

A REPORT
ON
AN INDUCED POLARIZATION SURVEY
ROSS RIVER AREA, YUKON TERRITORY

FOR

GAYLORD MINES LIMITED
VANCOUVER, BRITISH COLUMBIA

BY

EAGLE GEOPHYSICS LIMITED
VANCOUVER, BRITISH COLUMBIA

NOVEMBER 1968

This report has been examined by
the Geological Evaluation Unit.
Approved as to technical worth by:

D. C. Findlay
RESIDENT GEOLOGIST

Approved as to cost in the amount
of \$ 2791.68

R. G. Redden
IDENTIFYING INSPECTOR

Used as representation work
of Section 93(2) Yukon Quartz
Mining Act.

[Signature]
COMMISSIONER OF YUKON

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Electromagnetic Survey 1" = 200 feet	Map No. E-116-1
Induced Polarization Survey Area 'A' 1" = 200 feet	Map No. E-116-3
Induced Polarization Survey Area 'B' 1" = 200 feet	Map No. E-116-4

INTRODUCTION

Between July 3rd and 9th, Eagle Geophysics Limited carried out an Induced Polarization (I.P.) Survey on part of a property held by Gaylord Mines Limited and located in the Ross River Area, Yukon Territory.

The Survey was conducted along N45°E lines in two areas where previous E.M. 16 electromagnetic conductors had been indicated (Report on Grew Claims by Eagle Geophysics Limited, November 1967).

Measurements of apparent chargeability (the I.P. response parameter) were made every 100 feet in both areas using different electrode separations. Simultaneous measurements of apparent resistivity were also made.

The data are presented in profile form on plan maps, Map E-116-3 and 4, of the two areas, Areas 'A' and 'B' respectively.

PURPOSE

The purpose of the I.P. Survey was to determine, if possible, whether the previously located electromagnetic conductors were due to either sulphide mineralization and/or graphite, or to conductive shear zones and/or overburden effects.

GENERAL GEOLOGY

The reader is referred to a report by Ace R. Parker, P.Eng., November 1966 (unpublished).

The Grew group is situated on the north side of the Tintina fault zone and is essentially underlain by Mississippian rocks consisting for the most of banded skarn, quartzose granulite, chlorite schist, quartz-sericite schist, hornfels, phyllite, crystalline limestone and feldspar porphyry intrusions.

SURVEY SPECIFICATIONS

The Induced Polarization (I.P.) Survey was carried out using a pulse-type system manufactured by Hunttec Limited of Toronto, Ontario. Measurements with this system are made in the time domain.

The system consists basically of three units, a receiver, a transmitter and a motor-generator. The transmitter, which provides a maximum of 7.5 kw. d.c. to the ground, obtains its power from the 7.5 kw 400 cycle three phase generator driven by a gasoline engine. The cycling rate of the transmitter is 1.5 seconds 'current on' and 0.5 seconds 'current off' with the pulses reversing continuously in polarity. The data recorded in the field consists of careful measurements of the current (I) in amperes flowing through electrodes c_1 and c_2 , the primary voltage (V_p) appearing between the potential electrodes, P_1 and P_2 , during the 'current on' part of the cycle and a secondary or over voltage (V_s) appearing between P_1 and P_2 during the 'current off' part of the cycle.

The apparent chargeability (M_a) is calculated by dividing the secondary voltage by primary voltage and multiplying by 400, which is the sampling time in milliseconds of the receiver unit. The apparent resistivity (P_a) in ohm-metres is proportional to the ratio of the primary voltage and the measured current, the proportionality factor depending on the geometry of the array used. The chargeability and resistivity obtained are called apparent as they are values which that portion of the earth sampled would have if it were homogeneous. As the earth sampled is usually inhomogeneous the calculated apparent chargeability and resistivity are functions of the actual chargeability and resistivity of the rocks.

The survey was carried using the 'three electrode array' method of surveying.. In this method the current electrode C_1 and the two potential electrodes P_1 and P_2 are moved in unison along the survey lines. The spacing between these three electrodes is kept constant for each traverse at a distance roughly equal to the depth to be explored by that traverse. The second current electrode C_2 is kept fixed at 'infinity'.

Thus, on a 'three electrode array' traverse with an electrode spacing of 200 feet, a body lying at a depth of 150 feet will produce a strong response,

whereas the same body lying at a depth of 200 feet will only just be detected. By running subsequent traverses at different electrode spacings more precise estimates can be made of depth, width, thickness and percentages of sulphides of causative bodies located by the I.P. method.

DISCUSSION OF RESULTS

AREA 'A' (Map E-116-3)

The I.P. Survey was done with a 300 foot electrode separation over and around conductor 'A', a previously located E.M. 16 conductor. It indicated a moderately high chargeability background over which no anomalous conditions were discernible.

Additional work with 100 and 500 foot electrode separations on Line 2 SE gave lower and higher backgrounds respectively with no anomalous conditions.

The resistivity survey, particularly on the 100 foot spacing, indicated a resistivity low, ie. a zone of high conductivity, closely associated with the location of the E.M. conductor.

AREA 'B' (Map E-116-4)

The I.P. Survey was done with a 200 foot electrode separation over and around conductor 'B', a previously located E.M. 16 conductor. It indicated a low chargeability background over which no anomalous conditions were discernible.

Additional work with a 400 foot electrode separation on Lines 9 SE and 10 SE indicated a similar background with no anomalous conditions.

The resistivity survey indicated a general resistivity low, ie. a zone of high conductivity, closely associated with the location of the E.M. conductor.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

From July 3rd to 9th, 1968, Eagle Geophysics Limited carried out an Induced Polarization Survey over part of a property held by Gaylord Mines Limited.

The property is situated in the Whitehorse Mining Division of the Yukon Territory, and is located 15 miles northwest of the settlement of Ross River.

The I.P. Survey was done over and around locations of two previously determined E.M. conductors.

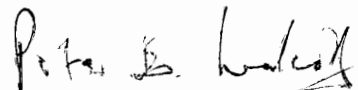
No anomalies were obtained on the survey, but resistivity lows, ie. conductivity highs, approximately coincident with the location of the E.M. conductors were observed.

Thus, in the writers opinion, the E.M. conductors were due to possible shear zones and/or deepening of overburden as suggested by the resistivity survey, and not due to economic sulphide mineralization.

It is therefore recommended that no further work be done on the property at this time, but that the

property be held in abeyance until such time as the assessment work runs out or a new discovery in the immediate area sparks renewed interest.

Respectfully submitted,
EAGLE GEOPHYSICS LIMITED,

A handwritten signature in cursive script, appearing to read "Peter E. Walcott".

Peter E. Walcott, P.Eng.
Geophysicist.

VANCOUVER, B. C.
November 1968.

A P P E N D I X

(1)

COST OF SURVEY

From July 3rd to 9th, 1968, Eagle Geophysics Limited provided a geophysicist, a geophysical operator, a 7.5 I.P. unit and a four wheel drive truck for \$275.00 per day.

Draughting, interpretation and mobilization were extras so that the total cost of services provided by Eagle Geophysics Limited was \$2,021.00.

(ii)

PERSONNEL EMPLOYED ON SURVEY

<u>Name</u>	<u>Occupation</u>	<u>Address</u>	<u>Dates Worked</u>
J. Lloyd	Geophysicist	815-736 Granville Street, Vancouver 2, B.C.	July 3-9 incl. 1968
V. Pashniak	Geophysical Operator	"	"
G. MacMillan	"	"	"
R. Davie	Geophysical Helper	326-736 Granville Street, Vancouver 2, B.C.	"
Peter E. Walcott	Geophysicist	815-736 Granville Street, Vancouver 2, B.C.	November 15 and 16, 1968.
Miss S. Main	Typist	326-736 Granville Street, Vancouver 2, B.C.	November 18, 1968.

(iii)

CERTIFICATION

I, Peter E. Walcott, of the Municipality of Coquitlam, British Columbia, hereby certify that:

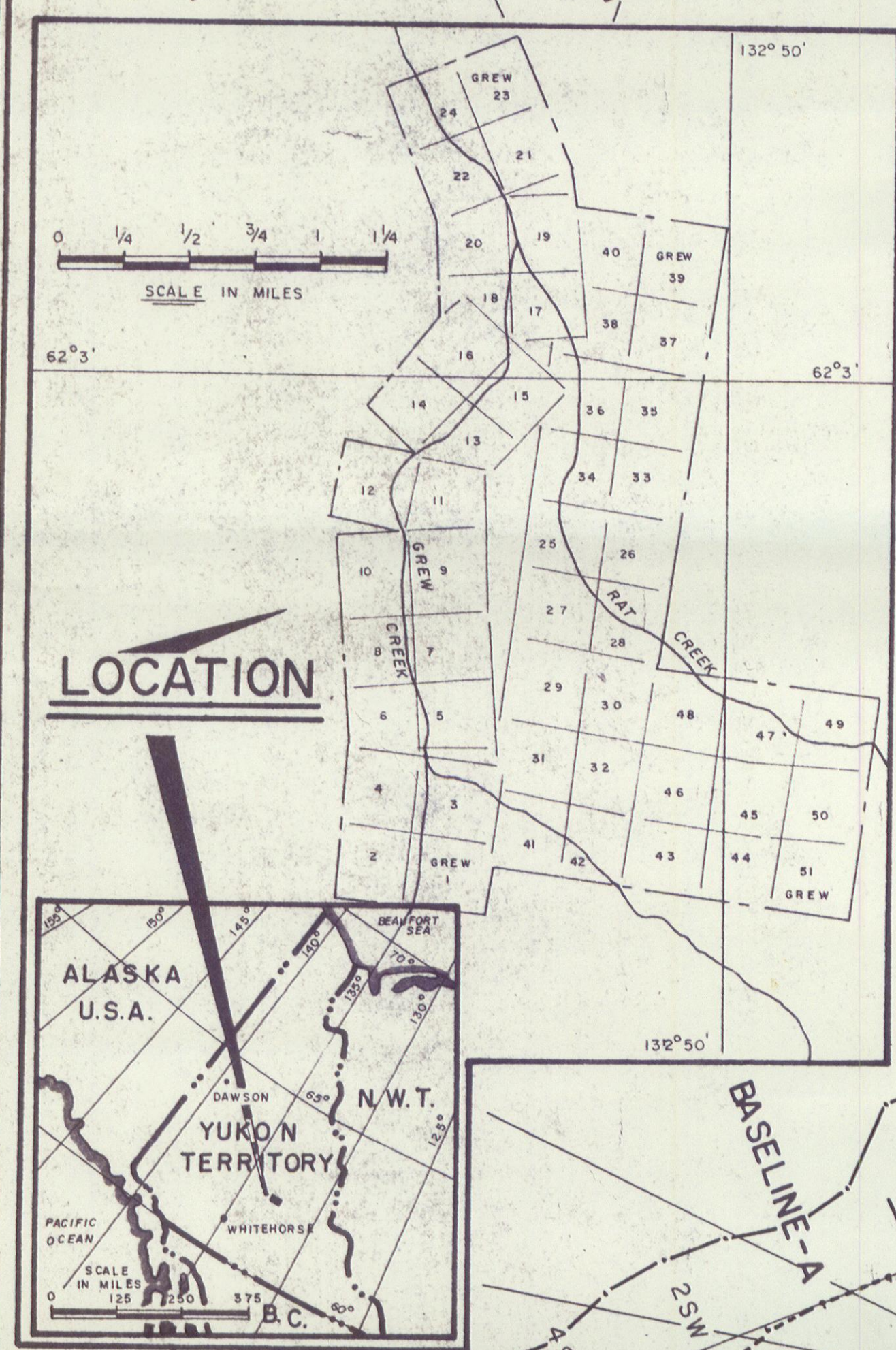
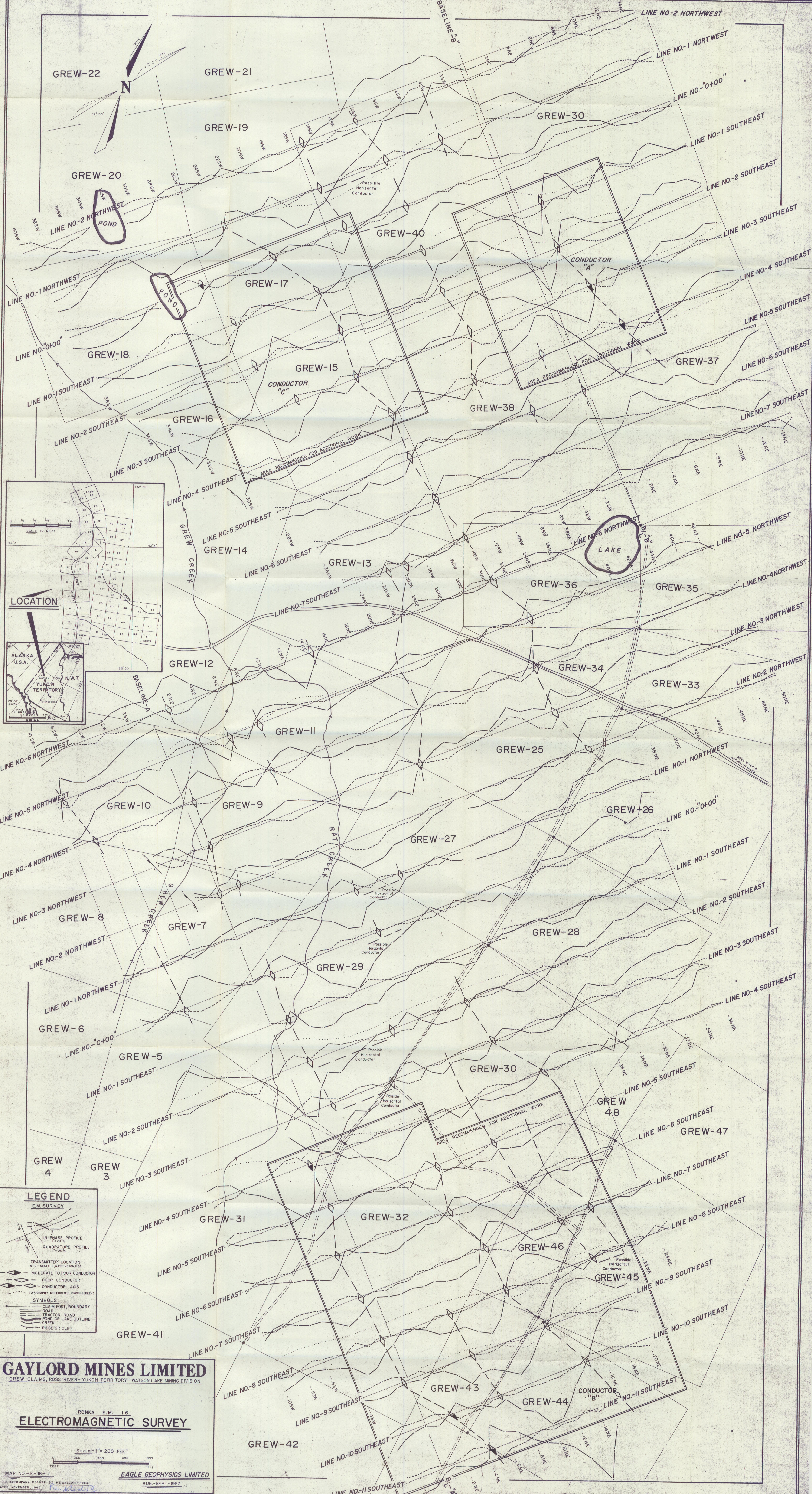
1. I am a graduate of the University of Toronto in 1962 with a B.A.Sc. in Engineering Physics, Geophysics option.
2. I have been practising my profession for the last six years.
3. I am a member of the Association of Professional Engineers of Ontario and the Yukon.
4. I have no shares of Gaylord Mines Limited, nor do I expect to receive any.



Peter E. Walcott, P.Eng.

VANCOUVER, B.C.

November 1968



LEGEND
E.M. SURVEY

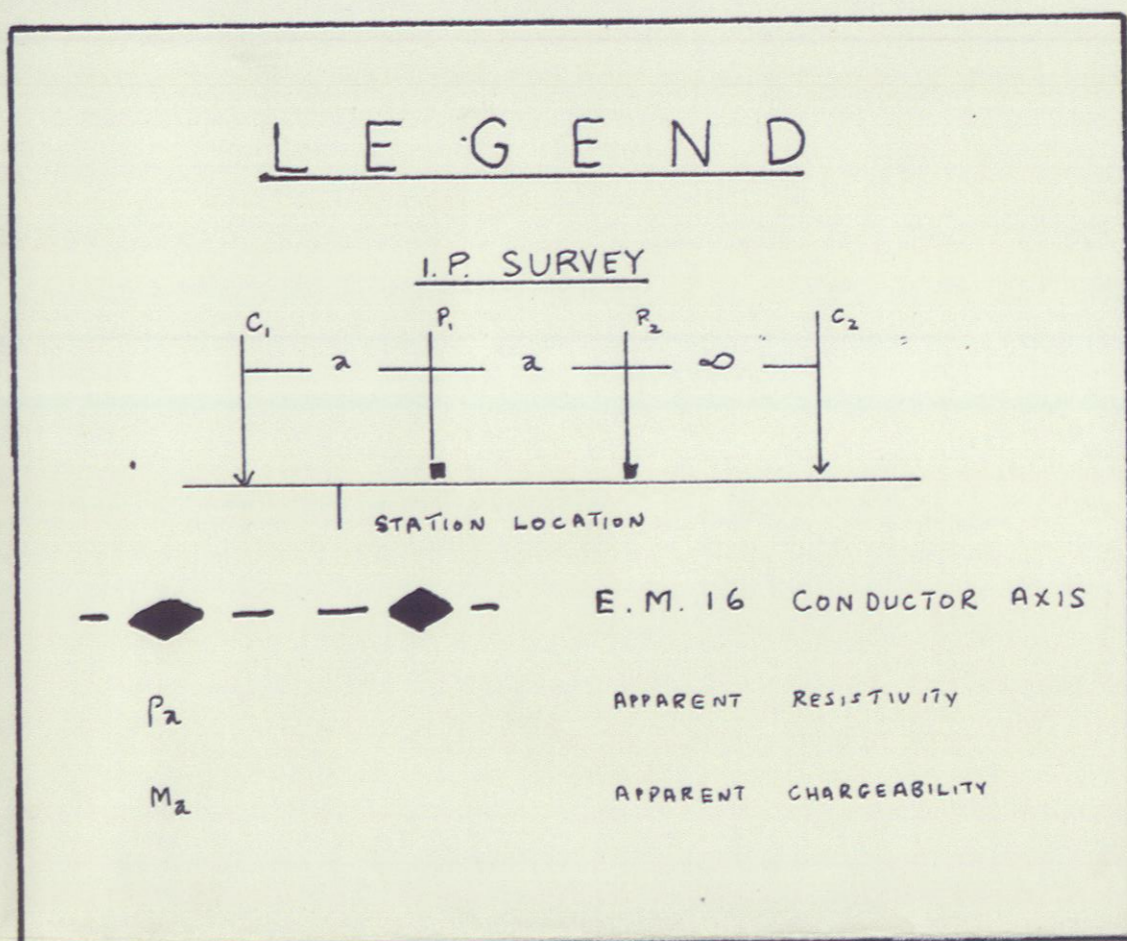
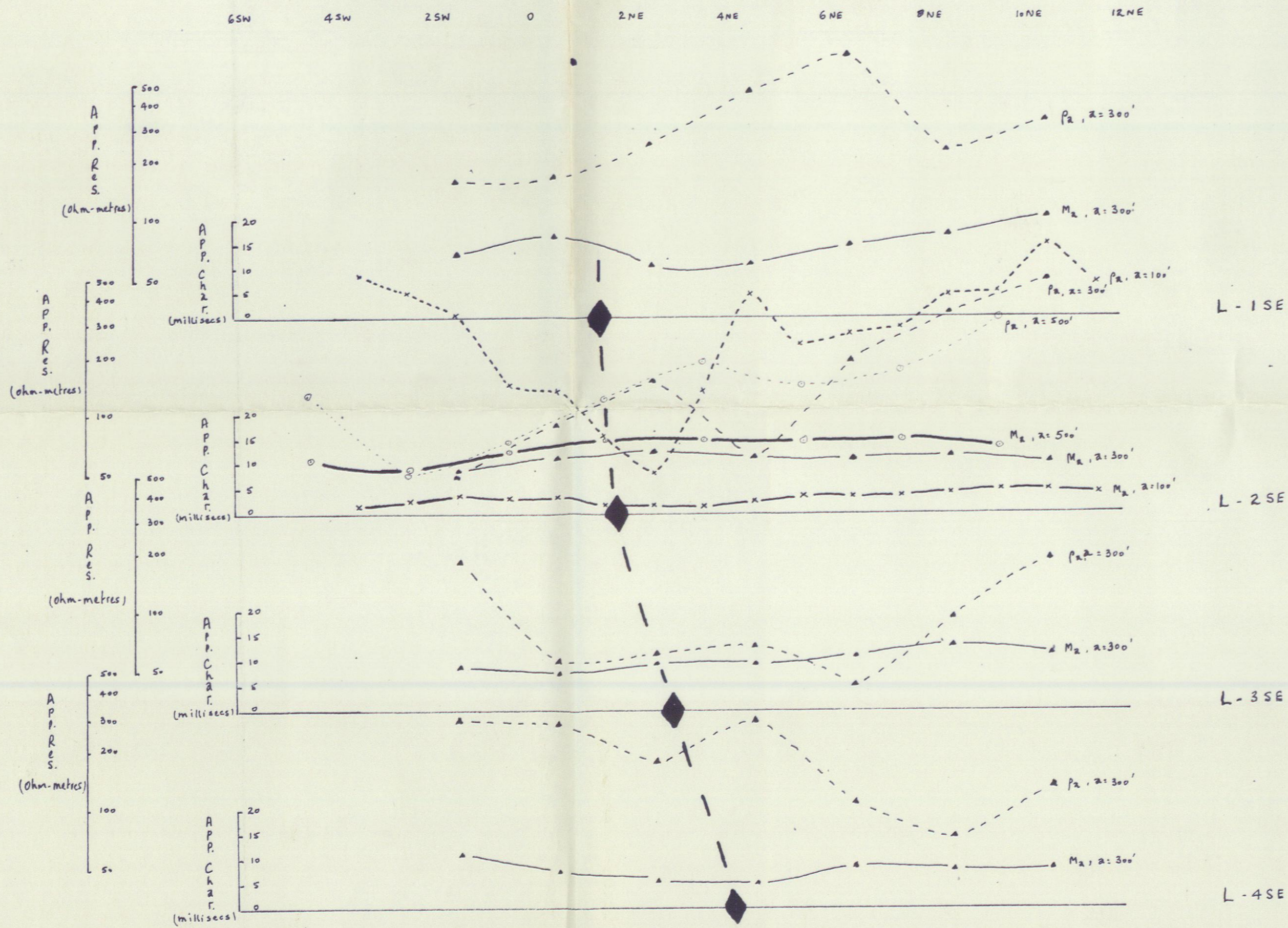
- IN PHASE PROFILE
- QUADRATURE PROFILE
- TRANSMITTER LOCATION
- MODERATE TO POOR CONDUCTOR
- POOR CONDUCTOR
- CONDUCTOR AXIS
- SYMBOLS
- CLAIM POST, BOUNDARY
- ROAD
- TRACTOR ROAD
- POND OR LAKE OUTLINE
- CREEK
- RIDGE OR CLIFF

GAYLORD MINES LIMITED
GREW CLAIMS, ROSS RIVER-YUKON TERRITORY-WATSON LAKE MINING DIVISION

RONKA E.M. 16
ELECTROMAGNETIC SURVEY

Scale 1" = 200 FEET

EAGLE GEOPHYSICS LIMITED
AUG-SEPT-1967



GAYLORD MINES LIMITED

GREW CLAIMS, ROSS RIVER - YUKON TERRITORY - WHITEHORSE MINING DIVISION

GRID - "A"

INDUCED POLARIZATION SURVEY

APPARENT CHARGEABILITY AND RESISTIVITY PROFILES

Scale - 1" = 200 FEET

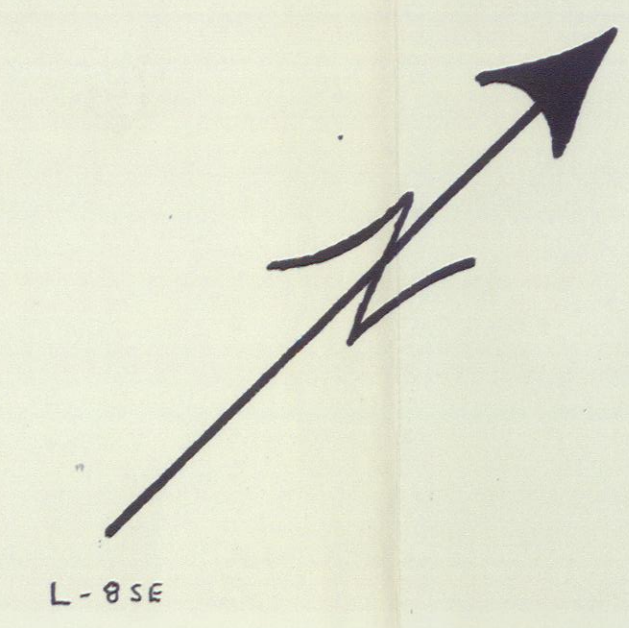
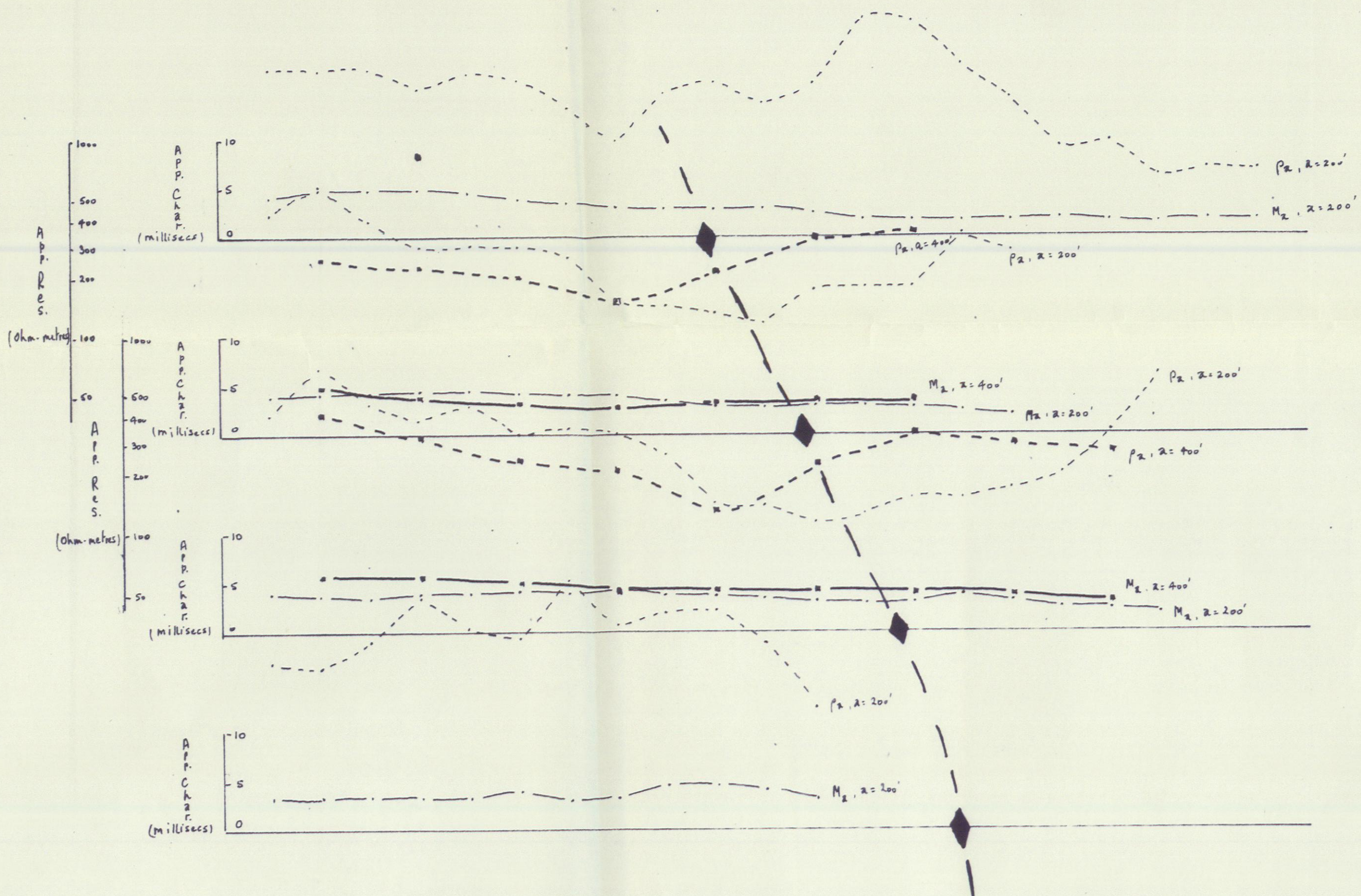
MAP NO. - E-116 - 3

TO ACCOMPANY REPORT BY P.E. WALCOTT, P. ENG.
DATED NOVEMBER 1968

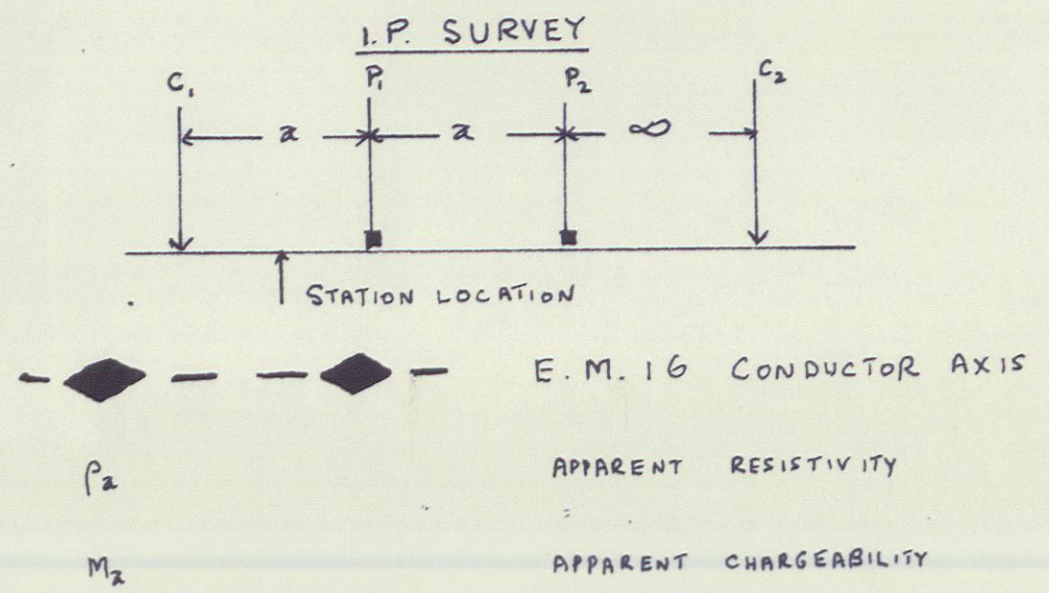
Peter J. Walcott

EAGLE GEOPHYSICS LIMITED
JULY - 1968

2NE 4NE 6NE 8NE 10NE 12NE 14NE 16NE 18NE 20NE 22NE



LEGEND



GAYLORD MINES LIMITED

GREW CLAIMS, ROSS RIVER - YUKON TERRITORY - WHITEHORSE MINING DIVISION

GRID "B"

INDUCED POLARIZATION SURVEY

APPARENT CHARGEABILITY AND RESISTIVITY PROFILES

Scale - 1" = 200 FEET



MAP NO - E-116-4

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DATED NOVEMBER 1968

JULY - 1968