

Flagstaff GeoConsultants



DATA SUPPLIED

CSAMT data was acquired on EL 8/96 by Zonge Engineering as contractors to Goldfields Ltd, in 1999. This CSAMT data complements surveys covering the Basin Lake area (EL 19/98) to the south, reported in Asten (1999) and Hill and Vicary (1999). Data was supplied by the contractor as digital AVG files, and digital files of 1D inversions.

The re-interpretation of dipole-dipole resistivity and chargeability data uses information from surveys conducted by McPhar Geophysics (1967). The data were digitised from original pseudo-sections provided by McPhar in 1967. The resistivity and IP data was inverted using the University of British Columbia 2D inversion software (Oldenburg et al, 1994). A base map at scale 1:5000, showing locations of the Lines on the Mt Tyndall East grid, as drawn by the MLM&R in 1982, was used as the primary geographic reference.

Sketches of for selected boreholes were provided by T. Callaghan, and are included in Figures 1-8 of this report.

INTRODUCTION

The historical data and known geology is described by Dauth (1999). The new CSAMT survey (Zonge Job 426) was commissioned by Goldfields Ltd and covered 14 east-west lines, from 5356200N to 5362000N (spacing 400 m). The lines averaged 1500 m length and used 50 m receiver electric dipoles. The transmitter bipole was east-west, length 1875 m, with centre located at 380038E, 5350600N. At the southern end, the data partially overlaps earlier data acquired by Billiton on Lines 5356200N and 5357000N. Transmitter frequencies from 8192 Hz to 32 Hz were used; lower frequencies used in the earlier Billiton survey were judged to add no useful information, being clearly in the "near-field" in this resistive terrain.

Data was supplied by the contractor as AVG files, ie as Cagniard resistivities averaged in time but with no spatial filtering. The data was then converted to full AMG coordinates and filtered using the EMAP process (Torres-Verdin and Bostick, 1992) by this author. The EMAP filtering process gives a dramatic reduction in magneto-telluric static effects, which makes interpretation of the data via resistivity-frequency pseudo-sections significantly more reliable (Asten 1999).

The EMAP filtered data was then transformed to resistivity-depth parasections, using the Bostick transform (Jones, 1983). While the Bostick transform is a one-dimensional (layered-earth) transform, when coupled with EMAP filtering it gives results close to two dimensional inversion (Torres-Verdin and Bostick, 1992).

A significant constraint on interpretation of this data is that the transition zone for the controlled source occurs at 1024Hz or 512Hz, and much of the data acquired at

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