

PETER E. WALCOTT & ASSOC. LTD.

LOG NO: 0329	RD.
ACTION:	
FILE NO:	

A GEOPHYSICAL REPORT

ON

AN INDUCED POLARIZATION SURVEY

Tahtsa Lake Area, British Columbia  
53° 32' N, 127° 14' W  
N.T.S. 93E/11E

Claims surveyed: Mark K & Ryan

Survey Dates: Aug. 21st -  
Sept. 5th, 1987

FILMED

FOR

Owner/Operator: WESTBANK RESOURCES INC.

**GEOLOGICAL BRANCH**  
Vancouver  
**ASSESSMENT REPORT**

BY

17,228

PETER E. WALCOTT & ASSOCIATES LIMITED

Vancouver, B.C.

FEBRUARY 1988

Part 2  
of 2

GEOPHYSICAL SERVICES

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ACCOMPANYING MAPS - Scale 1: 5000

MAP POCKET

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INTRODUCTION.

Between August 21st and September 5th, 1987, Peter E. Walcott & Associates Limited undertook an induced polarization survey over part of a property, located in the Tahtsa Lake area of British Columbia, for Westbank Resources Inc.

The survey was conducted over east-west chain and compass lines that were established from a north-south base line.

Measurements (first to fourth separation) of apparent chargeability and resistivity were made along the lines using the dipole-dipole method of surveying and a 25 metre dipole.

The data are presented in pseudo-section form on individual line profiles bound in this report. In addition the various chargeability anomalies obtained are located on an interpretation map, Map No. W-418-1, that accompanies this report.

PROPERTY, LOCATION & ACCESS.

The claims are located in the Omineca Mining Division of British Columbia and consist of the following claims:

<u>CLAIM NAME</u>	<u>UNITS</u>	<u>RECORD NO.</u>	<u>ANNIVERSARY</u>
MARK K	20	4968(1)	Jan. 5th
RYAN	20	4969(1)	Jan. 5th

They are situated in the Coles Creek valley, between Tahtsa and Whitesail lakes, some 130 kilometres south of the town of Smithers, British Columbia.

Access was obtained by means of vehicle along a forestry road to the north shore of Tahtsa Lake, 20 kilometres north of the property, and thence by helicopter.

PREVIOUS WORK.

The property and surrounding area was first explored for a Cu-Mo porphyry deposit in the late sixties. Exploration work consisted of geological mapping, geochemical and geophysical surveying, and diamond drilling.

After the property was acquired by Westbank in 1982, a major soil sampling programme, and an airborne VLF and magnetic survey subsequently were carried out.

The results of the above are documented in whole or in part in reports held by Westbank.

GEOLOGY.

The reader is referred to the previously mentioned reports and to a report on the geological mapping by the staff of Westbank Resources Inc.

Basically the property is underlain by Jurassic Hazelton Group volcanics and sediments on the west, and late Cretaceous Kasalka Group felsic fragmental and volcaniclastic rocks to the east, the latter being preserved in a graben structure on the Ryan claim.

These units have been intruded by late Cretaceous felsic to intermediate stocks and dykes.

Mineralization and zoned hydrothermal alteration are associated with the above intrusive events.

PURPOSE.

The purpose of the survey was to see if the I.P. method could assist in detecting precious metal vein deposits in the peripheral alteration zones around the Cretaceous intrusions..

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 EDA Instruments Ltd. of Metropolitan Toronto, Ontario.

The system consists basically of three units, a receiver (EDA), a transmitter and a motor generator (Hunttec). The transmitter, which provided a maximum of 2.5 kw d.c. to the ground, obtains its power from a 2.5 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 the current electrodes  $C_1$  and  $C_2$ , the primary voltage (V) appearing between the two potential electrodes,  $P_1$  and  $P_2$ , during the "current-on" part of the cycle, and the apparent chargeability ( $M_a$ ) presented as a direct readout in millivolts per volt using a 160 millisecond delay and a 1580 millisecond sample window by the receiver, a digital receiver controlled by a micro-processor.

The apparent resistivity (P.) 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 "dipole-dipole" electrode array. This electrode configuration and the methods of presenting the results are illustrated in the appendix. Depth penetration with this array is increased or decreased by increasing or decreasing "a" and/or "n".

In practise, the equipment is set up at a particular station of the line to be surveyed; three transmitting dipoles are laid out to the rear, measurements are made for all possible combinations of transmitting and receiving dipoles, up to the fourth separation, i.e.  $n=4$ : the equipment is then moved 3 "a"



feet along the line to the next set-up.

A 25 metre dipole was employed on this survey, and first to fourth separation measurements made every 25 metres along the survey lines.

DISCUSSION OF RESULTS.

As can be seen from the geologic map most of the I.P. coverage was over the main area of interest i.e. the downfaulted block underlain by Kasalka Group rocks.

The area surveyed showed the property to exhibit a low chargeability background - 1 to 4 milliseconds - above which several zones of various widths and chargeability strengths are clearly discernible.

The strongest of these, a complex zone of high chargeability, extends from Line 46N to Line 53N on the fault contact of the Hazelton and the Kasalka, is undefined to the north and south, and for the most to the west - only Lines 52 and 53N were extended over the fault zone to the west -, and appears to strengthen in intensity northwards towards the granodiorite plug. It is associated with higher resistivity values, presumably silification, although overburden cover is lesser at its location on the ridge (it should be mentioned here that insufficient coverage was obtained over the Hazelton Group rocks to properly ascertain their background properties).

Another strong chargeability anomaly was obtained on the contact of the Hazelton and the quartz-diorite dyke on Lines 52N, 53N and the Coles Creek line. This zone is also open to the north and south.

The third strong intensity wide chargeability zone occurs near the eastern end of Lines 46 and 47N. Here the chargeabilities are similar, particularly on Line 47N, to those of the main anomaly around 62E on all the lines, but with no discerning resistivity high. Drill hole #7 confirmed the causative source to be omnipresent pyrite in underlying Hazelton volcanics.

The remainder of the anomalous zones occur in underlying Kasalka rocks, with the exception of the anomaly on the eastern end of Line 53N that occurs in Telkwa volcanics, and are smaller in extent and weaker in response.

Although they appear to exhibit a northerly trend based on their line to line correlation and the general resistivity trend, it is possible that they could be related to oblique

striking parallel shear zones as suggested by some of their coincident locations with minor creek beds - Map W-418-1. Closely spaced VLF lines and geological mapping might resolve this problem.

Drilling to date on or near Lines 47, 49 and 50N respectively has tested some of these zones with the subsequent confirmation of pyrite as their causative sources. Precious metal values were limited to an occurrence on Line 49N.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.

Between August 21st and September 5th, 1987, Peter E. Walcott & Associates Limited undertook a small induced polarization survey over part of a property, located in the Tathsa Lake area of British Columbia, for Westbank Resources Inc.

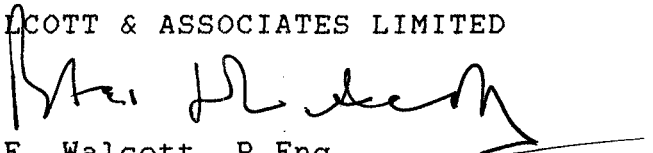
The I.P. survey located the presence of several zones of varying chargeability response above a low flat background.

The weaker of these, obtained over underlying Kasalka Group rocks, could represent sulphide mineralization associated with mineral bearing fluids and shear zones, as confirmed by the limited drilling to date.

Further study of the geology, geochemistry and geophysics is recommended before planning additional work.

Respectfully submitted,

PETER E. WALCOTT & ASSOCIATES LIMITED



Peter E. Walcott, P.Eng.  
Geophysicist

Vancouver, B.C.

February 1988

PETER E. WALCOTT & ASSOC. LTD.

APPENDIX  
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PETER E. WALCOTT & ASSOC. LTD.

- i -

COST OF SURVEY.

Peter E. Walcott & Associates Limited undertook the survey on a daily basis. Mobilization and reporting charges were extra so that the total cost of services provided was \$21,099.66.

GEOPHYSICAL SERVICES

PETER E. WALCOTT & ASSOC. LTD.

- ii -

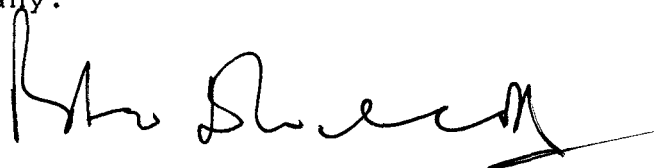
PERSONNEL EMPLOYED ON SURVEY.

<u>Name</u>	<u>Occupation</u>	<u>Address</u>	<u>Dates</u>
Peter E. Walcott	Geophysicist	Peter E. Walcott & Assoc. 605 Rutland Court, Coquitlam, B.C., V3J 3T8	Sept.10, Nov.15 1987 Feb. 27 - 28, 88
G. MacMillan	Geophysical Operator	"	Aug. 21- Sept.5, 1987 Jan. 28 - 31, 88
G. Mandryk	"	"	Aug. 21- Sept.5, 1987
P. Charlie	"	"	"
J. Bones	Geophysical Assistant	"	"
P. Roberts	"	"	Sept. 3-5, 1987
J. Walcott	Typing	"	Feb. 28,29, 1988

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 five years.
3. I am a member of the Association of Profession Engineers of British Columbia and Ontario.
4. I hold no interest, direct or indirect, in the securities or properties of Westbank Resources Inc. nor do I expect to receive any.

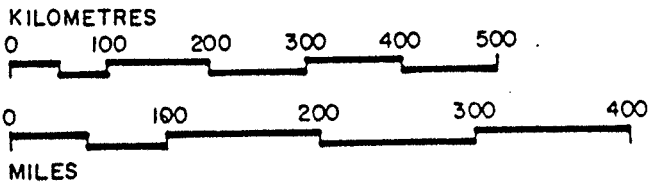
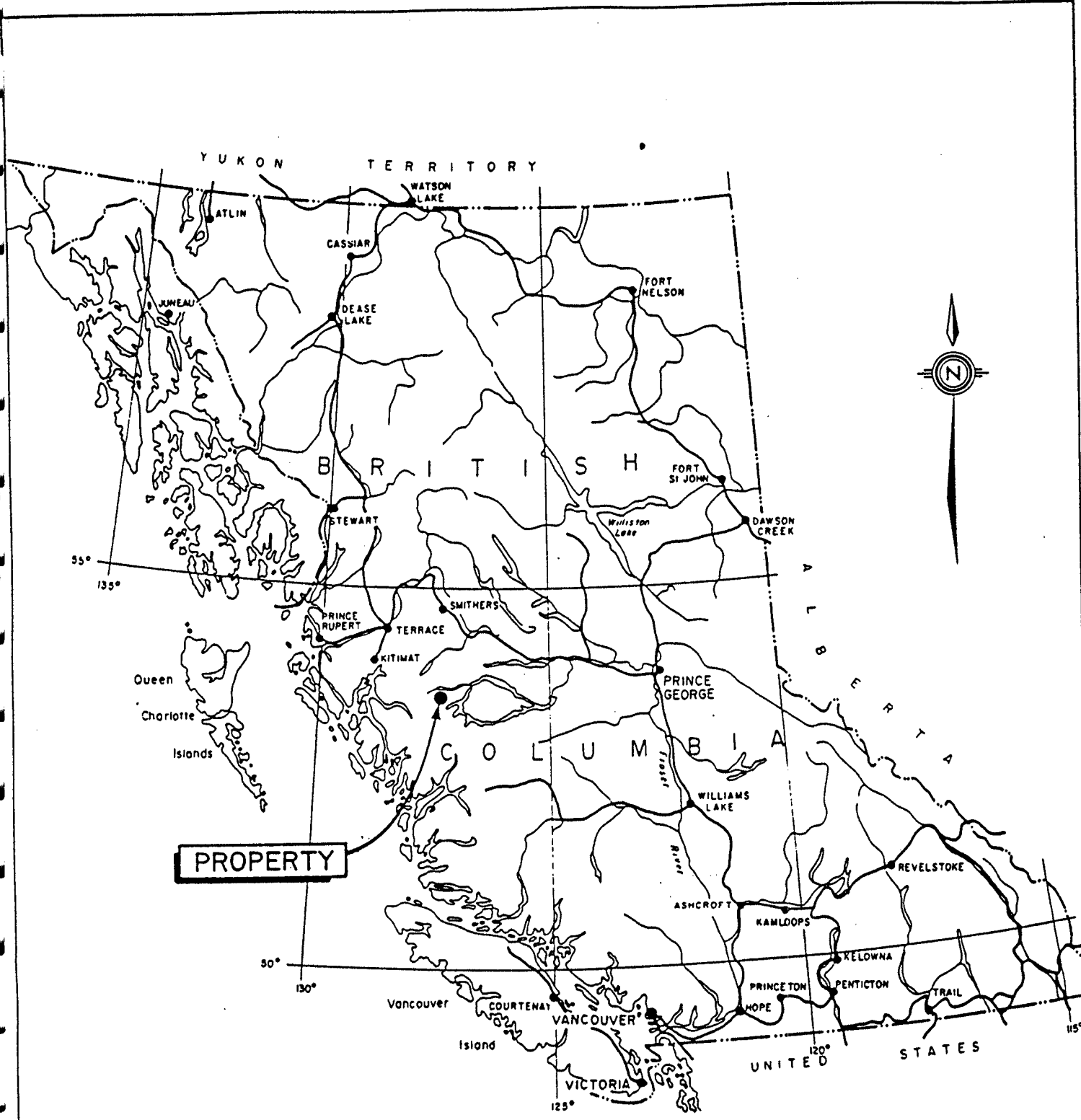


Peter E. Walcott, P.Eng.

Vancouver, B.C.

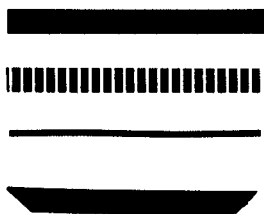
February 1988





WESTBANK RESOURCES LTD.			
Ryan and Mark-K Claims			
PROPERTY LOCATION MAP			
OMINECA MINING DIVISION N.T.S. 93E/11			
EQUITY ENGINEERING LTD.			
DWN. BY J.I.E.	PROJECT WRRR7-01	DATE May, 1987	FIG 1

I.P. PSEUDO-SECTIONS.



Anomalous Zone

Possible Anomalous Zone

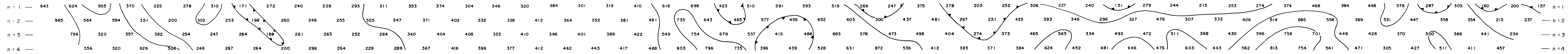
Probable Anomalous Zone

Zone undefined at either end.

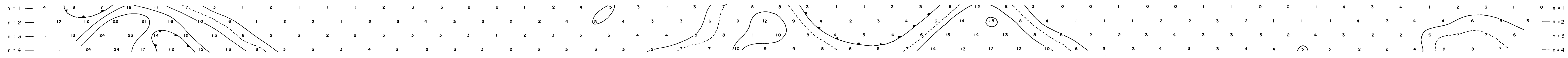
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CREEK  
NW-SE

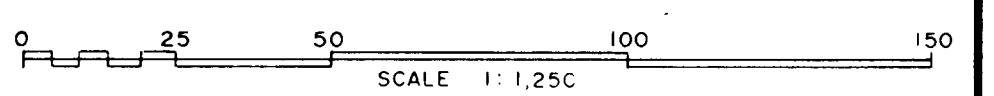
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APPARENT CHARGEABILITY MILLI-VOLTS / VOLT

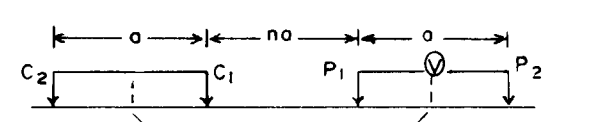


WESTBANK RESOURCES INC.  
RYAN CLAIMS, TROITSA LAKE AREA, B.C.  
**LINE 48 NORTH**



INDUCED POLARIZATION SURVEY

DIPOLE - DIPOLE  
ELECTRODE CONFIGURATION



CURRENT ELECTRODE WEST OF POTENTIAL ELECTRODE  
DIPOLE SEPARATION "a" - 25 METRES  
TIME DELAY - 160 MILLI-SECONDS  
SAMPLING TIME - 1580 MILLI-SECONDS  
RECEIVER - EDA IP # 2  
TRANSMITTER - HUNTEC MARK IV  
CONTOUR INTERVAL

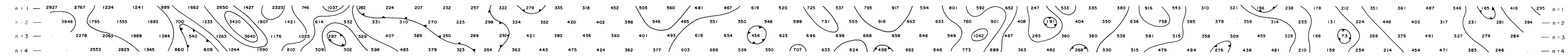
APPARENT RESISTIVITY - 100, 200, 300, 500, 700, 1000, etc.  
APPARENT CHARGEABILITY - 5, (7), 10, 15, 20, 25, etc.

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**  
17,228 Part 2 of 2  
E. WALCOTT & ASSOC. LTD.  
SEPTEMBER - 1987

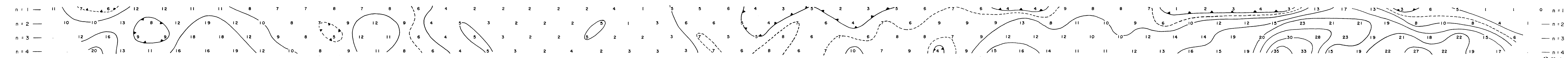
6200-E 6300-E 6400-E 6500-E 6600-E 6700-E 6800-E 6900-E 7000-E 7100-E 7200-E 7300-E 7400-E 7500-E

CREEK  
NW-SE

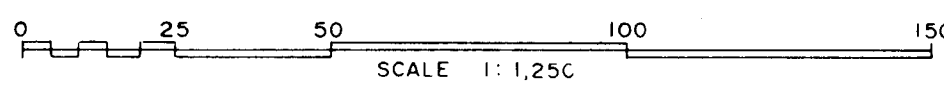
APPARENT RESISTIVITY OHM - METRES



APPARENT CHARGEABILITY MILLI-VOLTS / VOLT

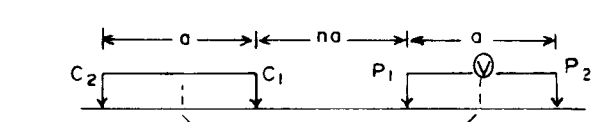


WESTBANK RESOURCES INC.  
RYAN CLAIMS, TROITSA LAKE AREA, B.C.  
LINE 47 NORTH



INDUCED POLARIZATION SURVEY

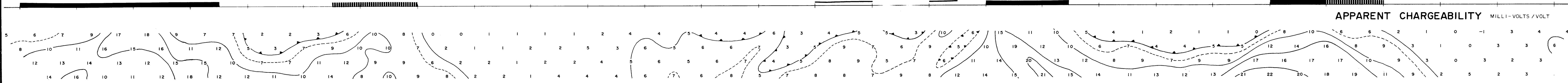
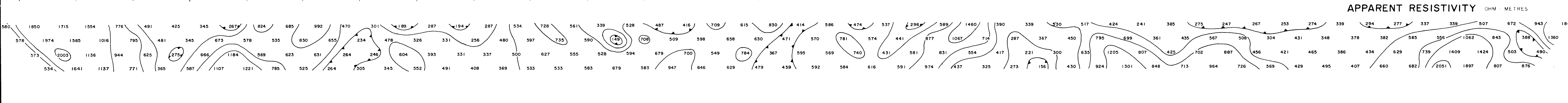
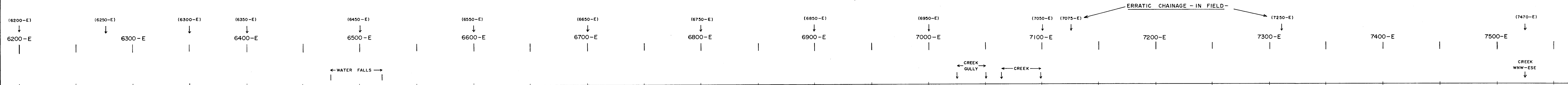
DIPOLE - DIPOLE  
ELECTRODE CONFIGURATION



CURRENT ELECTRODE WEST OF POTENTIAL ELECTRODE  
DIPOLE SEPARATION "a" - 25 METRES  
TIME DELAY - 160 MILLI-SECONDS  
SAMPLING TIME - 1580 MILLI-SECONDS  
RECEIVER - EDA IP # 2  
TRANSMITTER - HUNTEC MARK IV

GEOLOGICAL BRANCH  
ASSESSMENT REPORT  
CONTOUR INTERVAL  
APPARENT RESISTIVITY - 100, 200, 300, 500, 700, 1000, etc.  
APPARENT CHARGEABILITY - 5, (7), 10, 15, 20, 25, etc.

17,228  
SEPTEMBER-1987  
Part 2 of 2



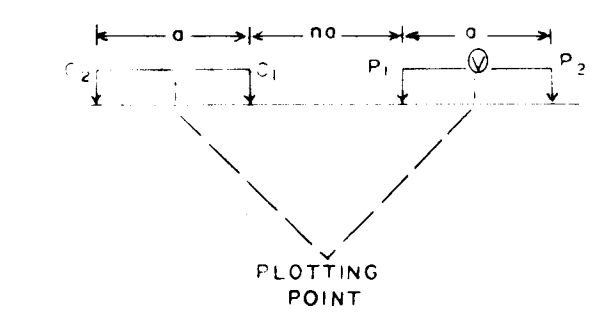
WESTBANK RESOURCES INC.  
RYAN CLAIMS, TROITSA LAKE AREA, B.C.

LINE 46 NORTH



INDUCED POLARIZATION SURVEY

DIPOLE - DIPOLE  
ELECTRODE CONFIGURATION

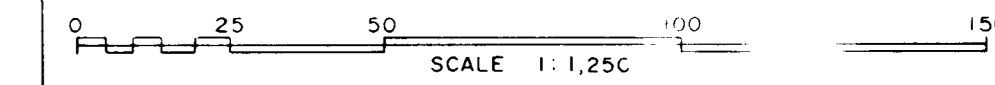


CURRENT ELECTRODE WEST OF POTENTIAL ELECTRODE  
DIPOLE SEPARATION "a" - 25 METRES  
TIME DELAY - 160 MILLI-SECONDS  
SAMPLING TIME - 1580 MILLI-SECONDS  
RECEIVER - EDA IP # 2  
TRANSMITTER - HUNTEC MARK IV

CONTOUR INTERVAL  
APPARENT RESISTIVITY: 200, 300, 500, 700, 1000, etc.  
APPARENT CHARGEABILITY: 5, (7), 10, 15, 20, 25, etc.

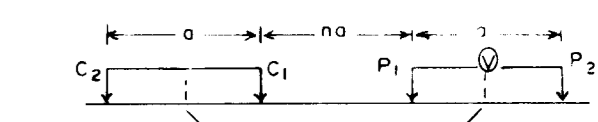
GEOLOGICAL BRANCH  
ASSESSMENT REPORT  
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SEPTEMBER - 1987

WESTBANK RESOURCES INC.  
 RYAN CLAIMS, TROITSA LAKE AREA, B.C.  
**LINE 51 NORTH**



**INDUCED POLARIZATION SURVEY**

**DIPOLE - DIPOLE**  
 ELECTRODE CONFIGURATION



CURRENT ELECTRODE WEST OF POTENTIAL ELECTRODE  
 DIPOLE SEPARATION "a" - 25 METRES  
 TIME DELAY - 160 MILLI-SECONDS  
 SAMPLING TIME - 1580 MILLI-SECONDS  
 RECEIVER - EDA IP # 2  
 TRANSMITTER - HUNTEC MARK IV  
 CONTOUR INTERVAL

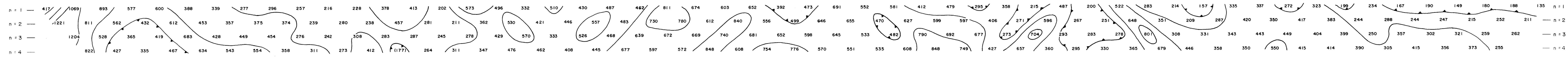
**GEOLOGICAL BRANCH**  
**ASSESSMENT REPORT**  
 APPARENT RESISTIVITY - 100, 200, 300, 500, 700, 1000, etc.  
 APPARENT CHARGEABILITY - 5, (7), 10, 15, 20, 25, etc.

**17,228** Part 2 of 2  
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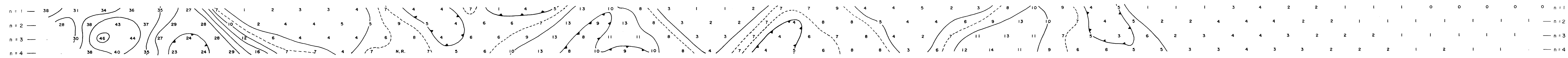
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CREEK SW-NE  
 ↓  
 CREEK SW-NE  
 ↓

**APPARENT RESISTIVITY** OHM - METRES



**APPARENT CHARGEABILITY** MILLI-VOLTS / VOLT



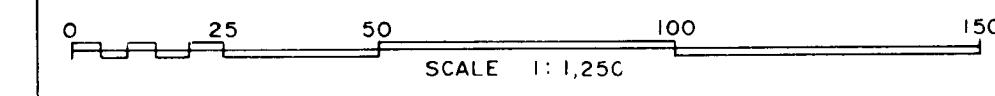






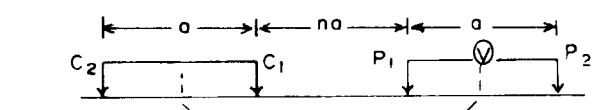
WESTBANK RESOURCES INC.  
 RYAN CLAIMS, TROITSA LAKE AREA, B.C.

LINE 53 NORTH



INDUCED POLARIZATION SURVEY

DIPOLE - DIPOLE  
 ELECTRODE CONFIGURATION

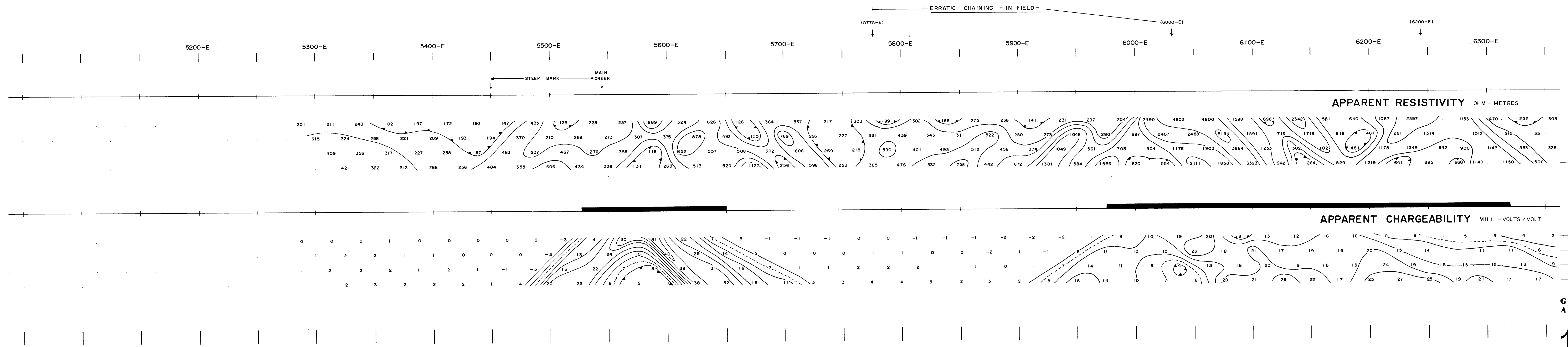


CURRENT ELECTRODE WEST OF POTENTIAL ELECTRODE  
 DIPOLE SEPARATION "a" - 25 METRES  
 TIME DELAY - 160 MILLI-SECONDS  
 SAMPLING TIME - 1580 MILLI-SECONDS  
 RECEIVER - EDA IP # 2  
 TRANSMITTER - HUNTEC MARK IV  
 CONTOUR INTERVAL  
 APPARENT RESISTIVITY - 100, 200, 300, 500, 700, 1000, etc.  
 APPARENT CHARGEABILITY - 5, (7), 10, 15, 20, 25, etc.

GEOLOGICAL BRANCH  
 ASSESSMENT REPORT

SURVEY BY  
 WALTER E. WALCOTT & ASSOC. LTD.  
 SEPTEMBER - 1987

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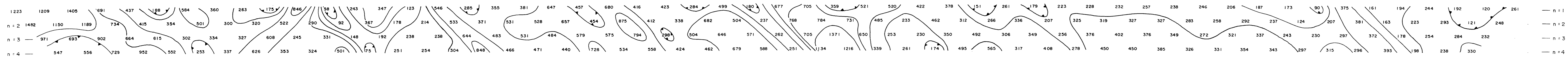
CHAINAGE ERROR IN FIELD - NO # 7225

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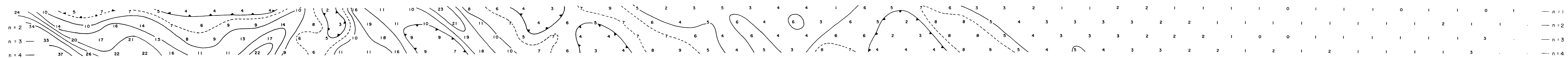
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CREEK SW-NE

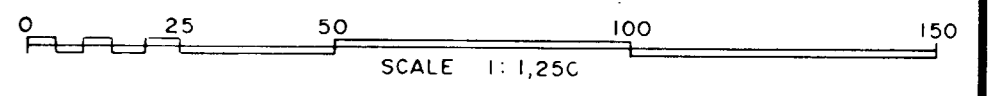
APPARENT RESISTIVITY OHM - METRES



APPARENT CHARGEABILITY MILLI-VOLTS / VOLT

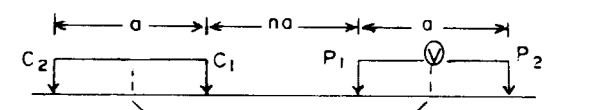


WESTBANK RESOURCES INC.  
 RYAN CLAIMS, TROITSA LAKE AREA, B.C.  
 LINE 52 NORTH



INDUCED POLARIZATION SURVEY

DIPOLE - DIPOLE  
 ELECTRODE CONFIGURATION



CURRENT ELECTRODE WEST OF POTENTIAL ELECTRODE  
 DIPOLE SEPARATION "a" - 25 METRES  
 TIME DELAY - 160 MILLI-SECONDS  
 SAMPLING TIME - 1580 MILLI-SECONDS  
 RECEIVER - EDA IP # 2  
 TRANSMITTER - HUNTEC MARK IV  
 CONTOUR INTERVAL

APPARENT RESISTIVITY - 100, 200, 300, 500, 700, 1000, etc.  
 APPARENT CHARGEABILITY - 5, (7), 10, 15, 20, 25, etc.

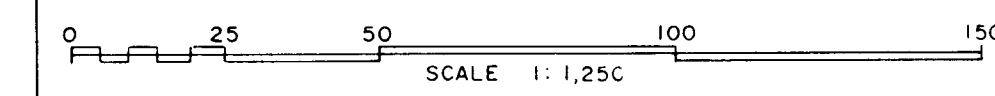
GEOLOGICAL BRANCH  
 ASSESSMENT REPORT

17,228 last 2 of 2

SEPTEMBER - 1987

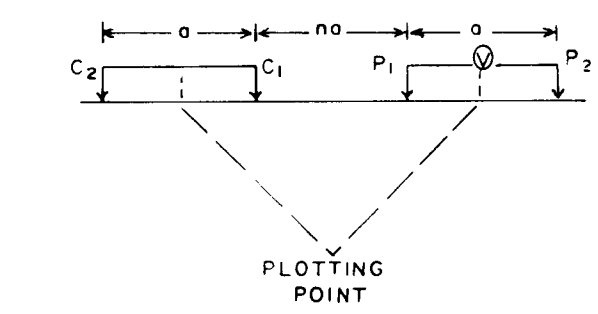
WESTBANK RESOURCES INC.  
 RYAN CLAIMS, TROITSA LAKE AREA, B.C.

LINE 52 NORTH



INDUCED POLARIZATION SURVEY

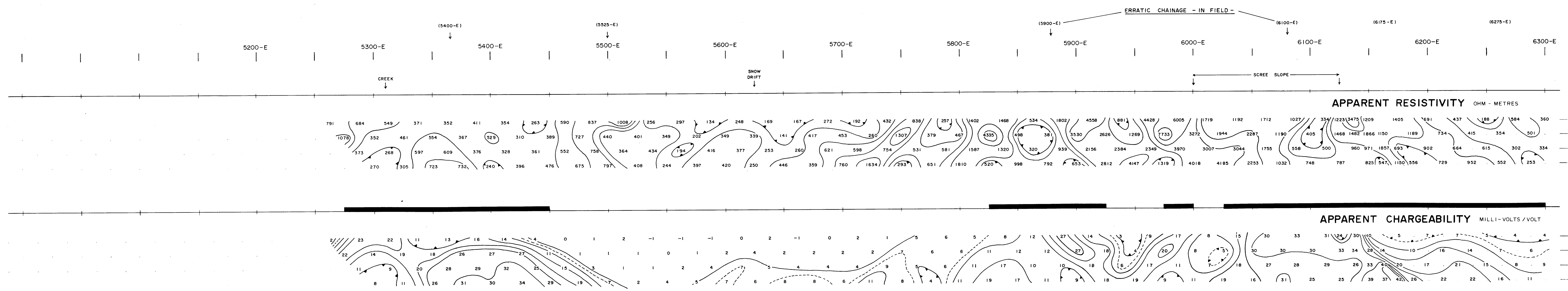
DIPOLE - DIPOLE  
 ELECTRODE CONFIGURATION



CURRENT ELECTRODE WEST OF POTENTIAL ELECTRODE  
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 TIME DELAY - 160 MILLI-SECONDS  
 SAMPLING TIME - 1580 MILLI-SECONDS  
 RECEIVER - EDA IP # 2  
 TRANSMITTER - HUNTEC MARK IV  
 CONTOUR INTERVAL

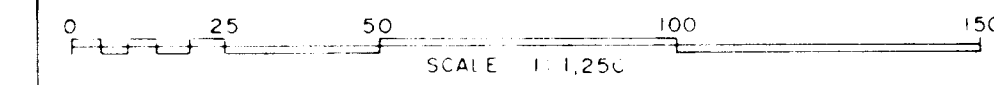
APARENT RESISTIVITY - 100, 200, 300, 500, 700, 1000, etc.  
 APPARENT CHARGEABILITY - 5, (7), 10, 15, 20, 25, etc.

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 SURVEY BY  
 PETER E. WALCOTT & ASSOC. LTD.  
 SEPTEMBER-1987  
*Part 2 of 2*



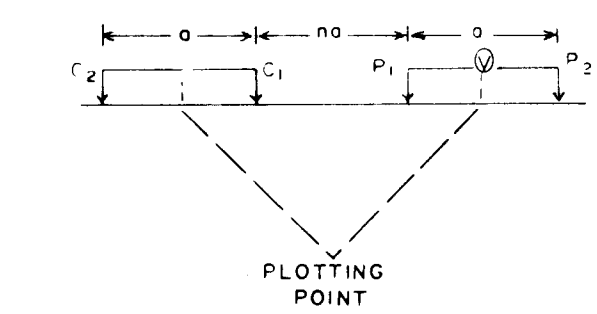
**GEOLOGICAL BRANCH  
 ASSESSMENT REPORT**

WESTBANK RESOURCES INC.  
 RYAN CLAIMS, TROITSA LAKE AREA, B.C.  
**MAIN CREEK "LINE"**



**INDUCED POLARIZATION SURVEY**

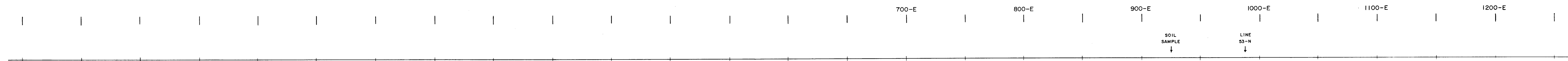
**DIPOLE - DIPOLE**  
 ELECTRODE CONFIGURATION



CURRENT ELECTRODE WEST OF POTENTIAL ELECTRODE  
 DIPOLE SEPARATION "a" = 25 METRES  
 TIME DELAY = 160 MILLI-SECONDS  
 SAMPLING TIME = 1580 MILLI-SECONDS  
 RECEIVER - EDA IP # 2  
 TRANSMITTER - HUNTEC MARK IV  
 CONTOUR INTERVAL

**GEOLOGICAL BRANCH**  
**ASSESSMENT REPORT**  
 APPARENT RESISTIVITY - 100, 200, 300, 500, 700, 1000, etc.  
 APPARENT CHARGEABILITY - 5, (7), 10, 15, 20, 25, etc.

**17,228** BY  
 PETER E. WALCOTT & ASSOC. LTD.  
 SEPTEMBER-1987  
**Part 2 of 2**



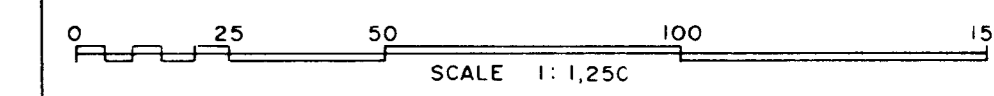
**APPARENT RESISTIVITY** OHM - METRES



**APPARENT CHARGEABILITY** MILLI-VOLTS / VOLT

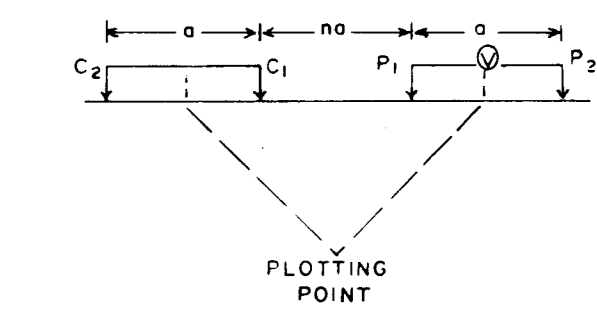


WESTBANK RESOURCES INC.  
 RYAN CLAIMS, TROITSA LAKE AREA, B.C.  
**LINE 53 NORTH**



**INDUCED POLARIZATION SURVEY**

**DIPOLE - DIPOLE  
 ELECTRODE CONFIGURATION**

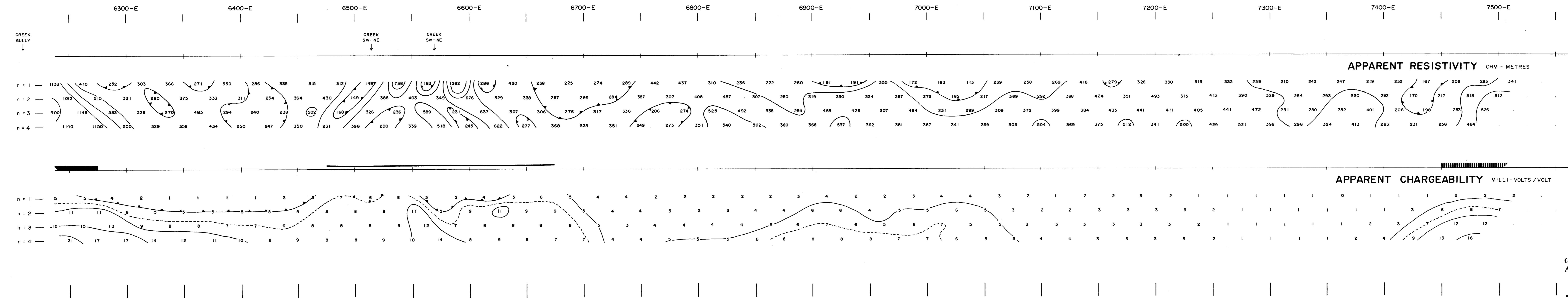


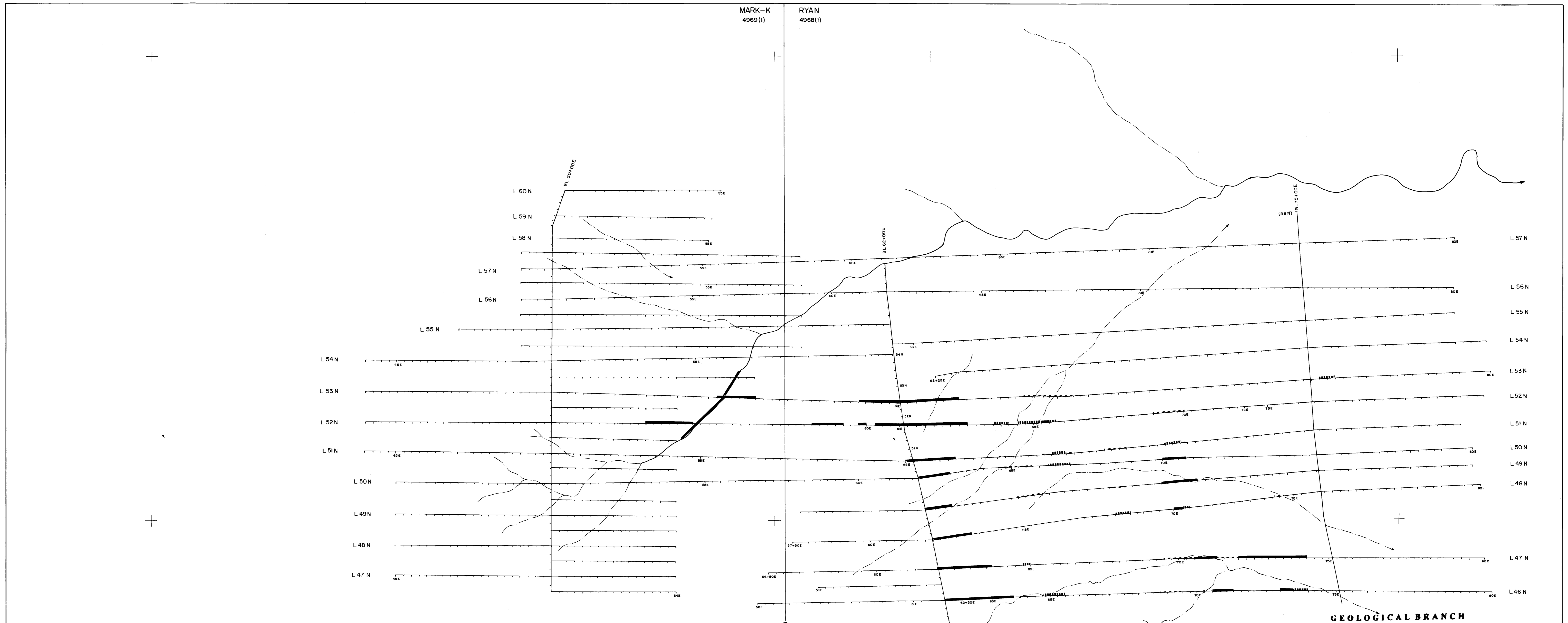
CURRENT ELECTRODE WEST OF POTENTIAL ELECTRODE  
 DIPOLE SEPARATION "a" - 25 METRES  
 TIME DELAY - 160 MILLI-SECONDS  
 SAMPLING TIME - 1580 MILLI-SECONDS  
 RECEIVER - EDA IP # 2  
 TRANSMITTER - HUNTEC MARK IV  
 CONTOUR INTERVAL  
 APPARENT RESISTIVITY - 100, 200, 300, 500, 700, 1000, etc.  
 APPARENT CHARGEABILITY - 5, (7), 10, 15, 20, 25, etc.

**GEOLOGICAL BRANCH  
 ASSESSMENT REPORT**

SURVEY BY  
 PETER E. WALCOTT & ASSOC. LTD.  
 SEPTEMBER-1987

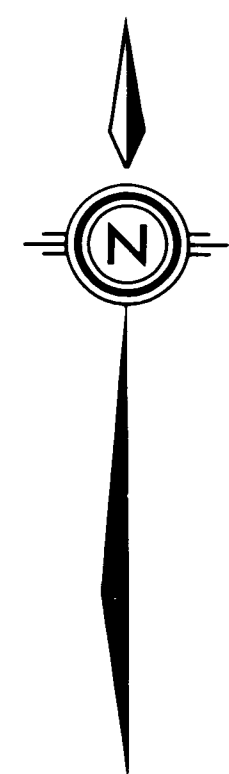
**17,228** Part 2 of 2





GEOLOGICAL BRANCH  
ASSESSMENT REPORT

17,228 Part 2  
of 2



- LEGEND:
- GRID LINES
  - x SOIL SAMPLE LOCATION
  - + ROCK SAMPLE LOCATION
  - Δ SILT SAMPLE LOCATION
  - TRENCH
  - DDH-3 DIAMOND DRILL HOLE (AMAX)
  - DIAMOND DRILL HOLE (WESTBANK-1987)
  - ~ INTERMITTENT CREEK
  - MAJOR DRAINAGE
  - ANOMALOUS ZONE
  - POSSIBLE ANOMALOUS ZONE
  - PROBABLE ANOMALOUS ZONE
  - ZONE UNDEFINED AT ENDS

WESTBANK RESOURCES INC.	
COLES CREEK PROJECT OMINECA MINING DIVISION, B.C.	
INDUCED POLARIZATION SURVEY ANOMALY LOCATION MAP	
N.T.S. : 93E/11	BY : PETER E. WALCOTT
SCALE : 1:5 000	DRAWN
PLATE No : W-418-1	DATE : DECEMBER, 1987