APPENDIX 1

- GPX Report

RepTEM Airborne Geophysical Survey

Browns Range, Northern Territory.

January - February 2008
Survey Operations and Logistics Report

For
PALACE RESOURCES

Survey Flown by:

GPX Airborne
JOB NUMBER 2301
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GPX Airborne
RepTEM (Mkl) Survey

SURVEY SUMMARY

Client: PALACE RESOURCES
Job Number: 2301
Survey Area: Browns Creek, Northern Territory
Data Processing Base: Base of Operations and processing base was Supplejack Downs Station

Mobilisation 11th January 2008
Production 12th January - 2nd February 2008
Demobilisation 2nd February 2008

Line km surveyed: 1801.146 km

Survey Crew: Brett Hanlon (Crew Leader)
Kent Andrews
Jeffery Kerferd
Nick Scott (Pilot)
Hamish Henderson (Pilot)

Survey Specifications: Traverse Line Spacing 200 m
Traverse Line Direction 090 - 270 degrees
Tie Line Spacing 2000 m
Tie Line Direction 000 - 180 degrees

In January 2008, GPX Airborne was contracted by Palace Resources to perform a RepTEM survey over the browns Range survey area in the Northern Territory. The job was flown between the 12th January and the 2nd February 2008.

The base of operations and processing was located at the Supplejack Downs Station.
Survey Area Maps

Overview

PALACE RESOURCES
BROWNS RANGE
GDA94 MGA52
28th May 2007

Scale 1:100000

GPX Airways
11 Wilcock Street,
Adelaide, South Australia. +61 8 9315 8111

GDA94 / Map Grid of Australia zone 52
RepTEM System Specifications

Transmitter
Waveform - 25% duty cycle square wave
Pulse on Time 5 ms (inclusive of 1ms cosine ramp on)
Pulse off Time 15 ms
Pulse Current 320 Amps
Switch on Ramp 1 ms
Switch off Ramp 55 µs
Tx Loop Area 350 m²
Tx NIA - 112,000
Tx Frequency 25 Hz

Receiver
A D Circuitry 24 bit
Sample Time 0 12 ms
Sampling 121 Linear channels
Windowed Data 21 channels

Receiver Coil
Effective NA 10,000 Square Metres
Bandwidth- 45,000 Hz
Geometry.

Transmitter loop is towed 35 m below helicopter. Receiver coil is located at centre of Tx loop.

Transmitter I Receiver at nominal 35 m terrain clearance.

Helicopter survey speed is between 45 and 55 knots.

Along line sample interval is between 9 and 11 metres.
EM Data Channel Specifications

NB: Time 0 is at the start of the switch off ramp

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RepTEM Airborne Geophysical System
Magnetic Data Specifications
The helicopter was equipped with a bird mounted Geometrics G 822A Cesium vapor, optically pumped magnetometer continuously sampling at 1200 Hz. The instrument has a sensitivity of 0.001nT, with a sensor noise level of less than 0.1nT. The magnetic readings are resampled to 50Hz with each sample containing an array of 24 readings. Adjacent readings are summed to minimise bias from the EM transmissions to produce the 25Hz magnetic array data. The mid time array positions are averaged to create the magnetic response. The time synchronized ground magnetic field data was digitally recorded at a 5.0 sec interval with a Geometrics G856 magnetometer to an accuracy of 0.1nT.

Base Station Location:  563174mE, 7866276mN  MGA Zone 52

DATA PROCESSING SUMMARY
The following processes were carried out at the field processing office:
• Spline removal of birdswing
• Negative decays paired and reversed
• Filtering and correction of laser altimeter
• Data is splined to a uniform sample spacing
• Butterworth filter applied to each channel
• Preliminary gridding and data verification

Final EM Processing
Software used for processing at the GPX Perth office:
• Geosoft
• EmaxAIR by Fullagar Geophysics
• ChrisDBF

System response obtained from high level flights is removed from the data. CDIs are generated using EmaxAIR, and depth slice data is interpolated from the Emax output using in house software. Final plots are created in Geosoft .MAP format, and include CDIs that are masked to the first and last depth solution at each station.

Magnetic Data processing.
The aircrafts magnetic data is corrected for diurnal and the mean diurnal value added back to the channel. Parallax is applied, followed by the IGRF correction, the mean IGRF value being added back to data. Where required tie line and a micro level will be applied to the final magnetic channel.

<table>
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<tr>
<th>Area Name</th>
<th>Diurnal Value</th>
<th>IGRF Value</th>
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<tr>
<td>Browns Range</td>
<td>50699.81 nT</td>
<td>50699.73 nT</td>
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</table>
Digital Elevation Model

The laser altimeter data was subtracted from the GPS height to give a digital elevation model which represents height above the WGS84 spheroid. This data was then mean levelled with the SRTM (Satellite Radar Topography Mission, NASA) to remove any levelling.
Final DVD Contents

\images

GeoTiff format images of all depth slices, minimum, maximum and last conductivity, digital elevation and magnetic data.

\grids

Conductivity depth slices with name convention of dnnn.grd where nnn is the depth of the conductivity slice, grids are in Geosoft GRD format. ERMapper format grids have also been provided, with a ERM_Dnnn.ers naming convention.

Final Magnetic grid: ERM_Magnetics.ers
Final Digital Terrain: ERM_DEM.ers (WGS84 spheroid)

\grids\cdi_grids

Geosoft format files of the CDI grids.

\located_data

TEM.LDT
Line: Line number
Fiducial: Fiducial number as displayed on the CDI sections.
East: Easting (GDA94 MGA52)(metres)
North: Northing (GDA94 MGA52)(metres)
Heli_Z: GPS altitude of helicopter (metres)
TX_Laser: Height of the laser altimeter on the hoist (metres)
DEMF: Levelled Digital Elevation Model, WGS84 (metres)
Current: Transmitter current (amps)
Ch[*]: EM response, channels 1 21 (uV)
Mag: Interpolated magnetic channel.
CDI.LDT
Line: Line number
East: Easting (GDA94 MGA52)(metres)
North: Northing (GDA94 MGA52)(metres)
Distance: Distance along line (metres)
Depth: Depth below surface (metres)
Conductivity: Conductivity (mSIm)
RL: GPS depth (WGS84)(metres)

DEPTHSLICE.LDT
Line: Line number
East: Easting (GDA94 MGA52)(metres)
North: Northing (GDA94 MGA52)(metres)
Distance: Distance along line (metres)
RL: GPS depth (WGS84)(metres)
[35 150]: Conductivity at specified depth (mSIm)

COND SUMMARY.LDT
Line: Line number
East: Easting (GDA94 MGA52)(metres)
North: Northing (GDA94 MGA52)(metres)
Firstcond: First recorded conductivity in a decay (mSIm)
Maxcond: Maximum recorded conductivity in a decay (mSIm)
Lastcond: Last recorded conductivity in a decay (mSIm)
Mincond: Minimum recorded conductivity in a decay (mSIm)

MAGNETICS.LDT (25Hz data)
Line: Line Number
SPM: Seconds past midnight.
East: Easting (GDA94 MGA52)(metres)
North: Northing (GDA94 MGA52)(metres)
Rawmag: Raw magnetics channel
Diurnal: Diurnal data
PreMag: Diurnal corrected.
IGRF: Calculated IGRF value for each point.
MagF: Final magnetics channel
GPS_Z: GPS altitude of helicopter (metres)
Clearance: Ground clearance of the Magnetic Sensor.
Each data type is also accompanied with a similar Geosoft database.

\sections
Linear & logarithmic profiles, and conductivity depth images for each line. In Geosoft .MAP format (viewable with the free interface at http://www.geosoft.com).
\sections\Images
Linear & logarithmic profiles, and conductivity depth images for each line. In PNG (Portable Network Graphics) format.
IMAGES

60m Depthslice
GPX Airborne
A.B.N. 74 094 570 028
Locked Bag 3, Applecross,
Western Australia. 6153
Telephone:  (08) 9316 8111
Fax:        (08) 9316 8033