

### Report

to

### **Mine Makers**

on

# ELECTRICAL RESISTIVITY IMAGING SURVEY AT WONARAH PHOSPHATE

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### Summary

In early November 2009, Geoforce conducted an electrical resistivity imaging (ERI) survey for Mine Makers at Wonarah. The aim of this survey was to test the efficacy of ERI at delineating the subsurface extent (including depth, thickness, and undulations) of the Main Zone and Arruwurra phosphate deposits. The survey consisted of 4 lines (6.17km) of 2D ERI data to 100m depth, at an average acquisition rate of 1.03 line km per day.

#### Main Zone:

Line 1, 2 and 3 were acquired on the Main Zone. In general, the response was a layered earth response with 5 distinct layers, described below in Table 1. These layers showed moderately good correlation with the drilling data, but this was not sufficiently accurate to be used for absolute determination of phosphate thickness and depth. This disappointing result is attributed to the extremely high resistivity of the surface regolith combined with an insufficient contrast between the electrical properties of the target phosphate layer and the surrounding chert/silicified siltstone layers.

#### Arruwurra:

The ERI at Arruwurra returned better results, but the target BPH layer was below the resolution of the technique. As a rough rule of thumb, the best resolution is 10-20% of the electrode spacing (20%x10m=2m). The target BPH layer averages only 2m thick at 25m depth, though laterally very extensive, and this is a marginal target for 10m ERI. The drilling data from Line 3 correlates well with the ERI data,. This better result is attributed to a combination of shallower target depth and better surface conditions. There is potential that smaller electrode spacing (5m or 2m) could significantly improve the resolution over this area.

Geoforce recommends petrophysical properties testing on samples from the Main Zone and Arruwura. This will help determine 3 important factors:

- Why the results from the Main Zone were less useful than expected;
- The true spectrum of variation in rock properties within the Arruwurra area
- The future potential for ERI to aid phosphate delineation around Arruwurra;

This will require at least 3 samples from each of the main rocks units (including mineralisation) be sent for rock property testing in Sydney. The results will enable a more refined interpretation of the Arruwurra ERI.

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## 1 Introduction

This report outlines the acquisition, processing and interpretation of Electrical Resistivity Imaging (ERI) field data at Wonarah by Geoforce Pty Ltd (Geoforce) for MineMakers Ltd. The general survey requirement was to provide reliable and cost effective subsurface mapping of the Wonarah Phosphate deposits in central Northern Territory with the ultimate aim to reduce drilling requirements and better define the distribution patterns.

The survey was undertaken during November 2009 and consisted of four lines (three of the Main Zone and one adjacent to the Arruwurra Pit) totalling 6.17 line km of 2D ERI data.

ERI data provides detailed cross-sectional images of resistivity variations from which detailed mapping of the sub-surface can be conducted. This can be used to interpret such attributes as:

- Layer thickness and lateral extremity;
- The contact between clay, sand and bedrock layers;
- Changes in groundwater saturation (i.e. porosity);
- Changes in groundwater conductivity (i.e. pore fluid conductivity).

The scope of work specified that the standard 2D data might be capable of the Main Zone to depths of 80m and *thick* sections of the Arruwurra zone to depths of 100m This depth of investigation is accomplished using 3 cable spreads with electrode spacings of 10m (total length of 710m) that have a nominal vertical resolution accuracy of 10% of the apparent depth, which degrades further as depth increases below 40m (for technical notes on Geoforce's implementation of ERI please refer to Appendix 1).

Supporting technical information on the ERI method and digital data are provided as Appendices.

### 2 Survey Production

#### 2.1. Survey logistics and production summary

The survey was undertaken between the 31<sup>st</sup> October and 6<sup>th</sup> November 2009, acquiring four lines (6.17 line km) of 2D ERI data. The survey team consisted of a 3 person crew onsite, plus several MineMaker staff to assist with moving cables and digging electrodes. Three utility vehicles and one quad bike were used to acquire the data. All lines surveyed were oriented north-south. Line 1 and Line 2 and Line 3 targetted Main Zone mineralisation, while Line 4 was 30km west targetting Arruwurra mineralisation.

The tough ground conditions (very high resistivity and hard rock) required that each electrode be repeatedly saturated with a briney water/detergent/bentonite solution prior to data acquisition. This in turn required vehicle access along line, and necessitated that the original planned Line 1 be moved to a location with an established access track. The tough ground conditions also meant that data acquisition on the Main Zone was slower than expected until the efficient truck-mounted watering systems were employed.

Extensive additional testing was performed at this time to ensure data integrity and quality. We are confident that the final data was of the best possible quality given the difficult ground conditions. On the full production days, work proceeded smoothly and efficiently. An average of 10.5 hours was worked per production day with an additional 0.5 hours of data QC and preliminary processing undertaken by the crew leader each evening. Production details are summarised in Table 2.1 and survey line details are provided in Table 2.2 (co-ordinates provided in MGA94 Zone 53).

Start date	31 October 2009
End date	6 November 2009
Total days	7
Production days	6
Standby days (rain)	0
Non-chargeable days (extensive testing)	1.5
Total line km	6.17
Effective line km per production day	1.03

Table 2.1 – Summar	y of survey	production
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Line	Start of line	End of line	Line length
Line 1	654000E	654000E	1430m
	7792000N	7790570N	
Line 2	653250E	653250E	1882m
	7788235N	7786353N	
Line 3	655500E	655500E	1905m
	7791000N	7792905N	
Line 4	639875E	639875E	952m
	7774540N	7775492N	
		Total	6169m

Table 2.2 – Survey lines and total line km surveyed (MGA94 Zone 53 coordinates)

### 2.2. Data acquisition and sequences

Data acquisition used a Syscal Pro 10 channel ERI system combined with a nonstandard electrode configuration, designed to provide optimal resolution both vertically and laterally. The Syscal Pro settings used are summarised in Table 2.3 and equipment specifications are included in Appendix 2.

SYSTEM	Syscal Pro (10 channel) with 72 electrode configuration
ELECTRODES	Stainless Steel (rod: 12mm diameter, 400mm length)
STATION SPACING	10m
NO. ELECTRODES	2D: (3 cable) – 72 electrodes per survey spread
ARRAY	2D: Non standard – combined dipole-dipole and Schlumberger array optimised for 10 channel acquisition. This array is far more dense than conventional arrays (>3118 data points in pseudosection per 720m)
PENETRATION DEPTH	Effective ~90m <sup>1</sup>
POWER	400V (800V max), 2.5A max (250W max output)

#### Table 2.3 – ERI acquisition parameters

The key advantage of the Syscal Pro system is that up to 10 data quadripoles can be acquired concurrently thus providing a very rapid data acquisition rate. The 2D sequences used at Wonarah were designed to take advantage of this capability, and were based around:

- dipole dipole profiling for a = 10m, 20m and 40m, up to n = 5 (multiple for spacings between quadripoles);
- a non-standard Schlumberger sounding array configuration.

<sup>&</sup>lt;sup>1</sup> While data is acquired below the effective depth, the resolution is reduced such that only broad indications of electrical variations can be imaged

### 2.3. Data repeatability

The key points of Geoforce's standard data repeatability checks are as follows:

- Testing should be conducted on a regular basis, using electrodes which remain emplaced in the ground for both measurements.
- Automatic filtering of data sets (using a 0.5% cut-off for standard deviation and elimination of data points corresponding to physically unrealisable apparent resistivity values) should result in no more than 10% of data being eliminated. In some extreme local conditions (i.e. crossing of loosely packed alluvial gravels) the percentage of data eliminated through automatic filtering can reach 20% to 25% due to variable electrical coupling between the electrodes and the ground.
- The **average** difference between each pair of data checks should be no more than 2 to 6%.
- The **median** difference between each pair of data checks should be no more than 2 to 4%.
- Unless data outliers have been manually edited, the median deviation will be regarded as the most reliable indicator.

It has been found that these levels are conservative enough to allow for natural deviations in data due to changes in electrode coupling and ground surface conditions, but are tight enough to flag corruption of data due to problems with cables or equipment.

The percentage of data automatically filtered out from Line 1 and Line 2 was was 30% and the median difference between all repeated datasets was above the 4% guidelines set-out above. This reflects the particularly challenging ground conditions on these lines caused by the extensive caps of hard, dry silcrete. In contrast, the Line 4 (Arruwurra) and Line 3 (Main Zone) had much less silcrete, and the data quality was vastly better. Less that 10% of the data from Lines 3 and 4 was rejected (using a 1% standard deviation cut off). The difference in data is readily apparent when comparing these lines with Lines 1 and 2.

# **3** Presentation of Results

Figure 3.1, Figure 3.2, and Figure 3.3 represent data from Line 1, Line 2 and Line 3, respectively, acquired on the Main Zone. Figure 3.4 represents data from Line 4 acquired on the eastern side of the Arruwurra Pit.

All the figures are presented with line distance along the X-axis in mN (MGA53), AHD elevation<sup>1</sup> on the Y-axis and data coloured such that more resistive areas are warmer colours (yellows through reds) and more conductive areas are cooler colours (blues through greens). The section view is effectively looking due west because all lines are oriented exactly north-south.

The figures are annotated with:

- Resitiviity legend;
- MineMakers borehole locations;
- MineMakers borehole stratigraphy
- Limit of high resolution data at the edges of the figures due to a strong electrical contrast between the near surface layers.

The figures show the following electrical structure:

- $\circ$  Layer 1: very highly resistive variable surface layer (100 to 2000Ωm) from surface to 8m depth;
- o *Layer 2:* highly conductive layer (4 to  $50\Omega$ m) 10 to 20 m thick when at the surface.
- Layer 3: moderately resistive layer (100 to 500Ωm) 15-to20m thick beneath layer 2 (Lines 1, 2, 3) OR moderately low resistive layer (70-200ohm.m) (Line 4 only)
- *Layer 4:* very subtle conductor, maybe optimistic, found on Lines 1,2,3, but no correlation on Line 4.
- *Layer 5:* Conductive basalt basement (10-250ohm.m)
- *Layer 6:* resistive sub-basement? layer (>  $130\Omega m$ ) to depth only seen on Line 4 (too deep on the Main Zone lines).

# Table 4: Layers defined by the ERI data from Lines 1, 2 and 3, and interpreted nature of the causative lithology.

Layer	Depth interval	Description	Resistivity	Comments
Layer 1	0 to ~8m ±3m	REG: Aeolian sand, silcrete, ferricrete, collovium	Highly variable resistivity 100 to 2000ohm.m	Impermeability and hardness sign. degrades ERI results
Layer 2	~8 to ~20m ±4m	Well-bedded HMU: mudstone, siltstone, minor sandstone	Consistently low resistivity 5-50ohm.m	
Layer 3	~20 to ~ 45m ±15m	Mixed HMU +CMU (?)	Moderate resistivity 100-500ohmm	Very different on Line 4
Layer 4	~45 to ~55m ±10m	CBX?MBX/HBX+TUN	20-100ohm.m	Difficult to distinguish from basalt, variable, poor correlation

<sup>&</sup>lt;sup>1</sup> AHD elevations gained from interpolating drill collar elevations.

Layer 5	~55-100+m	BAS: Basement basalt	low resistivity ~10- 210 ohm.m	Ubiquitous on line 3 but highly variable on line 2/1
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# Table 5: Layers defined by the Line 4 ERI data, and interpreted nature of the causative lithology.

Layer	Depth interval	Description	Resistivity	Comments
Layer 1	0 to ~5m	REG: Aeolian sand, silcrete, ferricrete, collovium	Highly variable resistivity 20 to 2000ohm.m	Much better surface conditions for ERI around Arruwurra
Layer 2	~5 to ~12m	Well-bedded HMU: mudstone, siltstone, minor sandstone	Consistently low resistivity 5-50ohm.m	
Layer 3	~12 to ~ 30m	(APH+BPH)?	Moderate resistivity 70-200ohm.m	
Layer 4	NA	NA	NA	Only applicable on lines 1,2 3 – not at Arruwurra
Layer 5	~30-~84+m	BAS: Basement basalt	Low resistivity 10- 20ohm.m	Basalt layer is shallower here
Layer 6	~84-100+m	SUB-basement rocks	Moderately high >140 ohm.m	True basement

Digital copies of the ERI data are provided in Appendix 3 (available on CD).

Figure 3.1 – Main Zone Line 1 with drill hole data.

Figure 3.2 – Main Zone Line 2 with drill hole data

Figure 3.3 – Main Zone Line 3 with drill hole data

Figure 3.4 – Main Zone Line 4 with drill hole data

### 4 GEOLOGY

#### 4.1. Main Zone Stratigraphy

The general stratigraphy of the Main Zone consists of the following:

- REG regolith, surficial only composed of silcrete, ferricrete, colluvium
  - HMU The Hangingwall Mudstone Unit. This unit is comprised of mudstone, siltstone and minor sandstone. Within the mineralised areas of the main zone there are no carbonate units.
  - CMU The Convolute Mudstone Unit represents the upper limit of phosphate deposition and is generally weakly phosphatic. Av. 5 to 10m.
  - MPH The Mudstone Phosphorite Unit is, by definition, phosphatic sediment with > 10% P2O5. Phosphatic material is usually yellow to pink or more uncommonly mauve.
  - CBX The Chert Breccia Phosphorite Unit occurs immediately below the MPH unit. Varies in thickness from 2 – 8 metres and is present in almost every hole.
  - HBX/MBX high grade phosphoritic chert
  - TUN The Transitional Sediments occur below the CBX. Comprised of mudstone, clay, chert, siltstone, minor sandstone and phosphorite..
  - TUP The Transitional Phosphorite is distributed erratically within the Main Zone. The TUP is 0.5 to 3.5 metres thick, typically 1-2 metres thick, and is comprised of high grade indurated phosphorite.
  - o BAS Basalt

#### 4.2. Arruwurra Stratigraphy

The Arruwurra phosphate prospect has different stratigraphy from the Main Zone. Specificially, the MPX and CBX units are not present, and the target phosphate layer is shallower, thinner, flatter, and more consistent. The general stratigraphy of Arruwurra consists of the following:

- REG Surficial only. Aeolian sand, silcrete, ferricrete, calcrete, colluvium
- HMU The Hangingwall Mudstone Unit.
- APH The Arruwurra Phosphorite Unit is, by definition, phosphatic sediment with > 10% P2O5. The APH varies from absent to ~10 metres thick but is typically 5 metres thick.
- TUN The Transitional Sediments occur below the APH and at an equivalent stratigraphic level to BPH. TUN may be absent where BPH is present with APH grading into BPH.
- BPH The Basal Phosphorite Unit occurs in the eastern part of Arruwurra. Stratigraphically, the BPH sits directly above the footwall basalt in the eastern part of Arruwurra. The BPH is 0.5 to 3.5 metres thick, typically 1-2 metres thick, and is comprised of high grade indurated phosphorate.
- o BAS basalt.

# 5 Interpretation

#### 5.1 Main Zone Line 1

The ERI data from Line 1 were the most adversely affected by the high surface resistivity problem. The poor quality data caused large, near surface variations in the resistivity profile, and significantly reduced resolution of the deeper layers. This is particularly apparent from 7791200mN to 7791500mN, where the line went over the

flank and crest of a bare silcrete ridge. A layered earth response is still apparent despite the high noise levels.

Relatively good quality sections include 200m at the northern end, and a 600m section through the middle from 7790800 to 7791400 mN. These sections show the layer 3 (HMU) from about 270mRL to 250mRL (labelled Figure 3.1), which undulates and seems to track some of the drilling data. The correlation, however, is not strong enough to warrant further analysis.

The most notable feature on Line 1 is the relatively poor development of the basalt (layer 5). In the northern half, this layer is almost completely absent, and this may in fact correlate with a granite basement high (see hole WNRC981A). Otherwise, the disappearance of the basalt layer in the ERI may just reflect the reduction in resolution associated with poor data quality over this section of line.

#### 5.2. Main Zone Line 2

The ERI data from Line 2 were comparatively good quality, despite several electrodes having very poor surface contact. A good layered earth response is apparent along the entire line. The base of layer 3 matches the mapped position of phosphate sediments and/or the depth to top of the basement basalt. This position, however, is not sufficiently accurately resolved to allow absolute and unequivocal determination of phosphate thickness or depth. Therefore, whilst the correlation is enticingly close, it is still not good enough for purpose.

The most interesting feature on line 2 is the clear response from resistive granite basement high at 7787100mN. The ERI suggests that the depth to granite basement is less than 70m in this location, vs 100m+ for the remainder of the line.

Line 1 and 2 show lateral resistivity variations within the HMU (Layer 3) and wet, interpreted as variations in porosity and / or permeability (decreased resistivity indicates an increase in porosity and / or permeability due to increased hyper-saline water content). These variations may potentially be related to factors affecting phosphate deposition.

#### 5.3. Main Zone Line 3

Line 3 was the best quality data acquired over the Main Zone. Notably, the basement granite (layer 6) was not apparent on line 3. The resistivity reliably maps the depth to the base of the HMU+CMU, but does not resolve the dips and swells in the phosphate layers. One notable feature is the rock properties around WNRC327. Both the surface land forms and the ERI data indicate some sort of fault system through this area, which has significantly reduced the ground resistivity.

Combining the stratigraphy with the ERI results allows for a geological interpretation of the layers previously identified in Figure 3.1 to Figure 3.3 (Table 5.1). The description and interpretation of the results layers are presented below.

Layer No.	Description
Layer 1	Dry Aeolian sands and silcrete - REG
(highly resistive surface layer)	The dry sand and rocky silcrete ridges which cover most of the Main Zone proved to be essentially perfect resistors. Only after repeatedly inundating the electrodes with salt water was contact resistance low enough to allow current to pass through this layer, and penetrate into the deeper subsurface. Line 3

	was the least challenging of the three Main Zone lines, and the data quality commensurately better. The dry sand and rock silcrete ridges are very clear as a surficial, 5-10m thick, red (resistive) layer and are present on all sections. E.g. Line 1, 7791200mN to 7791800mNat surface
Layer 2	Well-bedded' Hanging Wall Mudstone - HMU
subsurface layer)	Inis persistent, thin, highly conductive layer occurs immediately below the silcrete+sand surface within the thick, otherwise undifferentiated HMU package. After conference with MineMakers' chief geologists, it is clear that this division actually reflects a transition from well-bedded HMU to poorly bedded, clast-rich HMU. The clearest example of Layer 2 occurs on Line 3 between 7791200mN and 7792400mN between 275mRL and 265mRL.
Layer 3 (mod.	Clast-rich mixed Hanging Wall Mudstone plus Convolute Mudstone Unit(?) - HMU
resistive	Layer 3 is interpreted as the bulk response of the Hanging Wall Mudstone and
middle laver)	Convolute Mudstone, which would likely have similar electrical properties. The moderately higher resistive of Laver 3 when compared to Laver 2 is attributed
	to the rock being less weathered. Layer 3 is very well developed on Line 3 between 7791200mN and 7792400mN between 265mRL and 235mRL.
Layer 4	Phosphate package: CBX, MPH, TUN, TUP – very subtle
(mod.	Layer 4 is defined as the boundary between Layer 3 and Layer 5, which is, in
resistive)	turn, nominally the target phosphate package. Detailed comparison of the drilling with the ERI data shows that the base of the HMU+CMU is actually quite well defined as the gradational boundary between the red, resistive Layer 3 (HMU+CMU), and the green, conductive Layer 5 (basalts). The phosphate layers do not appear to have sufficient contrast alone to create a distinct, traceable response. Instead, the bulk effect of the phosphate layers is to create the gradational boundary between the basement and the HMU. While this interpretation may be described as optimistic, there is nevertheless a good correlation between the drilled 'depth to phosphate' and the transition from resistive mudstone to conductive basalt. This correlation can be tentatively used to map the dips and rises in the phosphate depth along lines 1, 2 and 3.
Layer 5	Basalt - BAS
basement	below surface. Basalt, especially weathered basalt, is sometimes quite
layer)	conductive, and appears as a low resistivity area in ERI data. This response is particularly apparent as the thick, green, conductive layer extending between 40m and 80m depth on line 2 and line 3. Interestingly, the basalt appears to be thinner or absent on the northern third on line 1.
Layer 6	Basal granite at approximately 100m depth
(resistive	Line 1 and 2, but not Line 3, show a clear resistive layer that varies in depth
basement layer)	basement. The layer is particularly well developed on Line 1 between 7791400 and 7791800mN, and on line 2 at 7787150mN.

 Table 5.1 – Geological interpretation of ERI layers

#### 5.4. Arruwurra Line 4

The surface conditions on Line 4 were much more conductive, and the ERI results are accordingly much better.

Layer No.	Description		
Layer 1	Dry Aeolian sands and silicrete - REG		
	The surface material on Line 4 was dry red sand with no rocks. The previous day the line was watered using the road watering truck. This significantly		

	reduced the surface contact resistances and improved the data quality.		
Layer 2	'Well-bedded' Hanging Wall Mudstone - HMU		
	This persistent, thin, highly conductive layer occurs immediately below the silcrete+sand surface within the thick, otherwise undifferentiated HMU package. After conference with MineMakers chief geologists, it is clear that this division actually reflects a transition from well-bedded HMU to poorly bedded, clast-rich HMU. The clearest example of Layer 2 occurs on Line 4 between 7774900mN and 7775200mN between 255mRL and 245mRL.		
Layer 3	SOUTH Line 4: APH plus BPH	Clast-rich, mixed Hanging Wall Mudstone plus Convolute Mudstone Unit(?) - HMU	
	On the southern half of Line 4, the ERI image shows the boundary between the weathered conductive HMU and the resistive APH with a high level of accuracy. E.g. 7774600mN and 7775000mN. However, north of 7775000mN the relationship breaks down, partly because of the absence of significant thicknesses of APH+BPH.	North of 7775000mN the APH+BPH is absent from drill cores. Layer 3 in this section is discontinous and blobby, and seems to reflect changes with the HMU. The lower boundary of the HMU (intersection with basement) is very accurately defined despite the larger station spacing.	
Layer 4	NOT PRESENT ON LINE 4 – see Layer 3:APH		
Layer 5	Basalt - BAS		
	The basement basalt is generally intersected in drill holes at around 20-30m below surface. The basalt is especially clear in the ERI data on Line 4 as a thick, extensive, conductive (green) layer extending between 25m and 80m depth.		
Layer 6	Basal granite at approximately 100m d	epth	
	The line 4 ERI data shows the clearest resistive granite basment response of the entire survey. The granite starts at about 180mRL on the southern end of the line, but steps up to about 200mRL at 7775100mN.		

 Table 5.2 – Geological interpretation of ERI layers

# 6 Conclusions

The purpose of the ERI was to test if geophysics could help MineMakers geologists map the phosphate layers at the Wonarah Main Zone and Arruwurra prospects. It was hoped that this approach could significantly reduce the drilling requirements.

The results from the ERI on Arruwurra are as follow:

- The ERI effectively mapped the horizontal extent of the thick sections of APH+BPH, but not sections where the total thickness was less than 5m.
- The ERI survey design was not ideally suited to detecting the thinner layers at Arruwurra, but the preliminary results indicate that the combination of better ground conditions, shallower target depths, and different target electrical properties is an encouraging result but the 10m electrode spacing was too broad to achieve the desired resolution for this layer thickness. We believe the desired resolution could be achieved by reducing the electrode spacing to 5m or 2m. Finer electrode spacing will predominately improve the horizontally resolution. The vertical resolution may only be marginally improved in a layered environment. This is, of course, highly dependent on the rock property analysis.

- The ground conditions are suited to ERI, but vehicle access along line is still • required to get sufficient water to site.
- Rock property testing would aid interpretation of ERI results.
- A full cost-benefit analysis of drilling versus geophysics uld be applied prior to considering further survey work.

The results from the ERI on the Main Zone are as follows:

- ERI was ineffective at mapping the thickness of the target phosphate units.
- The ERI was moderately effective at mapping the lower boundary of the • HMU(CMU) because of the contrast between the basalt and the HMU(CMU). but there was no direct response from the phosphate units. Therefore the boundary can only be used as an indirect means of determining depth to phosphate, but not thickness or grade.
- The ERI was effective at mapping depth to basement granite.
- The ground conditions are not conducive to rapid data acquisition and good quality data. This may improve marginally after the wet season (if it is indeed wet).

### 7 Recommendations

We recommend several tests to better interpret and ascertain the value of these surveys.

- Rock property testing to refine the spectrum electrical properties of rocks from • the Arruwurra. This will determine if there is sufficient, consistent contrast in to warrant further surveys with closer electrode spacing
- If the rock property tests are encouraging, borehole conductivity logging on open drill holes along the Arruwurra zone to better constrain the interpretation;
- A cost-benefit analysis to determine the total value of geophysics compared to drilling.

### 8 Disclaimer

The interpretations contained in this report are based on the training and experience of the author and information passed on during the course of the investigation. As with all geophysical data, multiple interpretations are possible. The client is advised to consider information from all available sources prior to making a decision on how to proceed.

Kate Godber

Senior Geophysicist

# Appendix 1

**Technical Notes on Geoforce's Implementation of ERI** 

# Appendix 2

Specifications of Syscal PRO ERI System

# **Appendix 3**

#### **ERI Digital Data and Digital Images**

Note: Digital data and images supplied on CD with this report.

- ASCII data
  - o Line 1 Geo-referenced data.txt
  - o Line 2 Geo-referenced data.txt
  - Line 3 Geo-referenced data.txt
  - o Line 4 Geo-referenced data.txt
  - ME1127MM line end points MGA94z53.txt
- DXF files
  - Line1\_Layers.dxf
  - Line2\_Layers.dxf
  - Line3\_Layers.dxf
  - Line4\_Layers.dxf
- PDFs
  - o Fig3.1\_drillhole.pdf
  - Fig3.2\_drillhole.pdf
  - Fig3.3\_drillhole.pdf
  - o Fig3.4\_drillhole.pdf
  - FigA3.1\_interp\_layers.pdf
  - FigA3.2\_interp\_layers.pdf
  - FigA3.3\_ interp\_layers.pdf
  - FigA3.4\_ interp\_layers.pdf