



# TODD RIVER RESOURCES

## TODD RIVER METALS PTY LTD

### WALABANBA PROJECT

### PARTIAL RELINQUISHMENT REPORT

**EL26848**

**04/03/09 to 03/03/18**

Tenement/s	EL26848	1:250 000 Sheet Name	Mount Peake (SE5305)
Holder	Todd River Metals Pty Ltd	1:100 000 Sheet Name	Anningie (5554),
Manager	N/A	Datum	GDA94-53
Operator	Todd River Metals Pty Ltd	GDA_E	276032-319124
Commodity	Cu, Au, Ni, Pb, Zn	GDA_N	7565673-7630564
Elements Analysed	Ag, Al, As, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Sr, Th, Ti, Tl, U, V, W and Zn.		
Keywords	HELITEM, mapping, sampling, FLEM, target, anomaly, RC drilling, DHEM.		
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Report Date	May 2018		
Distribution	Todd River Resources Ltd		(1)
	NT Department of Primary Industry and Resources		(1)

## **EXECUTIVE SUMMARY**

Exploration Licence 26848 was granted to Toro Energy Limited (Toro) on 4/03/2009.

TNG Ltd signed a Heads of Agreement (HOA) with Toro in April 2012. The agreement gave TNG the right to explore for all minerals except uranium within EL 26848.

In April 2017 TNG Ltd demerged its base metal assets to the new company Todd River Resources Limited (TRR) and EL 26848 is now owned and operated by TRR subsidiary Todd River Metals Pty Ltd.

TNG took out the JV agreement with a view to exploration for primary base metal sulphides, nickel and magnetite hosted vanadium-titanium, as found in the Mount Peake Fe-V-Ti deposit to the east.

EL26848 was reduced in area from 45 blocks to 23 blocks prior to its ninth anniversary and this report details the exploration conducted with the relinquished area.

In August 2012 a HELITEM survey was flown by Fugro Airborne Surveys Pty Ltd (Fugro) over several targets within the Walabanba project area. Two block areas were flown within the relinquished region of EL 26848, Block 1 and Block 5. Six targets were identified from the data (T1a, T1b, T1c, T5a, T5b and T5c).

Ground inspection of targets and sampling was completed in 2012 and 2013.

Fixed loop EM was carried out over targets 1c and 5b/c in April 2014.

Drilling of six holes over T1c and T5b/c was completed in July/August 2017. 868 samples were sent for analysis and pXRF readings were taken on four of the six holes. DHEM was completed on each hole. Results were disappointing and as such these areas of the licence were relinquished at the ninth anniversary of the licence.

Rehabilitation was completed on all holes in October 2017.

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# 1. INTRODUCTION

Exploration Licence 26848 was granted to Toro Energy Limited (Toro) on 4/03/2009.

TNG Ltd signed a Heads of Agreement (HOA) with Toro in April 2012. The agreement gave TNG the right to explore for all minerals except uranium within EL 26848.

In April 2017 TNG Ltd demerged its base metal assets to the new company Todd River Resources Limited (TRR) and EL 26848 is now owned and operated by TRR subsidiary Todd River Metals Pty Ltd.

EL26848 was reduced in area from 45 blocks to 23 blocks prior to its ninth anniversary and this report details the exploration conducted with the relinquished area.

A HELITEM survey was completed across two block areas in 2012 followed by ground inspection and sampling in 2012/13 and a fixed loop EM in 2014. Drilling was undertaken across two target areas in 2017.

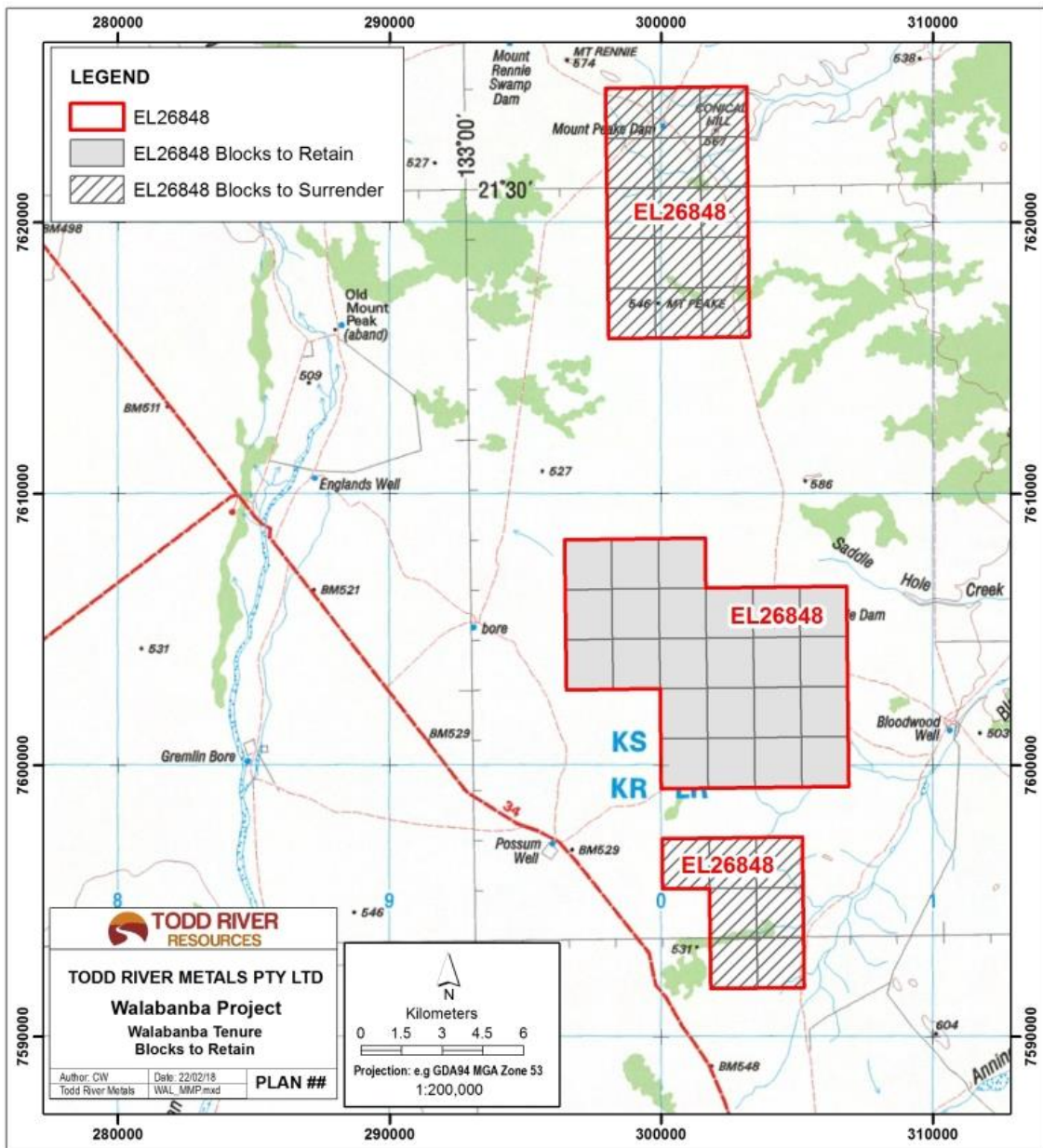


Figure 1: Location of Walabanba Hills project area (Retained area in grey).

## 2. LOCATION AND ACCESS

The Walabanba Hills project is located immediately to the west of the Mount Peake V-Ti-Fe project. EL26848 is situated on Anningie Stations approximately 250km north-northwest of Alice Springs with good access via the Stuart Highway then unsealed station tracks. The tenement lies on the Mt Peake 1:250,000 mapsheet and the Anningie 1:100,000 mapsheet.

## 3. TENURE

Exploration Licence 26848 was granted to Toro Energy Limited (Toro) on 4/03/2009. TNG Ltd signed a Heads of Agreement (HOA) Toro in April 2012. The agreement gave TNG the right to explore for all minerals except uranium within EL 26848.

In April 2017 TNG Ltd demerged its base metal assets to the new company Todd River Resources Limited (TRR) and EL 26848 is now owned and operated by TRR subsidiary Todd River Metals Pty Ltd.

A partial relinquishment from 185 to 92 blocks was completed at the fifth anniversary of the licence and as per section 29(3) of the *Minerals Titles Act* a reduction was undertaken on the tenement leading up to the sixth anniversary of grant, reducing the number of blocks from 92 to 45. A further reduction from 45 to 23 blocks has been completed at the ninth anniversary of the licence.

Details of EL26848 are provided in Table 1 and Figure 1. Retained blocks are listed in Table 2.

**Table 1: Walabanba Project tenement details.**

TITLE	BLOCKS	GRANT DATE	EXPIRY DATE
EL26848	23	4/03/2009	3/03/2019

**Table 2: Blocks to be retained on EL 26848.**

Map ID	Block	Sub-Block
SF5313	81	N, O, P, S, T, U, X, Y, Z
SF5313	82	Q, R, S, V, W, X
SF5314	53	E, K
SF5314	54	A, B, C, F, G, H

## 4. GEOLOGY

The Reynolds Range project lies within the Arunta region of the Northern Territory. Basement is comprised of Palaeoproterozoic to Mesoproterozoic metasedimentary and granitic rocks within the Aileron Province, including the Reynolds Range Group. The granites and orthogneisses are highly-radiogenic within the Reynolds Range, hosting numerous veins and pegmatites with anomalous uranium and thorium. Locally the Aileron Province rocks are overlain by Tertiary to recent clastic sequences, derived from erosion of the radiogenic granites in the Reynolds Range.

Uranium mineralisation is known in the region and is restricted to the Proterozoic Aileron Province and nearby Carboniferous Ngalia Basin. To the southeast uranium occurs in

phosphatic and REE-enriched metasomatic pods and veins within the high metamorphic grade Lander Rock beds.

To the east lies the mineralised Mount Peake gabbro, a Ti-V-Fe ore body hosted by a differentiated basic sill with minor ultrabasic layers. The predominant rock type is olivine gabbro with layering defined by variations in plagioclase/olivine+clinopyroxene ratios. Most of the gabbros are massive with no discernible layering.

The local geology (Figure 2) comprises sodic granites, gneisses and minor amphibolites, folded metasediments and intruded metabasic rocks. Major northwest shears cut the sequence and are associated with barren quartz intrusions. Two prominent structures run along the Lander River Valley, to the west and along the Salt Creek – Blue Bush Bore Valley. The granite batholiths are interpreted to be shallowly eroded with exposure of their upper levels only, with abundant pegmatite outcrops, typically of quartz-feldspar-muscovite-tourmaline composition. Some very coarse examples occur in association with minor tantalum or tin mineralisation that has in places been mined. The metasediments, comprising meta shales, cherts, siltstone and fine sandstone range in grade from lower to upper greenschist facies and are common in the Lander valley. Some exhibit quartz sericite alteration. Tertiary to Recent cover comprising laterite derived sands and clays (alluvium and colluvium) , calcrete and ferricrete is common in low lying areas and can be up to 70m thick, however Toro's drilling indicates it is over 200m thick in places.

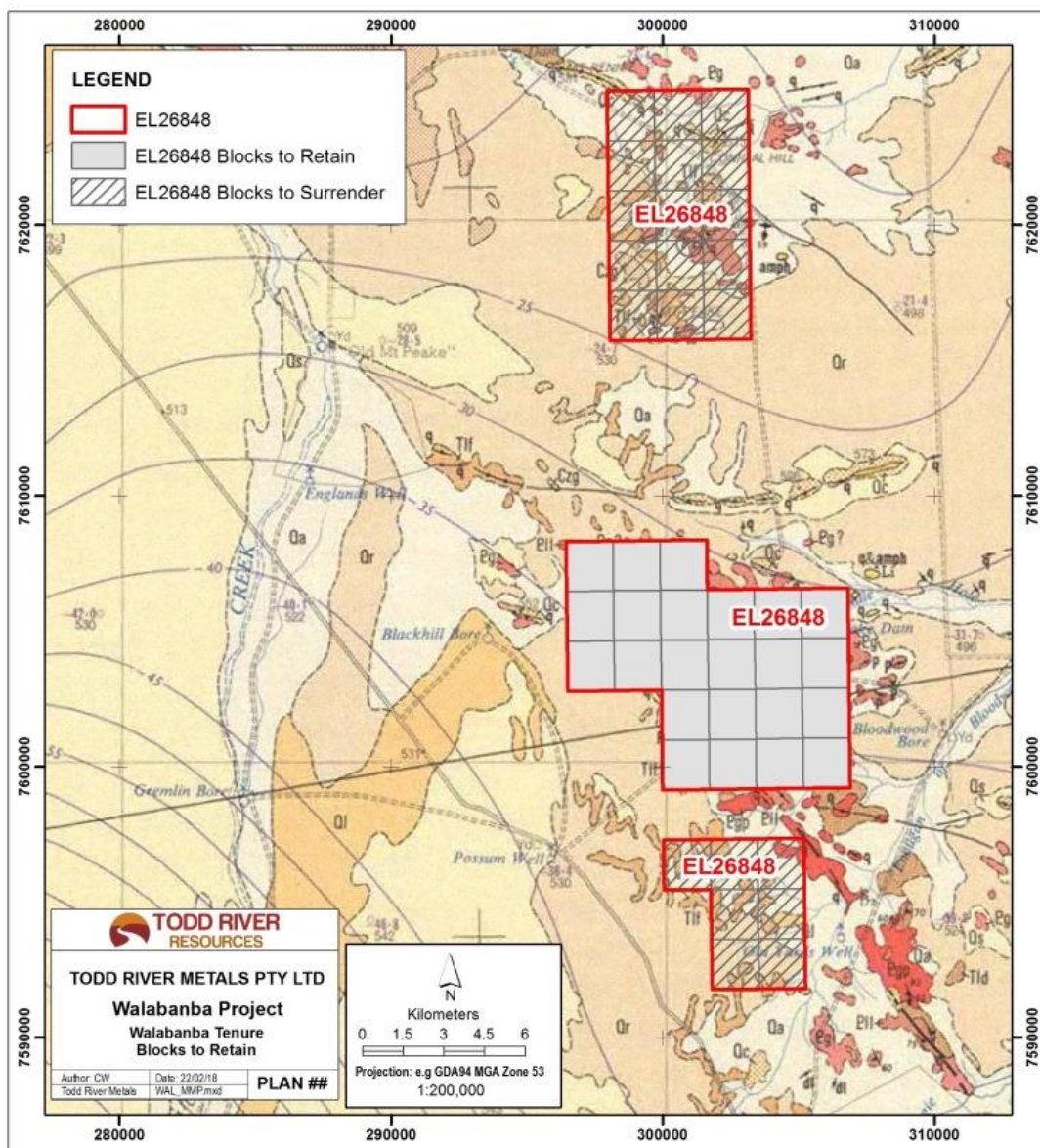


Figure 2: EL 26848 on 250K geology.

## 5. PREVIOUS EXPLORATION

Numerous companies have been exploring in the region over the past 40 years in search of uranium, gold, base metals and diamonds. Within the tenement boundaries most drilling has been carried out in search of gold. Holes tend to be shallow (<10m). Uranium has been extensively explored for in the area but exploration has been restricted to water bore sampling, hard rock and limited near surface calcrete styles of uranium within or proximal to outcropping terrains.

Highlights of the exploration prior to Toro Energy include aeromagnetic surveys over the region, conducted by Anglo American Corporation (Anglo), and focused on magnetic and Electro-Magnetic (EM) anomalies. These surveys identified numerous targets anomalous in nickel, copper and platinum group elements, suggesting the presence of sulphide bearing intrusive rocks.

## 6. EXPLORATION UNDERTAKEN ON THE RELINQUISHED AREA

### 6.1 HELITEM Survey

In 2012 TNG undertook a HELITEM survey over several target areas within the Walabanba project area. The survey covered small magnetic anomalies identified by historical EM surveys and anomalous regions identified by historical GEOTEM which is considered substandard compared to modern HELITEM techniques. Two block areas were flown within the relinquished portion of EL 26848 (Figure 3) and six targets were identified (Table 3). Data is included in Appendix 1.

**Table 3: Location of HELITEM Targets.**

<b>Anomaly Number</b>	<b>Easting (GDA94-53)</b>	<b>Northing (GDA94-53)</b>
T1a	300500	7617600
T1b	299500	7619150
T1c	301580	7621675
T5a	303800	7594575
T5b	304600	7595375
T5c	304000	7595750

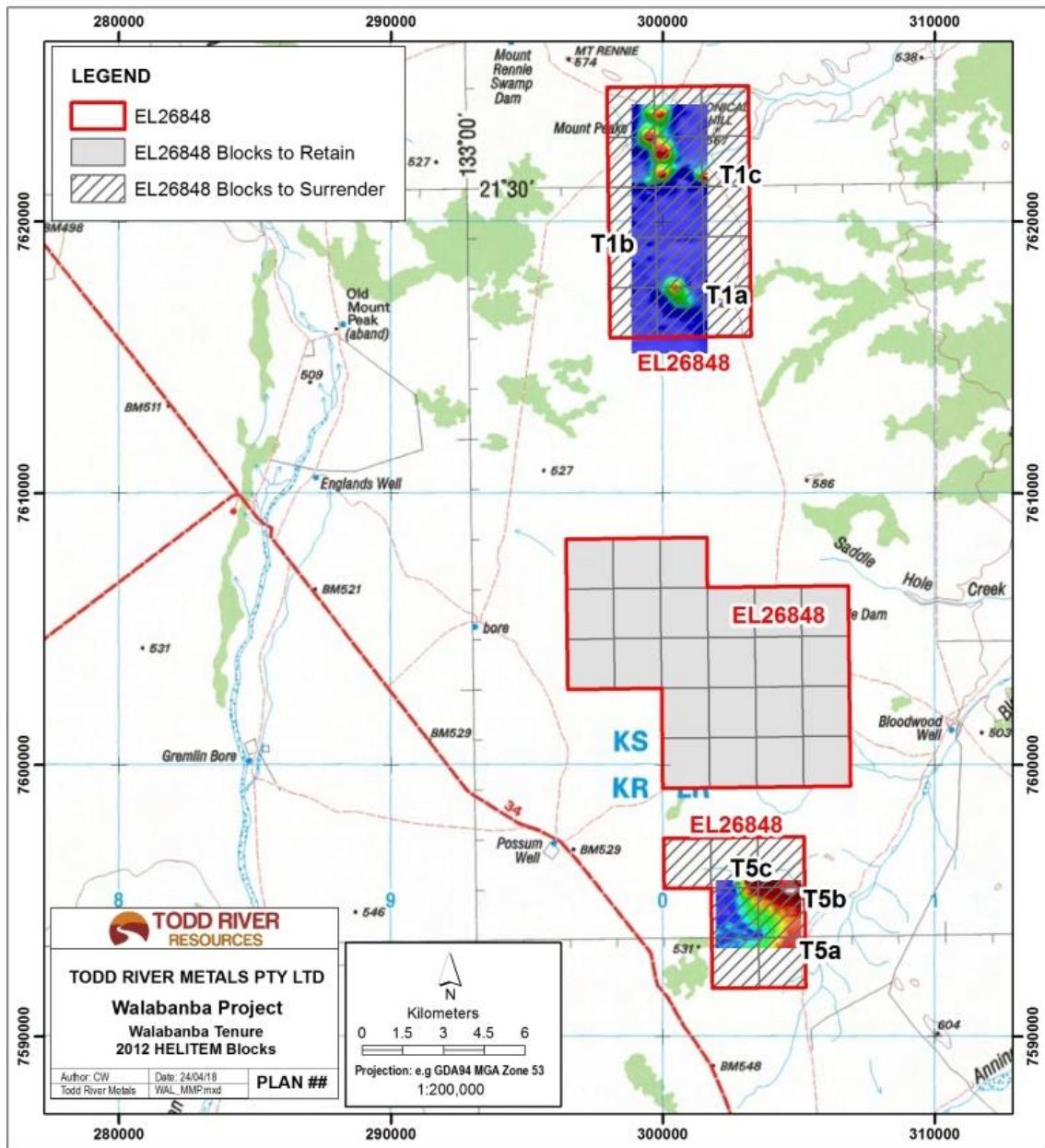
Three late-time anomalies were identified from the HELITEM data over Block 1 (T1a, T1b and T1c). Each one is associated with a discrete magnetic. Each anomaly required field inspection, in particular T1c which is coincident with a historical lead occurrence.

Block 5 was designed to cover a discrete and moderately strong magnetic bullseye anomaly. Three targets were identified.

Target T5a is a weak, early-mid time anomaly coincident with the targeted magnetic bullseye. It represents a weakly conductive body, probably caused by disseminated sulphides within the magnetic unit. The anomaly does warrant field inspection.

Target T5b is a late-time anomaly adjacent to a moderately conductive E-W trend. Follow-up ground EM is recommended as the resolution of the HELITEM data is quite poor at this depth.

Target T5c is another late-time anomaly and appears to be associated with a magnetic anomaly. It is forming beyond the northern limit of the survey and cannot be fully assessed. Ground EM is recommended.



**Figure 3: HELITEM Blocks 1 and 5 flown within the relinquished area of EL 26848. Shows targets T1a, T1b and T1c along with T5a, T5b and T5c.**

## 6.2 Ground Inspection of HELITEM Anomalies

A limited on-ground followup programme was completed in October 2012. A portable NITON was used for sampling and six samples were sent for multielement laboratory analysis. All data is in Appendix 2.

### Block 1

Target T1a is a mid-late time anomaly also associated with a discrete magnetic anomaly. It has been covered in the ground EM work conducted by Anglo. Site inspection found no

outcrop in the immediate vicinity so no geochemical data was collected from the transported cover. A lateritic duricrust rock sample (WB10006; Table 4) was taken approximately 260m west, 50m south of the target and submitted for multi-element analysis.

Target T1c is a single line, mid-late time anomaly coincident with a discrete magnetic bulls-eye. Ground EM, conducted by Anglo, found no significant anomalies but the target is in close proximity to an historic lead occurrence and a topographical high. Target 1c lies on the north east of a shallow dipping (2-3%) laterite duricrust surface with a distinct erosion scarp and associated breakaway approximately 200m to the south of the target centre. To the north is a vegetated sheetwash plain however the target is located in residual pisolitic lag material, often with cutans. Site investigation showed no evidence of the historical lead occurrence near in the anomaly. Three samples of residual pisolitic lag (WB10003, WB10004 and WB10005; Table 4) were collected for laboratory analysis.

**Table 4: Location of pisolitic lag from EM Target 1c.**

<b>SAMPLE</b>	<b>Easting GDA94</b>	<b>Northing GDA94</b>	<b>LOCATION</b>	<b>SAMPLE DESCRIPTION</b>
WB10003	301525	7621675	EM Target T1c, all from centre of the target centre and from hill of duricrust outcrop.	Lateritic duricrust, in-situ pisolites (& cutans) and hem/geoth rock fragments
WB10004	301579	7621675	EM Target T1c, all from centre of the target centre and from hill of duricrust outcrop.	Lateritic duricrust, in-situ pisolites (& cutans) and hem/geoth rock fragments
WB10005	301626	7621665	EM Target T1c, all from centre of the target centre and from hill of duricrust outcrop..	Lateritic duricrust, in-situ pisolites (&cutans) and hem/geoth rock fragments
WB10006	301236	7617549	EM Target T1a, 260m west and 50m south of target centre point	Lateritic duricrust, in-situ pisolites (& cutans) and hem/geoth rock fragments

### Block 5

Block 5 was designed to cover a discrete and moderately strong magnetic bulls-eye anomaly.

Geochemical sampling was performed with a handheld portable XRF gun and was conducted at sites 5c and 5a and on outcrop between 5b and 5c. A total of fourteen XRF soil/gravel/rock readings were taken of transported material and along the lateritic duricrust found near Targets 5c and 5a. Two rock chip samples of in-situ lateritic duricrust (Table 5) and pisolites were collected, 200m south of the target centre at T5c (WB10001) and 200m east of the target centre at T5a (WB10002).

**Table 5: Lateritic duricrust sample locations, EM Target 5c.**

<b>SAMPLE</b>	<b>Easting GDA94</b>	<b>Northing GDA94</b>	<b>LOCATION</b>	<b>SAMPLE DESCRIPTION</b>
WB10001	303763	7595491	EM Target T5c, 200m south of target centre	Lateritic duricrust, in-situ pisolites (& cutans) and hem/geoth rock fragments
WB10002	303909	7594414	EM Target T5a, 200m east of target centre	Lateritic duricrust, in-situ pisolites (& cutans) and hem/geoth rock fragments

Ground inspection immediately over anomaly 5a identified no outcrop or sub-crop to explain the source of the anomaly. The anomaly is located on an open sheetwash plain with a transported pisolith surface. Approximately 100m to the south there is anomalous thick vegetation with tall trees, there does not appear to be any indication for this. 200m to the east of the anomaly is a dome-shaped lateritic duricrust hill. The topography suggests it may dip away to the west, under the sheetwash plain at Target 5a, shallow drilling would therefore be able to sample the underlying lateritic duricrust.

Target 5b was located on a flat sheetwash plain with intermittent transported pisolith gravel. There is no outcrop within the 100m x 200m EM Target area. It is expected to be thin transported cover based on granite outcrop approximately 200m to the northwest.

Target 5c, to the northwest of 5b, is centered upon a large flat with hard, Aeolian/sheetwash transported sandy soil cover, draining to the NE. The plain has <2m of topography within 400m, the nearest visible hill 1km to the NNE. Vegetation consists of low fuchsia/poverty bushes and grass. The transported cover is most like to be thin (<10m but as probably very thin – 0.5-1m) as granite outcrop is found approximately 500m away.

Approximately 100m to the north and 200m to the south of the anomaly are small rises. Both are lateritic duricrust regolith units, and strongly ferruginous with hematite/goethite pisoliths, many with visible cutans, showing they are in-situ. pXRF sampling was conducted along the northern rise. The highest copper was 94.9ppm with the only other notable result, taken on the northern rise, of 737ppm Cr and 3636ppm Sb. The southern rise is wedge shaped with an erosional surface at the northern edge, nearest the anomaly, and gently sloping to the southwest, this may indicate it continuing with the slope direction, underneath the cover, and also that some sort of duricrust may have eroded from the area overlying the anomaly.

The only outcrop in the area was a muscovite granite observed in a creek at approximately 304413mE, 7595484mN. Much of the feldspar within the granite had been weathered to kaolinite clays with some outcrop more ferruginous, possible as a result of scavenging hematite from surrounding iron rich environments. Several pXRF samples were taken on it and it showed some anomalous copper values, reaching 705.9ppm copper. Other significant values include Pb at 211ppm, Sn at 320.8ppm and Sb 410.7ppm.

### **6.3 Multi-element analysis of Pisolite Samples**

Six samples were submitted to ALS for multi-element ICP and Fire Assay analysis from reconnaissance work on the Walabanba Hills project. All results are included in Appendix 2.

Samples were from the EM targets T5c (WB10001), T5a (WB10002), T1c (WB100003, 4, 5) and T1a (WB10006). These are summarised in Table 4 and 5 (above) with locations shown on Figure 4.

Sample medium was lateritic duricrust. Outcrop of fresh rock was non-existent over the EM targets visited. Most had sheetwash or aeolian sandplain surface transported regolith over the central portions of the targets. Several visited areas had residual lateritic duricrust outcrops within a few hundred metres of the conductor position and when this was the case this was sampled as duricrust provides a sample medium collecting chalcophile elements broadly from within the weathered zone.

Anomalous results were obtained for copper, iron, vanadium and zinc.

Copper values for samples WB10003, WB10004, and WB10005 (all from EM target T1c) were strongly anomalous with values of: 741ppm, 755ppm, and 808ppm Cu returned.

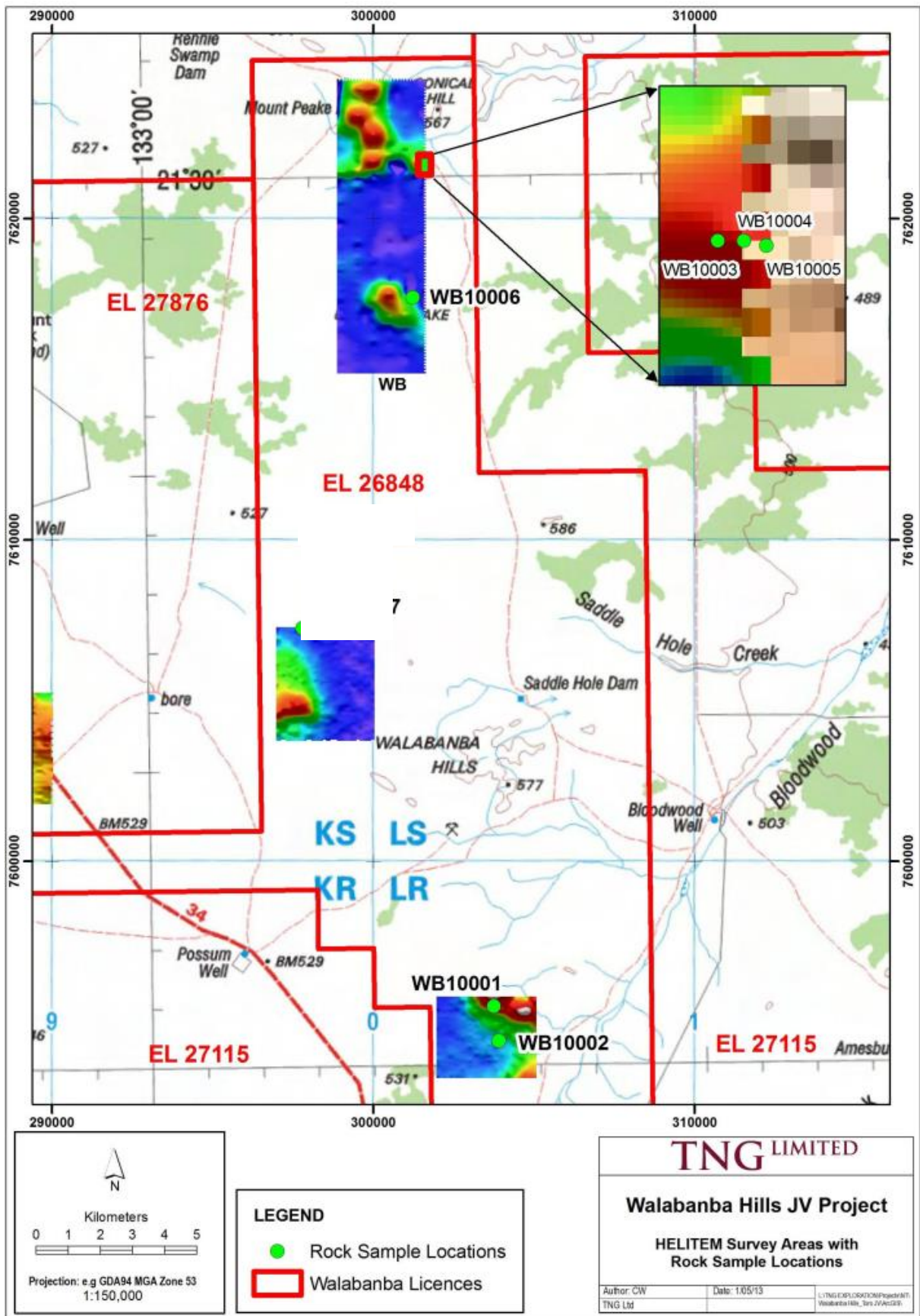


Figure 4: Location of lateritic samples sent for multielement analysis.

The three laboratory ICP samples are located on the centre of the EM conductor area. While frequently elevated in lateritic duricrust a reasonable background value on mafic substrate would likely be below 200ppm and an anomalous threshold in this medium perhaps 250ppm Cu. As such these samples indicate a significant anomaly effectively covering the whole of the hill that exposes lateritic duricrust. The hill is all duricrust outcrop with residual pisolitic gravels on top. It is ~500m E-W, and the duricrust surface dips at a few degrees to the north. The conductor position is under the pisolith gravels on the northern low slope of the hill. The consistent grade of copper between the three samples is a result of the sample material being able to spread a broad anomaly within the duricrust.

Copper values obtained from samples WB10006 (144.5ppm Cu, EM target T1a) and WB10007 (213ppm Cu, EM target T4a) were slightly elevated and may be indicative of some modest bedrock anomalism. These areas should have more extensive sampling completed on them to determine the significance of the elevated values. The relationship between the geochemistry and the EM conductor target is also unclear in both of these samples, as the samples were taken some distance from the centre of the EM conductor. Further ground work and maybe ground EM follow-up will hopefully elucidate the relationship there.

All samples had iron values in excess of 30% Fe, with four over 50%. Iron rich duricrust is not an iron mineralisation target due to its small size potential.

Vanadium is elevated in all samples which may be a result of:

- a mafic substrate, and
- the sampling medium physically concentrating residual material that does not weather (in this case the Cr and V rich magnetite from likely mafic intrusive substrate).

Values in excess of 1000ppm V (sample WB10002 at EM target T5a) should be followed up, while samples with greater than 500ppm V are likely to map the mafic bedrock, and more particularly the magnetite bearing gabbros within intrusive rocks similar to those seen at the Mount Peake V-Ti-Fe resource to the east.

Zinc results for samples WB10005 (112ppm Zn at target T1c, and coincident with the best copper result) are weakly to moderately anomalous and should be followed up.

The relationship between this geochemistry and the geophysics (EM conductors from HELITEM) is unclear at this stage as only samples from T1c were from immediately above the target zones. This anomalous geochemistry does however provide some support for the geophysics and so increase the priorities of these particular areas for follow up.

Lateritic duricrust is an ideal surface sampling medium as it is a consistent sample type and the high iron content scavenges chalcophile elements, precious and base metals from over a reasonably large area and throughout the weathered profile – allowing for broad sample spacings while adequately covering large areas of ground. In the reconnaissance work completed in October 2013 it was noted that there was a reasonable amount of laterite present in the tenement. This is a result of the bedrock having more mafic component (as the Arunta metasediments have little iron and therefore do not develop iron rich regolith units).

#### **6.4 Target 1c Soil Sampling**

EM Target 1c (301580mE, 7621675mN) is a single line, mid-late time response EM conductor coincident with a discrete magnetic bullseye. The anomaly was visited during the 2012 field program and a soil grid with rock chip sampling conducted over the anomaly (Figure 5).

Rock chip samples taken in October 2012 returned anomalous copper values, exceeding 700ppm, from the laterite rise just south of EM Target 1c. Following this a regional Niton pXRF soil grid was designed to outline any underlying anomalism leached into laterite profile.

The grid was designed at 100m x 100m spacing from 300700mE to 302000mE running from 7621200mN to 7621800mN covering a grid area of 1.3km (E-W) x 0.6km (N-S) with a total of 90 sample points. Following anomalous copper values infill was conducted in two areas down to 50m x 50m spacing. Overall 137 Niton pXRF soil readings were recorded.

Soil sample sites were classified using the rock codes:

L: Laterite

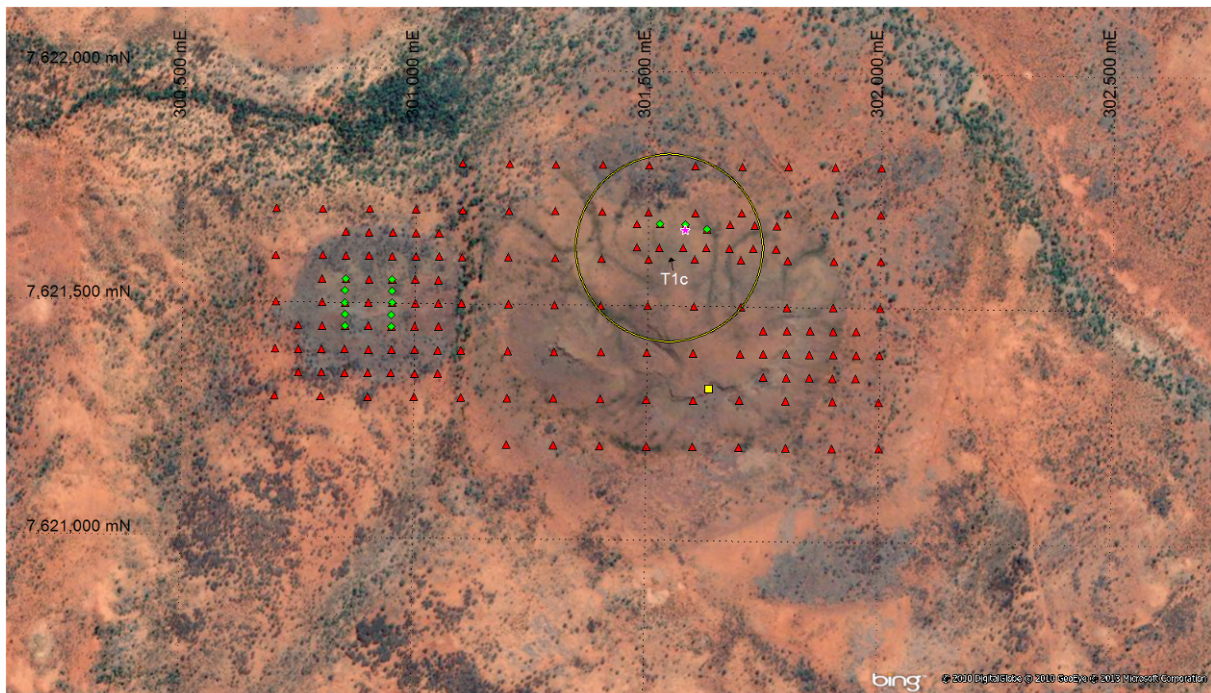
F: Float

C: Cutans

S: Sand - transported

In addition to soil sampling the laterite duricrust with pisolites was rock chip sampled across the anomalous zone (WA2001-WA2010). Two north-south orientated sample lines were conducted in, the east of the sampling area, at 300850mE and 300950mE. Samples of in-situ material were collected at 25m intervals with a total of ten samples submitted for ICP multi-element laboratory analysis.

In total 154 soil samples have been taken at Target 1c with 13 ICP rock and one Niton pXRF rock sample. Sample locations are shown in Plate 5.

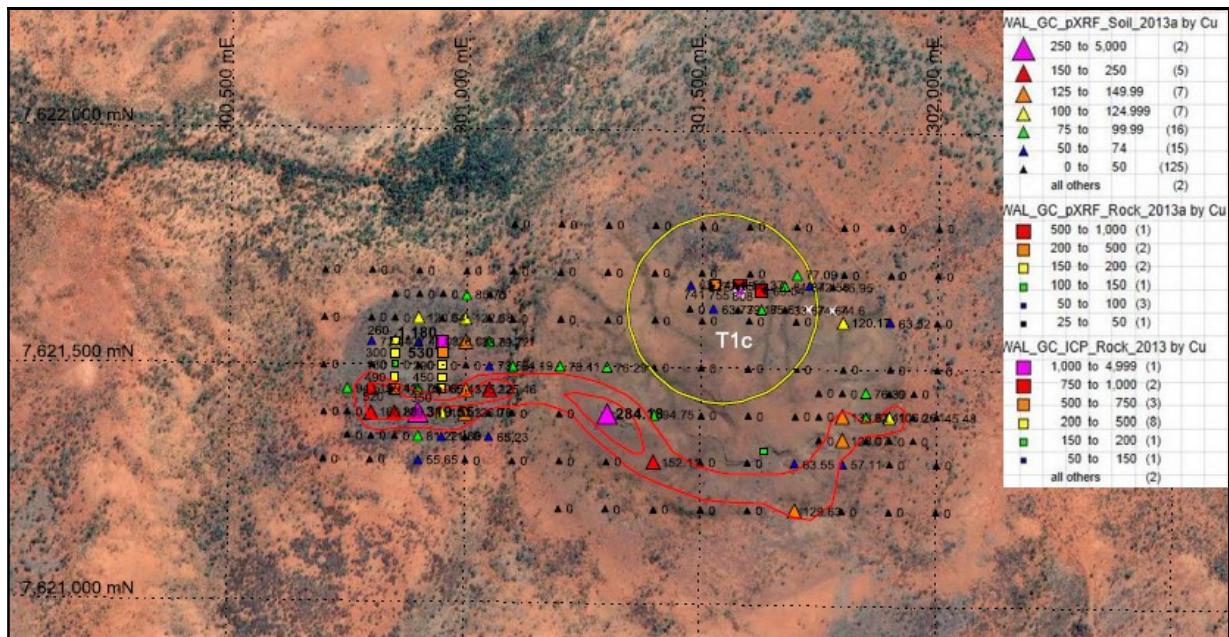


**Figure 5: Sampling locations across Target 1c.**

Of the 137 pXRF readings collected over the Target 1c soil grid, 21 exceeded the anomalous threshold of 100ppm copper with four over 200ppm copper. A maximum reading of 320ppm copper was collected on the southern slope of the eastern laterite rise.

Infill surrounding this anomaly identified anomalous soil geochemistry covering an area of 250m (E-W) x 50m (N-S), moving north the values return to background levels along

7621500mN before another anomalous zone measuring approximately 200m x 50m centred around 300950mE, 7621550mN (Figure 6).



**Figure 6: Results of sampling across Target 1c.**

A second anomalous zone on the western laterite rise, approximately 300m to the southeast of EM Target 1c, reaches 134ppm copper however when infill sampling was conducted it does not appear to be continuous.

Three other isolated anomalous results were not investigated further as although they exceeded 100ppm copper they were collected in transported material, believed to be sourced from the anomalous duricrust upslope. Cutan coating on the in-situ pisolites allowed transported material to be easily identified during sampling.

Rock sampling of the Laterite crust returned a maximum ICP assay of 1180ppm copper. Of the ten samples collected all exceeded 100ppm copper with eight above 300ppm.

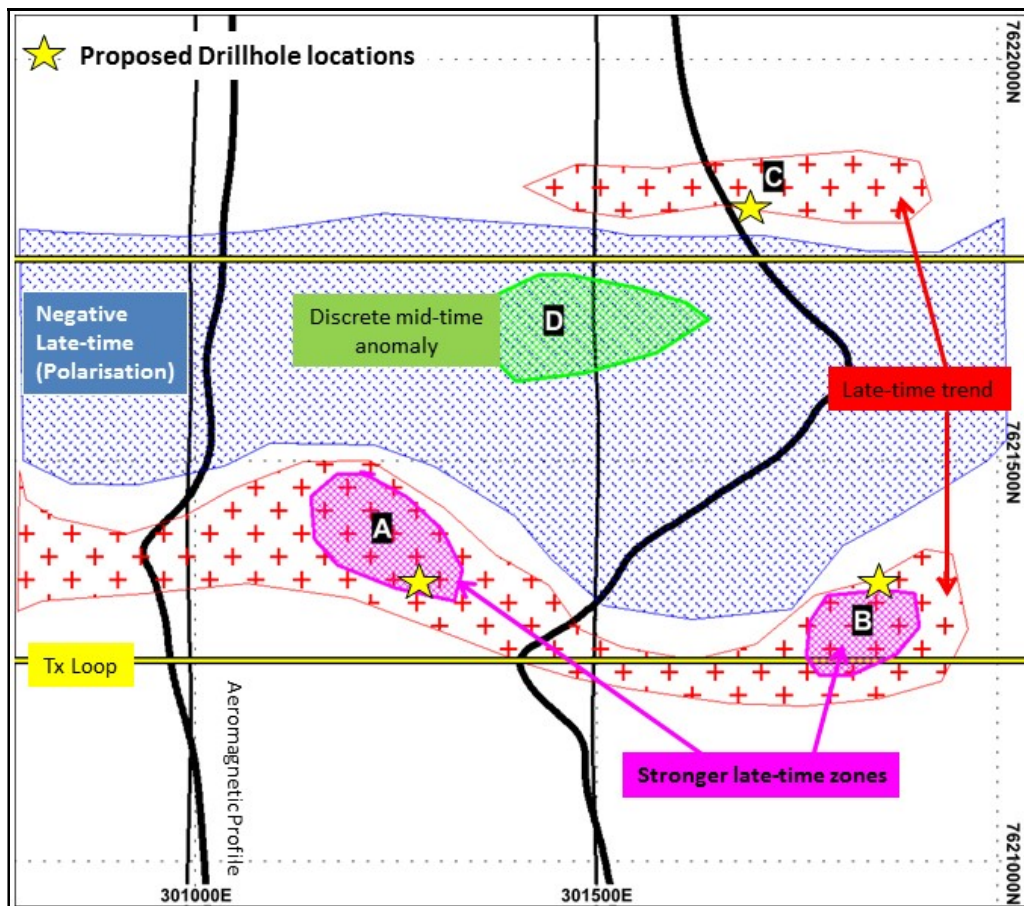
## 6.5 Fixed Loop EM Survey

Fixed loop EM was carried out over targets 1c and 5b/c in April 2014. All data is included in Appendix 4.

At EM Target 1c a 1400 x 1000m area was surveyed (Figure 7) and interpretation shows four discrete anomalies (Figure 8) that centre on the original conductor with a coincident aeromagnetic high. Anomalies A and B are along the southern flank of a central ground polarisation (EM negative) zone, have strong (300 Siemens) late time responses that are coincident with anomalous copper geochemistry. Anomaly C is a 500 Siemen south-dipping late time plate, while Anomaly D is a weak circular mid time feature. Drilling testing of Anomalies A, B, and C at EM Target 1c was proposed.



**Figure 7: Target 1c FLEM Survey Layout.**

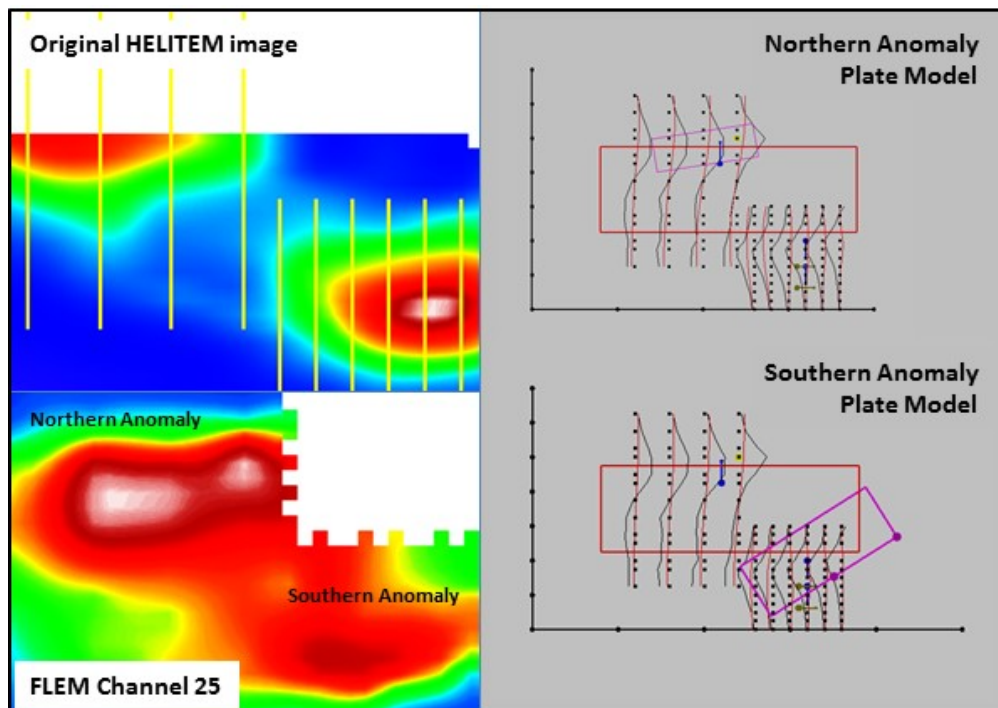


**Figure 8: Walabanba Project FLEM Target 1c survey area and interpretation, showing four separate conductive anomalies.**

The second area surveyed (1500 x 500m; Figure 9) covered two adjacent but discrete EM conductor targets (5b and 5c) outlined from the HELITEM interpretation. Interpretation of the FLEM data (Figure 10) suggests two moderately conductive bodies are present and three holes would suffice to adequately test the potential for base metal mineralisation here.



**Figure 9: Target 5b/c FLEM Survey Layout.**



**Figure 10: Composite of images from the Walabanba FLEM survey at Target 5b/c.**

## 6.6 Drilling of EM Targets

Drilling at the Walabanba Project commenced on 9 July 2017 and was completed on 24 August 2017. The hole collar details are listed in Table 6 and shown on Figure 11. In total, six RC holes for 1,289.5m, were completed using using an Evolution FH3000 Multipurpose truck mounted rig supplied by Grid Drilling.

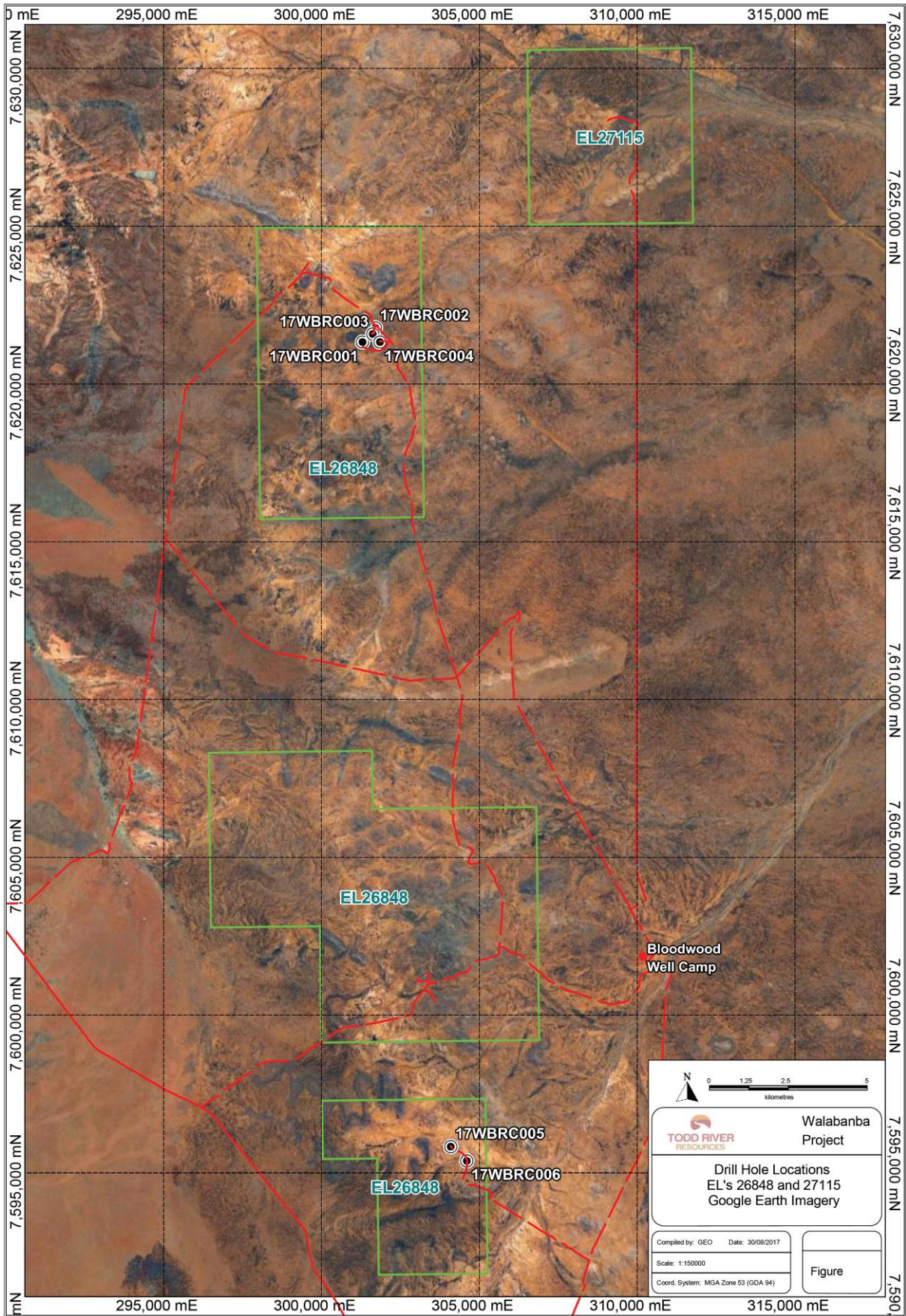
**Table 6: Walabanba Project 2017 Drill Hole Collar Details**

<b>Hole ID</b>	<b>Prospect</b>	<b>Easting GDA94Z53</b>	<b>Northing GDA94Z53</b>	<b>AHD (m)</b>	<b>Depth (m)</b>	<b>Dip</b>	<b>Azimuth</b>
17WBRC001	Target 1c_A	301300	7621351	509	162.5	-55	0
17WBRC002	Target 1c_C	301705	7621804	508	213	-60	0
17WBRC003	Target 1c_D	301621	7621602	517	204	-60	0
17WBRC004	Target 1c_B	301850	7621354	513	229	-65	0
17WBRC005	Target 5c	304093	7595854	525	271	-65	0
17WBRC006	Target 5b	304599	7595401	522	210	-65	180

Target areas were originally identified from an airborne HeliTEM electromagnetic survey flown in 2012, with subsequent ground reconnaissance including mapping and soil sampling in 2012/2013. Three areas were surveyed by Khumpusup Ltd with a fixed loop ground electromagnetic (FLEM) system in April 2014. The interpretation of the FLEM survey identified four low-medium ranked target areas with mid to late time, moderate to strong conductors (EM Targets 1c, 1d, 5b and 5c). One area was targeted based on a discrete magnetic anomaly proximal to EM Target 5b.

Eight holes were originally proposed to test the EM targets but only six of the eight holes were completed.

Geological logging and sampling was completed over 1m intervals. Samples were submitted for laboratory analysis based on pXRF readings on RC chips and geological logging description. pXRF readings were taken on all 1m samples from holes 17WBRC001 to 17WBRC004 using an Olympus DeltaPro. Holes 17WBRC005 and 006 were not analysed due to problems with the pXRF. A total of 430 RC samples were sent to ALS for analysis by the ME-ICP61 (33 element four acid ICP-AES) method for Ag, Al, As, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Sr, Th, Ti, Tl, U, V, W and Zn. Samples were also assayed for gold using Au-ICP22 (au 50g FA ICP-AES finish).



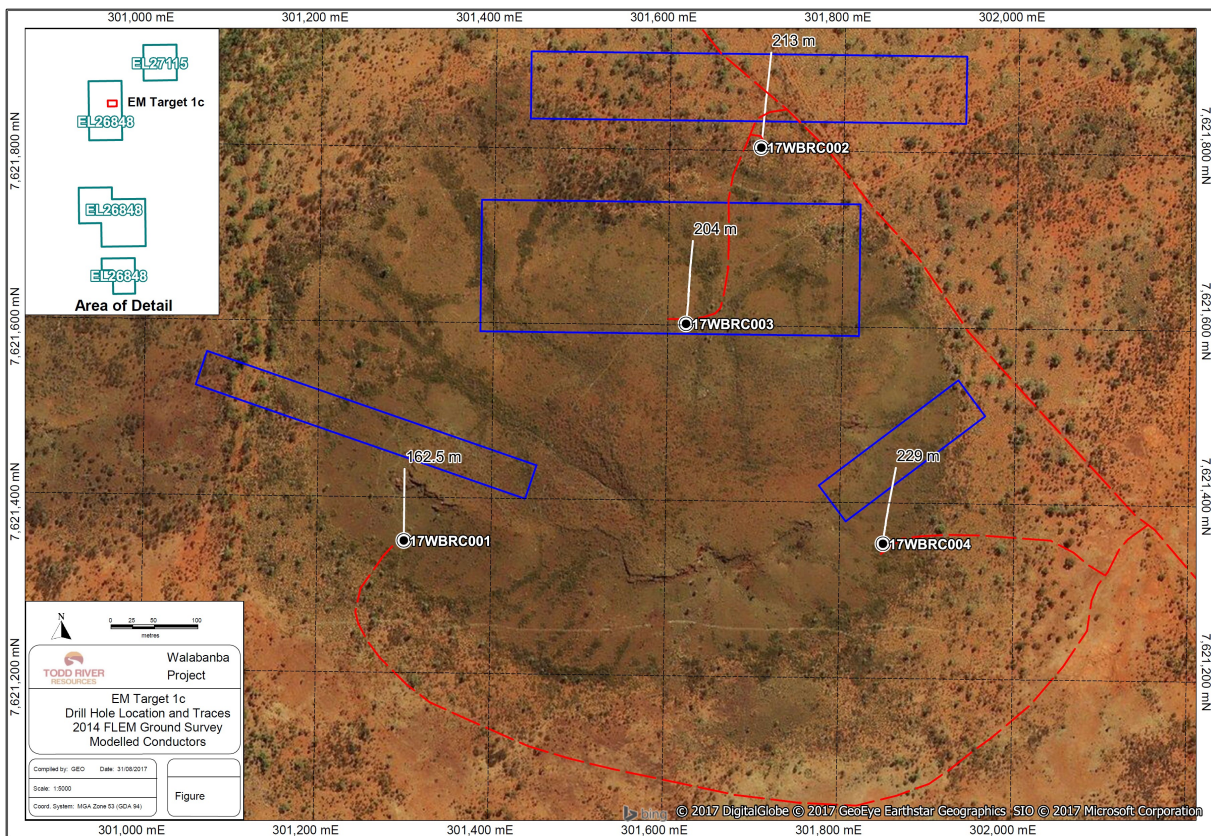
**Figure 11: Location of 2017 Walabanba drillholes.**

### Target 1c

EM Target 1c is centred on a low circular shaped hill covered by a thick ferricrete duricrust cap, exposed as several metre high breakaways on the flanks of the hill slope. The concentration of iron within the ferricrete at this location, which has not been observed in other areas within the project location, and the coincident magnetic high was suggestive of mafic basement rocks underlying the area.

An interpretation of the FLEM survey for EM Target 1c area showed four discrete anomalies centred on the original HeliTEM conductor with a coincident magnetic high. EM Targets 1c\_A and 1c\_B are located along the southern flank of a central ground polarisation (EM negative) zone with strong (300 Siemens) late time responses, coincident with anomalous soil sample copper geochemistry. EM Target 1c\_C is a 500 Siemen south-dipping late time plate. EM Target 1c\_D is a weak circular mid time feature.

Four reverse circulation holes (17WBRC001 to 17WBRC004) were drilled, for a total of 808.5 m, to test the four interpreted conductor plates (Figure 12).



**Figure 12: Location of Target 1c drillholes in relation to conductor plates.**

### Target 5b/c

Target 5b/c covered two adjacent but discrete EM conductor targets outlined from the HELITEM interpretation. Interpretation of the FLEM data suggests two moderately conductive bodies are present.

Two reverse circulation holes (17WBRC005 to 17WBRC006) were drilled, for a total of 481 m, to test the interpreted conductor plates (Figure 4).

## Results

The best result returned from the interval based sampling was in hole 17WBRC001 with 8 m at an average of 0.14 % combined base metals per metre from 1 to 9 m which included 0.1 % copper and 0.04 % Zn within weathered surficial clays and ferricrete. Significant assay results from all drilling with values above 0.1 % combined base metals is tabulated Table 7.

**Table 7: Best results from the Walabanba drilling, above 0.1% combined copper, lead and zinc (Sum of base metal – BM).**

Hole ID	From (m)	To (m)	Interval (m)	Ave Cu (ppm/m)	Ave Pb (ppm/m)	Ave Zn (ppm/m)	Ave BM (ppm/m)	Grade (ppm across interval)
17WBRC001	1	9	8	1,008	8	383	1,398	11,185
17WBRC002	148	150	2	16	384	1,613	2,013	4,025
17WBRC002	154	155	1	59	247	1,210	1,516	1,516
17WBRC002	171	174	3	23	204	879	1,106	3,319
17WBRC002	198	201	3	65	1,187	1,248	2,500	7,500
17WBRC003	12	13	1	488	8	1,180	1,676	1,676

No significant mineralisation (base metals > 1 %) was intersected in the drilling of the six holes (17WBRC001 to 17WBRC006) drilled at EM Target 1c and 5b/c to test the individual modelled conductors. All holes intersected thick saprolitic clays, up to 60 m thick) containing elevated base metal contents (maximum of 8 m at 0.14% combined base metals in 17WBRC001 from 1 to 9 m).

These clays were overlying basement rocks comprised of fine to medium grained crystalline to ophitic mafic intrusive rocks of gabbro composition in the northern holes (Target 1c). A maximum grade of 0.25 % combined base metals from 198 to 201 m in 17WBRC002, which includes 1 m at 0.272 % lead from 199 to 200 m and 0.268 % zinc from 200 to 201 m was returned from the drilling of all four holes. Sulphide mineralisation is associated with thin quartz veinlets, pyrite and weak chlorite alteration of the host gabbro rocks.

Basement rock in the southern holes (Target 5b/c) comprised psammitic and pelitic rocks with numerous quartz veins and pegmatites, particularly in 17WBRC006. Minor pyrite mineralisation was associated with the quartz veins.

All digital data is included in Appendix 5 and the ALS documentation in Appendix 6.

## DHEM

DHEM was conducted by Merlin Geophysics, using a Digi Atlantis system on all six holes drilled. The transmitter loops shown in Table 8 were designed to test the holes. All data is included in Appendix 7.

**Table 8: DHEM Transmitter Loops**

LoopName	Holes	Corner	East	North
WB_Tx1	17WBRC001	NW	301200	7621350
WB_Tx1	17WBRC001	NE	301400	7621350
WB_Tx1	17WBRC001	SE	301400	7621150
WB_Tx1	17WBRC001	SW	301200	7621150
WB_Tx2	17WBRC002 & 17WBRC003	NW	301650	7621800
WB_Tx2	17WBRC002 & 17WBRC003	NE	301850	7621800
WB_Tx2	17WBRC002 & 17WBRC003	SE	301850	7621600
WB_Tx2	17WBRC002 & 17WBRC003	SW	301650	7621600
WB_Tx3	17WBRC002 & 17WBRC003	NW	301450	7621800
WB_Tx3	17WBRC002 & 17WBRC003	NE	301650	7621800
WB_Tx3	17WBRC002 & 17WBRC003	SE	301650	7621600
WB_Tx3	17WBRC002 & 17WBRC003	SW	301450	7621600
WB_Tx4	17WBRC003	NW	301550	7621600
WB_Tx4	17WBRC003	NE	301750	7621600
WB_Tx4	17WBRC003	SE	301750	7621400
WB_Tx4	17WBRC003	SW	301550	7621400
WB_Tx5	17WBRC004	NW	301750	7621350
WB_Tx5	17WBRC004	NE	301950	7621450
WB_Tx5	17WBRC004	SE	302025	7621250
WB_Tx5	17WBRC004	SW	301825	7621150
WBT5_Tx1	17WBRC005	NW	304500	7595500
WBT5_Tx1	17WBRC005	NE	304700	7595500
WBT5_Tx1	17WBRC005	SE	304700	7595300
WBT5_Tx1	17WBRC005	SW	304500	7595300
WBT5_Tx2	17WBRC006	NW	303950	7595950
WBT5_Tx2	17WBRC006	NE	304250	7595950
WBT5_Tx2	17WBRC006	SE	304250	7595650
WBT5_Tx2	17WBRC006	SW	303950	7595650

## 6.7 Drillhole Rehabilitation

The drilling programme July/August 2017 TRM undertook drilling of six holes for 1289.5m across two target areas within EL 26848 (Figure 9). Two campsites were set up adjacent to each other as shown on Figure 7. Choice of campsite location resulted in minimal disturbance to the surrounding area. Tables 9 and 10 outline the disturbance from the programme.

Rehabilitation of the drillpads at holes 17WBRC001-006 and campsites was completed in October 2017. Tracks will be left to revegetate naturally but will be monitored for weeds and erosion and remediated as required. Drillholes 17WBRC002 and 17WBRC006 have been included as Monitoring Stations along with the access track between 17WBRC002 and 003, the access track to 17WBRC004 and 17WBRC006 and the TRM campsite.

**Table 9: Disturbance at each Target area.**

Prospect	Holes	Drill Pads	Sumps	Access Track (m)
Target 1c	4	4	0	1,900
Target 5b/c	2	2	0	2,330
<b>TOTAL</b>	<b>6</b>	<b>6</b>	<b>0</b>	<b>4,230</b>

**Table 10: Total disturbance, pads, tracks and campsite.**

Disturbance	Area	Number	Total (m <sup>2</sup> )
Pads	20m x 15m	6	1,800
Tracks	4230m x 2.5m	NA	10,575
Camp	30m x 30m	2	1,800
		<b>TOTAL</b>	<b>14,175 m<sup>2</sup></b>

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