

1982 GEOPHYSICAL ASSESSMENT REPORT

TITLE Steamboat Mountain Property

CLAIMS Clum 2 - 5

COMMODITY Pb, Zn

LOCATION-AREA Five kilometres southwest of  
Brisco in southeastern British  
Columbia

-COORDINATES Latitude 50°48'N  
Longitude 116°20'W

-MINING DIVISION Golden Mining Division

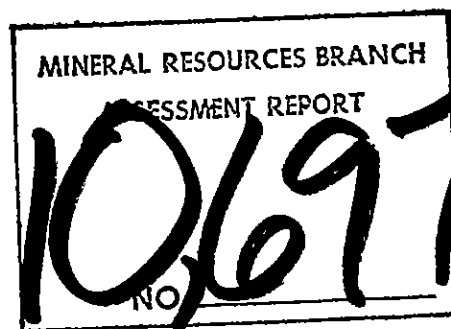
-NTS 82 K/16W

BY C.J. Hodgson and Peter E. Walcott  
(Independent Contractor)

FOR AMAX OF CANADA LIMITED

WORK PERIOD August 8-28, 1982

AMAX VANCOUVER OFFICE



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SUMMARY

This report describes results of an induced polarization survey conducted on the Steamboat Mountain property between August 8 and 28, 1982. The survey was conducted by P.E. Walcott and Associates Ltd., independent contractor, using personnel supplied by both Walcott and AMAX.

The report consists of two parts; Part I consists of introductory and background data on the property, whereas Part II consists of Walcott's report on the induced polarization survey which he personally supervised.

The Steamboat Mountain property consists of Clum 1-5 claims (94 units) owned by AMAX of Canada Limited and located five kilometres southwest of Brisco in southeastern British Columbia. Access is by secondary road from Brisco.

Interest on the property centers on the Beaverfoot Formation of massive-weathering grey dolomite which underlies the north-northwesterly trending axis of Steamboat Mountain. Minor galena and sphalerite showings occur in restricted zones of sparry dolomite breccia throughout the exposed Beaverfoot Formation.

An induced polarization survey was conducted on a 5 km baseline along the axis of Steamboat Mountain and along three cross lines in an attempt to locate "blind" Mississippi-Valley type Pb-Zn ore bodies associated with low resistivity breccia zones within the Beaverfoot. Such low resistivity zones were found, but their interpretation remains somewhat ambiguous, in that they may equally well be caused by underlying

low resistivity shales of the McKay Formation.

A field cost of \$32,436.85 is to be applied as three years' assessment on each of Clum 2, 3 and 4 claims, and four years' assessment on Clum 5 claim.

## INTRODUCTION

This report presents results of an induced polarization survey conducted on Clum 2-5 claims inclusive. The work was conducted between August 8 and 28, 1982, by P.E. Walcott and R. Summerfield of Peter E. Walcott and Associates Ltd., assisted by AMAX employees J.R. Candy, A. Gamp, E. Bianchini and T. Robinson.

### Location, Access and Topography (Figure 1)

The claims are located on and north of the summit of Steamboat Mountain, some five kilometres southwest of Brisco in southeastern British Columbia. Access is easily afforded to lower elevations on the property by means of numerous secondary roads from highway 95 at Brisco.

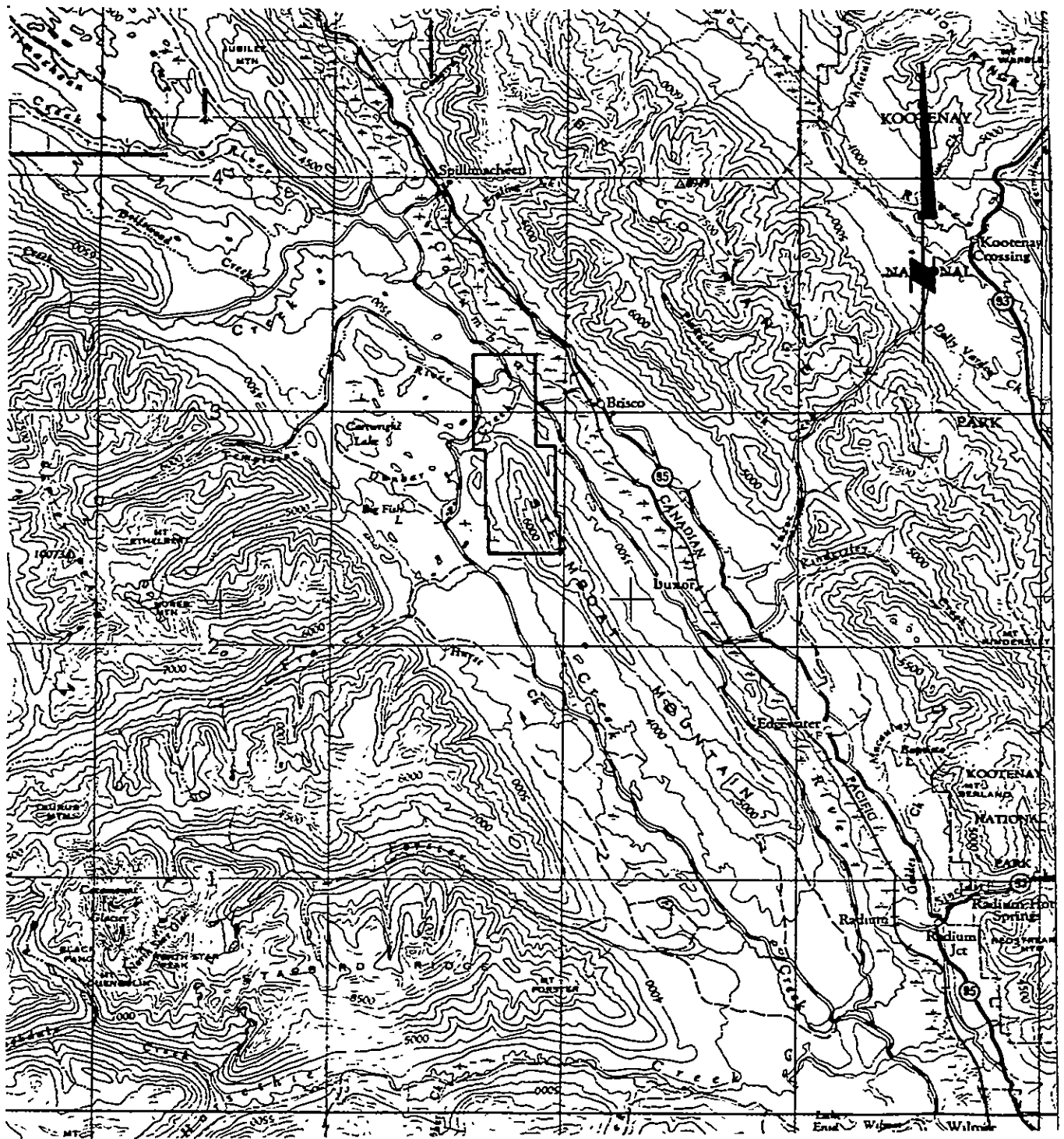
Elevation on the claims ranges from 760 metres (2,500 feet) at the north end to 1,900 metres (6,150 feet) at the summit of Steamboat Mountain.

### Claims Data (Figure 2)

The property consists of Clum 1-5 claims totalling 94 units, wholly owned by AMAX of Canada Limited. Pertinent claims data is as follows:

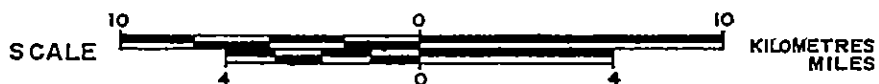
<u>Claim</u>	<u>Unit</u>	<u>Record No.</u>	<u>Loc. Date</u>	<u>Record Date</u>	<u>Expiry Date</u>
Clum 1	20	873	Dec. 8/80	Dec. 16/80	Dec. 16/82
Clum 2	20	874	Dec. 8/80	Dec. 16/80	Dec. 16/85*
Clum 3	18	933	Aug. 13-14/81	Sept. 11/81	Sept. 11/85*
Clum 4	18	934	Aug. 13-14/81	Sept. 11/81	Sept. 11/85*
Clum 5	18	971	Oct. 2/81	Oct. 20/81	Oct. 20/86*

\* After approval and application of the assessment work described in this report.



AMAX OF CANADA LIMITED  
 STEAMBOAT MOUNTAIN PROPERTY  
 CLUM CLAIMS  
 GOLDEN MINING DIVISION - BRITISH COLUMBIA

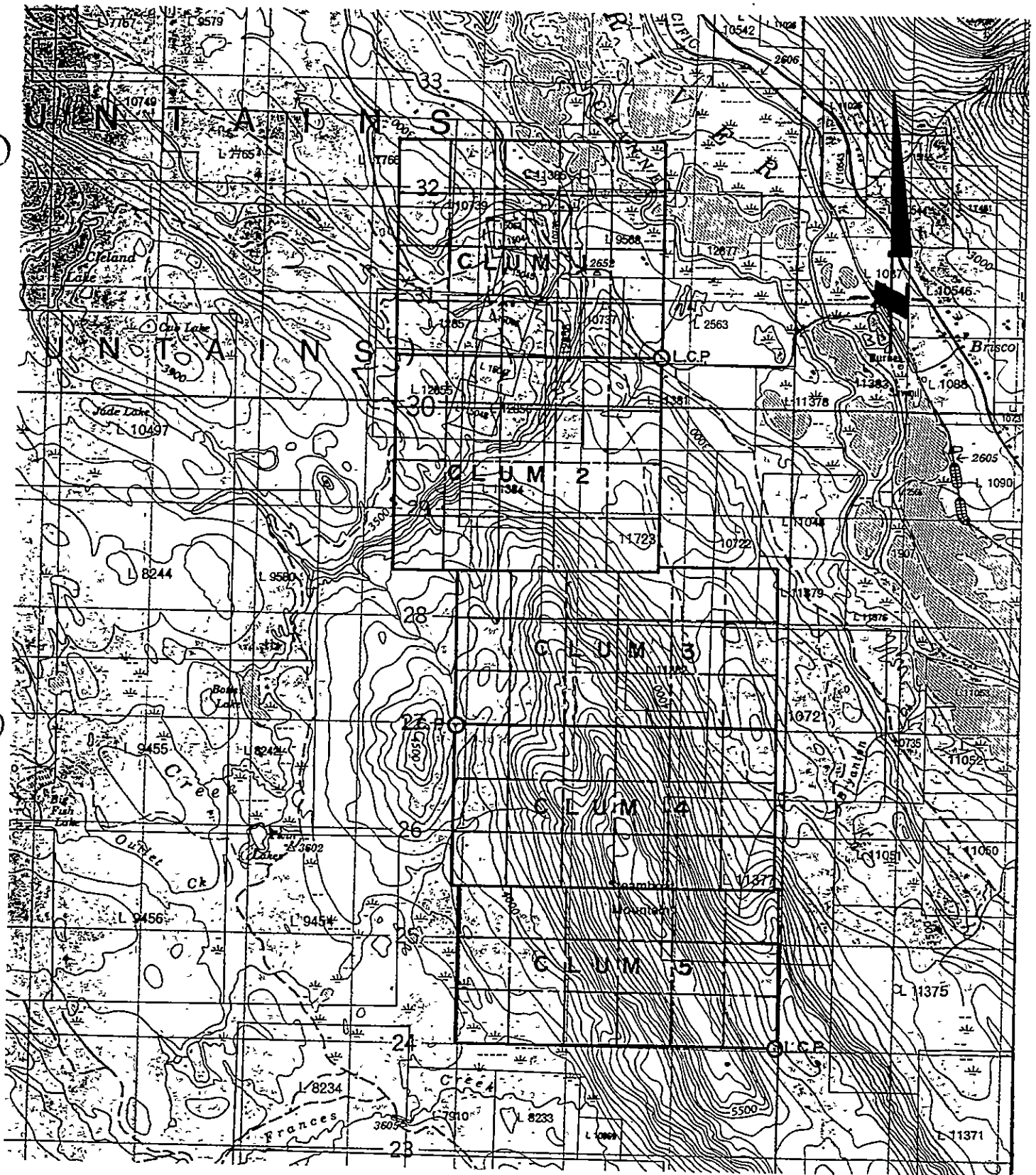
LOCATION MAP



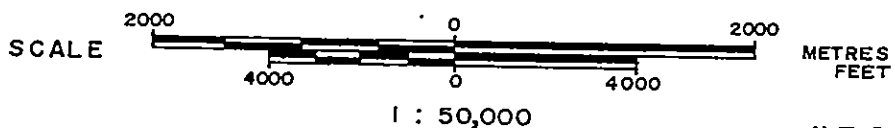
1 : 250,000

N.T.S. Ref. 82 K 16

FIG. 1



AMAX OF CANADA LIMITED  
 STEAMBOAT MOUNTAIN PROPERTY  
 CLUM CLAIMS  
 GOLDEN MINING DIVISION - BRITISH COLUMBIA  
**CLAIM MAP**



### Previous Work

The property was subjected to preliminary geological mapping, prospecting and soil sampling by AMAX in 1981. An assessment report presenting the results of this geological mapping was submitted in December, 1981.

Earlier work on the property consisted of pitting and development of short exploration adits on a weakly pyritic Precambrian (?) quartzite unit within Mt. Nelson Formation dolomites on Clum 3 claim, which work probably dates from the early years of this century. More recently, Cominco drilled a chalcopryrite prospect at the southwest corner of Clum 4 claim (the former Jersey prospect) in the mid-1960's.

### PROPERTY GEOLOGY

The central and eastern parts of the property are underlain by Paleozoic carbonate and clastic strata of Upper Cambrian to Lower Silurian age. These are separated from Early Proterozoic (Helikian) dolomites of the Mt. Nelson Formation, and Late Proterozoic (Hadrynian) coarse clastics of the Toby Formation and Horsethief Creek Group, all occurring along the western margin of the property, by the northerly trending Mount Forster-Steamboast fault, a major fault of regional extent.

Paleozoic strata form a prominent syncline, termed the Purcell Boundary syncline by Reesor, whose axial trace is along the north-northwest trending Steamboat Mountain ridge-crest. North of Dunbar Creek the syncline is partially truncated by the Mount Forster-Steamboast fault so that only part of eastern fold limb is preserved.



Jubilee Formation of Upper Cambrian age is present on the east side of the claim block and in the southwest corner of Clum 5. It consists of well-bedded grey dolomite thinly bedded in the lower half, thickly bedded in the upper half. Total thickness is estimated at 700-1,000 metres.

McKay Formation underlies much of the central part of the claims. Interbedded limestone and limy argillite produce a distinctive weathering pattern of alternating resistant and recessive bands. Total thickness is about 600 metres.

Mt. Wilson Quartzite outcrops in the central and northern part of the claims as a thin, 1-20 metre marker horizon, but pinches out towards the south end of Clum 5 claim. It consists of clean vitreous orthoquartzite. It is massive weathering with little obvious internal structure.

Beaverfoot dolomite occupies the core of the syncline on Steamboat Mountain and extends to the north end of the claims. It is a massive, largely structureless, cliff-forming grey dolomite in which local bands of chert nodules provide the best measure of bedding attitude. A stratigraphic thickness of up to 400 metres of the formation is preserved.

Mineralization within the Beaverfoot Formation consists of fine crystalline galena and sphalerite occurring in amounts up to several combined percent as disseminations in restricted zones of distinctive white sparry dolomite breccia. Those zones occur preferentially in the lower 200 metres of the formation, and appear to be of early diagenetic origin.

C.J. Hodgson  
September 30, 1982

*C.J. Hodgson*

APPENDIX I  
STATEMENT OF COSTS

STATEMENT OF COSTS

Summary and Period of Work

Geophysical Survey - August 8 - 28, 1982

Personnel Employed

P.E. Walcott - 605 Rutland Court Coquitlam, B.C. V3J 3T8 Operator (21 days)	
R. Summerfield - 605 Rutland Court Coquitlam, B.C. V3J 3T8 Assistant (21 days)	
J.R. Candy - 2426 Lawson Avenue West Vancouver, B.C. Assistant (21 days @ \$93.48)	1,963.08
T. Robinson - General Delivery Old Ferry Road Monte Creek, B.C. VOE 2M0 Assistant (19 days @ \$60.09)	1,141.71
E. Bianchini - 73 Sellers Avenue Toronto, Ont. M6E 3T7 Assistant (21 days @ \$75.68)	1,589.28
A. Gamp - 6430 138th Street Surrey, B.C. V3W 5G6 Assistant (21 days @ \$75.68)	1,589.28

Basemap Preparation

Orthophoto and fair drawn topographic maps at 1:5,000 scale and 10 metre contour interval. Produced on contract by Pacific Surveys.	....	3,159.32
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Geophysical Contractors

Invoice No. 1601 of Peter E. Walcott and Associates Ltd.	....	16,881.59
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Transportation

Okanagan Helicopters - August 16, 17, 18, 25, 26, 27 (set outs on Steamboat Mtn.)	....	2,172.59
Four-wheel drive vehicle 21 days @ \$40.00	....	840.00

Accommodation

124 man-days @ \$25.00/day	....	3,100.00
		<u>\$32,436.85</u>

Application

Three years each on Clum 2, 3, 4  
Four years on Clum 5

*O. J. Hodgson*

APPENDIX II

STATEMENTS OF QUALIFICATIONS

STATEMENT OF QUALIFICATION

NAME J. R. Candy

ADDRESS 2426 Lawson Avenue  
West Vancouver, B.C.

EDUCATION 1st and 2nd year Science leading for a biology  
major, completed in May 1977  
Capilano College  
3rd and 4th year Science, BSc Zoology majors  
completed in 1980  
University of British Columbia

EXPERIENCE 1976 D.C. Syndicate - geologist assistant  
1977 J.C. Stephens Exploration - prospector/  
expeditor  
1977 AMAX Potash Limited - core splitter  
1978 AMAX Potash Limited - geological assistant  
1979 AMAX Potash Limited - geological assistant  
1980 AMAX of Canada Limited - geological assistant  
1981 AMAX of Canada Limited - geologist  
1982 AMAX of Canada Limited - project geologist

STATEMENT OF QUALIFICATION

NAME T. E. Robinson

ADDRESS General Delivery  
Old Ferry Road  
Monte Creek, B.C.  
VOE 2M0

EDUCATION Graduate of Kamloops Senior Secondary School: 1979  
Enrolled at Cariboo College, Kamloops: 1980-82

EXPERIENCE Geological assistant, Sulpetro Minerals Limited  
(Kamloops branch), 1981 (summer)  
Geological assistant, AMAX of Canada Limited,  
1982 (summer)

STATEMENT OF QUALIFICATION

NAME E. Bianchini

ADDRESS 73 Sellers Avenue  
Toronto, Ontario  
M6E 3T7

EDUCATION Completed 3rd year at University of Toronto,  
majoring in geology

EXPERIENCE Geophysical assistant, Utah Mines Limited,  
1980, (summer)  
Geological assistant, Canadian Occidental Petroleum  
Ltd., 1981 (summer)  
Geological assistant, AMAX of Canada Limited,  
1982 (summer)

STATEMENT OF QUALIFICATION

NAME A. Gamp

ADDRESS 6430 - 138th Street  
Surrey, B.C.  
V3W 5G6

EDUCATION Completed 3rd year at U.B.C., in honours geology/  
geophysics

EXPERIENCE Prospecting assistant, Union Carbide Exploration,  
1980 (summer)  
Geophysical and geological assistant, Bema  
Industries, 1981 (summer)  
Geological assistant, AMAX of Canada Limited,  
1982 (summer)



PETER E. WALCOTT & ASSOC. LTD.

*PART II*

A GEOPHYSICAL REPORT

ON

AN INDUCED POLARIZATION SURVEY

Steamboat Mtn, British Columbia

FOR

AMAX MINERALS EXPLORATION

Vancouver, B.C.

BY

PETER E. WALCOTT & ASSOCIATES LIMITED

Vancouver, B.C.

SEPTEMBER 1982

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PSEUDO-SECTIONS OF APPARENT CHARGEABILITY	<u>MAP POCKET</u> W-319-1 to 4
PSEUDO-SECTIONS OF APPARENT RESISTIVITY	W-319-5 to 8

INTRODUCTION.

Between August 8th and 28th, 1982, Peter E. Walcott & Associates Limited carried out a limited induced polarization survey over part of a geochemical survey grid covering the northern section of Steamboat Mountain, Radium Hot Springs area, British Columbia for Amax Minerals Exploration.

The survey was carried out over the base line traversing the backbone of the mountain, and three cross lines spaced 1000 metres apart. The latter were not necessarily the most favourable to survey but were considerably more amenable to traverse than their fellow lines.

Measurements of apparent chargeability - the I.P. response parameter - and resistivity were made along these lines using the pole-dipole method of surveying. Readings were made with 50 metre and 100 metre dipoles. With the former first to fourth separation measurements were made, while with the latter only the third and fourth were sought.

The data are presented in pseudo section form on individual line topographic profiles accompanying this report.

PURPOSE.

The purpose of the survey was to determine the nature of the I.P. response from the mineralization - namely galena and sphalerite with no iron sulphides - observed scattered throughout the dolomitic Beaverfoot formation and to use this response, if any, to outline sizeable occurrences for investigation with borehole techniques.

PREVIOUS WORK.

The reader is referred to reports held by Amax Minerals  
Exploration.

GEOLOGY.

The reader is again referred to the forementioned reports held by Amax Minerals Exploration.

SURVEY SPECIFICATIONS.

The induced polarization (I.P.) survey was carried out using a pulse type system, the principal components of which are manufactured by Hunttec Limited and Phoenix Geophysics Limited of Metropolitan Toronto, Ontario.

The system consists basically of three units, a receiver (Hunttec), a transmitter and a motor generator (Phoenix). The transmitter, which provides a maximum of 3.0 kw d.c. to the ground, obtains its power from a 3.0 kw 400 c.p.s. three phase alternator driven by a gasoline engine. The cycling rate of the transmitter is 2 seconds "current-on" and 2 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<sub>1</sub> and C<sub>2</sub>, the primary voltage (V) appearing between the two potential electrodes, P<sub>1</sub> and P<sub>2</sub>, during the "current-on" part of the cycle, and the apparent chargeability (M<sub>a</sub>) presented as a direct readout using a 200 millisecond delay and a 1000 millisecond sample window by the receiver, a digital receiver controlled by a microprocessor.

The transmitter of this system met its untimely demise when the wire was hit by an unfortunate lightning strike midway through the survey. It was replaced by a 7.5 kw transmitter manufactured by Hunttec Limited and similarly driven by a more powerful alternator.

The apparent resistivity (Pa) 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 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 out using the "pole-dipole" method of surveying. In this method the current electrode C<sub>1</sub>, and the two potential electrodes, P<sub>1</sub> and P<sub>2</sub>, are moved in unison along the survey lines. The spacing "na" (n an integer) between C<sub>1</sub> and P<sub>1</sub> is kept constant for each traverse at a distance roughly equal to the depth to be explored by that traverse, while that of P<sub>1</sub> to P<sub>2</sub> (the dipole) is kept constant at "a". The second current electrode C<sub>2</sub> is kept constant at "infinity".

SURVEY SPECIFICATIONS cont'd

Thus usually on a "pole-dipole" traverse with an electrode spacing of 100 metres a body lying at a depth of 50 metres will produce a strong response, whereas the same body lying at a depth of 100 metres will only just be detected. By running subsequent traverses at different electrode separations, more precise estimates can be made of depth, width, thickness and percentage of sulphides of causative bodies located by the I.P. method.

The survey was originally planned to be carried out using the dipole-dipole method. However on initial test work carried out with a 5 and 10 metre dipole over known scattered mineralization currents of less than 1/100 of an amp were obtained on all occasions. This along with the resistivities obtained did not bode too well for obtaining measurable signals on the n = 3 and 4 100 metre dipole readings. Added to these was the task of packing the 80 lb motor-generator up the 45° slopes, and these factors suggested that the pole-dipole array with its fixed transmitter set-up and good "infinity" contact in the swamps below was the way to attack the grid.

Thus the survey was carried out using a 50 metre dipole with first to fourth separation measurements obtained on 50 metre intervals, and using a 100 metre dipole with third and fourth separation measurements obtained along the lines with the exception of Line 46 S where only the 50 metre dipole was used.



DISCUSSION OF RESULTS.

Before discussing the results obtained the writer would like to insert a word of caution about the results and the method of presentation.

Basically the I.P. technique is a volume sampling technique and the results of this volume sampling are represented by a plot point. This is judged to be located perpendicular to the surface at the midpoint of the current and nearest potential locations.

On the average I.P. surveys carried out over a half plane, although side effects with diagnostic patterns can be obtained, the causative source of the anomaly obtained is generally beneath or somewhere near beneath the I.P. traverse. On surveying in whole space the causative source of the anomaly obtained on one traverse will be located at a certain distance from the traverse line in any of four quadrants and generally needs additional traverses to determine its location. Also the geometric factor used in the calculation of the apparent resistivities will be doubled.

Thus the writer has plotted the results on topographic profiles so that the reader can easily see where the measurements deviate from those of the half plane. This really occurs only over the crest of the hill on the three cross lines. Here also one can see that by moving 50 metres with current and potential electrodes straddling the spine one is effectively sampling the same volume over again hence the near superimposition of the numbers. It should also be mentioned here that the writer used the half plane geometric factor in the calculation of apparent resistivity throughout although one could do a visual quantitative estimate of the volume sampled for each reading and adjust the resistivities accordingly.

The results from the base line could have been presented as a straight pseudo-section plot but in keeping with the cross line presentation it was decided to use the same.

Also the plotting point was determined by the plane of  $C_1 - P_1$ , whereas others might favour the intersection of the  $45^\circ$  lines from the respective pseudo-dipole and dipole respectively.

Again it should be stressed that this is only a presentation of the results of a volume sampling technique and not a cross section although the urge to draw in the syncline based on the quartzite locations and attitudes is strong.

DISCUSSION OF RESULTS cont'd

Before commencing the I.P. traverse the writer conducted some measurements with 5 and 10 metre dipoles over supposedly scattered mineralization in the Beaverfoot on Lines 29 and 30 S around 9 W. Here chargeabilities of 4 to 8 milliseconds and resistivities of the order of 3000 to 6000 ohm-metres were obtained.

From a study of the pseudo-sections these are in keeping with those obtained over the main body of Beaverfoot and in direct contrast to those obtained on Line 26 S where the mapped Beaverfoot between 6 + 50 and 10 + 00 W yielded results more akin to those of the McKay and other rock formations in the area - namely relatively high chargeabilities and low resistivities. The anomaly itself could have an off-line causative source with its characteristics of double peaking and strongest values on higher separations but the higher chargeabilities on the western extremity still do not conform.

The results will now best be discussed on a line by line basis.

A. The Base Line.

From the results of this line which roughly traverses the long axis of the syncline it can clearly be discernible that the McKay formation (1) underlying the quartzite at 4 + 50 S and extending northwards and (2) extending southwards from circa 52 + 00 S is characterized by moderate chargeability and low to moderate resistivity backgrounds whereas the Beaverfoot dolomite has a very low uniform chargeability and very high resistivity background as clearly exemplified by the readings obtained from 10 + 00 to 14 + 00 S, and from 30 + 00 to 49 + 00 S where the traverse line bisects the lateral surface exposure of the dolomite.

The lower resistivity values obtained in the northern extremity of the traverse reflect the wet overburden cover.

Six anomalous zones are apparent to the writer from the results and are illustrated on the pseudo-section plot.

Zone A lies on the contact between the Beaverfoot and McKay and appears to be associated with the quartzite there.

Zone B is located within the Beaverfoot between 16 + 50 and 18 + 50 S. It again appears to be associated with the quartzite at the base of the Beaverfoot as here the contact is only some 30 to 50 metres to the west. A resistivity low is also observed associated with this high.

DISCUSSION OF RESULTS cont'd

Zone C is a smaller but similar zone to B.

Zone D is a large complex zone extending from 28 + 00 S to 36 + 00 S. The northerly portion down to 30 + 00 S is probably due to a causative source associated with the quartzite and/or underlying McKay. This is borne out by the resistivity low. However the portion between 30 + 00 and 36 + 00 S is well away from the contact, exhibits high resistivity and would appear to be associated with a causative source (s) within the dolomite.

Zone E is a smaller shallow zone within the dolomite between 36 + 50 and 38 + 50 S. Again high resistivities prevail.

Zone F would appear to be a shallow zone of limited depth extent within the McKay near the contact - the exact location of the contact is not known. It exhibits low resistivity.

In addition higher chargeability and lower resistivity readings are obtained on the larger separations along most of the profile with the notable exceptions as previously mentioned. In every instance as one can see by comparison with the geological map these can be attributed to side effects due to the proximity of the easterly or westerly quartzite horizon and underlying McKay formation. Whether or not the higher chargeability readings are due to causative sources within the Beaverfoot associated with the quartzite as well as to higher background values for the underlying McKay or due solely to higher background values in the underlying McKay can only be ascertained by drilling as a similar situation will be encountered on the cross lines.

Line 46 S.

This traverse will be discussed firstly as it crosses one of the two previously mentioned low chargeability high resistivity zones located on the baseline and the inferences made here will be used in the discussion of the following two lines.

The results corroborate those obtained on the base line. Both the resistivity and chargeability patterns show clearly defined vertical type contacts at the quartzite limiters of the Beaverfoot. The highest chargeability readings occur away from the contact on the west and on the contact on the east but no chargeability and/or low resistivity values are obtained within the dolomites.

Whether or not the chargeabilities would drop off with progression to the east could not be determined due to the presence of a cliff face. However the traverse was angled to north then eastwards

DISCUSSION OF RESULTS cont'd

down a draw to obtain some values over the McKay as shown on the profile plot.

Line 36 S.

The writer would have liked to run Line 34 or Line 35 S but as this was not possible due to topographic considerations had to settle for Line 36.

As on Line 46 S higher chargeability and lower resistivity readings are obtained on either side of the dolomitic extent but in this case they extend into the dolomite. In other words these readings appear partially due to causative sources in the Beaverfoot associated with the quartzite as well as to anomalous conditions and/or higher background values within the top of the McKay as it is unlikely due to the constant attitudes of the quartzites that the syncline shallows out sufficiently to allow all of the response to emanate from the latter.

This shallowing is not suggested by the results of Line 46 S.

In addition a shallow source causative anomaly is observed in the crest of the hill as expected from the base line results.

Line 26 S.

Here again the same situation exists on the extremities of the Beaverfoot as on Line 36 S.

Other zones of high chargeability readings are located in the complex geology to the west as shown. As previously mentioned the writer does not think that the Beaverfoot formation underlies 7 + 00 to 10 + 00 W as mapped or if so it would have to be extremely thin and that does not appear to be the case from the noted dips.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.

Between August 8th and 28th, Peter E. Walcott & Associates Limited carried out a small induced polarization survey at Steamboat Mountain, Radium Hot Springs area for Amax Minerals Exploration.

The results showed a number of zones exhibiting higher chargeability values to exist beneath the area surveyed.

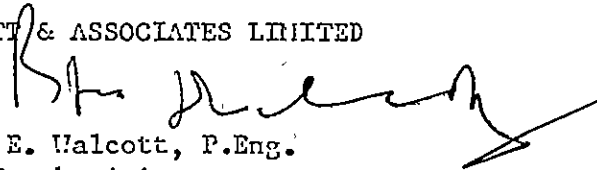
From the results three salient points can be noted

- 1.) An anomalous zone of sizeable one dimension exists within the Beaverfoot.
- 2.) Polarizable material appears to be associated with the quartzite marking the Beaverfoot - McKay contact. Whether this material abides in the both or just in the one remains the subject of conjecture but the results from Line 46 S favour the former.
- 3.) A serious discrepancy between the geology and geophysics is noted on Line 26 S as discussed. This breach can only be healed by the discovery of polarizable material therein.

The writer suggests that the above ambiguity and the nature of the causative source be resolved by borehole investigation. However further investigation should be subject to geologic scrutiny. Although overall targets might be small positive results could be applicable to similar environments in the area.

Respectfully submitted,

PETER E. WALCOTT & ASSOCIATES LIMITED

  
Peter E. Walcott, P.Eng.  
Geophysicist

Vancouver,  
British Columbia

September 1982

A P P E N D I X



COST OF SURVEY.

Peter E. Walcott & Associates Limited provided two men and equipment on a daily basis. Amax Minerals Exploration provided the camp and the necessary helpers. Mobilization and reporting costs were extra so that the total cost of services provided was \$16,881.59.

PERSONNEL EMPLOYED ON SURVEY.

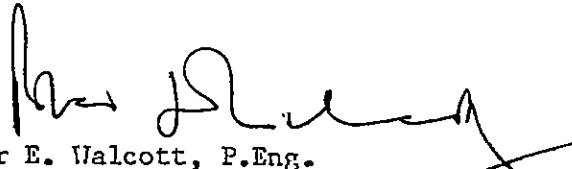
Name	Occupation	Address	Dates
Peter E. Walcott	Geophysicist	Peter E. Walcott & Assoc. 605 Rutland Court, Coquitlam, B.C. V3J 3T8	Aug. 8 - 23th, 1982 Sept. 21 - 25th, 1982
Rod Summerfield	Geophysical Operator	"	Aug. 3th - 20th, & 31st, 1982
J. Walcott	Typing	"	Sept. 29th, 1982



CERTIFICATION.

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

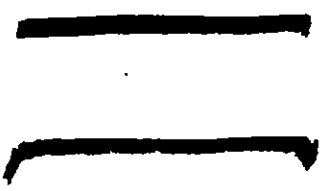
1. I am a Graduate of the University of Toronto in 1962 with a B.A.Sc. in Engineering Physics, Geophysics Option.
2. I have been practising my profession for the last twenty years.
3. I am a member of the Association of Professional Engineers of British Columbia, and Ontario.
4. I hold no interest, direct or indirect, in the Steamboat Mountain property nor do I expect to receive any.

  
Peter E. Walcott, P.Eng.

Vancouver,  
British Columbia

September 1982

Legend - I.P. Pseudo Sections



Anomalous Zone.

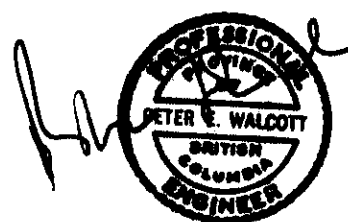
Zone undefined at ends.



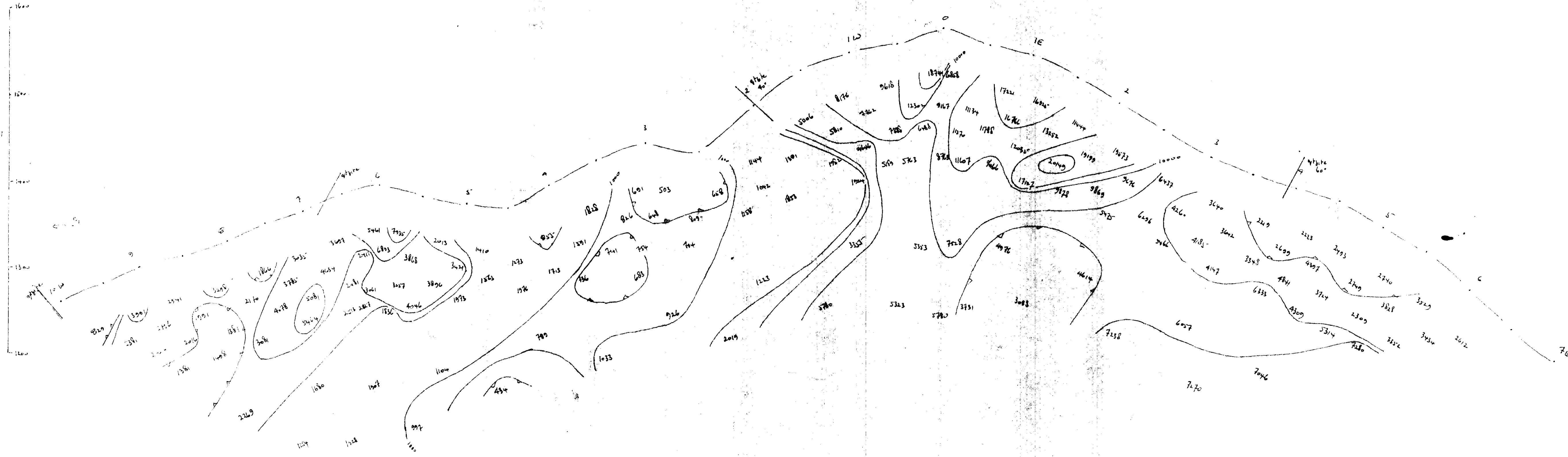
MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**10697**

AMAX OF CANADA LIMITED  
STEAMBOAT MOUNTAIN PROPERTY  
CLUM CLAIMS  
GOLDEN MINING DIVISION - BRITISH COLUMBIA  
TOPOGRAPHIC BASE MAP  
AND I.P. SURVEY LINES

SCALE 1:5,000  
To accompany "1982 ASSESSMENT REPORT" by C.J. Hodgson and R.E. Walcott



MINERAL RESOURCES EXPLO.  
ASSESSMENT REPORT  
**10697**



# Amaz Minerals Exploration

Steamboat Mtn., Radium, British Columbia

## Induced Polarization Survey

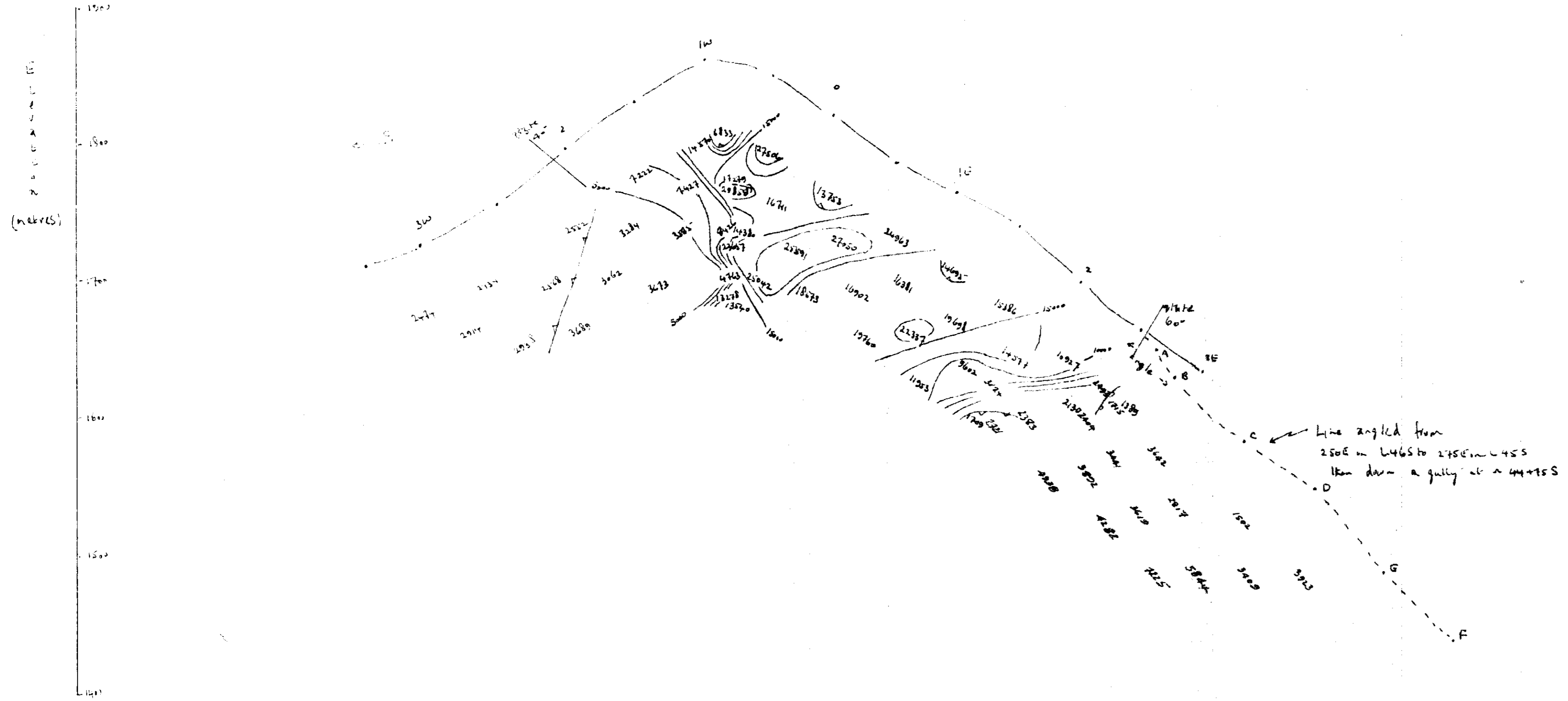
Apparent Resistivity  
**L-26S**

Pole-Dipole Array  
a = 50 m, n 1 to 4  
a = 100 m, n 3 & 4

Scale 1:2500

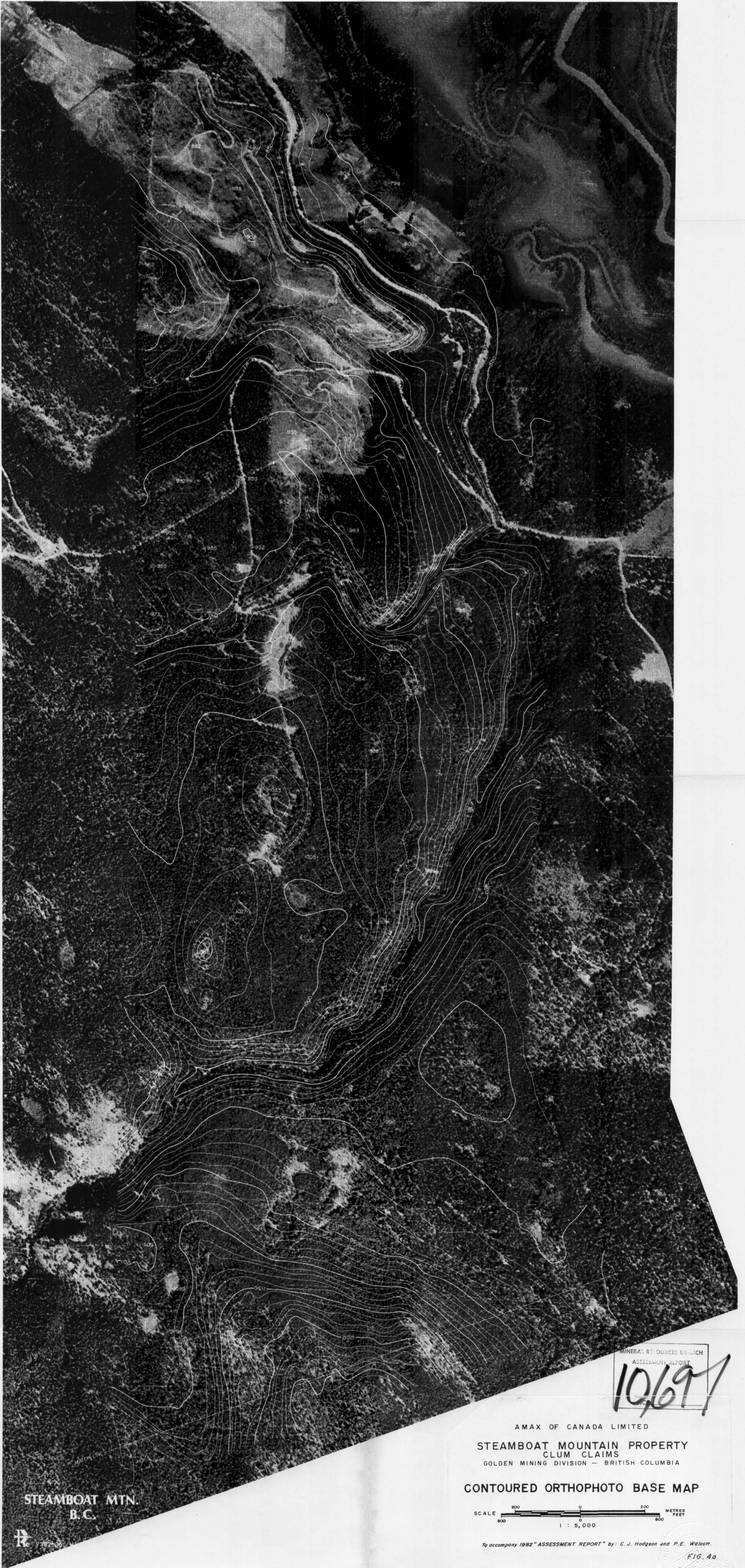
Map No. W-319-6

PETER E. WALCOTT & ASSOC. LTD.  
August 1982



MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**10,697**  
NO.

**Amax Minerals Exploration**  
Steamboat Mtn., Radom, British Columbia  
**Induced Polarization Survey**  
**Apparent Resistivity**  
**L-46S**  
Pole - Dipole Array  
α = 50 ms in 1 to 4  
Scale 1: 2500  
Map No. W-319-8  
PETER E. WALCOTT & ASSOC. LTD.  
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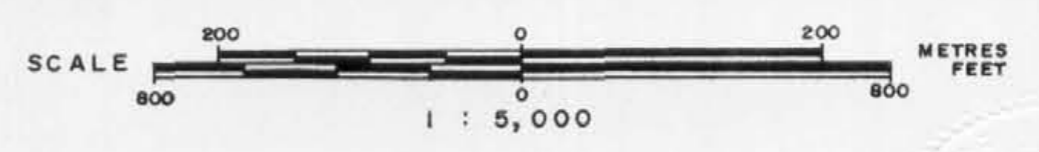


STEAMBOAT MTN.  
B.C.



MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**10,697**

AMAX OF CANADA LIMITED  
STEAMBOAT MOUNTAIN PROPERTY  
CLUM CLAIMS  
GOLDEN MINING DIVISION - BRITISH COLUMBIA  
CONTOURED ORTHOPHOTO BASE MAP



To accompany 1982 "ASSESSMENT REPORT" by: C. J. Hodgson and P. E. Walcott.

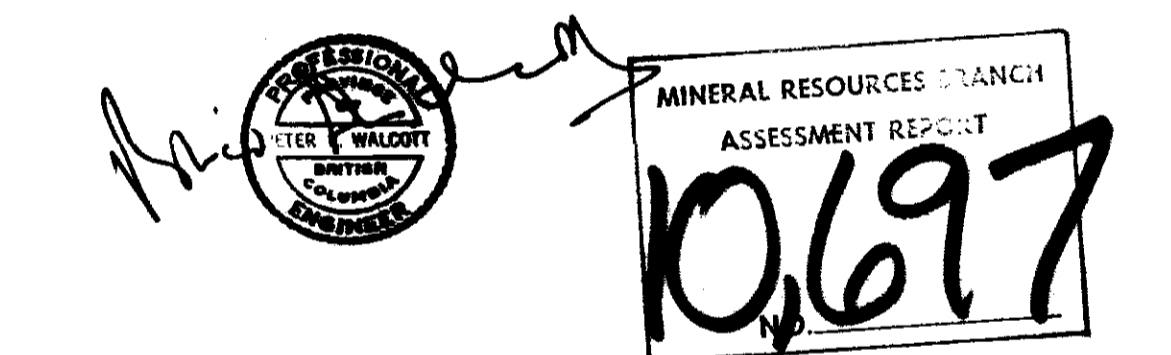
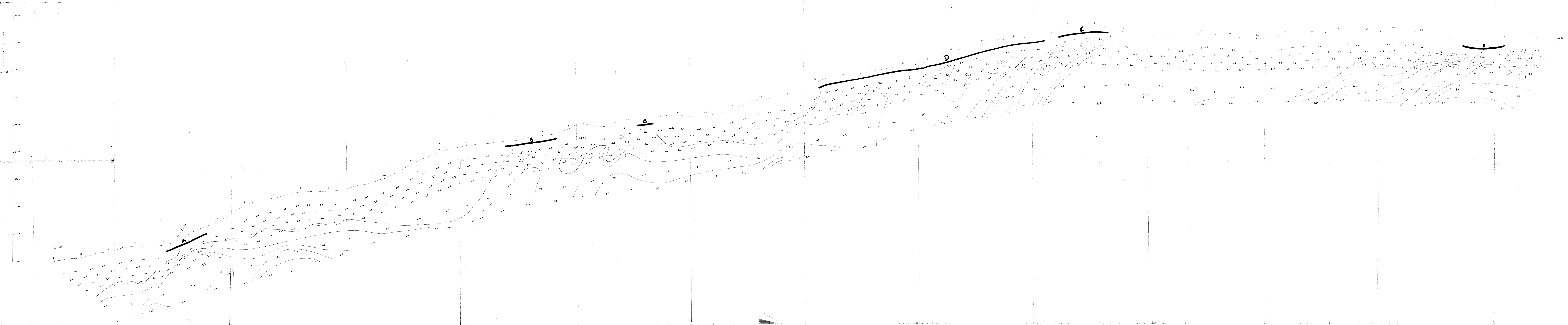
FIG. 4a

*C. J. Hodgson*



AMAX OF CANADA LIMITED  
STEAMBOAT MOUNTAIN PROPERTY  
CLUM CLAIMS  
GOLDEN MINING DIVISION - BRITISH COLUMBIA  
**CONTOURED ORTHOPHOTO BASE MAP**  
SCALE METRES  
FEET  
1 : 5,000  
To accompany 1982 "ASSESSMENT REPORT" by: C. J. Hodgson and P.E. Walcott.

10697 *CJH* FIG. #0



MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**10,697**

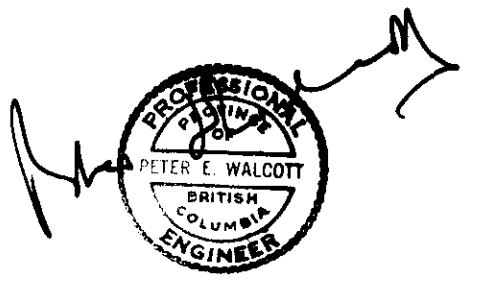
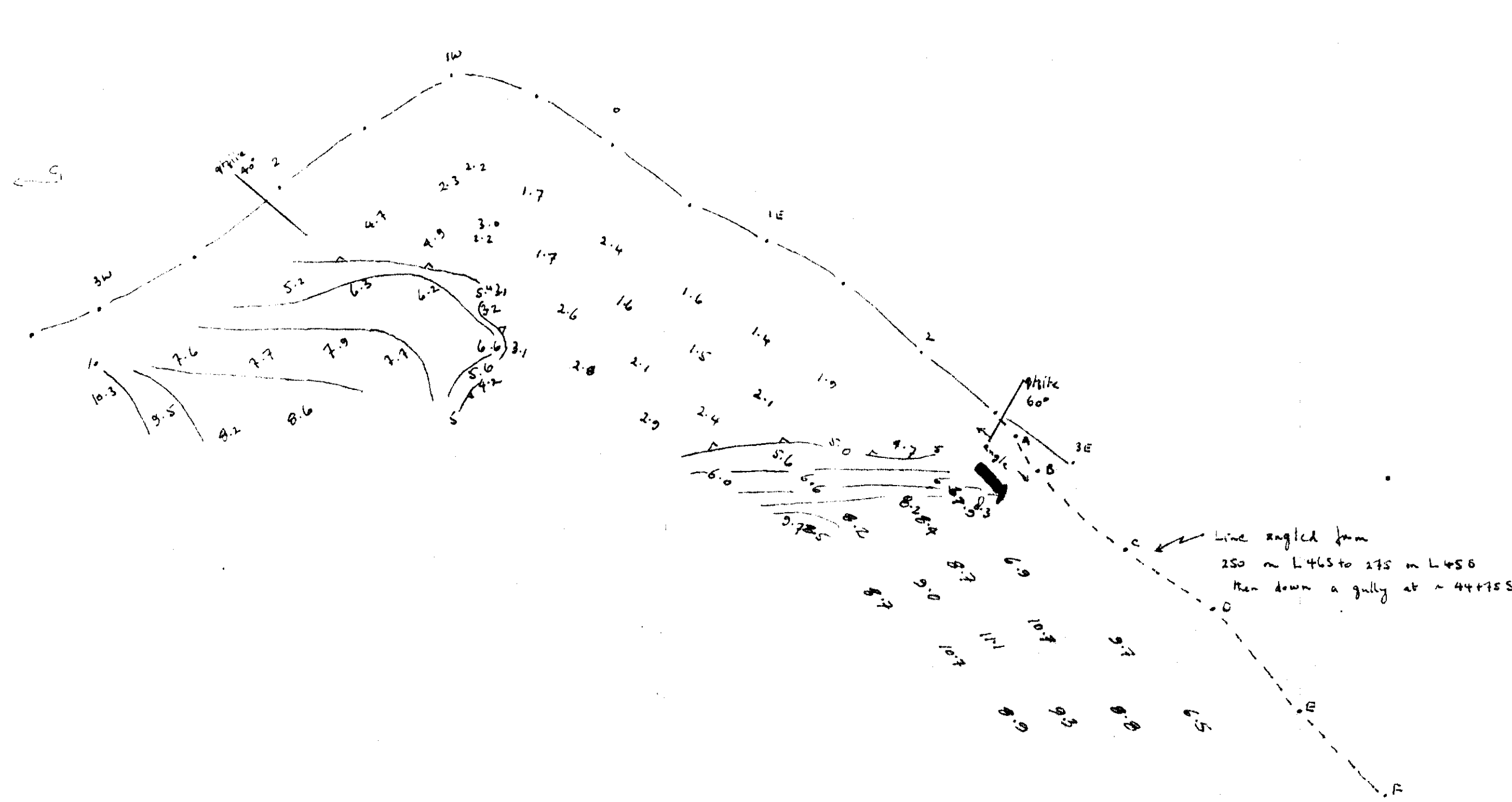
Amaz Minerals Exploration  
Shearwater Mine, Radnor, British Columbia  
Induced Polarization Survey  
Apparent Chargeability  
Base Line

Scale - Dipole Array  
2 - 50 m, 100 - 150 m  
3 - 100 m, 150 - 200 m  
Scale 1:1000

Map by: [Signature]  
Date: [Signature]  
August 1982

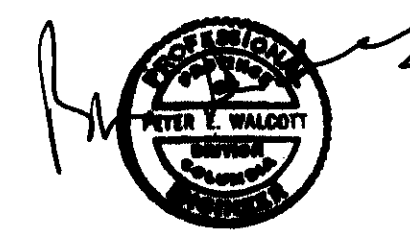
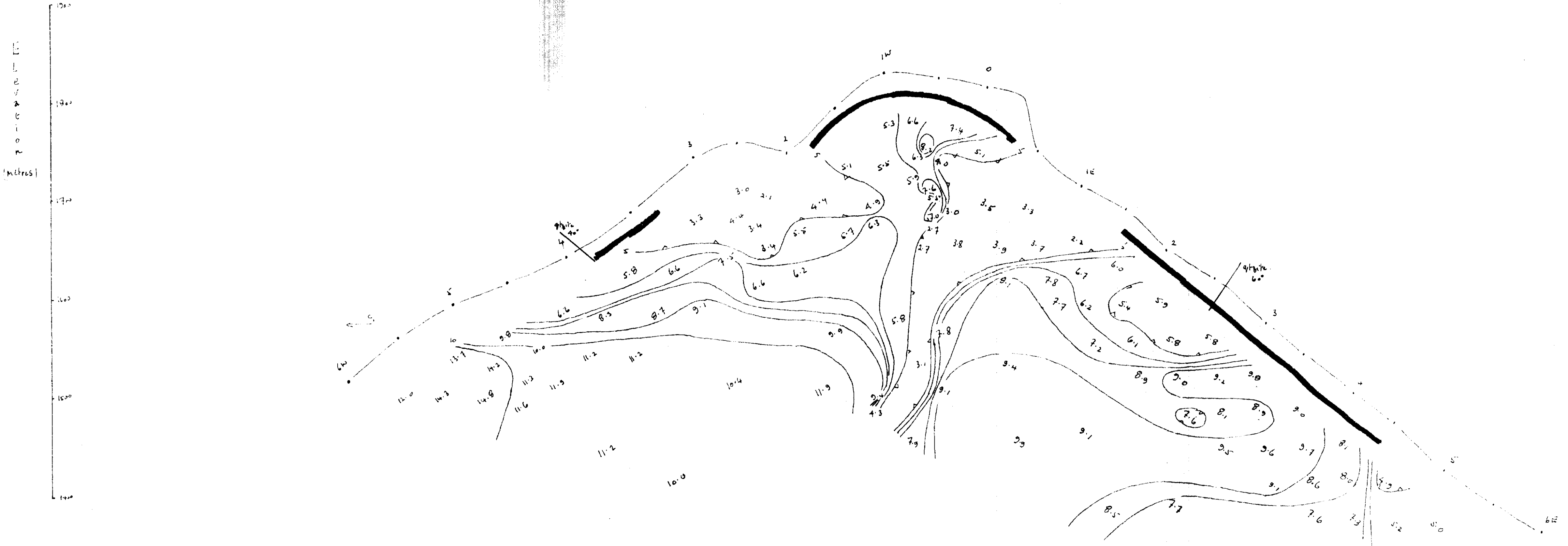


Elevation (metres)



MINERAL SERVICES BRANCH  
 REPORT  
**10,697**

**Amex Minerals Exploration**  
 Steamboat Mtn, Radium, British Columbia  
**Induced Polarization Survey**  
**Apparent Chargeability**  
**L. 465**  
 Pole - Dipole Array  
 a = 50 ms w 1 to 4  
 Scale 1:2500  
 Map No. W-319-4  
 Peter E. Walcott - Assoc. Eng.  
 August 1982



AMM  
 REPORT  
**10697**

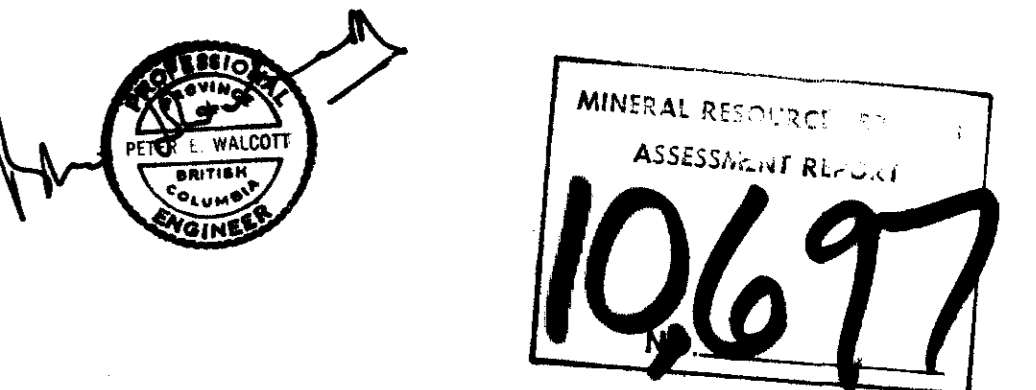
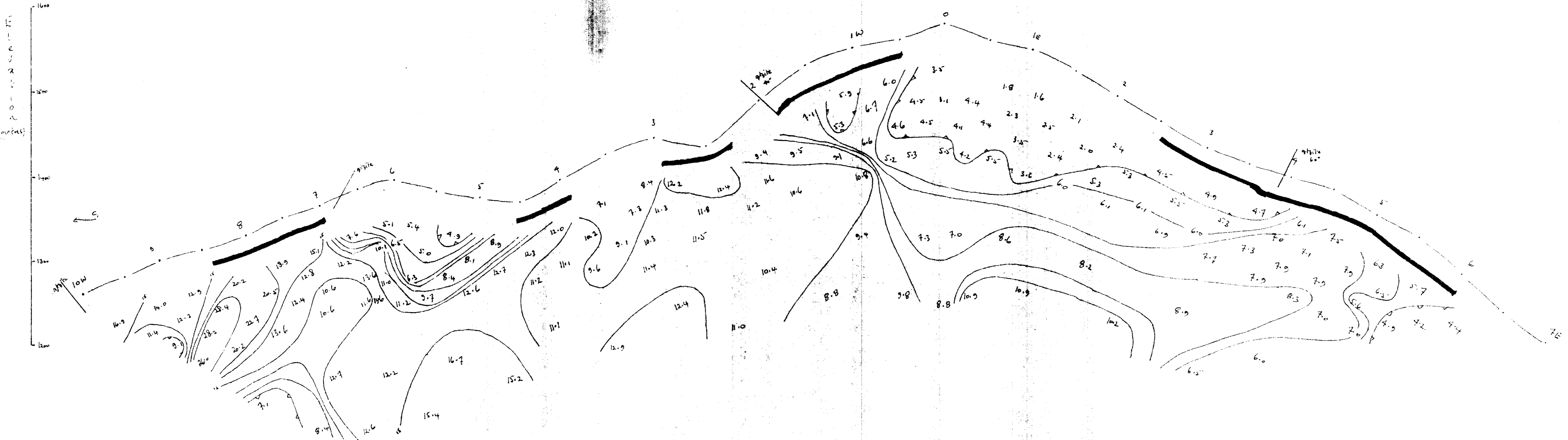
**Amaz Minerals Exploration**  
 Steamboat Mine, Radom, British Columbia

**Induced Polarization Survey**  
**Apparent Chargeability**  
**L-365**

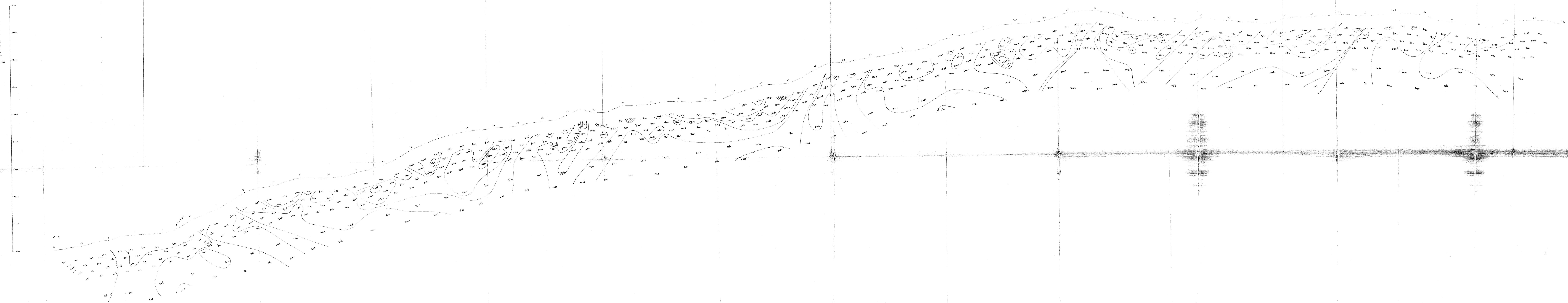
Pole-Dipole Array  
 $\alpha = 20$  m,  $n = 1$  to 4  
 $\lambda = 100$  m,  $n = 3$  to 4


Scale 1:2500

Map No. 10697-3  
 North Arrow in Section  
 August 1982



**Amaz Minerals Exploration**  
 Steamboat Min., Radium, British Columbia  
**Induced Polarization Survey**  
 Apparent chargeability  
**L-26S**  
 Pole-Dipole Array  
 2 x 50 m., n 1 to 4  
 2 x 100 m., n 3 & 4  
 Scale 1:2500  
 Map No. W-319-2  
 PETER E. WALCOTT & ASSOC. LTD.  
 August 1982




  
 MINING ASSOCIATION OF BRITISH COLUMBIA
   
 10,697
   
 Amax Minerals Exploration
   
 Steamboat near Radom, British Columbia
   
 Induced Polarization Survey
   
 Apparent Resistivity
   
 Base Line
   
 Pole - Dipole Array
   
 2 x 50 m, n 1 to 4
   
 2 x 100 m, n 3 to 4
   
 Scale 1:2500
   
 Map No. 1010-5
   
 Field & Laboratory
   
 August 1982

Vertical Scale  
Metres

-1900  
-1800  
-1700  
-1600  
-1500  
-1400



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Amax Minerals Exploration

Steamboat Mtn., Radium, British Columbia

Induced Polarization Survey  
Apparent Resistivity

L-36S

Wade - Dipole Array

d = 50 m, n = 1 to 4

d = 100 m, n = 3, 2, 4

Scale 1:2500

Map No. W 310-7

PETER J. WALSH & ASSOCIATES  
August 1982