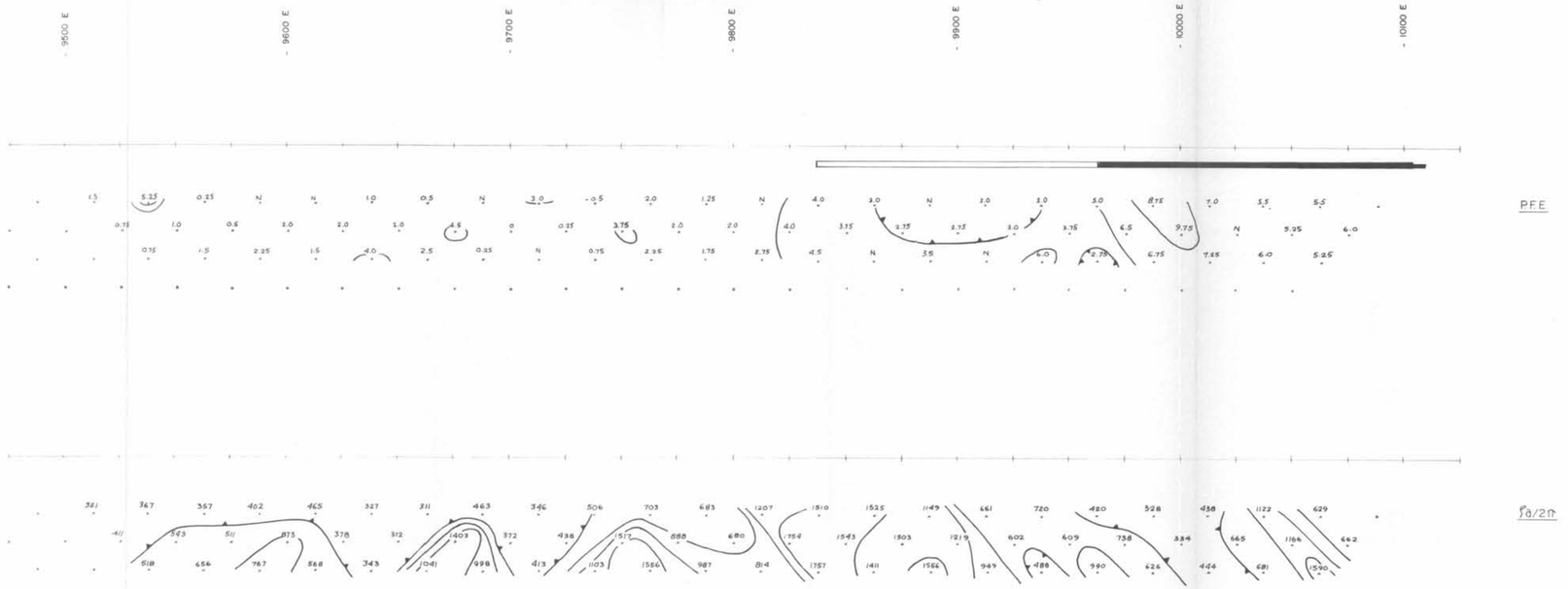

Fig. 5

LEGEND

Array : Dipole - dipole

Frequency : 5.0 / 0.3 Hz

a : 25 m

Contour Interval : PFE 3.0, 5.0, 7.5

Fa 100, 300, 500, 1000, 1500

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REVISED	MINERAL HILL CLAIMS I.P. SURVEY Line 9500N
DWG NO.	
PROJ NO. 1039	PROJECT TELKWA-TOPLEY
N.T.S. 93L/10	Drawn by (traced) W.M.R. Date Oct./83
SCALE 1:1250	noranda NORANDA EXPLORATION CO. LTD. Vancouver

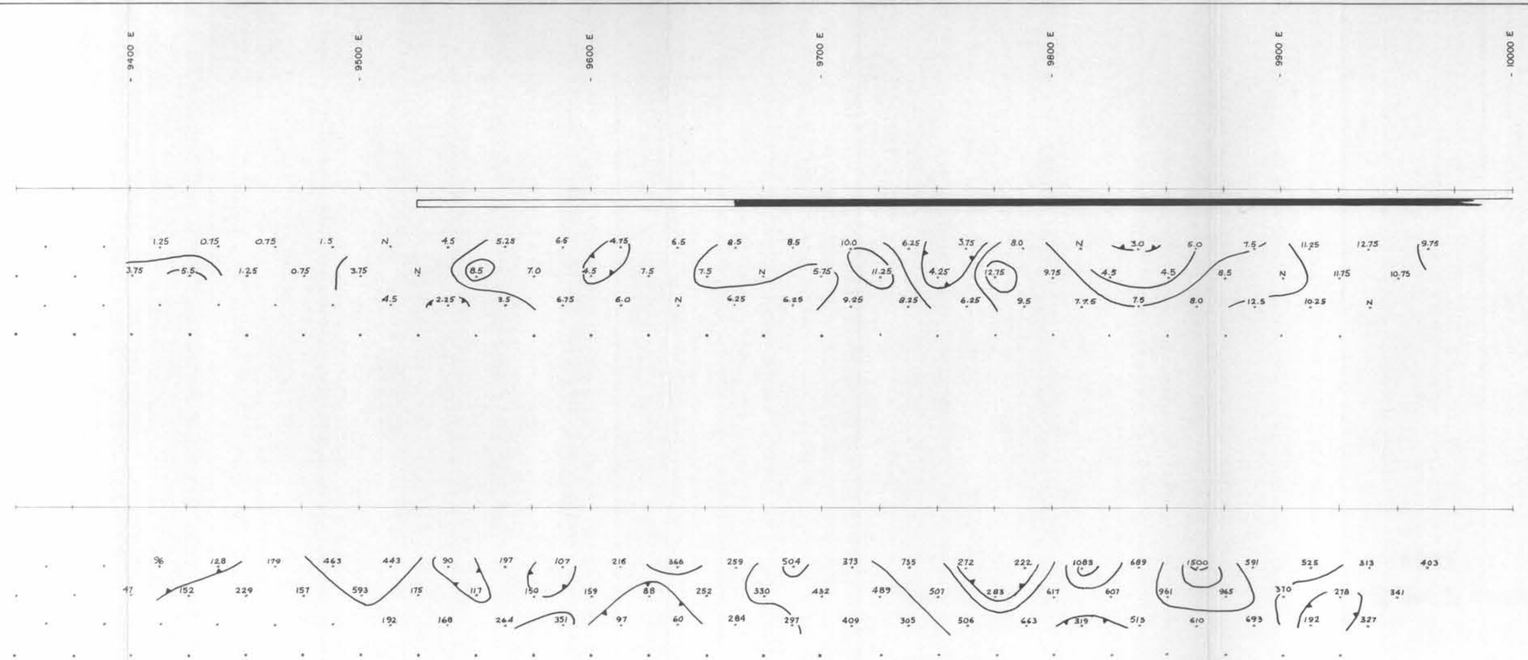


Fig. 6

LEGEND

Array: Dipole - dipole

Frequency: 5.0/0.3 Hz

a: 125 m

PFE: 3.0, 5.0, 7.5

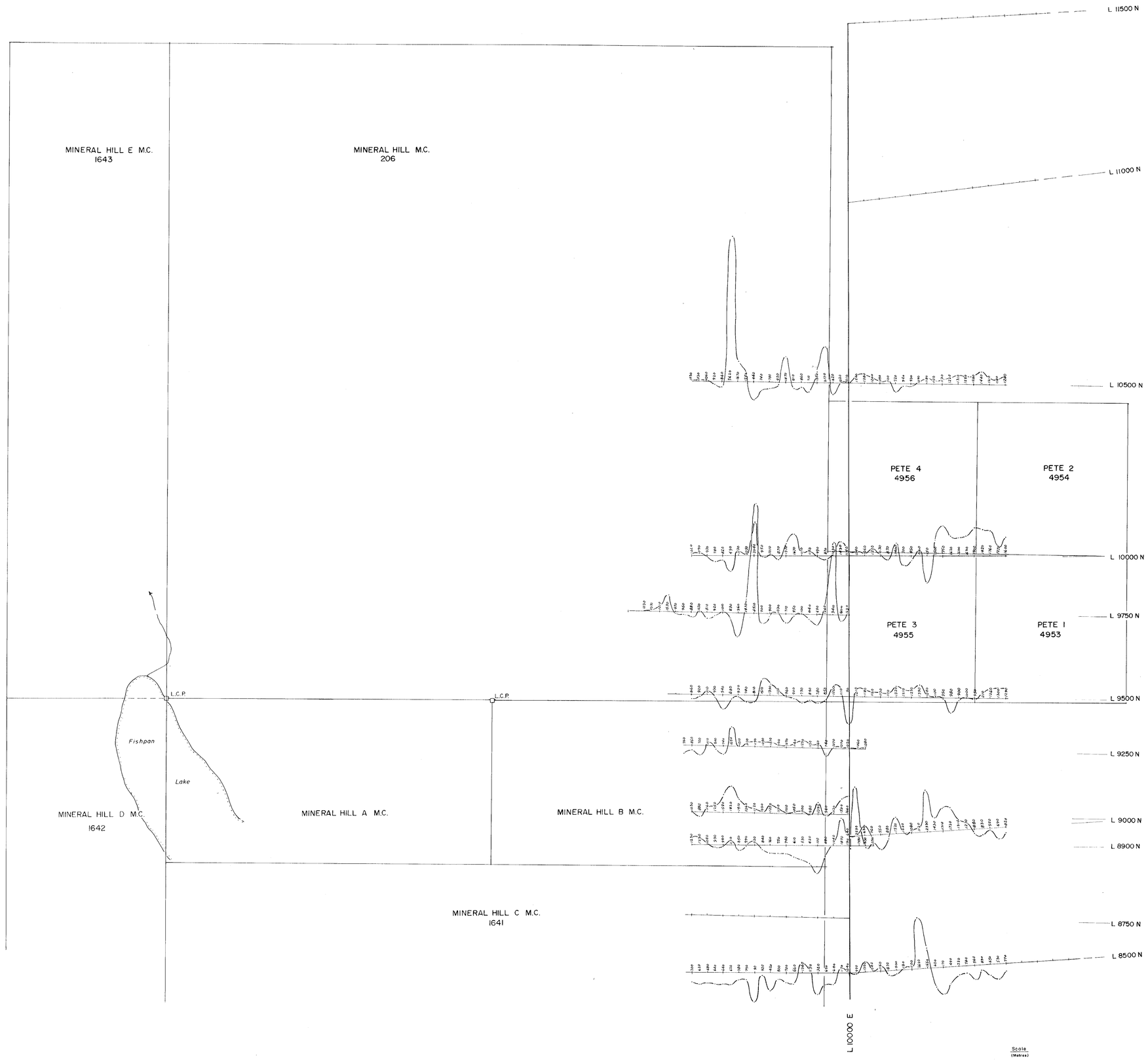
Contour interval

Ra: 100, 300, 500, 1000, 1500

12180

PART 2 of 2

REVISED	MINERAL HILL CLAIMS I.P. SURVEY Line 9750 N.
DWG NO.	
PROJ NO. 1039	PROJECT TELKWA - TOPLEY
N.T.S. 93L/10	Drawn by W.M.R. Date Oct/83
SCALE 1:1250	noranda NORANDA EXPLORATION CO. LTD. Vancouver



GEOLOGICAL BRANCH
ASSESSMENT REPORT

12,180

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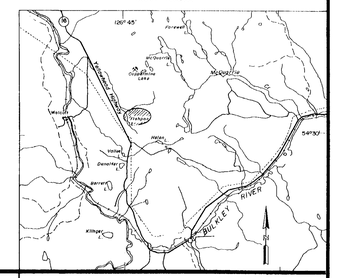
of 2

LEGEND

INSTRUMENT	:	Unimag
FIELD MEASUREMENT	:	Total
DATUM	:	57,000$^{\gamma}$ (Plot Line = 58,000$^{\gamma}$)
PROFILE SCALE	:	1 cm. = 500$^{\gamma}$
SURVEY DATE	:	Sept./83
OPERATOR	:	J.M., D.H.

LOCATION MAP
Scale: 1:250,000



REVISED	TELKWA-TOPLEY
	MINERAL HILL CLAIMS
	MAGNETOMETER SURVEY
PROJ. No. 45	SURVEY BY: J.M., D.H. DATE: Jan./84
N.T.S. 93L/10	DRAWN BY: W.M.P. SCALE: 1:5000
DWG. No. 1	NORANDA EXPLORATION
	OFFICE: Vancouver

GEOLOGICAL BRANCH
ASSESSMENT REPORT

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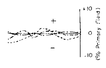
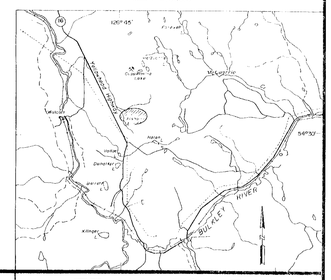
LEGEND

INSTRUMENT	:	SE-88
COIL SPACING	:	100 m.
FREQUENCY	:	Low ——— 337 Hz Med. — — — 1012 Hz High - - - - 3037 Hz
INTEGRATION TIME	:	16 sec.
REF. FREQ.	:	112 Hz
PROFILE SCALE	:	1 cm. = 10 %
CONDUCTOR AXIS	:	
SURVEY DATE	:	Sept./83
OPERATOR	:	K.L., M.S.



LOCATION MAP
Scale: 1:250,000



REVISED

PROJ. No. 45
N.T.S. 93L/10
DWG. No 2

TELKWA-TOPLEY

MINERAL HILL CLAIMS
H.L.E.M. SURVEY

SURVEY BY: K.L., M.S. DATE: Jan./84
DRAWN BY: W.M.R. SCALE: 1:5000

NORANDA EXPLORATION
OFFICE Vancouver