

PLANETARY GEOPHYSICS PTY LTD

IP/resistivity survey at the Cethana Prospect (ELA/2004)

Tasmania

for Pluton Resources Ltd

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INTRODUCTION

At the request of Mr John McDougall of Pluton Resources Ltd a field crew from Planetary Geophysics Pty Ltd (www.planetarygeophysics.com.au) completed a small IP/resistivity survey at the Cethana Prospect in Tasmania, Figures 1 and 2.

Three lines, 150m apart, were surveyed, Figure 3, with total coverage of 5200m.

SURVEY EQUIPMENT AND PROCEDURES

Equipment used for the survey consisted of an Iris Instruments (www.iris-instruments.com) 10 channel ElrecPro IP/resistivity receiver and an Instrumentation GDD (www.gddinstrumentation.com) 5000watt transmitter.

All measurements were made in the time-domain using a two-second half-duty cycle. The final chargeability value was calculated using an integration window from 0.5 to 1.1 seconds after the turn off of the transmitter pulse.

Lines were surveyed using a dipole-pole array (in this case the current electrode was to the north of the potential electrodes) with a 100m a-spacing and readings to $n = 8$.

Three lines of were completed with a total coverage of 5200m, Table I.

Line No.	Start	End	Coverage
9850mE	4400mN	6200mN	1800
10000mE	4300mN	6000mN	1700
10150mE	4300mN	6000mN	1700
		TOTAL	5200m

Table I, survey statistics, Cethana Prospect, Tasmania

RESULTS

There are zones of elevated chargeability on the three lines.

Line 9850mE, Figure 4, shows a discrete zone of anomalous chargeability at 5000mN and a broad zone of higher chargeability extending from 4700mN to the southern end of the line. These are highlighted in the two-dimensional inversion model, Figure 5, which infers the chargeability feature at 5000mN dips to the north and also clearly shows the zone at the southern end of the line to be open in that direction. The inversion modelling can be misleading with "end of line anomalies" and if possible this feature should be closed off, and remodelled prior

to any drill testing. The resistivity model, Figure 6, shows a resistive feature at 4600mE which is partly coincident with the southern chargeability high. There is a resistivity high at 4900mN to 5000mN which is coincident with a near surface chargeability high, and just south of deep chargeability high discussed above.

The chargeability distribution on Line 10000mE, Figure 7 is similar to Line 9850mE with a broad zone of elevated chargeability from 4650mN to the southern end of the line, open to the south; and a discrete chargeability feature at 5000 to 5100mN. The inversion model, Figure 8, shows the southern feature is open to the south at depth and a strong near-surface source at 4500mN and 4600mN, the model also shows the high zone at 5000mN to 5100mN and infers it is either vertical or dipping to the north. The resistivity distribution, Figure 9 is also similar to line 9850mE with the northern part of the line having high resistivities and the southern part of the line significantly lower resistivities indicative of differing rocks.

As with the lines discussed above, Line 10150mE, Figure 10, has two zones of elevated chargeability, one in the south extending from 4550mN to the southern end of the line and open in that direction, Figure 10, and the other centred at 5000mN. Inversion modelling indicates both near surface and deeper components to the sources, Figure 11. The resistivity distribution and inversion model is similar to Lines 9850mE and 10000mE, Figure 12.

SUMMARY AND CONCLUSIONS

The three lines of dipole pole IP/resistivity have mapped two zones of elevated chargeability at Cethana, Figure 13. The southern zone is open to local grid south, west and east. Two dimensional inversion modelling indicates it results from near surface and deep sources. The modelling of this southern anomaly is not well resolved as the anomaly has not been closed off to the south. The second chargeability zone which is located around 5000mN on the three lines is quite chargeable, with the modelling indicating a source that dips steeply to the north.

Both anomalous zones need to be accounted for. It is recommended, if at all possible, that the southern anomaly be closed off to the south to determine its extent in that direction and to facilitate improved models, Figure 2 does indicate a lake in that area. Both anomalies are open to grid west and east, therefore, should either have associated mineralisation, there is significant scope along strike.

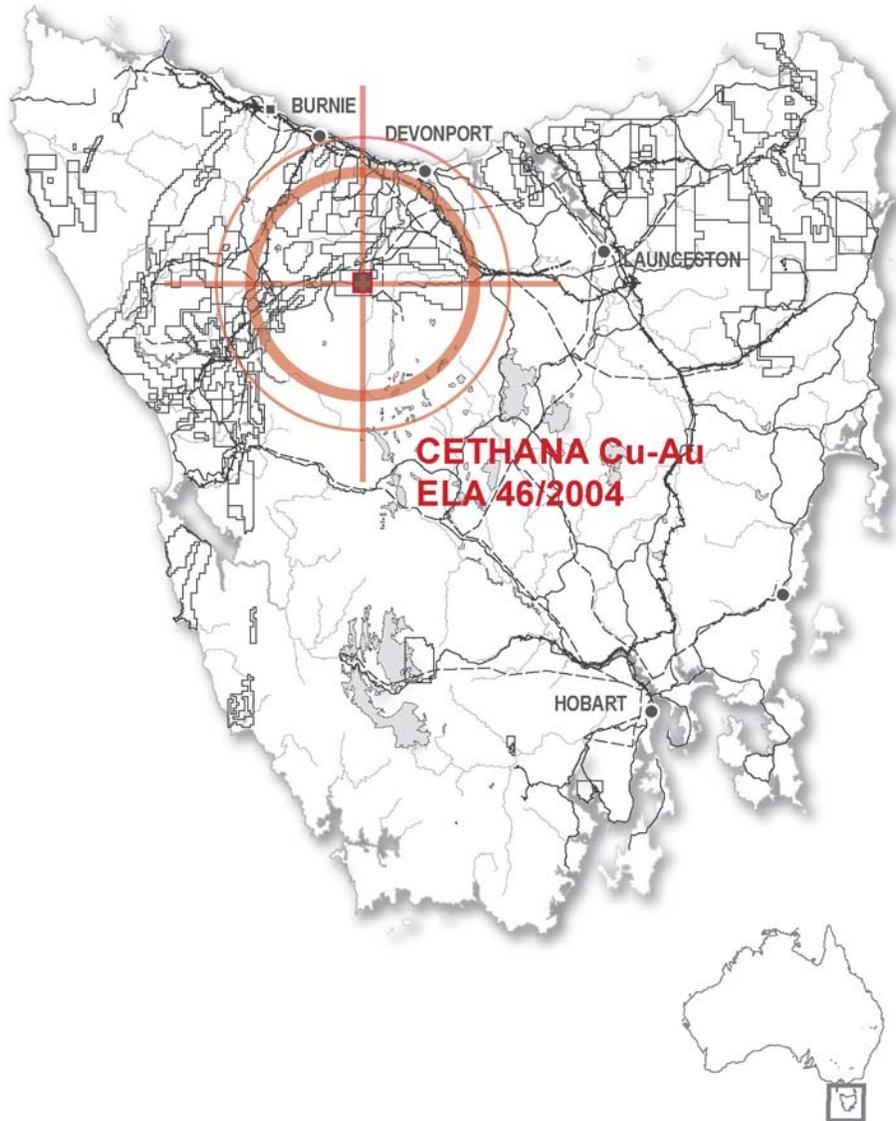


Figure 1, location plan, Cethana Prospect, Tasmania

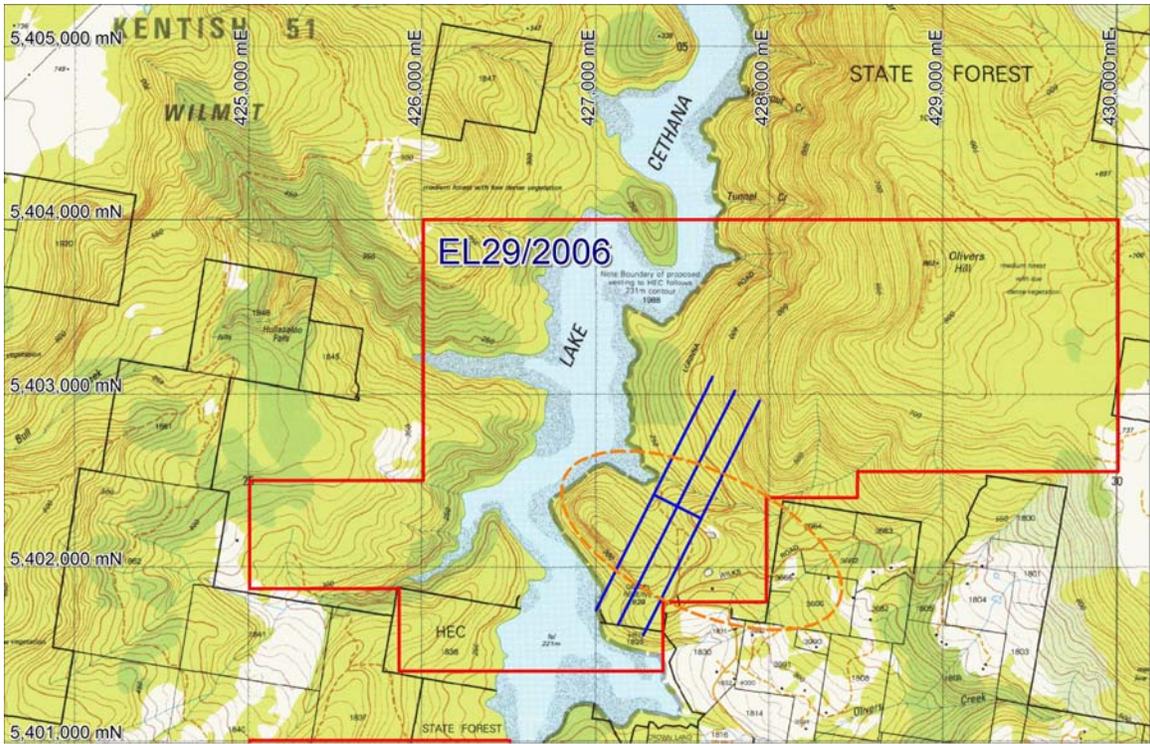


Figure 2, tenement outline, topography and IP line locations, Cethana Prospect, Tasmania.

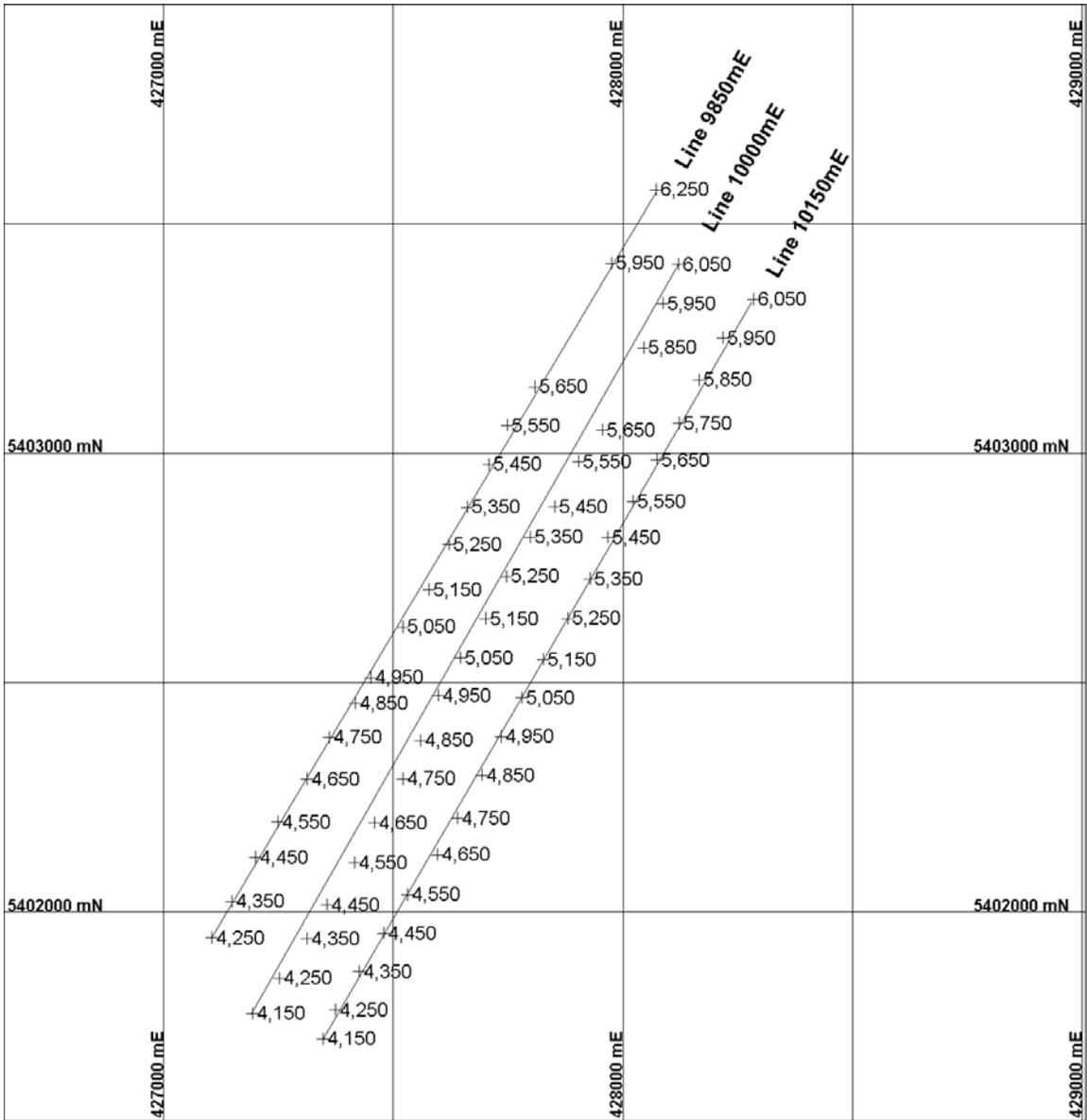


Figure 3, survey line locations with local line and station numbers, Cethana Prospect, Tasmania. Coordinates are AGD66/Zone55.

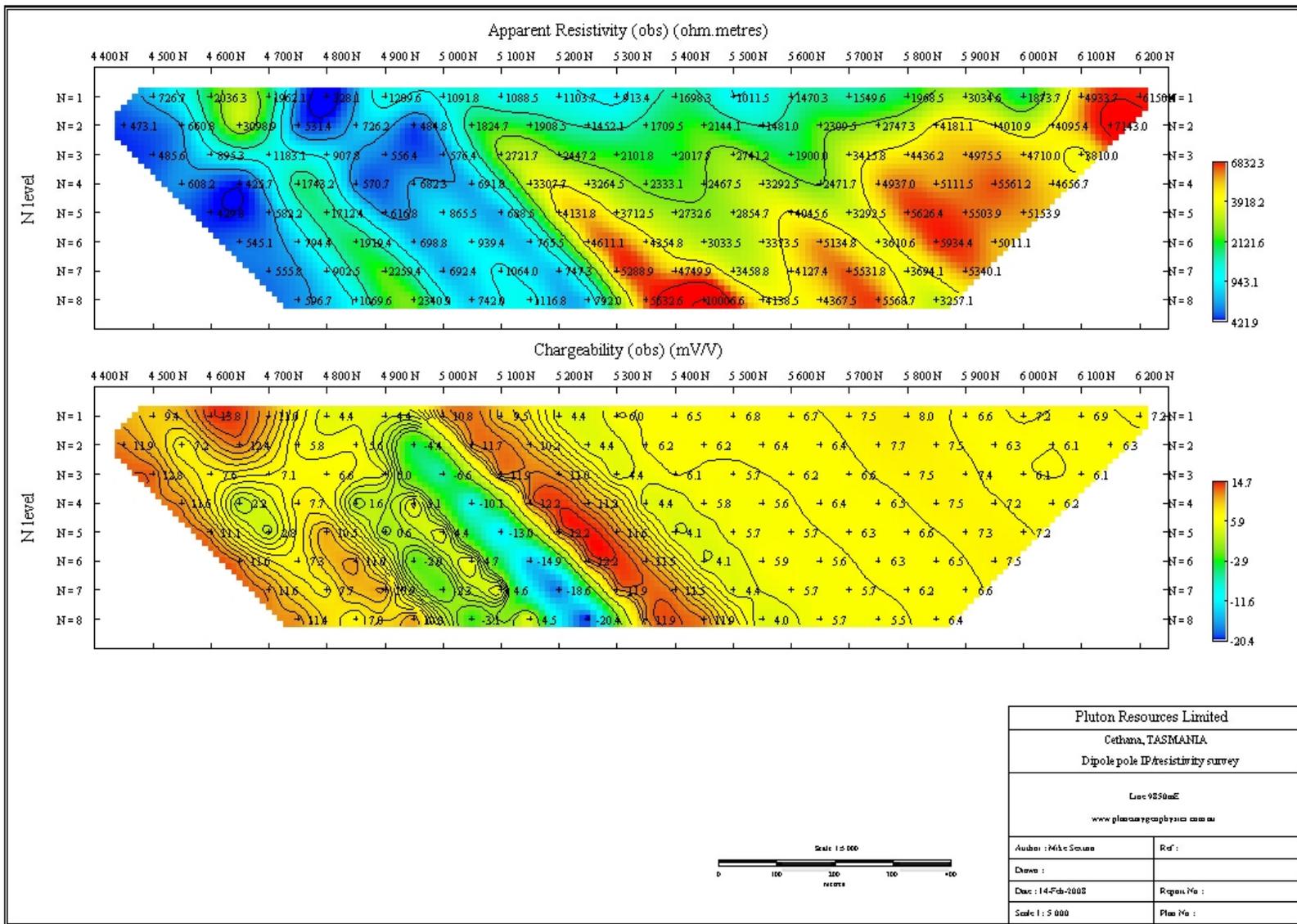


Figure 4, dipole pole IP resistivity pseudosection, line 9850mE, Cethana, Tasmania.

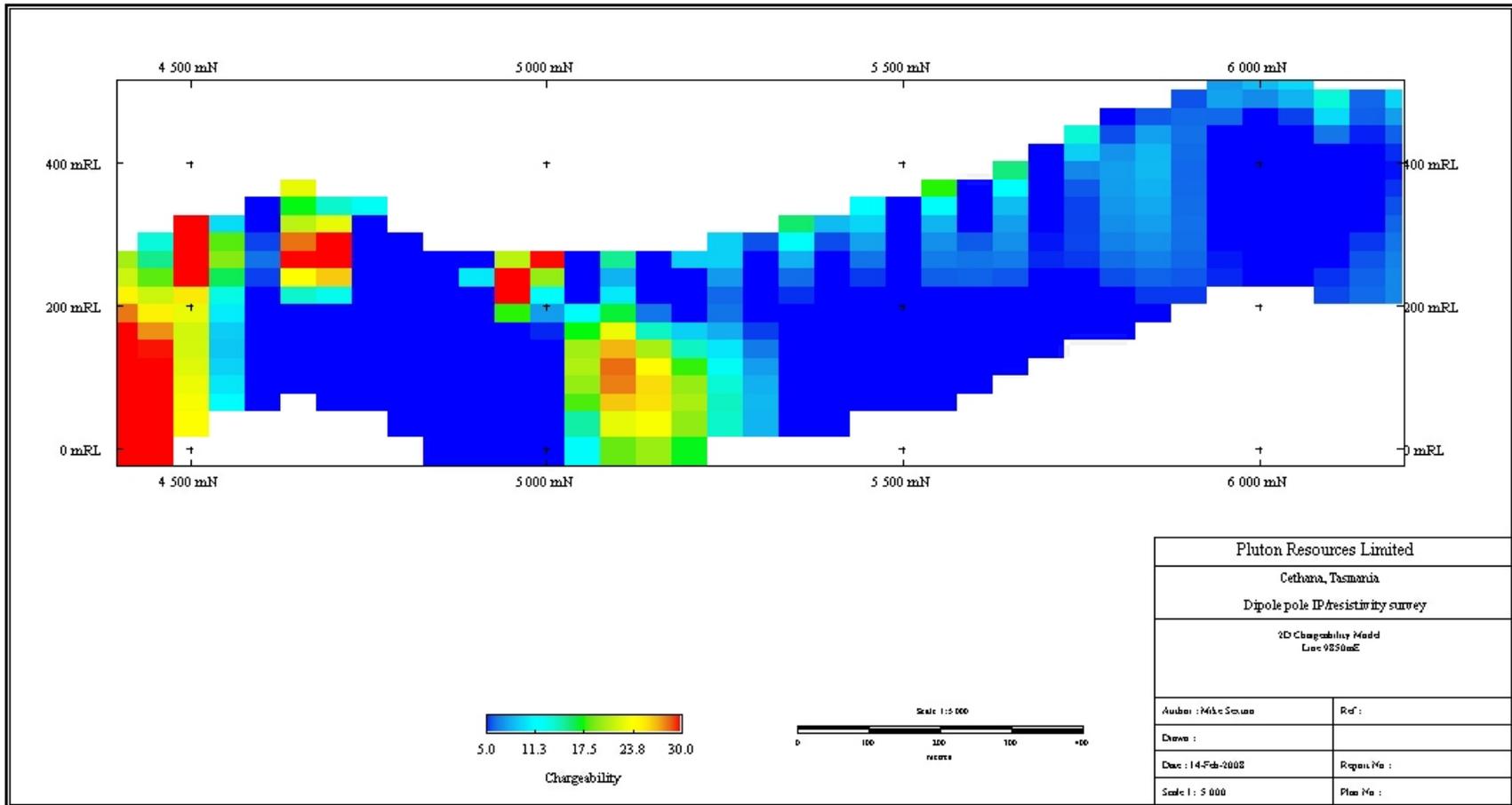


Figure 5, two dimensional chargeability inversion model, line 9850mE, Cethana, Tasmania.

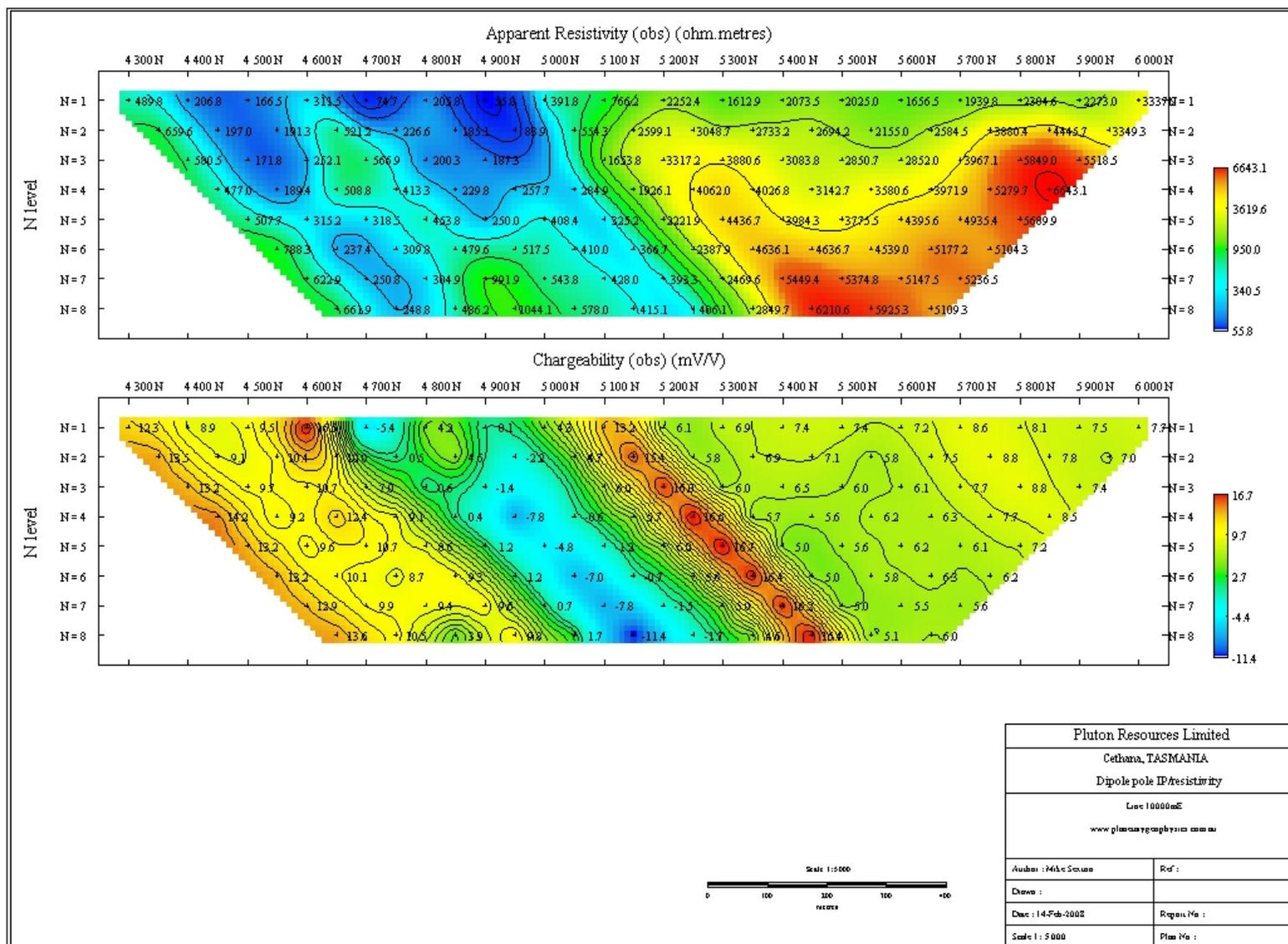


Figure 7, dipole pole IP/resistivity pseudosection, line 10000mE, Cethana, Tasmania.

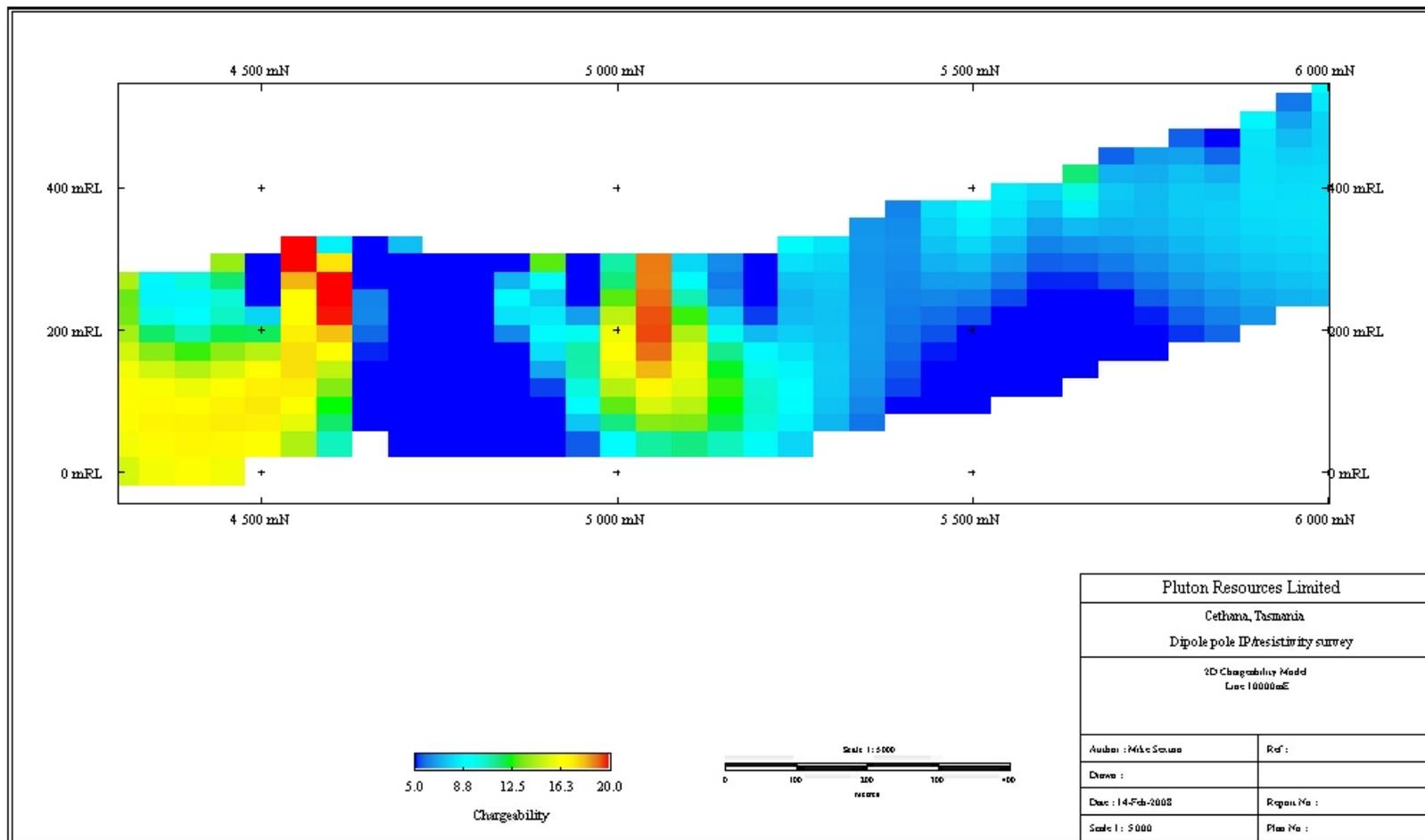


Figure 8, two dimensional chargeability inversion model, line 10000mE, Cethana, Tasmania.

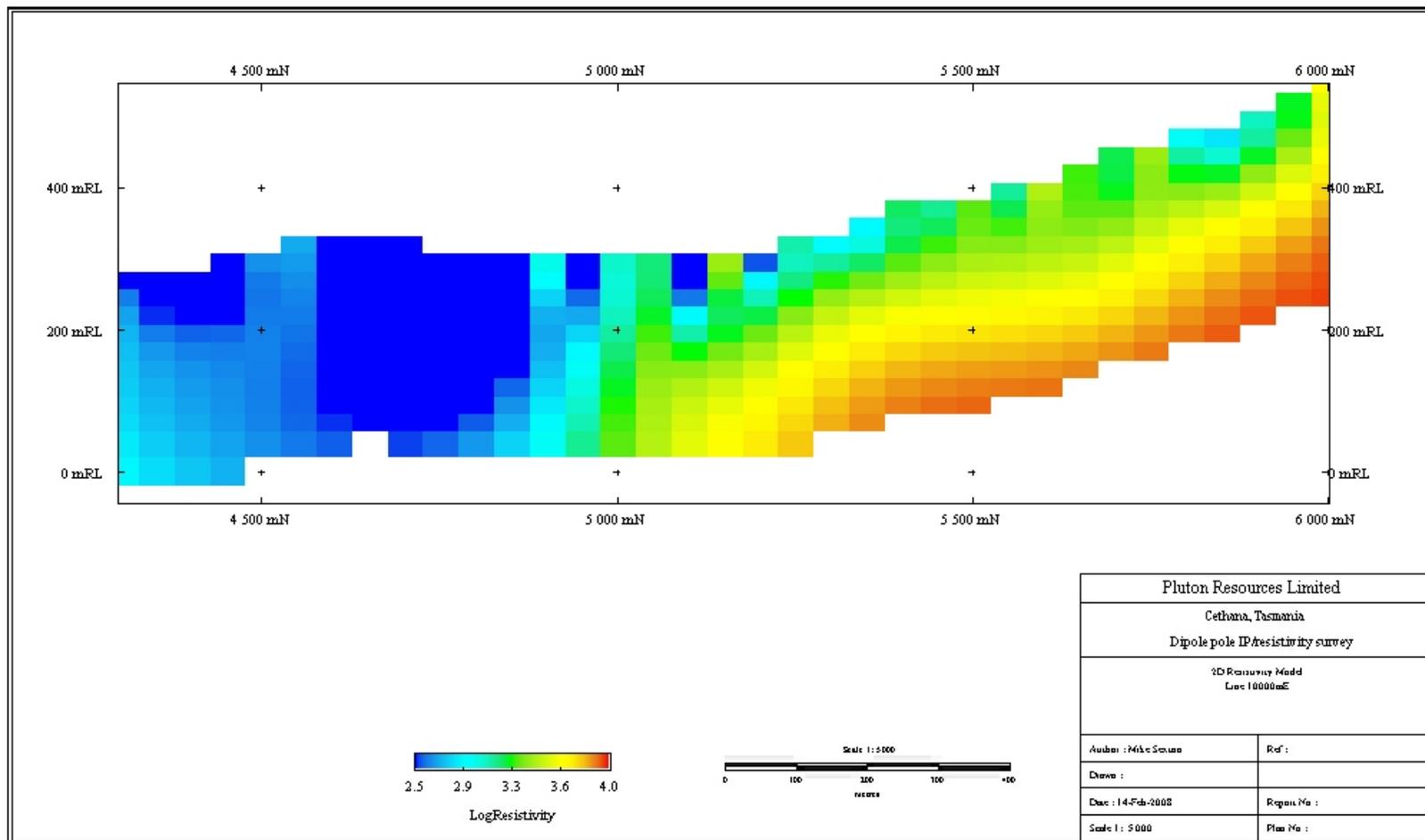


Figure 9, two dimensional resistivity inversion model, line 10000mE, Cethana, Tasmania

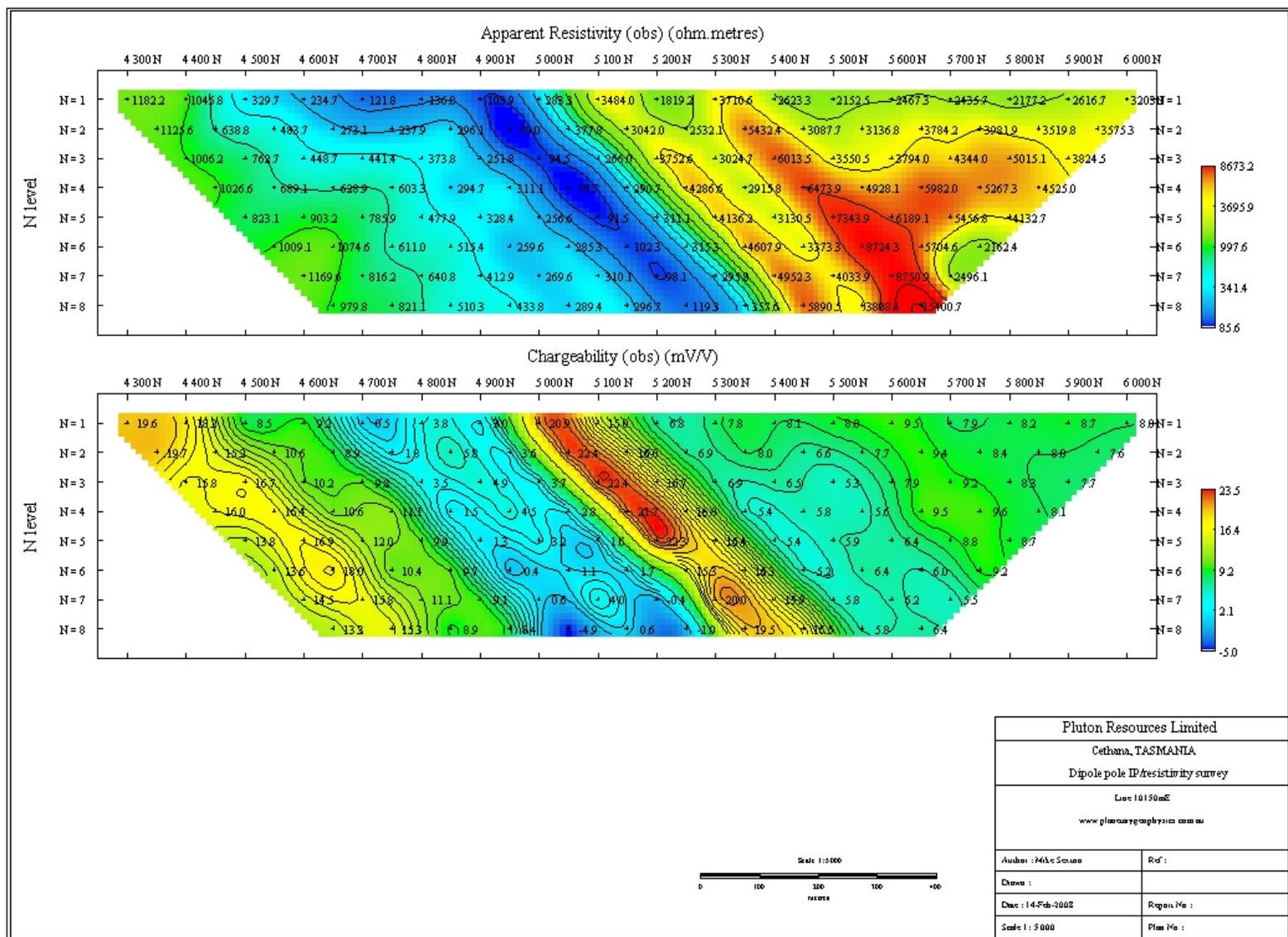


Figure 10, dipole pole IP/resistivity pseudosection, line 10150mE, Cethana, Tasmania

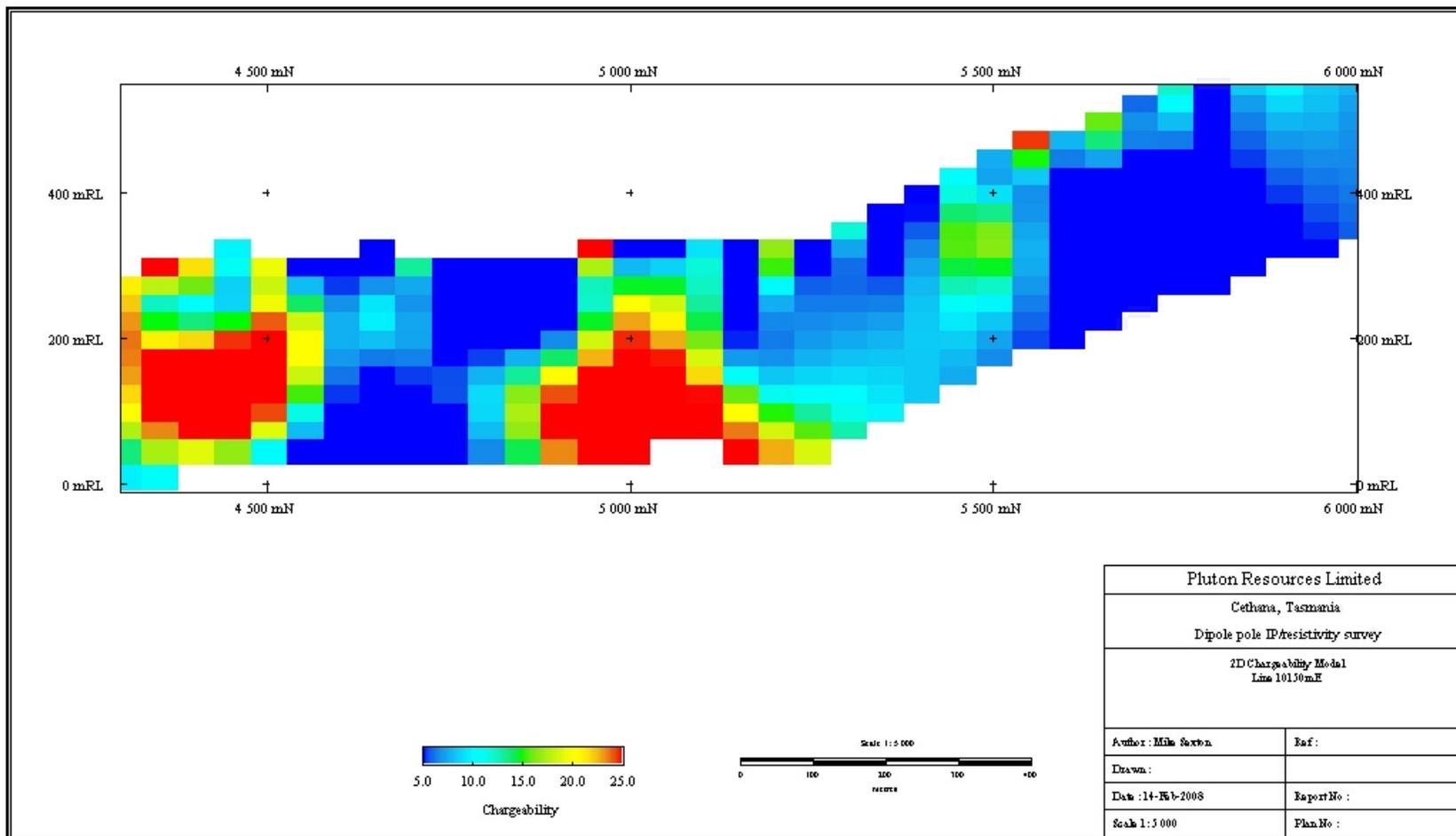


Figure 11, two dimensional chargeability model, line 10150mE, Cethana, Tasmania.

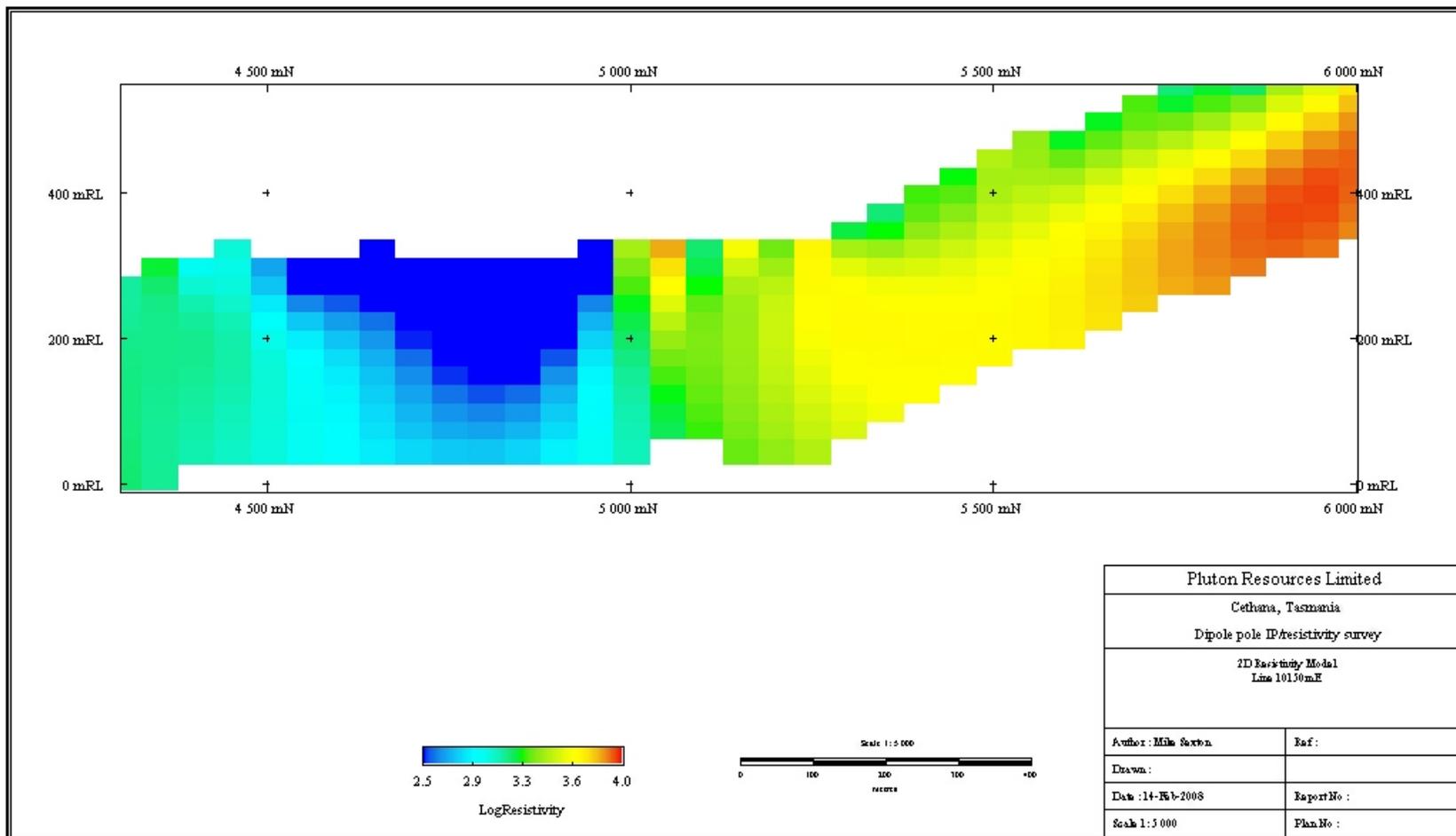


Figure 12, two dimensional resistivity inversion model, line 10150mE, Cethana, Tasmania.

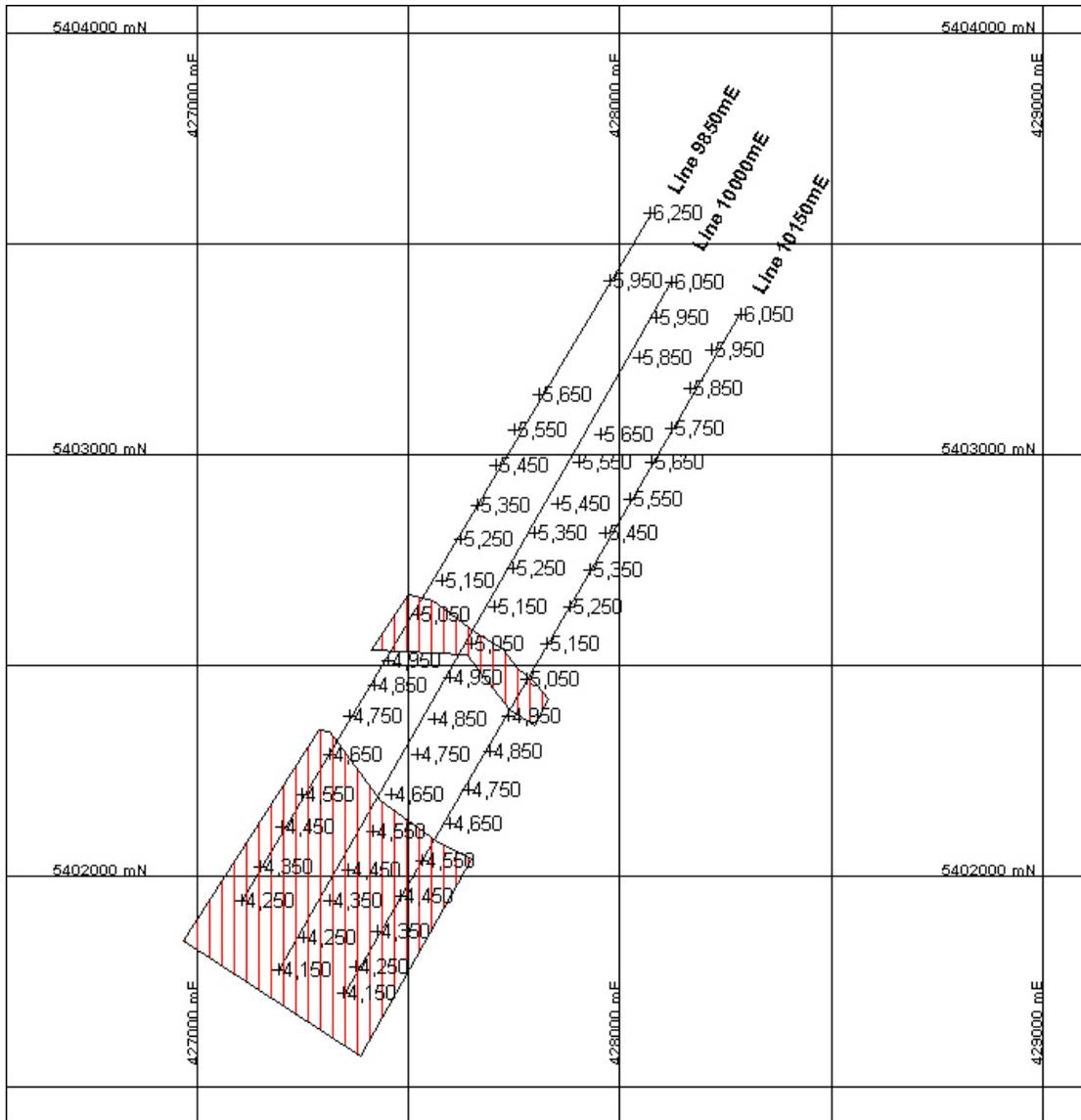


Figure 13, chargeability zones, Cethana, Tasmania