

# NEW MANINDI ZINC DEPOSIT EXPLORATION TARGETS

## HIGHLIGHTS

- **New 3D geological interpretations and detailed exploration targeting has identified at least nine new very high priority exploration targets**
- **The new targets provide the potential to greatly increase the Manindi mineral resource and improve project economics**
- **3D VTEM and FLTEM modelling combined with 3D magnetic inversion modelling has provided a new level of sophistication in exploration targeting**
- **LME zinc stockpiles have fallen by over 25% since 1 January 2015 and continue to fall**

## EXPLORATION TARGETS

A detailed exploration targeting exercise was completed to complement the JORC 2012 mineral resource estimate at Manindi. The aim was to identify robust exploration targets with the potential to host significant tonnages of additional mineralisation and improve the economics of the project. Any increase in the mineral resource estimate will improve the project economics at Manindi.

Some time ago, the Company flew a VTEM<sup>1</sup> survey over the Manindi project. The survey confirmed existing anomalies from historic MLTEM<sup>2</sup>, FLTEM<sup>3</sup> and DHTEM<sup>4</sup> surveys and the EM<sup>5</sup> response of the existing deposits, as well as identifying several new untested anomalies. The mineralisation at Manindi consists of massive sulphides with very high pyrrhotite content. Pyrrhotite is highly conductive, making TEM<sup>6</sup> a particularly effective targeting technique for Manindi-style mineralisation.

All EM data, historic and new, were reprocessed and modelled using modern 3D modelling software. The resultant 3D models were combined with existing aeromagnetic, geochemical and geological datasets to generate and rank exploration targets in order of priority (Figure 1).

3D inversion modelling<sup>7</sup> of the aeromagnetic dataset was particularly useful in ranking the TEM conductors. The mineralisation at Manindi is located on the western side of a deep-rooted, strongly magnetic body. TEM conductors located in similar positions either along strike from Manindi, or associated with other similar magnetic bodies received higher rankings (Figure 2).

Drilling at the current Manindi mineral resource has identified four mineralised positions, all of which are open in at least one direction. Most importantly, drilling at the current mineral resource has only tested the mineralisation to a maximum depth of 300m below surface. Recent EM modelling indicates that the conductive bodies extend much deeper than this, particularly beneath Kowari,

Kultarr and Numbat where the 2012 FLTEM models extend to over 500m below surface, and are open at depth. These are referred to as “resource extension” targets.

In addition to the resource extension targets, a number of other high priority targets such as Kaluta, Dibbler and Brushtail (see points 1, 4 and 5 below) have not yet been drill tested (Figure 1). These are referred to as “greenfields” targets. Should any of these high-quality targets contain mineralisation, they would substantially increase the Manindi mineral resource estimate and therefore improve project economics.

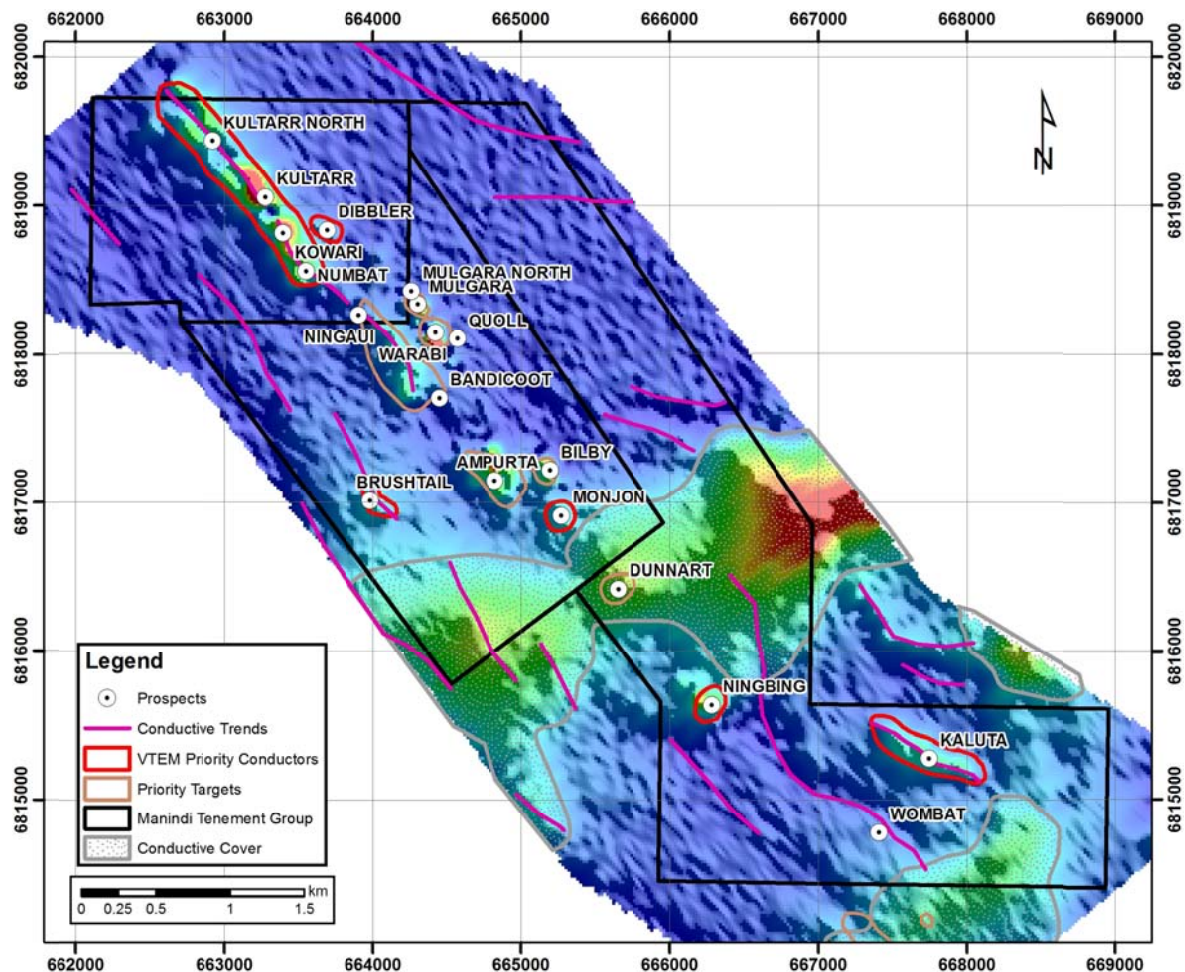


Figure 1 - Manindi VTEM imagery and target map showing highest priority targets in red polygons, other targets in beige polygons, conductive trends in pink lines and areas of conductive overburden in grey hatching

The high priority targets in order of ranking (with the highest ranking on top) are as follows:

1. Kaluta (greenfields)
2. Kultarr Deeps and Kultarr North (resource extension)
3. Kowari Deeps (resource extension)
4. Dibbler (greenfields)
5. Brushtail (greenfields)
6. Ningbing (greenfields)
7. Monjon (greenfields)

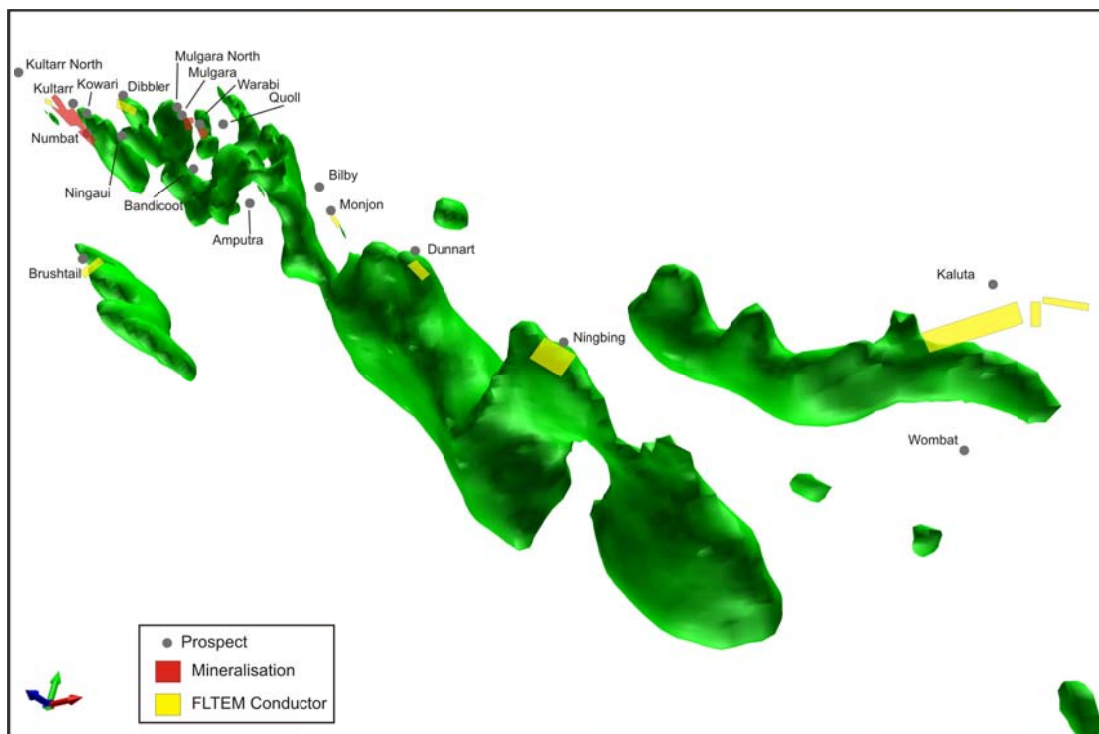


Figure 2 - 3D oblique view showing 3D magnetic inversion models in green with mineralisation wireframes in black and FLTEM conductor models in yellow. Note the favourable positions of the highest priority EM conductor models.

Descriptions and proposed follow-up programs for the highest priority exploration targets in order of priority are as follows:

#### 1. Kaluta

This target was identified by the 2012 VTEM survey, and refined by flow-up FLTEM in the same year. Kaluta is a relatively large untested highly conductive body. The 3D model is at least 70m by 600m in surface area. Potential thickness is unknown at this stage, but the tonnage potential is significant. The target starts at just 30m below surface, where it resolves into several discrete bodies then plunges shallowly, at approximately 25 degrees at an azimuth of 290 degrees. It is located close to the Wombat Cu-Ni soil anomaly and is coincident with a deep-rooted magnetic body comparable to the setting of the Manindi mineralisation.

The Kaluta EM anomaly was first identified by Western Mining Corporation (WMC) in 1974. Drill testing was attempted, but modern TEM surveying and 3D processing have confirmed that the conductor was not effectively drill tested at the time.

Follow-up will involve diamond drill testing followed by DHTeM surveying. DHTeM surveying will be used to determine whether or not the conductor has been effectively intersected, to refine the 3D conductor models, and to provide a vector for future phases of drilling. Future phases of drilling would depend on the discovery of significant mineralisation.

Kaluta is the highest ranked target because it is highly conductive, it is potentially large in size, it is coincident with a strongly magnetic body with a similar geological setting to the existing Manindi mineral resource, and it is completely untested by drilling.

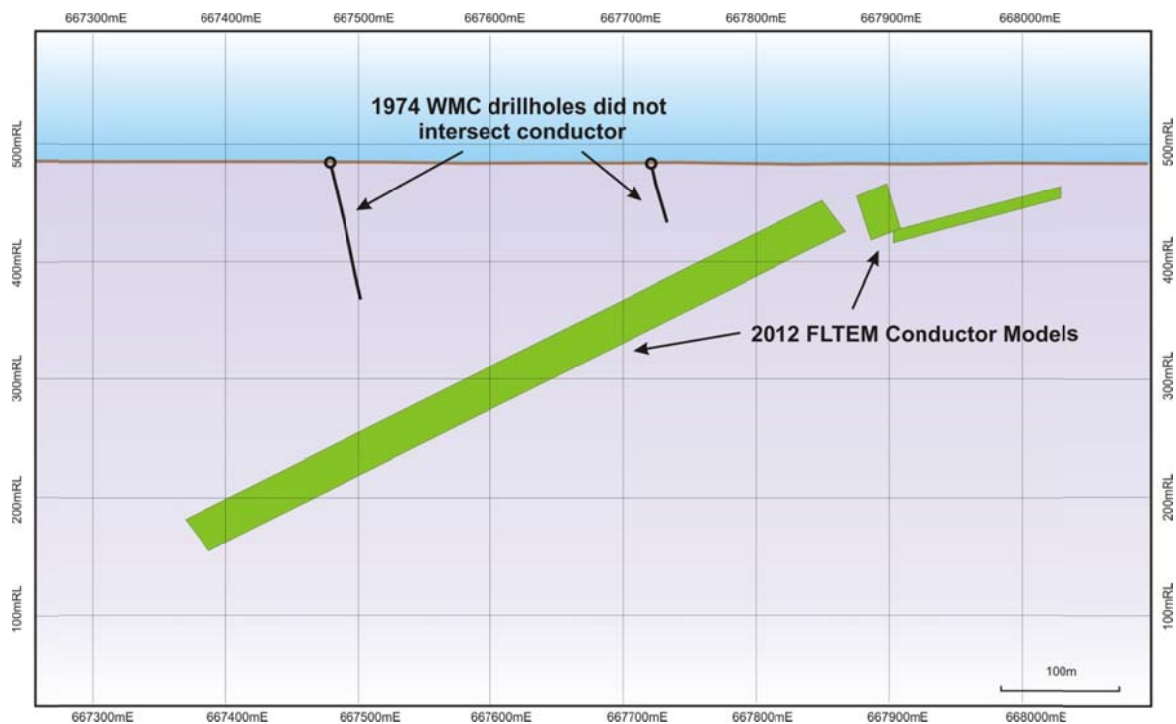


Figure 3 - Cross section of the Kaluta TEM conductor model showing the 1974 WMC holes which did not intersect the target

## 2. Kultarr Deepes and Kultarr North

Various phases of TEM surveying dating back as far as the 1970s have identified this highly conductive zone, which hosts the Kultarr mineralisation. The 2012 VTEM survey and follow-up FLTEM surveying showed that this zone extends to at least 1,000m vertically below surface. The deepest drilling only tests to a maximum of 300m vertical from surface.

Given its location directly below and along strike from the Kultarr mineralisation, which is also highly conductive, this is a very high priority drill target.

Follow-up will involve a program of deeper drilling followed by DHTeM surveying. The DHTeM surveying will be used to map out the sulphide mineralisation in detail and target future drilling. This target alone has the potential to greatly increase the Manindi mineral resource.

## 3. Kowari Deepes

This target is similar to Kultarr Deepes but ranks lower because the Kowari and Numbat mineralisation are both of a lower grade than Kultarr. However, given the generally highly segregated and zoned nature of VMS style mineralisation, **there is a good chance this conductor represents higher grade zinc and/or copper mineralisation. The highest grade copper intersected by drilling in the Manindi area, up to 1.27% Cu, occurs at the Kowari prospect.**

Follow-up will involve a program of drilling followed by DHTeM surveying. The DHTeM surveying will be used to map out the sulphide mineralisation in detail and target future drilling.



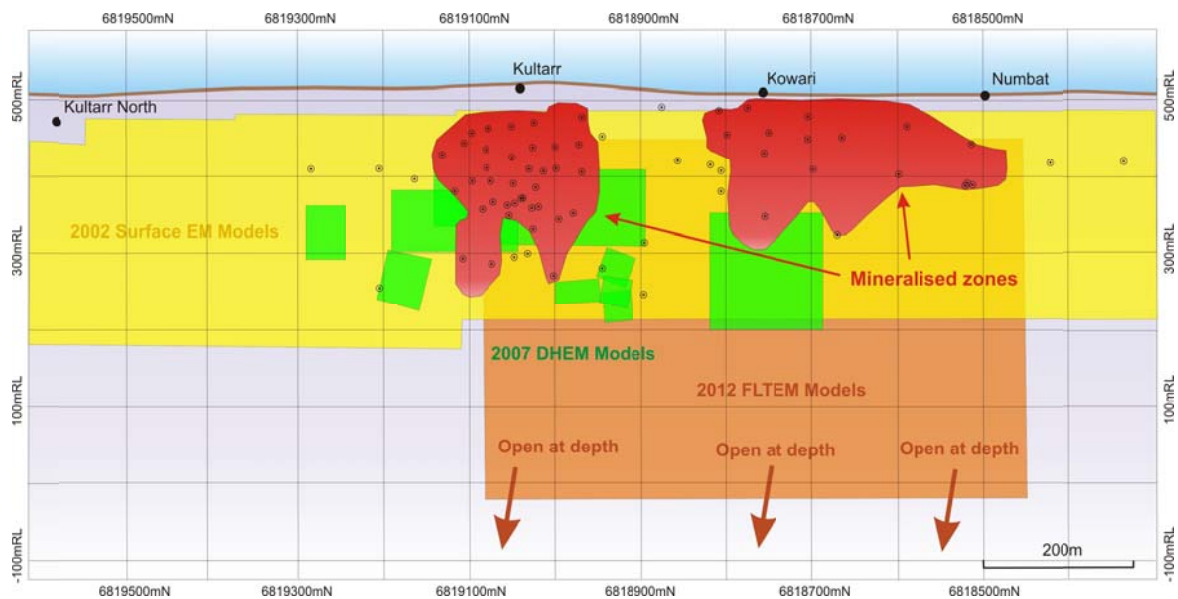


Figure 4 - Long Section of Kowari and Kultarr showing the high priority target areas. Newexco 2007 DHEM models are in green, 2002 surface EM models are in yellow, 2012 FLTEM models are in light brown and drillhole pierce points are in black dots.

#### 4. Dibbler

This TEM conductor is located 300m east of Kowari, coincident with a magnetic trend similar to, and parallel to the Manindi trend. It may represent a new mineralised horizon lower down in the volcanic sequence to the main Manindi position, or possibly mineralisation remobilised into the footwall gabbro. This would be expected in a typical VMS target model. Although this conductor is relatively small at its top, it may represent the top of something larger, which develops at depth.

Dibbler was identified by historic EM surveys. A shallow percussion hole was drilled by Esso Exploration and Production Australia INC (Esso) in 1984 over the conductor. Modern 3D modelling indicates that the hole failed to intersect the conductor. The hole was terminated at 39m in +300ppm copper. The Manindi deposits are typically surrounded by an alteration halo containing +250ppm copper, so this is a very positive sign for Dibbler.

Follow-up will involve drilling one hole to intersect the conductor followed by DHEM surveying. If significant mineralisation is intersected, a second phase of drilling will be carried out.

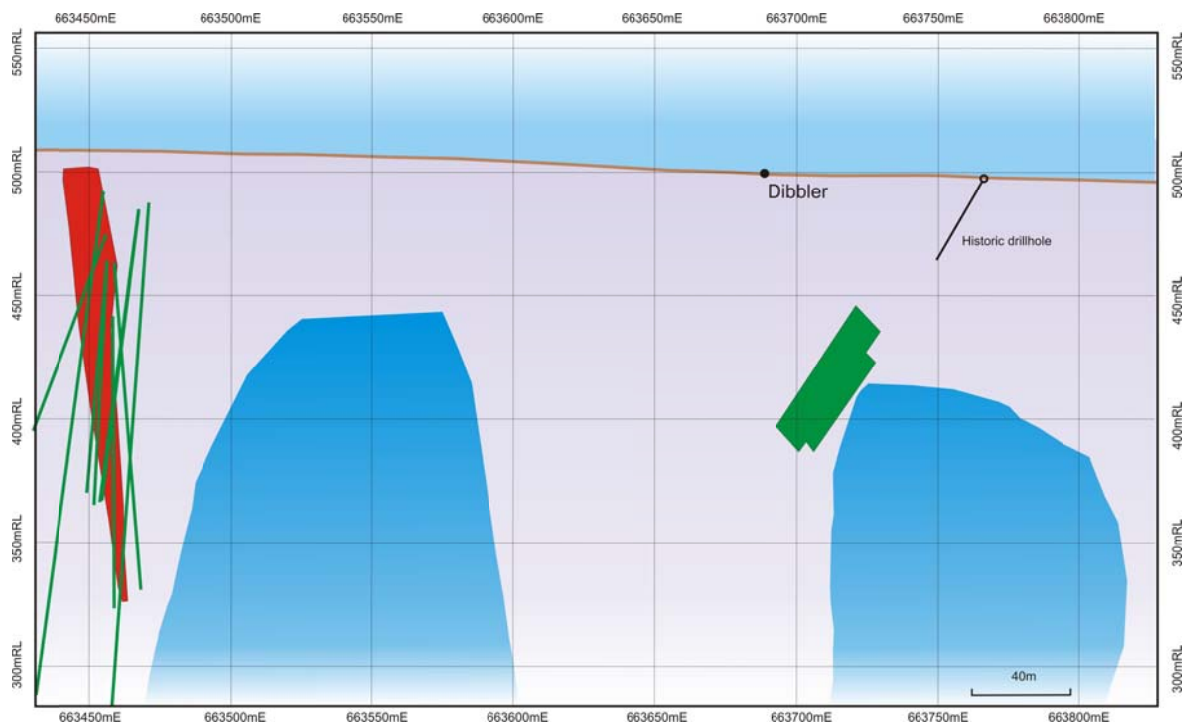


Figure 5 - Cross section of the Dibbler TEM 3D model, looking North West, showing the hole drilled by Esso in 1984, which failed to intersect the target, EM models in green, magnetic inversion models in blue and mineralisation in red. Note the Dibbler position on the 3D magnetic inversion models in comparison to the Kowari-Numbat mineralised position on the left

## 5. Brushtail

Identified by the 2012 VTEM survey and refined by follow-up FLTEM in the same year. This conductor is coincident with a strongly magnetic trend similar to the Manindi trend, the area is undercover and completely unexplored, and may represent a mineralised position higher up in the volcanic sequence to Manindi.

Although the conductor appears to be relatively small at its top, it could represent the top of something larger developing at depth, particularly given the coincidence with a magnetic body. Only drilling and DHTeM surveying can determine this.

The fact that this area has never been explored for Manindi style mineralisation makes Brushtail a very high priority target.

Follow-up will involve drilling of one or two diamond holes followed by DHTeM surveying. If mineralisation is encountered, further drilling and DHTeM surveying may be proposed.

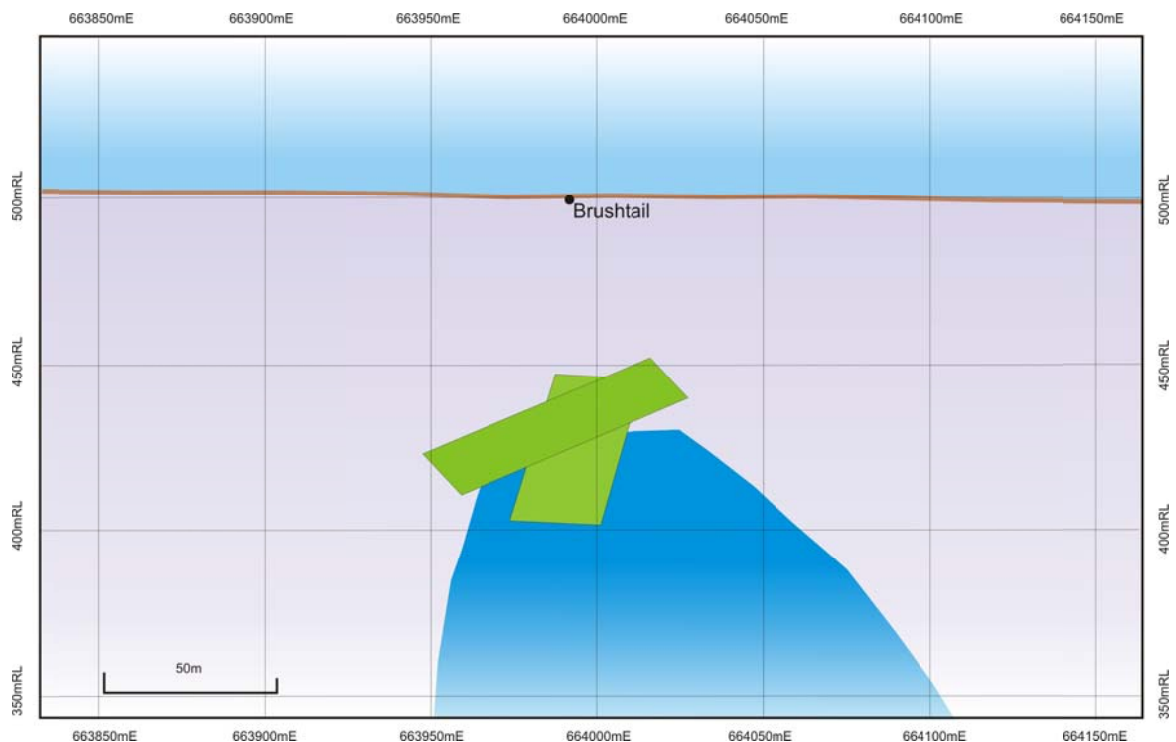


Figure 6 - Cross section of Brushtail showing the 2012 FLTEM 3D models in green and the 3D magnetic inversion model in blue

## 6. Ningbing

This EM conductor is located on the Manindi magnetic trend in a similar stratigraphic position to the Manindi deposits. The 2012 VTEM survey identified the anomaly and FLTEM surveying refined it in the same year. Historic EM had already identified the anomaly but modern 3D modelling indicates that drilling failed to effectively test it.

**WMC drilled a single hole over the conductor in 1974 but missed it by about 60m.** A second hole was drilled by Plutonic Resources in 1997; this hole was very close to the conductor, but was drilled at a low angle to it and failed to effectively test it. The Plutonic hole intersected a **broad zone of +250ppm copper which typically surrounds the Manindi deposits.** This is a positive sign for Ningbing.

Although not particularly large in size at 200m by 50m in extent, this conductor is only 80m from surface and has the potential to add a significant tonnage to the Manindi mineral resource. For comparison Warrabi measures approximately 150m by 65m by 10m thick and contains approximately 152,000t (14%) of the JORC 2012 mineral resource estimate.

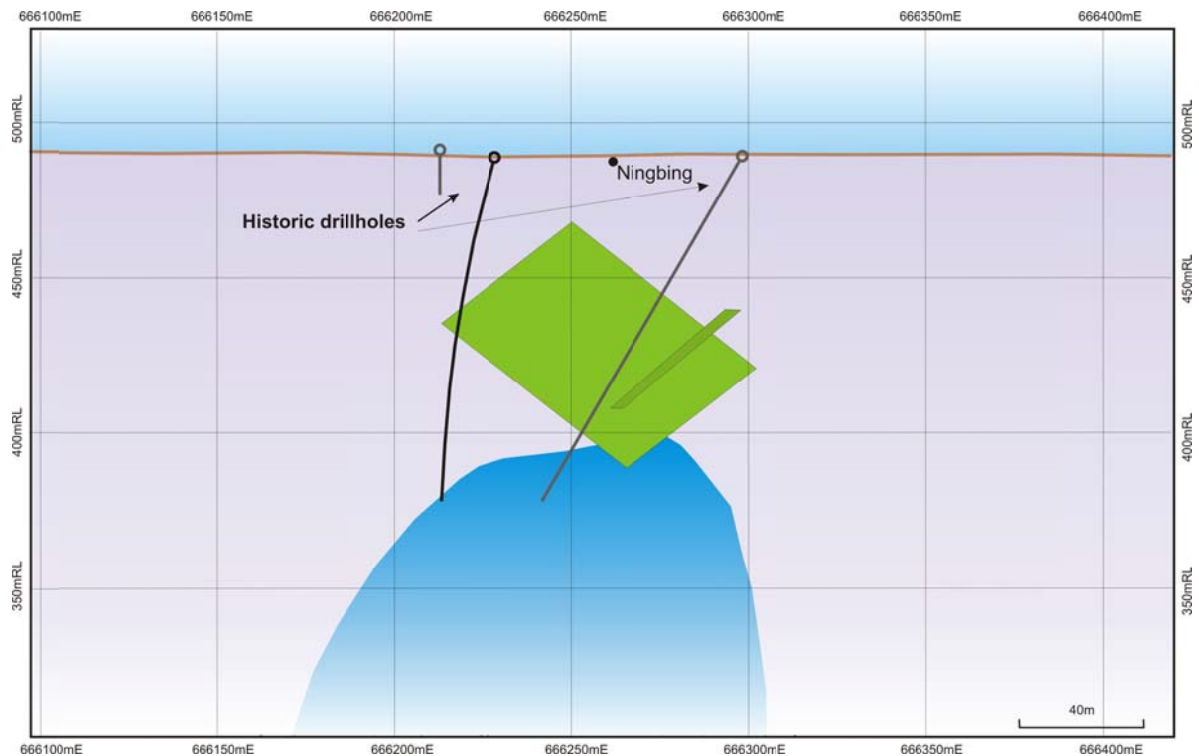


Figure 7 - Cross section of the Ningbing TEM anomaly. The 2002 3D conductor model is edge on in the foreground in darker green and the 2012 FLTEM model is located oblique to section at the back in lighter green. The WMC hole from 1974 is in black on the left and the Plutonic Resources hole from 1997 is in grey on the right. Neither hole effectively intersected either conductor model. Note the association with the magnetic inversion model in blue.

## 7. Monjon

This EM conductor is similar in style, stratigraphic position and history to Ningbing. The 2012 VTEM and FLTEM surveys identified and refined the target. The anomaly was identified and targeted from historic EM surveys but modern 3D modelling indices that drilling was ineffective at the time.

Plutonic drilled two holes here in 1997. Drillhole orientation and positioning was not optimal and the conductor was not effectively tested. Narrow zones of weakly anomalous copper up to 480ppm were intersected by the drilling.

Follow-up will involve the drilling of a single hole to intersect the conductor at the correct orientation followed by DHTM surveying. If significant mineralisation is intersected and DHTM provides a vector to more conductive material, a second phase of drilling will be carried out.



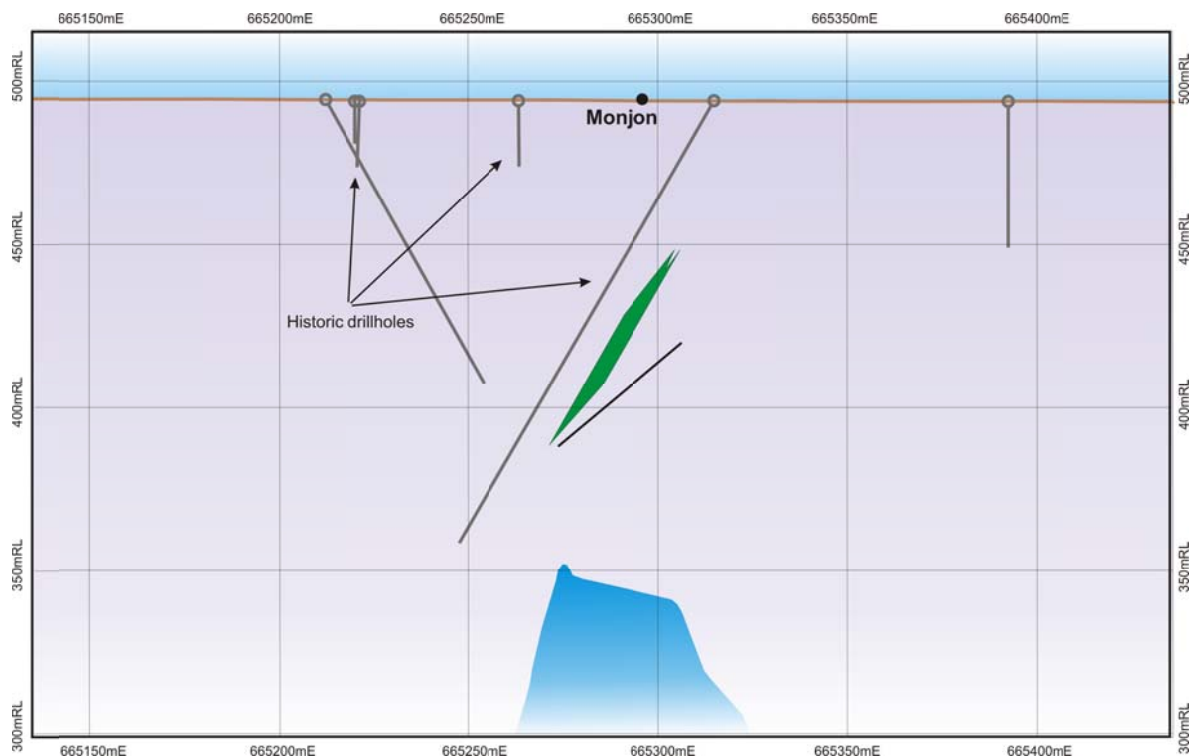


Figure 8 - Cross section through the Monjon TEM conductor shown in green, with the historic drilling that failed to intersect it in grey and the 3D magnetic inversion model in blue

## 8. Other targets

There are several other lower ranking targets at Manindi with the potential to add to the mineral resource. These include:

**Mulgara/Warabi:** Resource extension opportunities. Pre 2002 EM models extend to at least 150m below deepest drilling at Warabi.

**Ningau/Bandicoot:** Large EM conductor, only partially tested by drilling. This target needs more systematic drilling on an optimised grid direction.

**Ampurta:** Medium to large EM conductor only partially tested by drilling. Historic drilling is not systematic and copper grades reach up to 0.8% in places. This target needs further systematic drilling.

**Dunnart:** Small untested EM conductor on the Manindi magnetic trend. The anomaly is located beneath conductive overburden so it could be larger than EM modelling indicates.

**Bilby:** Small EM conductor intersected near its edge at a low angle by a single drillhole. No significant mineralisation intersected, but anomalous copper up to 486ppm in the drillhole.

### Glossary of geological/geophysical terms:

**VTEM<sup>1</sup>:** Versatile Transient (time domain) Electromagnetics, a modern airborne EM technique.

**MLTEM<sup>2</sup>:** Moving Loop Transient Electromagnetics, a ground EM technique.

**FLTEM<sup>3</sup>:** Fixed Loop Transient Electromagnetics, a ground EM technique.

**DHTEM<sup>4</sup>:** Down Hole Transient Electromagnetics, a technique using a downhole electromagnetic probe.

**EM<sup>5</sup>:** Electromagnetics, an electrical exploration technique based on the measurement of alternating magnetic fields associated with currents induced in the sub surface.

**TEM<sup>6</sup>:** Transient Electromagnetics, a generalised term.

**3D inversion modelling<sup>7</sup>:** A modern technique of magnetic data processing and interpretation.

**Pyrrhotite:** An iron sulphide mineral.

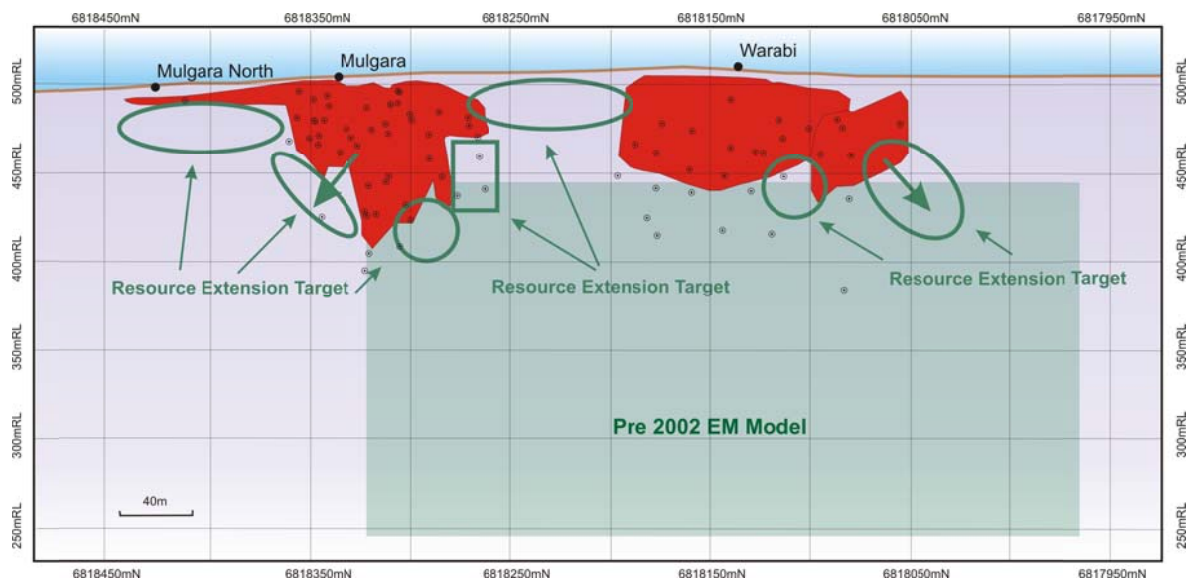


Figure 9 - Long section of Warabi and Mulgara showing areas for potential resource extensions and the Pre 2002 TEM conductor target. Drillhole pierce points are shown in black dots. Note some holes appear more than once as they intersect multiple discrete mineralised horizons

## ABOUT MANINDI ZINC-COPPER PROJECT, WESTERN AUSTRALIA

Metals Australia holds an interest in two base metals projects in Western Australia (Figure 10).

The Manindi zinc-copper project is located around 500 km northeast of Perth, and is being explored by Metals with a view to ultimately developing a zinc mine

The Manindi Project is located in the Murchison District of Western Australia, 20 km southwest of the defunct Youanmi gold mine. The project is located on three granted mining licences and contains a high grade zinc deposit.

Manindi is considered to be a volcanogenic massive sulphide (VMS) deposit, comprising a series of lenses of zinc-dominated mineralisation that have been folded, sheared, faulted, and possibly intruded by later dolerite and gabbro. The style of mineralisation is similar to other base metal sulphide deposits in the Yilgarn Craton, particularly Golden Grove near Yalgoo to the west of Manindi, and Teutonic Bore-Jaguar in the Eastern Goldfields.

Since the deposits were discovered, a comprehensive body of work has been generated, including geochemistry, geophysics, detailed geological mapping, extensive drilling, wireframe modelling, resource modelling and metallurgical test work.



Figure 10 - Location of the Western Australian base metals projects

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**Competent Person Declaration**

The information in this release relating to the geology and exploration results of the projects owned by Metals Australia Ltd is based on information compiled by Luke Marshall, who is a full time employee of Golden Deeps Limited and a consultant to Metals Australia. Mr Marshall is a member of The Australian Institute of Geoscientists, a Recognised Professional Organisation by the Australasian Joint Ore Reserves Committee, and has sufficient experience relevant to the style of mineralisation and types of deposits under consideration and to the activity which is being undertaken to qualify as a Competent Person as defined in the 2012 edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results. Mr Marshall consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

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