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# Quantec Geoscience Ltd. Geophysical Survey Interpretation Report

NTS 31-M/4
Regarding the
IP/RESISTIVITY SURVEYS
at the O'CONNOR PROPERTY,
STRATHY, CHAMBERS TWPS., ON
on behalf of
AURA RESOURCES CORP.
Vancouver, BC



G. R. J. Warne R. Sharpe M. Ohren

June, 2008

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#### 1. INTRODUCTION

• QGL Project No: CA00574C

• Project Name: O'Connor Property

• **Survey Period**: April 26<sup>th</sup> to May 7<sup>th</sup>, 2008

• Survey Type: Induced Polarization (IP) and Resistivity

• Client: Aura Resources Corp.

Client Address
 202-930 East 7th Avenue

Vancouver, BC

V5T 1P6

• Representative: John Poloni, P. Eng., Consulting Geologist

2110 – 150A Street Surrey, BC, Canada

V4A 9J6

Ph/Fx: 604-541-8828

• Objectives:

To locate and delineate IP and Resistivity signatures defining potential exploration drill targets related to disseminated, veinlet to semi-massive sulphide mineralization. The survey covered areas of interested selected, in part, on the basis of previous Total magnetic field, VLF-EM and Horizontal Loop EM surveys.

• Report Type: Interpretation Report

#### 2. GENERAL SURVEY DETAILS

#### 2.1 LOCATION

• Mineral Claims: Strathy Grid: Claims 4205113, 1229486

Chambers Grid: Claims 3007655,

3011896,421104

• Twp, Province/Territory: Strathy, Chambers Twps., Ontario

Country: Canada
 Nearest Settlement: Temagami
 NTS Reference #: 31 M/4

• **General Location:** 5-7 km west of the village of Temagami

• Base of Operations: New Liskeard



Figure 1: General Location of the O'Connor Property

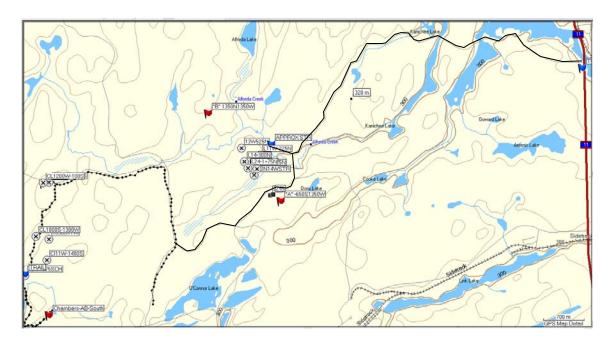


Figure 2: Chambers, Strathy Grid Location and Access

#### 2.2 Access

 Mode of Access: The O'Connor property was accessed via 4WD truck and ATV following the Kanichee Mine road, west off highway 11, approximately 4km north of Temagami, ON.

#### 2.3 SURVEY GRID

- Coordinate Reference System: Local exploration grids, referenced to UTM NAD83.
- Established: The exploration grid had been established in conjunction with previous work during 2007. The Strathy Grid was oriented on a baseline at N 050° with crosslines at 320°. The Chambers the East grid was oriented on a baseline at 090° with N-S crosslines.

Line Separation: 100 metresStation Interval: 25 metres

• Method of Chaining: Metric, Slope-Distance

#### 2.4 PREVIOUS WORK

Geophysical surveys consisting of Total Magnetic Field, VLF-EM and Horizontal Loop (Max-min) EM were conducted on the Strathy and Chambers grids during 2007. The surveys were conducted by Meegwich Consulting, Temagami, ON.

#### 3. SURVEY WORK UNDERTAKEN

#### 3.1 GENERALITIES

• Survey Dates: April 26<sup>th</sup> to May 7<sup>th</sup>, 2008

• Survey Period: 11.5 days

• Mobilization Days 1 day

• Survey Days (read time): 8.5 days

• Breakdown Days: 1 day

• Weather/Standby Days: 1 day

• Survey Coverage: 19.5 line kilometres

3.2 PERSONNEL

Project Manager: Jeffrey Warne, South Porcupine, ON

Onsite Supervisor: Jesse Maw, Bracebridge, ON

• Geophysical Technicians Jason Heilman, Thunder Bay, ON

Richard Chasse, Kirkland Lake, ON

• Field Assistants: Gregory Commanda, Bellville, ON

Sean Guidry, Timmins, ON

3.3 SURVEY SPECIFICATIONS

• Array: Reconnaissance Gradient, Multiple gradient Real-

section™ (see Figure 4)

• AB (Transmit dipoles) 200 to 2500 metres

MN (Rx dipole spacing): 25 metres
 Sampling Interval: 25 metres

Total Reconnaissance Blocks: 2

Approximate Arial Coverage: Strathy Grid ~ 0.3 kilometre<sup>2</sup>

Chambers Grid ~ 0.9 kilometre<sup>2</sup>

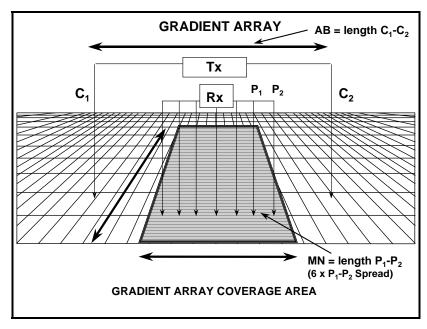


Figure 3: Gradient Array Configuration

#### 3.4 SURVEY COVERAGE

• Reconnaissance Gradient IP: 13.3 line kilometres (see Table I)

LINE	MINIMUM EXTENT	MAXIMUM EXTENT	TOTAL (metres)			
Strathy Grid (AB= 2000m, @ 650S, 1350W - 1350N, 1350W)						
1100 W	25 N	525 N	600			
1200 W	0 N	600 N	600			
1300 W	0 N	625 N	600			
1400 W	0 N	675 N	600			
1500 W	0 N	725 N	600			
1600 W	0 N	900 N	600			
		Total	3,600			
Chambers Grid (A	AB=2500M, @ 242	25S, 1100W – 50N, 1	1100W)			
600 W	0 N	1000 N	1000			
700 W	50 S	1000 N	1000			
800 W	0 N	1000 N	1000			
900 W	0 N	1000 N	1000			
1000 W	0 N	1000 N	1000			
1100 W	50 S	1000 N	1000			
1200 W	750 N	1200 N	1000			
1300 W	600 N	1200 N	1000			
1400 W	525 N	1200 N	600			
1500 W	600 N	1200 N	600			
1600 W	600 N	1200 N	500			
		Total	9,700			

Table 1: Reconnaissance IP/Resistivity Survey Coverage.

Realsection™ Detail IP:
 6.2 line kilometres (see Table 2)

AB Length	MINIMUM	MAXIMUM	TOTAL (metres)			
(meters)	EXTENT	EXTENT				
Line 1100 W (Chambers Grid)						
2000	675 N	1125 N	450			
1500	600 N	1200 N	600			
1000	600 N	1200 N	600			
700	600 N	1200 N	600			
500	675 N	1125 N	450			
300	775 N	1025 N	250			
200	775 N	825 N	150			
Total 3,100						
Line 1200 W (Cha	mbers Grid)					
2000	675 N	1125 N	450			
1500	600 N	1200 N	600			
1000	600 N	1200 N	600			
700	600N	1200 N	600			
500	675 N	1125 N	450			
300	775 N	1025 N	250			
200	775 N	825 N	150			
		Total	3,100			

Table 2: Realsection IP/Resistivity Survey Coverage.

#### 3.5 Instrumentation

• IP Receiver: Iris Elrec IP-6 (6 channel/Time Domain)

• IP Transmitter: Phoenix IPT-1B (3 kW / 75 - 1200V output)

• IP Power Supply: MG-2 (2kVA Leece-Neville, 60V, 3 phase, 400 Hz)

motor generator

#### 3.6 PARAMETERS

Input Waveform: 0.125 Hz square wave at 50% duty cycle

(2 seconds On/Off)

• Receiver Decay Sampling: IRIS IP-6 semi-logarithmic mode windows

(see Table 5)

Measured Parameters:

1) Chargeability in mV/V (10 time slices + total area under decay curve) (see Appendix D).

2) Primary Voltage in mV and Input Current in A for Resistivity calculation according to the gradient array geometry factor (see Appendix D).

Slice	Duration (msec)	Start (msec)	End (msec)	Mid-Point (msec)
Td	80	0	80	
T <sub>1</sub>	80	80	160	120
T <sub>2</sub>	80	160	240	200
Т3	80	240	320	280
T <sub>4</sub>	80	320	400	360
T <sub>5</sub>	160	400	560	480
Т6	160	560	720	640
T <sub>7</sub>	160	720	880	800
T <sub>8</sub>	320	880	1200	1040
T <sub>9</sub>	320	1200	1520	1360
T <sub>10</sub>	320	1520	1840	1680
Total Tp	1760			

Table 3: Decay Curve Sampling (for 2 Sec. Cycle)

#### 3.7 MEASUREMENT ACCURACY AND REPEATABILITY

• Chargeability: generally less than  $\pm$  0.5 mV/V [but acceptable to

 $\pm 1.0 \text{ mV/V}$ ].

• Resistivity: less than 5% cumulative error from Primary

voltage and Input current measurements.

#### 3.8 DATA PRESENTATION

#### • Maps:

- 1) Posted, contoured plan maps of reconnaissance gradient Total Apparent Chargeability, and Apparent Resistivity (1:5000 scale).
- 2) Posted, contoured Realsection maps of Total Chargeability and Apparent Resistivity for those lines for which Realsection coverage was conducted (1:5000 scale).

#### Digital IP/Resistivity Data:

Raw data: IP-6 digital dump file (See also Appendix C)

<u>Processed data:</u> Geosoft .XYZ format, using the following format:

Column 1 = Station/Line (X Position), in meters Column 2 = Station/Line (Y Position), in meters

Column 3 = Total Chargeability, in mV/V Column 4 = Apparent Resistivity, in  $\Omega$ -m

Column >5 = TDIP Spectral Estimates (M, Tau, c) from Geosoft IPREDC

#### 3.9 OPERATOR COMMENTS

The Kanichee Mine road was passable by truck for only a little more than a kilometer off highway 11, due to wet muddy conditions. ATV were utilized to access the balance of the distance of ~ 6 kilometers to the Strathy grid. The Chambers grid was approximately 6 kilometers further by ATV.

Digital grid maps, referenced to UTM NAD83 zone 17N, were obtained from Meegwich Consulting. The UTM location of the reconnaissance Gradient survey results was established based on the exploration grid locations defined by these maps. Several independent UTM NAD 83 locations were determined by GPS measurements acquired by Quantec's crew. The UTM coordinates measured for the Strathy exploration grid locations were generally within the typical margin of error for hand held GPS accuracy. The UTM coordinates measured for the Chambers exploration grid locations were typically 50 to 60 meters east of those defined by Meegwich's base maps. While potentially relevant with respect to the accuracy of the UTM locations of the exploration grids, the UTM locations determined by Quantec's crew were not acquired with the intent of establishing the UTM location of the exploration girds and cannot be considered conclusive.

Anomalies over which multiple gradient Realsection follow up coverage was completed, were selected based on overall magnitude and contrast of the measured apparent chargeability, lateral extent of chargeability anomaly, and if relevant, correspondence with VLF-EM and/or Horizontal Loop ((Max-min) EM anomalies detected by previous work completed over the property. Remaining within a work completion period of approximately 10 survey days was also considered.

At the Strathy grid, a poorly defined EM conductor interpreted from previous work does not exhibit a measureable gradient chargeability anomaly, but corresponds with decreased apparent resistivity, suggesting the interpreted conductor may be related to low resistivity overburden. The gradient array Chargeability results delineate weakly contrasting narrow chargeable zones, generally corresponding with zones of increased resistivity magnitude, which might be explained by decreased depth of overburden where the anomalies occur. Realsection survey coverage was not completed at the Strathy grid.

At the Chambers grid, a zone of moderate to strongly contrasting chargeability, having 100 to 200 meters lateral extents, with corresponding weakly contrasting reduced resistivity signature, was delineated near the northern limit of the survey coverage. Realsection survey coverage was subsequently completed over the anomaly to further delineate the IP/Resistivity signatures, particularly with respect to depth, in order to resolve target locations for potential trenching or drill testing to determine the explanation for the chargeability anomaly. The Realsection survey coverage was extended northward in order to delineate the north limit of the anomaly.

#### 4. DISCUSSION OF RESULTS

#### 4.1 OVERVIEW

The IP/Resistivity method is a technique for mapping electrical properties of the subsurface. The IP/Resistivity surveys at the O'Connor property have measured apparent, bulk volume average, DC resistivity and chargeability over portions of the Strathy and Chambers explorations grids. The electrode array specifications utilized for the surveys are estimated to provide investigation to maximum depths in excess of 200 meters, at 25 meter station spacing. The results, presented in contoured plan maps, reflect the subsurface chargeability and resistivity distributions as projected to surface. The use of multiple gradient arrays, where applied, provides a range of electrode array expansions along individual survey lines. The results, presented in contoured Realsection maps, reflect the chargeability and resistivity distributions with respect to depth, underlying the survey line.

By far the most prevalent factors controlling resistivity are the porosity and permeability of the rocks, in conjunction with groundwater saturation, and the salinity of the pore fluids, rather than mineral composition. Deposits of conductive mineralization, such as metallic sulphides, when present in sufficient volume concentrations, also become a major factor controlling subsurface resistivity. Chargeability is a near-direct indicator of the presence of metallic mineralization, Chargeability is controlled by the presence, orientation and distribution of polarizeable minerals, which include native metals, submetallic sulphides and oxides, and graphite. This characteristic can be affected by mineral concentrations in amounts as small a parts per hundred.

#### 4.2 RECONNAISSANCE GRADIENT IP/RESISTIVITY RESULTS

The Apparent Resistivity delineated over the Chambers grid ranges from approximately 1,000  $\Omega$ -m to in excess of 50,000  $\Omega$ -m. The background Resistivity is distinctively higher within the north region of the grid, where resistivity > 10,000 ohm-m are prevalent, in comparison to the south region of the grid, where resistivity < 10,000 ohm-m are prevalent. The boundary occurs proximal to 1400S. The Chargeability ranges from approximately 7 mV/V to 34 mV/V. The background Chargeability magnitude is approximately 7 mV/V to 10 mV/V. Four zones of anomalous chargeability have been delineated, as summarized in Table 4, all of which occur within the north region of the grid.

Anomaly A, located between 800S and 1000S, across lines1300W, 1200W, 1100W and 1000W, is the strongest and most extensive of the chargeability anomalies detected at the Chambers grid. The chargeability anomaly varies from moderate to strong, with maximum chargeability >30 mV/V across lines 1100W and 1200W. The strongest chargeability contrasts within the anomalous zone, are coincident with weak reduced resistivity contrasts. On the basis of the resistivity distribution, in plan, the existence of a fold nose, having an axis tracking from 875S on line 900W through 900S on Line 1300W could be envisioned. Previous magnetometer and electromagnetic surveys did not detect notable anomalies coincident with Anomaly A. Multiple gradient Realsection surveys were performed on lines 1100W and 1200W over the zone to further delineate the anomaly with respect to depth.

There are three additional, weaker chargeability anomalies detected on the Chambers grid.

Anomaly B occurs across lines 700W and 800W centered about 1000S, exhibiting weak to moderate chargeability contrast coincident with very weak reduced resistivity.

Anomaly C exhibits moderate chargeability contrast over a lateral extent of about 100 meters across lines 800W to 600W centered at 1150S. The anomaly is located adjacent to the south, of a weak to moderate low resistivity contrast. Previous magnetometer surveys detected increased total magnetic field coincident with the chargeable zone. A conductor, with axis coincident with the weak

low resistivity signature, was interpreted from prior electromagnetic surveys

Anomaly D is a spatially small anomaly with a lateral extent of about 25 meters centered on line 1000W at 1425S to 1450S.

A conductor, with axis crosscutting lines 600W to 1100W, proximal to 1400S, interpreted from previous electromagnetic surveys, exhibits a coincident, weak reduced resistivity signature. No anomalous chargeability was detected coincident with the conductor.

ANOMALY, LOCATION	CHARGEABILITY (mV/V)	ASSOCIATED RESISTIVITY (Ohm-m)	COMMENTS
<b>A</b> , L1300W – L900W at 750S – 1000S	Up to 33	5000-20000	The highest comparative IP is associated with the lowest resistivity within the zone
<b>B</b> L800W-700W at 1000S – 1050S	Up to 18	157500	The highest magnitude IP is on line 700W
C L800W-600W at 1125S -1200S	Up to 19	17000-30000	There is a low resistivity area just north of the location of this anomaly
<b>D</b> L1000W at 1350S – 1375S	19.8	25000	Limited lateral extent

Table 4: Chambers Grid Chargeability Anomalies

The apparent resistivity results at the Strathy grid range from ~ 2,000 ohm-m to approaching 50,000 ohm-m. Very high background resistivity, > 10,000 ohm-m, is prevalent within the northwest region of the grid, while background resistivity < 10,000 ohm-m prevails to the southeast. The boundary occurs proximal to 200N. No pronounced chargeability anomalies were detected at the Strathy grid. Zones of weakly increased chargeability are detected coincident with the highest resistivity regions, primarily in the northwest region of the gird, as summarized in Table 5. A conductor, with axis located between 150N to 200N across line 100W to 1500W, did not exhibit anomalous chargeability. Realsection survey coverage was not completed at the Strathy grid.

ANOMALY LOCATION	CHARGEABILITY (mV/V)	ASSOCIATED RESISTIVITY (Ohm-m)	COMMENTS
1300W, 1200W, 1100W from 5216300N to 5216100N	11.5-14	31000	Weak contrast to surrounding chargeability
1500W, 1600W centered on 5215850N	14-16	31000	Weak contrast to surrounding chargeability
1600W at 52157000N	12	35000	Weak contrast to surrounding chargeability

Table 5: Strathy Grid Chargeability Anomalies

#### 4.3 REALSECTION DETAIL IP/RESISTIVITY RESULTS

Multiple separation detailed surveys, conducted over Anomaly A on the Chambers grid, have delineated the apparent chargeability and resistivity over depths from near surface to as much as 300 meters. The depth locations for plotting the results, in Realsection, are derived from the separation distance between the transmit and measurement electrodes, for each measurement. The depth estimates are reasonable approximations, consistent with the electrode array geometries employed to acquire the measurements. The coverage over lines 1100W and 1200W was extended northward to 625S in order to provide adequate delineation of the anomaly signatures.

Table 6 summarizes the anomaly signatures delineated over lines 1100W and 1200W. The consistent increase in apparent resistivity at increasing depth is indicative of the presence of a thin, potentially discontinuous, layer of much lower resistivity overburden. The corresponding maxima of the chargeability at the shallowest depths of investigation suggest the anomaly sources may sub-crop.

LINE	ANOMALY EXTENT	CHARGEABILITY (mV/V)	ASSOCIATED RESISTIVITY	COMMENTS
			(Ohm-m)	
1100W	1000S-825S	16 to 35	increasing with depth	Alternating higher and lower contrasting chargeability, suggesting a series of narrow horizons
1200W	975S-750S	17 to 40	increasing with	. Resistivity variable but lower than surrounding anomalous area.

Table 6: L1100W, L1200W Realsection chargeability anomalies

On Line 1100W, the IP anomaly is ~250 meters wide overall, but comprised of 3 narrower horizons. Although the anomalous chargeability appears to persist to the bottom of the Realsection, the true depth extent of the source may be considerably less, and the subtle comparative increases in the anomalous chargeability magnitudes, at the greatest depths, appear to be a pervasive background effect.

The chargeability results over Line 1200W are similar to Line 1100W, although exhibit less variation of chargeability magnitude within the overall lateral extent of Anomaly A. The overall anomaly appears to consist of 2 narrower horizons. Subtle asymmetry of the chargeability anomaly suggests a slight northward dip of source horizons is possible. The resistivity coincident with the chargeability anomaly varies, but is generally lower than the area surrounding the anomaly, and the highest magnitude chargeability is typically coincident with the lowest magnitude resistivity.

#### 5. CONCLUSIONS AND RECOMMENDATIONS

The IP/Resistivity surveys at the O'Connor property have successfully measured apparent chargeability and resistivity over selected portions of the Strathy and Chambers exploration grids. The results reflect features of the subsurface underlying the survey coverage, related to variations in overburden, lithology, alteration, mineralization and structure. Reconnaissance surveys, employing the gradient electrode array, have located zones of anomalous chargeability indicative of potential concentrations of metallic mineralization. Detail follow up surveys, employing multiple gradient arrays, conducted over the strongest, most extensive of the chargeability anomalies, have further delineated the anomalies with respect to depth.

Previous work over the Strathy and Chambers Grids, using the Horizontal Loop (max-min) EM and VLF-EM techniques indicated the presence of several conductors. Previously completed magnetometer surveys delineated potential concentrations of magnetic mineralization.

Previous work using the VLF-EM and HLEM techniques over the Strathy grid gave the indication of a conductor in the southeast portion of the grid. The IP gradient survey did not detect significant contrasting chargeability in this area.

Four chargeability anomalies, A through D, have been identified at the Chambers Grid. Anomaly A is the strongest, most extensive of these anomalies. The anomaly signature is consistent with disseminated to veinlet or semi-massive metallic mineralization. The Realsection results over Anomaly A, on lines 1100W and 1200W, show that the source of the anomaly may sub-crop at shallow depths, and may persist to depths of up to 100m. Trenching and/or drill testing, of the anomalous zone, are recommended to determine the explanation of the anomaly, with priority assigned to investigation at the stations where the highest magnitude chargeability occurs. Additional investigation of two additional chargeability anomalies, B and C, identified at the Chambers Grid, may also be warranted. Although weaker and less extensive, the signatures of these anomalies are also consistent with veinlet to semi-massive metallic mineralization. Anomaly C is associated, although not coincident, with a conductor interpreted from previous work. Additional Realsection surveys are recommended to further delineate the depth and extent of those anomalies that may be of interest.

Inversion modeling of the current IP/Resistivity data could further define the true depth location and distribution of the anomalies seen in the Real section plots for the chambers Grid.

RESPECTFULLY SUBMITTED QUANTEC GEOSCIENCE LTD.

#### **APPENDIX A**

#### STATEMENT OF QUALIFICATIONS

- I, G.R. Jeffrey Warne, hereby declare that:
- 1. I am a senior project manager with residence in South Porcupine, Ontario and am presently employed in this capacity with Quantec Geoscience Ltd. of Toronto, Ontario.
- 2. I studied Engineering Geophysics in the Faculty of Applied Science at Queen's University in Kingston, Ontario, completing all but two of the course requirements for a B.Sc. (Eng.) in 1981.
- 3. I have worked continuously in this field, since May, 1981 in Canada, the United States, Mexico, Australia, Argentina, Chile, Peru, Bulgaria, Ireland, and Serbia.
- 4. I have no interest, nor do I expect to receive any interest in the properties or securities of **Aura Resources Corp.**
- 5. I managed the project, prepared the data presentation maps and co-authored the report. The statements made in this report represent my professional opinion based on my consideration of the information available to me at the time of writing this report.

Porcupine, Canada October, 2008

G.R. Jeffrey Warne Senior Project Manager, QGL

#### STATEMENT OF QUALIFICATIONS

- I, Roger Sharpe, hereby declare that:
- 6. I am a senior project manager with residence in Reno, Nevada and am presently employed in this capacity with Quantec Geoscience USA Inc. of Reno, Nevada.
- 7. I studied Geology in the Faculty of Arts and Science at Queen's University in Kingston, Ontario, and obtained a B.Sc. in 1983.
- 8. I have worked continuously in this field, since May, 1983 in Canada, the United States, Mexico, Bolivia, Australia, Argentina, and Peru.
- 9. I have no interest, nor do I expect to receive any interest in the properties or securities of **Aura Resources Corp.**
- 10. I was an author for the logistics report. The statements made in this report represent my professional opinion based on my consideration of the information available to me at the time of writing this report.

Reno, Nevada July, 2008

Roger Sharpe, B. Sc.

#### **STATEMENT OF QUALIFICATIONS**

- I, Mary Ohren, hereby declare that:
- 11. I am a junior geophysicist with residence in Reno, Nevada and am presently employed in this capacity with Quantec Geoscience USA Inc. of Reno, Nevada.
- 12. I studied Geology in the Mackay School of Mines, and obtained a B.Sc. in 2004.
- 13. I have worked in the field of Hydrogeology and Geology continuously since September 2005 in the United States.
- 14. I have no interest, nor do I expect to receive any interest in the properties or securities of **Aura Resources Corp.**
- 15. I prepared data presentation maps and co-authored the report. The statements made in this report represent my professional opinion based on my consideration of the information available to me at the time of writing this report.

Reno, Nevada July, 2008

Mary Ohren, B. Sc.

### APPENDIX B

Date	Description	Block	Line	Min Extent	Max Extent	Total IP Survey (m)	Total Mag Survey (m)
26-Apr-08	Mob from Timmins to New Liskard.					()	
27-Apr-08	Acess Strathy grid. Deploy Tx wire to establish AB,						
	Set up Tx site.	Strathy		_			
28-Apr-08	IP survey	Strathy	1100	0	600	600	
		Strathy	1200	600	0	600	
		Strathy	1300	0	600	600	
		Strathy	1400	600	300	300	
29-Apr-08	IP survey. Reciver auto initalized. Deployed AB on Chambers grid. Down day.	Strathy					
30-Apr-08	IP survey. Redeployed Rx wires and Tx set up back to Strathy grid to resurvey the lines lost yesterday.						
	Redeploy to Chambers grid.	Strathy	1400	300	0	300	
		Strathy	1500	0	600	600	
		Strathy	1600	600	0	600	
		Chambers	1600	1300	1800	500	
01-May-08	IP survey.	Chambers	1500	1800	1200	600	
		Chambers	1400	1200	1800	600	
		Chambers	1300	1800	800	1000	
		Chambers	1200	800	1700	900	
02-May-08	IP survey.	Chambers	1200	1700	1800	100	
		Chambers	1100	1800	800	1000	
		Chambers	1000	800	1800	1000	
		Chambers	900	1800	800	1000	
·	IP survey. Rain heavy at times. Day shorteded due to weather. Inadequate current forced us to leave the grid and put more rods at the north end of the AB. Weather Day.	Chambers	800	800	1800	1000	
04-May-08	IP survey. Road to next grid was reconed and						
	brushed out to accomodate ATVs	Chambers	700	1800	800	1000	
		Chambers	600	800	1800	1000	
	Detail IP survey.	Chambers	1200	1125	675	450	
		Chambers	1100	675	1125	450	
05-May-08	Detail IP survey.Recover and deploy Tx wire as needed. Start detailing on lines 1100 and 1200 on	Chamban	4000	600	4000	600	
	Chaimbers.	Chambers	1200	600	1200	600	
		Chambers	1100	1200	600	600	1
		Chambers	1200	600	1200	600	1
00 Mari 00	ID oursely Decoyor and dealer Trustine as and deal	Chambers	1100	1200	600	600	1
uo-iviay-u8	IP survey. Recover and deploy Tx wire as needed. Compleate detailing on lines 1100 and 1200.	Chambers	1100	600	1200	600	
		Chambers	1100	675	1125	450	
		Chambers	1100	1025	775	250	
		Chambers	1100	825	775	150	ļ
		Chambers	1200	600	1200	600	
		Chambers	1200	675	1125	450	ļ
		Chambers	1200	1025	775	250	ļ
		Chambers	1200	825	775	150	
	Tatala					10500	
	Totals					19500	l

#### **APPENDIX C**

#### THEORETICAL BASIS AND SURVEY PROCEDURES

#### **GRADIENT REALSECTION INDUCED POLARIZATION SURVEY**

The "Realsection" survey design uses multiple gradient arrays - with variable depths of investigation controlled by successive changes in array size/geometry. The method of data acquisition and the "Realsection" presentation are based on the specifications developed by Dr. Perparim Alikaj, of the Polytechnic University of Tirana, Albania, over the course of approx. 20 years of application. This technique was further developed for application in Canada, in association with Mr. Dennis Morrison, president of Quantec IP Inc.

The Gradient Array measurements are unique in that they best represent a bulk average of the surrounding physical properties within a relatively focused sphere of influence, roughly equal to the width of the receiver dipole, penetrating vertically downward from surface to great depths. These depth of penetration and lateral resolution characteristics are showcased when presented in plan, however through the use of multiple-spaced and focused arrays, the advantages of the gradient array are further highlighted when the IP/Resistivity data are fully developed in cross-section, using Realsections.

The resistivity is among the most variable of all geophysical parameters, with a range exceeding 10<sup>6</sup>. Because most minerals are fundamentally insulators, with the exception of massive accumulations of metallic and submetallic ores (electronic conductors) which are rare occurrences, the resistivity of rocks depends primarily on their porosity, permeability and particularly the salinity of fluids contained (ionic conduction), according to Archie's Law. In contrast, the chargeability responds to the presence of polarizeable minerals (metals, submetallic sulphides and oxides, and graphite), in amounts as minute as parts per hundred. Both the quantity of individual chargeable grains present, and their distribution with in subsurface current flow paths are significant in controlling the level of response. The relationship of chargeability to metallic content is straightforward, and the influence of mineral distribution can be understood in geologic terms by considering two similar, hypothetical volumes of rock in which fractures constitute the primary current flow paths. In one, sulphides occur predominantly along fracture surfaces. In the second, the same volume percent of sulphides are disseminated throughout the rock. The second example will, in general, have significantly lower intrinsic chargeability.

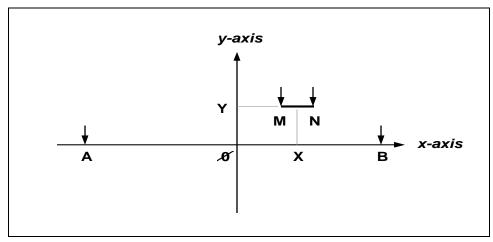


Figure B1: Gradient array configuration

Using the diagram in Figure B1 for the gradient array electrode configuration and nomenclature:<sup>1</sup>, the gradient array apparent resistivity is calculated:

where: the origin 0 is selected at the center of AB

the geometric parameters are in addition to  $\mathbf{a} = \mathbf{AB/2}$  and  $\mathbf{b} = \mathbf{MN/2}$ 

 ${\bf X}$  is the abscissa of the mid-point of  ${\bf MN}$  (positive or negative)

Y is the ordinate of the mid-point of MN (positive or negative)

#### Gradient Array Apparent Resistivity:

$$\rho a = K \frac{VP}{I} \quad ohm - metres$$

$$where: \quad K = \frac{2\pi}{(AM^{-1} - AN^{-1} - BM^{-1} + BN^{-1})}$$

$$AM = \sqrt{(a+x-b)^2 + y^2}$$

$$AN = \sqrt{(a+x+b)^2 + y^2}$$

$$BM = \sqrt{(x-b-a)^2 + y^2}$$

$$BN = \sqrt{(x+b-a)^2 + y^2}$$

Using the diagram in Figure B2 for the Total Chargeability:

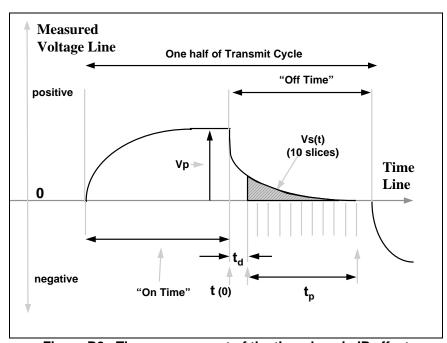


Figure B2: The measurement of the time-domain IP effect

<sup>&</sup>lt;sup>1</sup> From Terraplus\BRGM, <u>IP-6 Operating Manual</u>, Toronto, 1987.

the total apparent chargeability is given by:

### Total Apparent Chargeability:<sup>2</sup>

$$M_T = \frac{1}{t_p V_p} \sum_{i=1 \text{ to } 10} \int_{t_i}^{t_{i+1}} Vs \quad (t) \ dt \qquad \text{millivolts per volt}$$

where  $t_{i}$ ,  $t_{i+1}$  are the beginning and ending times for each of the chargeability slices,

More detailed descriptions on the theory and application of the IP/Resistivity method can be found in the following reference papers:

Cogan, H., 1973, Comparison of IP electrode arrays, Geophysics, 38, p 737 - 761.

Langore, L., Alikaj, P., Gjovreku, D., 1989, Achievements in copper sulphide exploration in Albania with IP and EM methods, Geophysical Prospecting, 37, p 925 - 941.

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<sup>&</sup>lt;sup>2</sup> From Telford, et al., <u>Applied Geophysics</u>, Cambridge U Press, New York, 1983..

#### **APPENDIX D**

#### **INSTRUMENT SPECIFICATIONS**

#### **IRIS ELREC 6 Receiver**

(From IRIS Instruments IP 6 Operating Manual)

Weather proof case

Dimensions:31 cm x 21 cm x 21 cmWeight:6 kg with dry cells

7.8 kg with rechargeable bat.

Operating temperature: -20°C to 70°C

(-40°C to 70°C with optional screen heater)

Storage: (-40°C to 70°C)

**Power supply:** 6 x 1.5 V dry cells (100 hr. @ 20°C) or

2 x 6 V NiCad rechargeable (in series) (50 hr. @ 20°C) or

1 x 12 V external

Input channels: 6

Input impedance: 10 Mohm Input overvoltage protection: up to 1000 volts

Input voltage range: 10 V maximum on each dipole

15 V maximum sum over ch. 2 to 6

**SP compensation:** 6 automatic  $\pm$  10 V with linear drift correction up to 1 mV/s

Noise rejection: 50 to 60 Hz powerline rejections

100 dB common mode rejection (for Rs= 0)

automatic stacking

Primary voltage resolution: 1  $\mu$ V after stacking

**accuracy:** 0.3% typically; maximum 1 over whole

temperature range

Secondary voltage windows: up to 10 windows; 3 preset window specs .plus

fully program-

mable sampling.

Sampling rate: 10 ms

**Synchronization accuracy:** 10 ms, minimum 40  $\mu$ V

Chargeability resolution: 0.1 mV/V

accuracy: typically 0.6%. maximum 2% of reading  $\pm$  1

mV/V for  $V_p > 10 \text{ mV}$ 

Battery test: manual and automatic before each measurement

**Grounding resistance:** 0.1 to 467 kohm

Memory capacity:2505 records, 1 dipole/recordData transfer:serial link @ 300 to 19200 baud

#### **IRIS IP 6 Dump File Format**

\* IP 6 (V9.1) \* \*-----\*

#77 Jul 1 1980 11:57 dipole 1 trigger 1 domain Time T wave Programmable wind. Grad. RCTGL array

cycle 19 Time= 2000 V\_D= 1260 M\_D= 40 T\_M1= 20 T\_M2= 30 T\_M3= 30 T\_M4= 30 T\_M5= 180 T\_M6= 180 T\_M7= 180 T\_M8= 360 T\_M9= 360 T\_M10= 360

Spacing config. : Imperial grid XP=-1300.0 Line= 400.0 D= -100.0 AB/2= 2500.0

#78 Jul 1 1980 11:57 dipole 2 trigger 1 domain Time T wave Programmable wind. Grad. RCTGL array

cycle 19 Time= 2000 V\_D= 1260 M\_D= 40 T\_M1= 20 T\_M2= 30 T\_M3= 30 T\_M4= 30 T\_M5= 180 T\_M6= 180 T\_M7= 180 T\_M8= 360 T\_M9= 360 T\_M10= 360

Spacing config. : Imperial grid XP=-1400.0 Line= 400.0 D= -100.0 AB/2= 2500.0

#### **APPENDIX D**

#### **INSTRUMENT SPECIFICATIONS**

#### **Phoenix IP Transmitter Model IPT-1**

Power Sources: Phoenix MG-3 (2.5KVA, 60V, 3 phase, 400 Hz) motor generator

Output Voltage: 75 to 1200V in 5 steps.

75 - 150 - 300 - 600 - 1200V

Voltage is continuously variable  $\pm$  20% from each nominal step value.

**Output Power:** Maximum continuous output power is 2.5KW.

Maximum Current: 10 Amps

Ammeter Ranges: 30m A, 100m A, 300mA, 1A, 3A, and 10A full scale.

Meter Display: A meter function switch selects the display of current level, regulation

status, input frequency, output voltage, line voltage

**Current regulation:** The change in output current is less than 0.2% for a 10% change in

input voltage or electrode impedance. Regulation is achieved by

feedback to the alternator of the motor generator unit.

Output waveform: Either DC, single frequency, two frequencies simultaneously, or time do-

main (50% duty cycle). Frequencies of 0.078, 0.156, 0.313, 1.25, 2.5 and 5.0 Hz are standard, whereas 0.062, 0.125, 0.25, 1.0, 2.0 and 4.0 Hz are optionally available. The simultaneous transmission mode has 0.313 and

5.0 Hz as standard, whereas 0.156 and 2.5 Hz are optional.

Operating Temperature: -40°C to +60°C

Frequency Stability:  $\pm 1\%$  from -40°C to +60°C is standard. A precision time base is

optionally available for coherent detection and phase IP measurements.

Transient Protection: Current is turned off automatically if it exceeds 150% full scale or is less

than 5% full scale.

**Dimensions:** 18cm x 40cm x 53cm

Weight:

17 kg

### APPENDIX E

#### LIST OF MAPS

#### • Plan Maps at scale of 1:10000

	Description	Drawing No.
1.	Posted, Contoured Apparent Resistivity, Strathy Grid	CA00574C-PLAN-RES-1
2.	Posted, Contoured Total Chargeability, Strathy Grid	CA00574C-PLAN-CHG-1
3.	Posted, Contoured Apparent Resistivity, Chambers Grid	CA00574C-PLAN-RES-2
4.	Posted, Contoured Total Chargeability, Chambers Grid	CA00574C-PLAN-CHG-2
5.	Posted, Contoured Location Map, Strathy Grid	CA00574C-PLAN-LOC-1
6.	Posted, Contoured Location Map, Chambers Grid	CA00574C-PLAN-LOC-2
	TOTAL PLANS	6

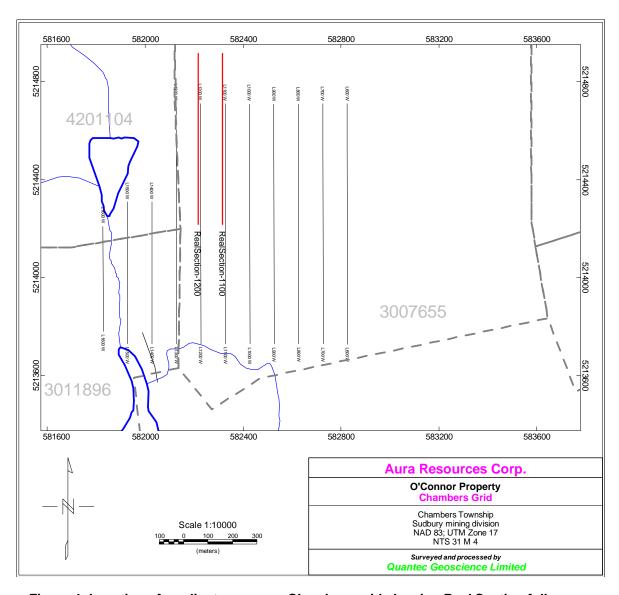
#### • Section Maps

	Description	Drawing No.
7.	Posted, Contoured, Stacked Realsection Map	CA00574C-RSIP-CHG-RES-11+00W
	Chambers Grid Line 11+00W at 1:5000	
8.	Posted, Contoured, Stacked Realsection Map	CA00574C-RSIP-CHG-RES-12+00W
	Chambers Grid Line 12+00W at 1:5000	
	TOTAL SECTIONS	2

**TOTAL MAPS: 8** 

#### **APPENDIX F**

Maps and Sections



<u>Figure 4: Location of gradient survey on Chambers grid showing Real Section follow-up lines in red.</u>

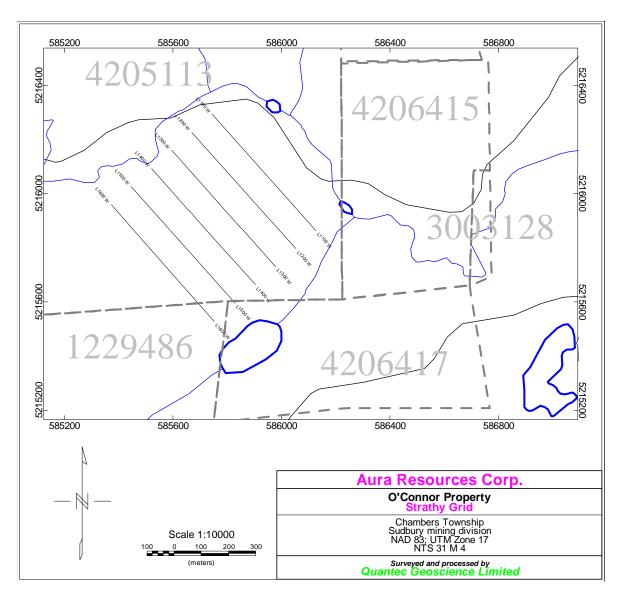


Figure 5: Location of gradient survey on Strathy grid.

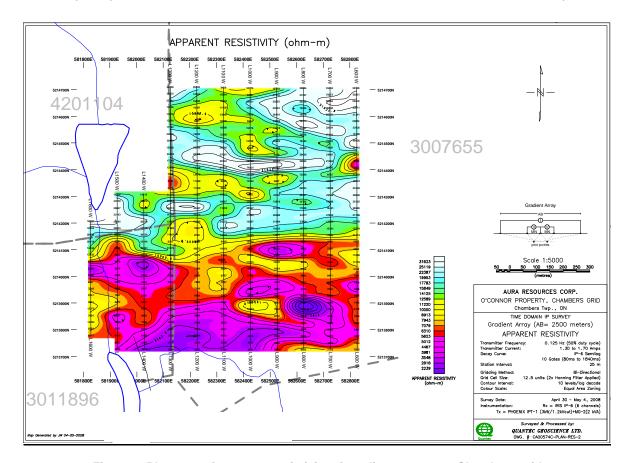
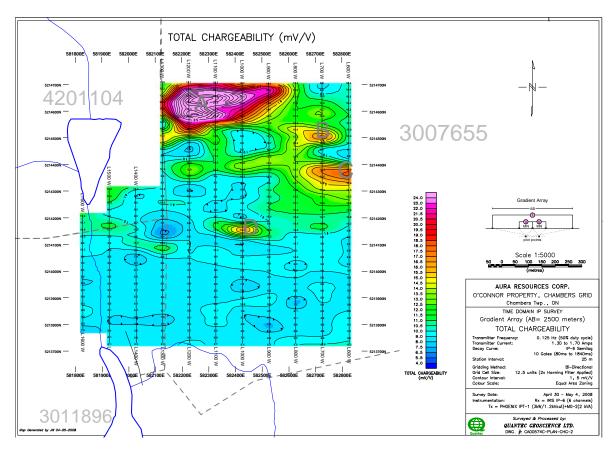


Figure 6: Plan map of apparent resistivity of gradient survey on Chambers grid.



<u>Figure 7: Plan map of total chargeability for the gradient survey on the Chambers grid. Anomalies A, B, C and D as referenced in report are labeled in grey.</u>

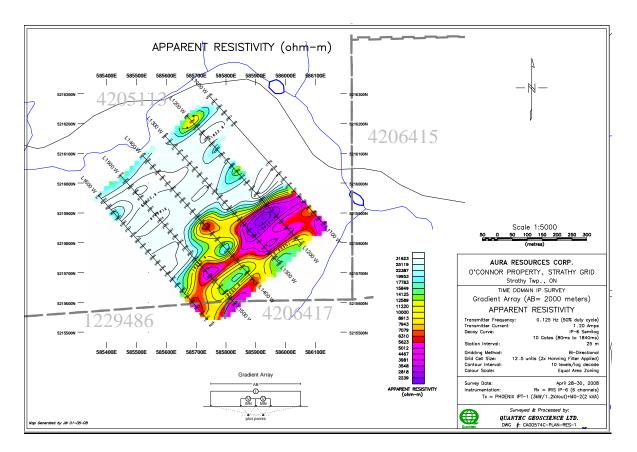


Figure 8: Plan map of apparent resistivity for gradient survey on Strathy grid.

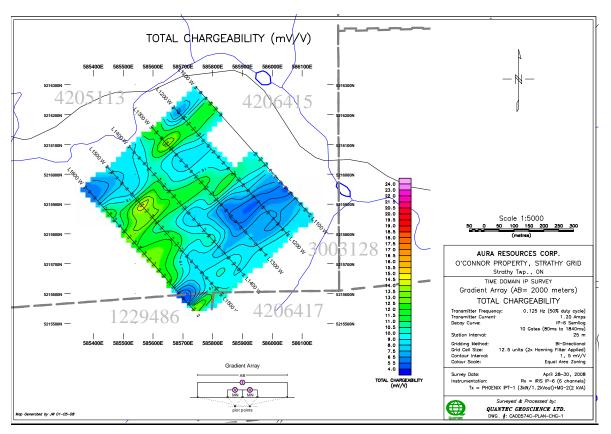
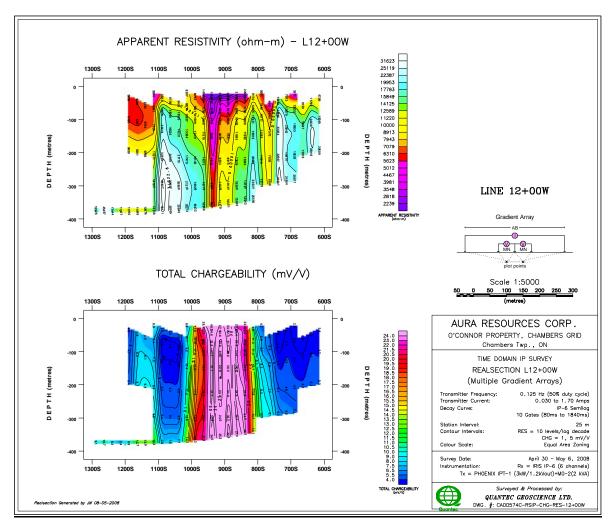
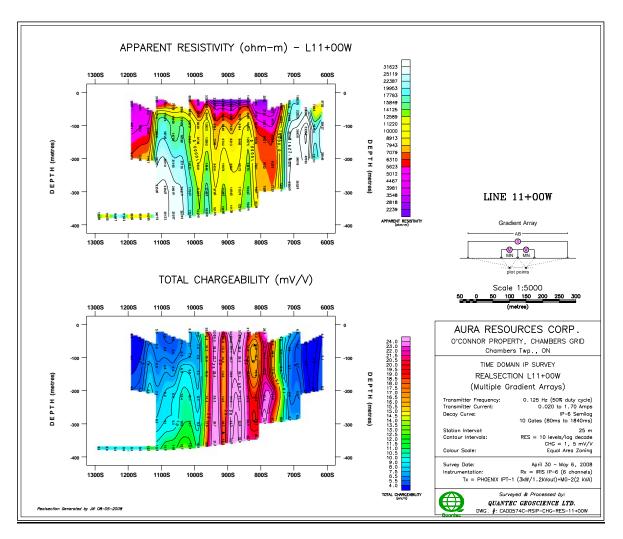


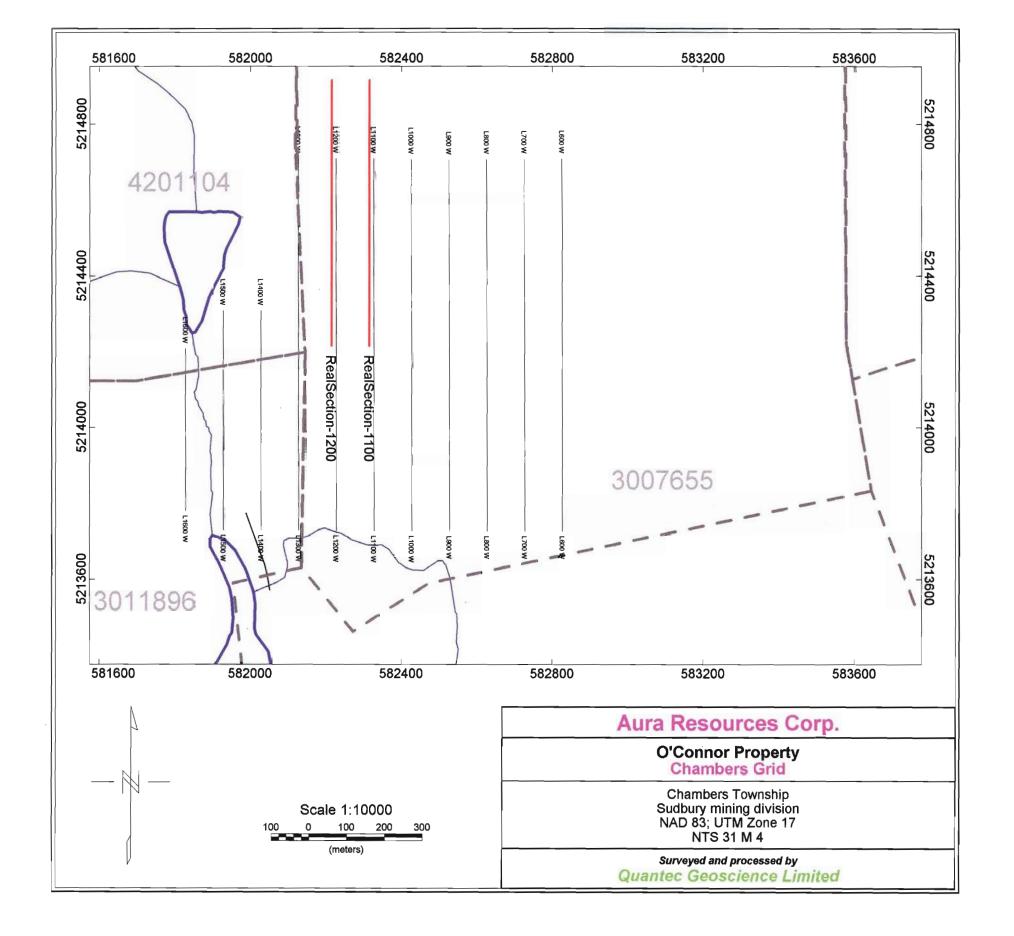
Figure 9: Plan map of chargeability for gradient survey on Strathy grid.

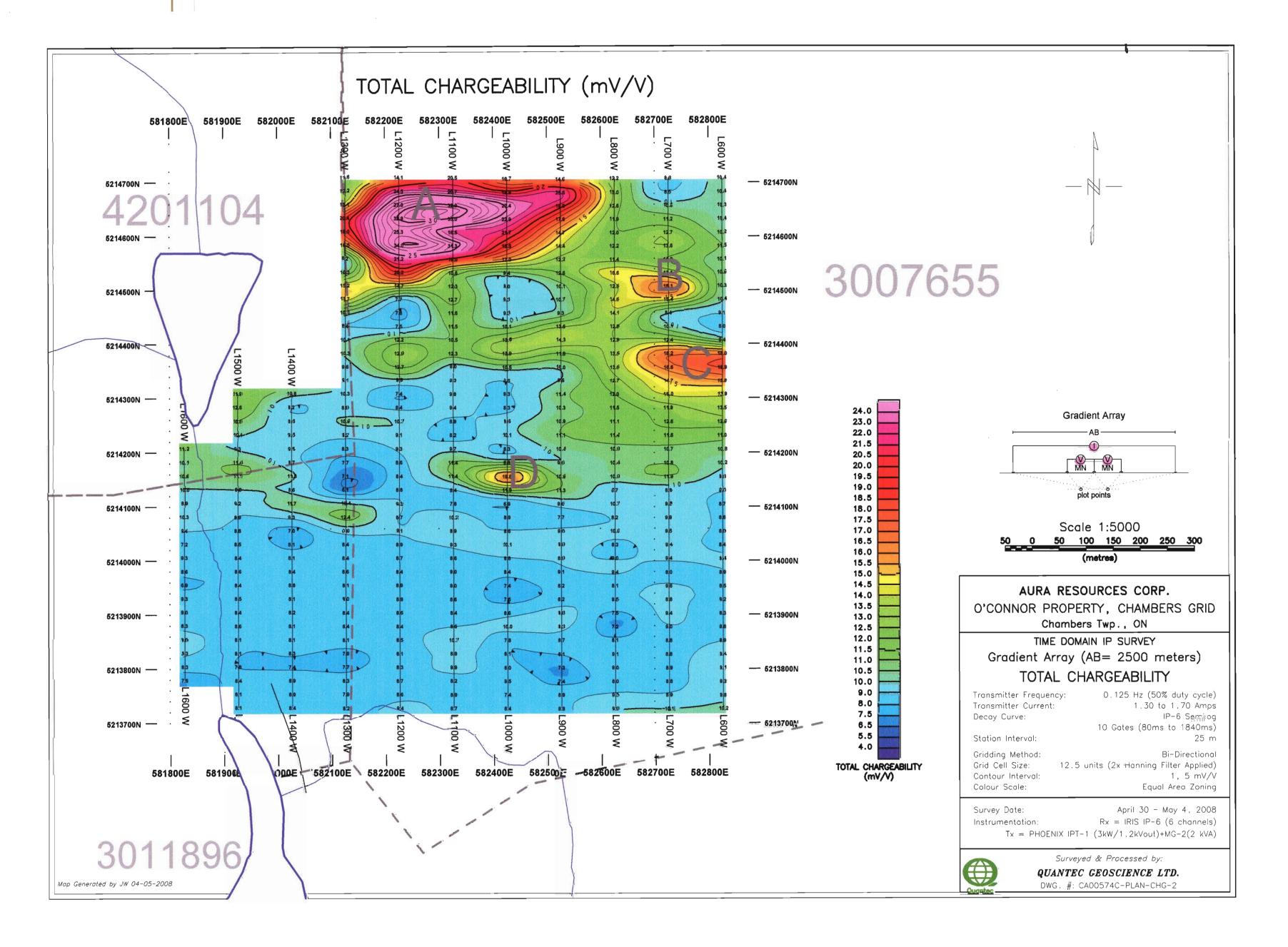


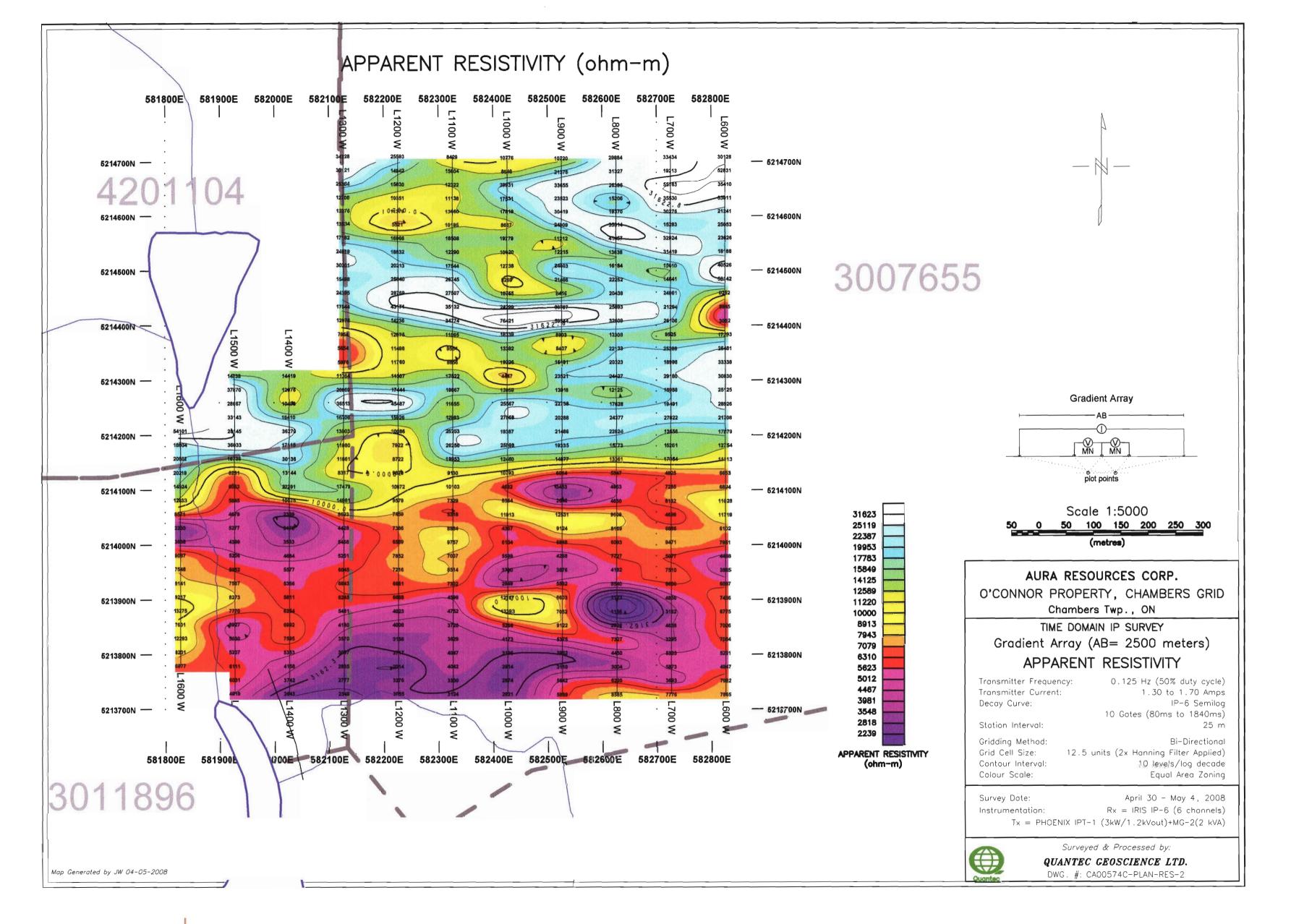
<u>Figure 10: Realsection display of apparent resistivity and total chargeability for line 1200W on the Chambers Grid</u>



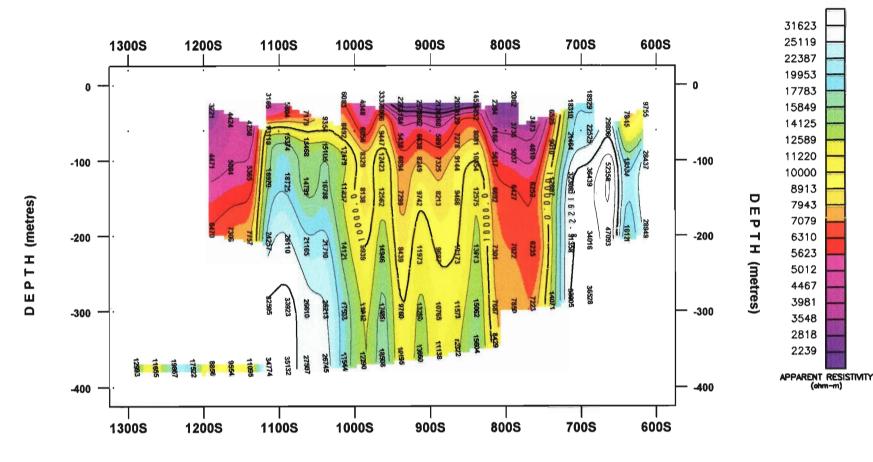
<u>Figure 11: Realsection display of apparent resistivity and total chargeability for line 1100W on the Chambers Grid</u>



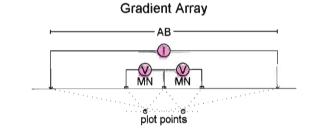




# APPARENT RESISTIVITY (ohm-m) - L11+00W

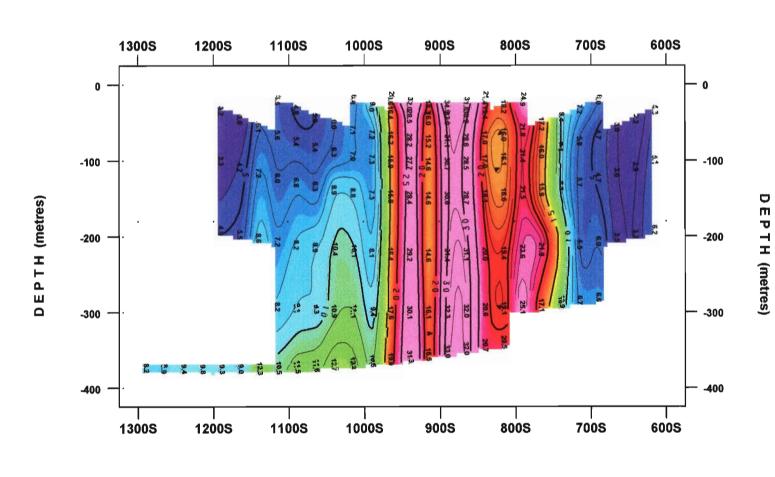


### LINE 11+00W



### Scale 1:5000 100 150 200 250 (metres)

# TOTAL CHARGEABILITY (mV/V)



### AURA RESOURCES CORP.

O'CONNOR PROPERTY, CHAMBERS GRID Chambers Twp., ON

### TIME DOMAIN IP SURVEY REALSECTION L11+00W (Multiple Gradient Arrays)

0.125 Hz (50% duty cycle) Transmitter Frequency: Transmitter Current: Decay Curve:

0.020 to 1.70 Amps IP-6 Semilog

10 Gates (80ms to 1840ms)

Station Interval: RES = 10 levels/log decodeContour Intervals:

CHG = 1, 5 mV/VEqual Area Zoning

April 30 - May 6, 2008 Survey Date: Rx = IRIS IP-6 (6 channels)Tx = PHOENIX IPT-1 (3kW/1.2kVout)+MG-2(2 kVA)



TOTAL CHARGEABILITY

Colour Scale:

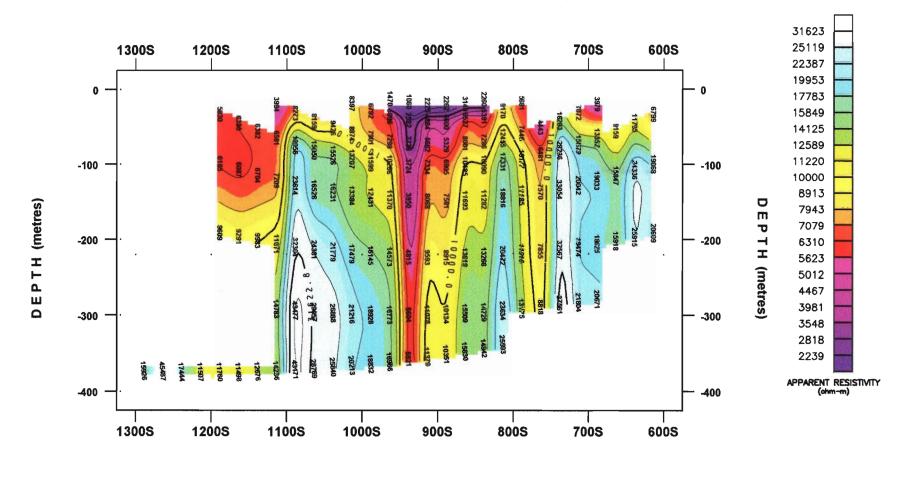
Surveyed & Processed by:

QUANTEC GEOSCIENCE LTD.

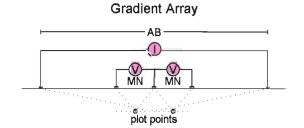
DWG. #: CA00574C-RSIP-CHG-RES-11+00W

Realsection Generated by JW 08-05-2008

## APPARENT RESISTIVITY (ohm-m) - L12+00W

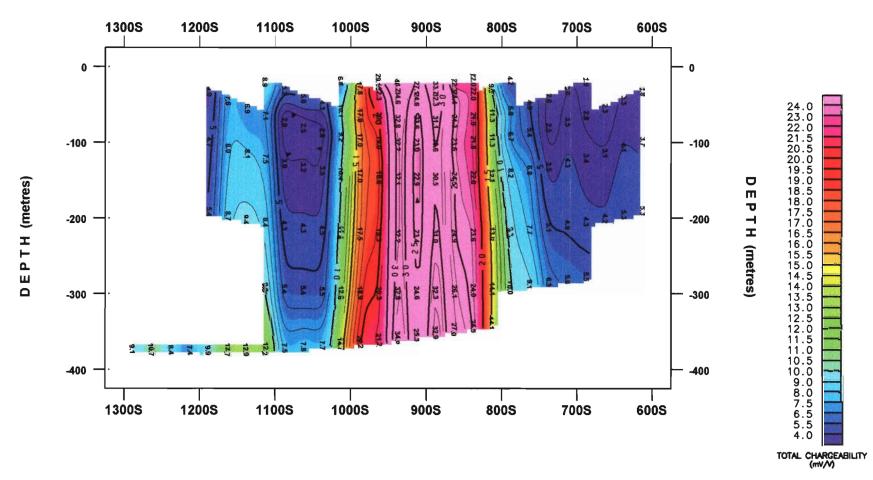


### LINE 12+00W



### Scale 1:5000 100 150 200 (metres)

# TOTAL CHARGEABILITY (mV/V)



### AURA RESOURCES CORP.

O'CONNOR PROPERTY, CHAMBERS GRID Chambers Twp., ON

### TIME DOMAIN IP SURVEY REALSECTION L12+00W (Multiple Gradient Arrays)

Transmitter Frequency: Transmitter Current:

0.125 Hz (50% duty cycle)

0.030 to 1.70 Amps IP-6 Semilog

10 Gates (80ms to 1840ms)

Station Interval: Contour Intervals:

Colour Scale:

Decay Curve:

RES = 10 levels/log decadeCHG = 1, 5 mV/V

Equal Area Zoning

Survey Date: Instrumentation:

April 30 - May 6, 2008 Rx = IRIS IP-6 (6 channels)Tx = PHOENIX IPT-1 (3kW/1.2kVout)+MG-2(2 kVA)



Surveyed & Processed by:

QUANTEC GEOSCIENCE LTD.

DWG. #: CA00574C-RSIP-CHG-RES-12+00W

Realsection Generated by JW 08-05-2008

