BC Geological Survey Assessment Report 29781b

## AN ASSESSMENT REPORT



ΒY

## PETER E. WALCOTT & ASSOCIATES LIMITED MARCH 17, 2008

Peter E. Walcott & Associates Limited Geophysical Services

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## **APPENDIX**

Cost of Survey Personnel Employed on Survey Certification

ACCOMPAN	ACCOMPANYING MAPS MAP POCK		
1P Pseudo Sections Lines	1,5400 2,000 4500, 4900, 5300, 5700, 6100, 6500, 6900, 7300N 7800N, 80001	n, 8200n, 8400n, 8600n, 9000n	
	nd 100 metre depth Modeled Chargeability nd 100 metre depth Modeled Resistivity	1:10000 1:10000	

#### **INTRODUCTION.**

Between November 16<sup>th</sup> and December 6<sup>th</sup>, 2007, Peter E. Walcott & Associates Limited undertook induced polarization (I.P.) surveying over parts of the Hit property, located some 30 kilometres southeast of the community of Aspen Grove, British Columbia, for Cazador Resources Ltd.

The survey was carried out over fourteen east-west oriented lines established by line cutters. The orientation of the grid was UTM north approximately 2.5 degrees east of true north. The southern most grid was 4500N at the southern property boundary and the most northern was at 9000N at the northern property boundary.

Measurements – first to sixth separation – of apparent chargeability – the I.P. response parameter – and resistivity were made on each of the line traverses using the pole – dipole technique with a combination of 12.5, 25 & 50 metre dipoles on selected lines.

In addition the elevations and horizontal locations of the line stations were measured using a Brunton altimeter and an Garmin C60 WAAS equipped GPS unit respectively.

The I.P. chargeability and resistivity data are presented as individual pseudo sections at a scale of 1:5,000.

In addition the 25, 50 and 100 meter depth chargeability and resistivity measurements are presented in coloured contour form on plan maps of the line grid at a scale of 1:10,000.

#### PURPOSE,

The purpose of the survey was to (a) trace out the possible extension of the porphyry style chargeability anomaly observed on the Axe property adjoining to the south, and (b) to explore for vein mineralization in the northern portion of the property where mineralization in quartz veins is known to exist.

#### SURVEY SPECIFICATIONS.

#### The Induced Polarization Survey.

The induced polarization (I.P.) survey was conducted using a pulse type system, the principal components of which were manufactured by Iris Instruments of Orleans, France and Instrumentation GDD Inc. of St. Foy, Quebec.

The system consists basically of three units, a receiver (Iris), transmitter (GDD) and a motor generator (Honda). The transmitter, which provides a maximum of 3.6 kw d.c. to the ground, obtains its power from a 5.0 kw 600 c.p.s. single phase alternator driven by a Honda 11 h.p. gasoline engine. The cycling rate of the transmitter is 2 seconds "current-

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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 voltages (V) appearing between any two sequential potential electrodes,  $P_1$  through  $P_{n+1}$ , during the "current-on" part of the cycle, and the apparent chargeability, (M<sub>a</sub>) presented as a direct readout in millivolts per volt using a 200 millisecond delay and a 1000 millisecond sample window by the receiver, a digital receiver controlled by a micro-processor – the sample window is actually the total of ten individual windows of 100 millisecond widths.

The apparent resistivity  $(f_a)$  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 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,  $C_1$ , and the potential electrodes,  $P_1$  through  $P_{n+1}$ , are moved in unison along the survey lines at a spacing of "a" (the dipole) apart, while the second current electrode,  $C_2$ , is kept constant at "infinity". The distance, "na" between  $C_1$  and the nearest potential electrode generally controls the depth to be explored by the particular separation, "n", traverse.

On this survey a 50 metre dipole was employed and first to sixth separation readings were obtained on Lines 4500N to 7300N. A 25 metre dipole was employed on Lines 7800N to 8400N, and 9000N, while 12.5 readings were conducted on Lines 8200N and 8600N. In all some 18 kilometres of I.P. traversing were completed.

#### Vertical control.

The elevations of the stations were recorded using an ADC Summit altimeter manufactured by Brunton of Wyoming, USA. This instrument measures elevations using barometric pressures to an accuracy of plus or minus 3 metres. Corrections for errors due to variations in atmospheric pressure were made by comparison to readings obtained on a similar instrument, held stationary at one location – the base -, at 10 minute intervals.

#### Horizontal control.

The horizontal position of the stations were recorded using a Garmin C60 WAAS enabled GPS unit.

#### Data Presentation.

The I.P. data are presented as individual pseudo section plots of apparent chargeability and resistivity at a scale of 1:5,000.

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Contour plans of the 25, 50 and 100 meter depth chargeability and resistivity, on an idealized grid, are also added at a scale of 1:10,000.

### **DISCUSSION OF RESULTS.**

The survey area was covered using different spacing to define smaller structures in the northern portion of the survey area, and a larger porphyry system in the southern portion of the survey area. Lines 4300N to 7300N were measured using a 50 metre dipole spacing. The lines were extended off the property boundary to the west in order to obtain sufficient background for subsequent inversion of the data. Lines 7800N to 9000N were measured using 25 metre dipole spacing in an attempt to define mineralized structures proximal to the Hit showing, along with two 12.5 metre test lines Line 8200N and Line 8600N

The resistivity over the survey area, shows a dominant north-northeasterly trending low with large northwesterly crosscutting structure likely associated with the Missezula Shear Zone (MSZ) in the north. The Hit showing, appears to be located on the northern side of this structure. A smaller structure can also be seen in the south showing a resistivity low and moderate chargeability adjacent to the Miss showing. However, due to line spacing and extents of the survey coverage minimal information can be obtained.

The chargeability shows a similar type pattern, to the resistivity trend. The south eastern chargeability anomaly is likely attributed to a previously mapped pyritic quartz porphyry unit. This unit appears to be truncated in the north by the MSZ around Line 6900N. A larger anomaly open to the north on Line 8400N and extending south to Line 8000N is also of interest due to the proximity to the hit showing, and increased resistivity. It should be noted that 2D inversions in this region may not be valid due to the large crosscutting structure.

### SUMMARY, CONCLUSIONS & RECOMMENDATIONS

Between November 16<sup>th</sup> and December 6<sup>th</sup>, 2007, Peter E. Walcott and Associates Limited undertook induced polarization traversing over parts of the Hit property for Cazador Resources Ltd.

The property is located on the east slopes of Missezula Mountain, some 30 kilometres south-southeast of the community of Aspen Grove, British Columbia.

The survey was carried out over fourteen east-west trending lines with a 25 & 50 metre dipole on the IP portion with two 12.5 dipole test lines.

The IP survey outlined the presence of essentially three chargeability zones, all of which are open.

The geophysical lines should be extended in the southern portion on the property to the eastern property boundary, and possible infill lines if warranted in the area of the Miss showing. The survey area in the north in the area of the Hit showing should be extended to close off the anomaly with possible infill lines to allow for the 3D inversion of the data. Prior to any further geophysical work a compilation of the existing data, should be extensively reviewed.

Respectfully submitted,

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### PETER E. WALCOTT & ASSOCIATES LIMITED

Peter E. Walcott, P.Eng. Geophysicist

Vancouver, B.C. March 17, 2008

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## **APPENDIX**

## COST OF SURVEY.

Peter E. Walcott & Associates Limited undertook the line establishment and the I.P. on a daily basis. Mobilization and reporting costs were extra so that the total cost of services provided was \$89,770.16.

## PERSONNEL EMPLOYED ON SURVEY.

Name	Occupation	Address	Dates
Peter E. Walcott	Geophysicist	Peter E. Walcott & Associates Limited 608 – 1529 W. 2 <sup>nd</sup> Ave Vancouver, B.C. V6J 1H2	Nov. 14th, 2007
Alexander Walcott	64	**	Dec. 8 <sup>th</sup> ,2007 Mar. 3 <sup>rd</sup> -4 <sup>th</sup> , 2008
M. Welz	89	"	Mar. 2 <sup>nd</sup> - 3 <sup>rd</sup> , 2008
John Cornock	<b>\$</b> \$		Dec. 3 <sup>rd</sup> - 5 <sup>th</sup> , 2007
Guillermo Munoz	46	66	Nov.16 <sup>th</sup> -17 <sup>th</sup> , 2007
C. Gugins	81	£6	Nov. 18 <sup>th</sup> - Dec2 <sup>nd</sup> 2007
T. Scott	Geophysical Assistant	<del>91</del>	Nov. 16 <sup>th</sup> - Dec. 5 <sup>th</sup> 2007
R. Weins	"	н	11
D. Little	"	29	"
N. Russel	15	*1	Nov 18 <sup>th</sup> -Dec 5 <sup>th</sup> 2007
S.Cochrane	46	"	2007 ()
W. Natomagan	17	n	Nov. 16 <sup>st</sup> -17 <sup>th</sup> , 07
C. Roe L. Gregory	Line establishment	**	Nov. 14 <sup>th</sup> -Dec 4 <sup>th</sup> 07
J. Walcott	Typing	14	Mar 16 <sup>th</sup> ,2008

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### **CERTIFICATION.**

I, Peter E. Walcott of 605 Rutland Court, 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 practicing my profession for the last forty five 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 Cazador Resources Ltd. or Avanti Mining Inc. nor do I expect to receive any.

Peter E. Walcott, P.Eng.

Vancouver, B.C. March 17, 2008

Peter E. Walcott & Associates Limited Geophysical Services



















V. C.





























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Date: NOVEMBER 2007 Interpretation:	
WALCOTT & ASSOCIATES LIMITED	



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