

## **NEWMONT TANAMI PTY LTD**

# FINAL REPORT FOR EL 9903 (EMMA) (TANAMI EXPLORATION AGREEMENT)

for the period 1<sup>st</sup> January 2005 to 23<sup>rd</sup> December 2005

Suplejack NORTHERN TERRITORY

Volume 1 of 1

**1:250,000 SHEET:** Tanami SE52-15

Birrindudu SE52-11 Winnecke Creek SE52-12 Tanami East SE52-16

**1:100,000 SHEET:** Mt Winnecke 4960

Wilson Creek 4959 Winnecke Creek 5060 Byrne 5059

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TENEMENT HOLDERS: Newmont Tanami Pty Ltd

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**Resource Development** 

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MARCH 2006 NEWMONT CR 32557

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#### **SUMMARY**

Exploration Licence 9903 was granted on the 21 August 2003 for a period of six years. EL9903 is located roughly 90km north east of the Tanami Mine and 45km east north east of the Groundrush Mine.

During the first year of tenure work completed by Newmont Exploration included a regional review of data for budgetry purposes. This Exploration Licence was included in the regional structural review completed by Brett Davies from RSG Global. An extensive surface sampling programme occurred covering the region on a one kilometre triangular grid. Several rockchips were also taken. An aeromagnetic survey was also completed.

During the interim period from 20<sup>th</sup> August 2004 to 31<sup>st</sup> December 2005 prior to the commencement of the Tanami Exploration Agreement (TEA) an extensive infill surface sampling program was carried out covering the central west region on a one kilometre and 250m triangular grid. Several rockchips and lag samples were taken.

During April 2005 A RAB/Aircore drilling program was conducted with the aim of testing the Pharoah and Kephri anomalies generated by the BLEG T sampling program conducted in late 2004. A petrological analysis of 22 samples was undertaken.

TECHNIQUE	HOLE ID	SAMPLE SEQUENCE/DEPTH	SAMPLES	METRES
RAB/Aircore Drilling	EMAC0001 - EMAC0055 EMRB0001 - EMRB0054	3838001 – 3839468	1467	4145
Petrology	EMAC013 EMBR016 EMRB021 EMRB021 EMRB022 EMRB022 EMRB024 EMBR027 EMAC030 EMRB031 EMRB031 EMRB035 EMAC036 EMAC036 EMAC040 EMBR041 EMAC042 EMAC044 EMAC044 EMAC045 EMAC045 EMAC046 EMAC049	39 - 42m 38 - 39m 42 - 45m 54 - 55m 27 - 30m 51 - 54m 45 - 48m 34 - 35m 56 - 57m 6 - 9m 36 - 39m 42 - 45m 34 - 35m 56 - 57m 41 - 42m 30 - 32m 26 - 27m 39 - 41m 30 - 33m 54 - 57m 15 - 18m 21 - 24m 12 - 13m 11 - 12m 12 - 13m	25	-

#### 1.0 INTRODUCTION

Exploration Licence (EL) 9903 was granted to Newmont Tanami Pty Ltd on the 21 August 2003 for a period of six years.

This report documents the work undertaken on EL 9903 during the tenure by Newmont exploration.

#### 2.0 LOCATION AND TENEMENT STATUS

#### 2.1 LOCATION AND ACCESS

Exploration Licence 9903 was granted on the 21 August 2003 for a period of six years. EL9903 is located roughly 95km to 150km north east of the Tanami Mine and 55km to 110km north east of the Groundrush Mine. See Figure 1.

Access to EL9903 is via the Lajamanu Road and then rough exploration tracks driven east through to the tenement. Access will be limited during November to April because of the wet season.

#### 2.2 TENEMENT STATUS

EL9903 comprises 470 blocks to cover an area of 1525 square kilometres. EL9903 is part of the Newmont 'Supplejack' Reporting Group. It was surrendered on 23<sup>rd</sup> December 2005.

#### 3.0 GEOLOGY

#### 3.1 REGIONAL GEOLOGY

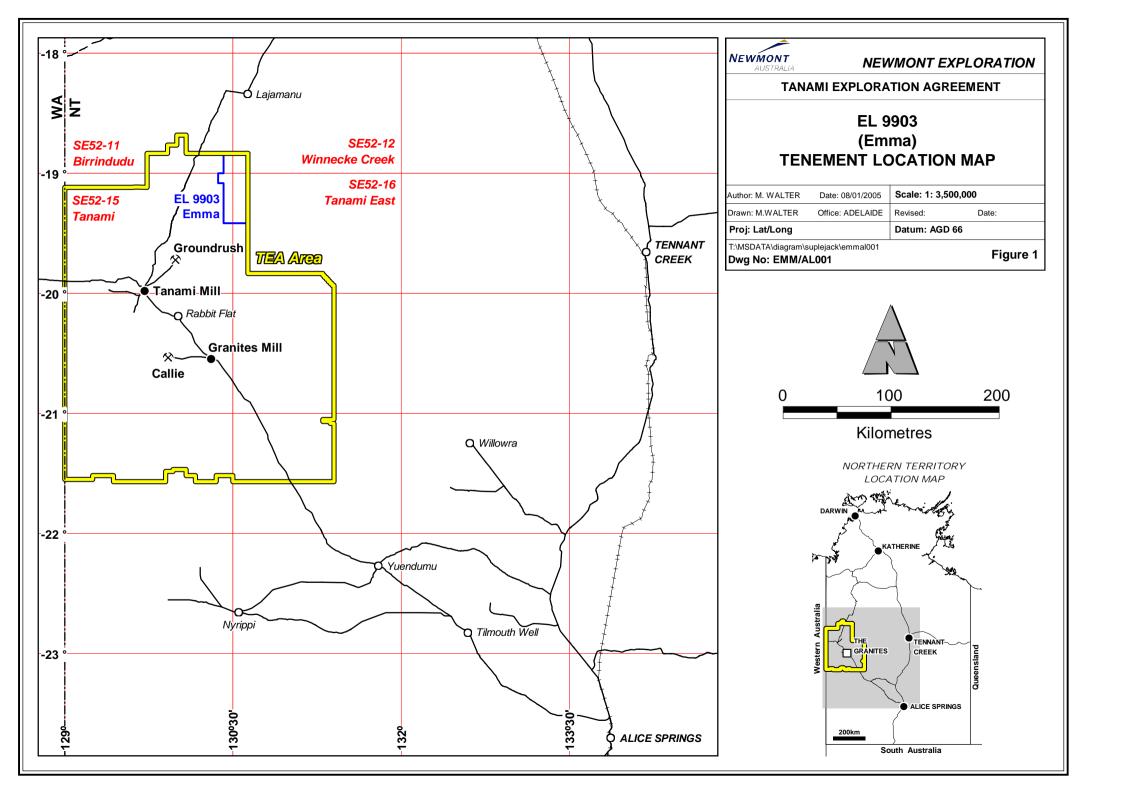
The Granites-Tanami Goldfields lie in the eastern part of the Early Proterozoic Granites-Tanami Inlier, which is part of the Northern Australian Orogenic Province (Plumb, 1990). The Inlier abuts the Arunta Complex to the south and east and is probably a continuation of the Halls Creek Orogeny in Western Australia (Hendrickx, et al, 2000). The Inlier underlies younger cover sequences including the extensive Paleozoic Wiso Basin on its northeastern margin, and Victoria River Basin to the north. To the west, clastic sediments of the Middle Proterozoic Birrindudu Basin overlie and separate the Inlier from the similar age rocks in the Halls Creek Province.

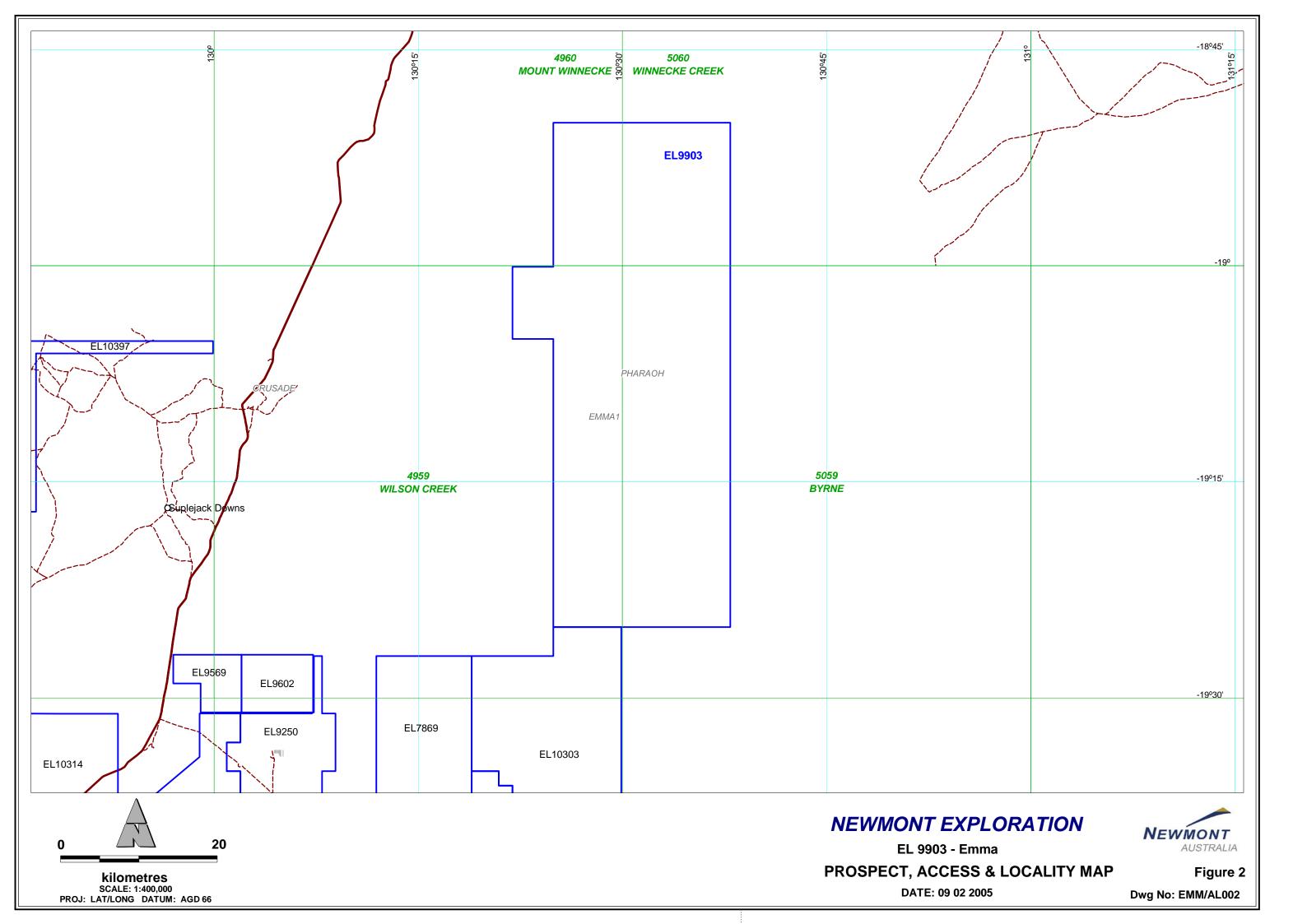
The oldest rocks of the Tanami region belong to the Billabong Complex, a suite of Archaean age gneiss and schist. This is unconformably overlain by the Proterozoic MacFarlanes Peak Group (mafic volcanic and volcanoclastic rocks), followed by a thick succession of clastic sediments of the Tanami Group. (Hendrickx et al, 2000). A suite of syn-to post-deformation dolerites and gabbros are found intruding both the MacFarlane Peak and Tanami Groups.

Complex, polyphase deformation during the Barramundi Orogeny (1845 – 1840Ma) has affected the entire Granites-Tanami Inlier. It appears to have been largely controlled by two sets of regional scale fundamental crustal fractures that trend NNE and WNW. This is evidenced by the orientation of successive phases of macroscopic folding in the region and the consistent sympathetic trends of late tectonic faults.

Peak metamorphism during the Barramundi Orogeny reached amphibolite facies (The Granites Gold Mine), but is more generally greenschist facies through the Inlier (Callie Gold Mine). Contact metamorphic aureoles, commonly identified in pelitic schist units by randomly orientated andalusite porphyroblasts, are well developed at the margins of the syn- and post-orogenic granite plutons.

Localised extension followed, forming small basins which filled with shallow marine sediments to the west (Pargee Sandstone) and pillow basalts and turbiditic sediments to the east (Mt. Charles Formation).





Following the period of extension, widespread granite intrusion and volcanism followed in the period 1830 – 1810 Ma. At least three suites of granitic intrusives and two volcanic complexes are present. The last intrusion of (undeformed) granite occurred at around 1800 – 1795Ma, with intrusion of The Granites Suite (Hendrickx et al, 2000).

Residual hills of gently folded Carpentarian Gardiner Sandstone unconformably overlie Early Proterozoic lithologies. Younger flat lying Cambrian Antrim Plateau Basalts are also preserved as platform cover in areas protected from erosional stripping.

Tertiary drainage channels, now completely filled with alluvial and lacustrine clays and calcrete are a major feature of the region. Some drainage profiles are 10 km wide and greater than 100m deep.

A desert terrain comprising transported and residual colluvial cover sediments and aeolian sand blanket a large portion of the Inlier, with an estimated outcrop exposure of less than 10% of the early Proterozoic lithological units.

Gold mineralisation within the Newmont Tanami tenement holdings is dominantly hosted by the Tanami Group, a sequence of fine to medium-grained turbiditic metagreywackes with lesser amounts of metapelite, carbonaceous siltstone and schist, banded iron-formation, chert and calcsilicates. (Hendrickx et al, 2000). Owing to their more resistant nature, only the cherts and iron-formations and associated interbedded graphitic schists tend to outcrop above the sand plain. The interlayered pillow basalts and sediments of the Mt.Charles Formation at the Tanami Mine deposits also host significant gold mineralisation.

#### 3.2 LOCAL GEOLOGY

EL9903 is dominated by Quaternary Alluvium and sediments with a major channel to the south and Cambrian cover sediments (quartz arenite, sublithic arenite, chert, mudstone, limestone, dolomite) to the north. Cambrian Antrim Plateau Volcanics have been identified to the south. The basement geology is predominantly Winnecke Granophyre (biotite granophyre, biotite adamellite, intrusive felsic porphyry) with inliers of the Birthday Group – Mount Winnecke Formation (sublithic arenite, minor conglomerate).

#### **4.0 EXPLORATION**

## 4.1 EXPLORATION for 21 st AUGUST 2003 to 20 AUGUST 2004

During the first year of tenure work completed by Newmont Exploration included a regional review of data for budgetry purposes. This Exploration Licence was included in the new regional structural review completed by Brett Davies from RSG Global. Work for the structural study concentrated on interpretation and mapping.

#### 4.1.1 Rockchips

Rock chipping work at EMMA showed potential Proterozoic rocks outcropping further east than the original interpretation showed. To allow for this a number of lines from the original EMMA program were extended to test for mineralisation in the SE portion of the tenement.

Rock Chipping at EMMA confirmed the expected igneous lithologies and occurrence of veining. It was further noted that Cambrian/Antrim basalt cover can potentially by identified visually as indurated lateritic plains now upstanding cf. the older intrusives rocks (where the are unsilicified and do not form ridges).

Helicopter supported first-pass reconnaissance work has been completed within the EMMA EL and rock chipping was carried out in the surrounding El's, with 630km2 sampled in 6 days.

12 rockchip samples were taken. A series of elements were also assayed for (Au, Ag, As, Ba, Bi, Cd, Co, Cu, Hg, Mo, Ni, Pb, Pd, Pt, Ru, Sn, V, W & Zn).

#### 4.1.2 Surface Samples

Soil sampling programmes using an empirical pattern within prospective areas were undertaken in the greenfields tenement of Emma. Surface samples were analysed using the new Bleg T technique at Newmonts Welshpool Lab.

702 BLEG T samples (inc. QC) were collected with in the Emma EL at 1km x 1km spacings on a triangular grid during May. Rockchip samples were also taken as appropriate, lag within these EL's was limited to <10% coverage.

Assays from Emma programme have been returned from Newmonts Welshpool Lab. Results highlight a single gold anomaly of 12ppb, supported by 3 samples of 5-6ppb. The area is subject to aeolian sediments (unknown thickness) overlying interpreted folded sediments adjacent to granitoid. See Figure 5 for surface sample locations.

Future work in the Emma region will include Anomaly verification when CLC clearances are complete. Parts of the EL will be assessed for relinquishment.

### 4.2 EXPLORATION FOR 21st AUGUST 2004 TO 31st DECEMBER 2004

#### 4.2.1 Rockchips

10 rockchip samples were taken. A series of elements were also assayed for (Au, Ag, As, Bi, Cu, Hg, Fe, Mo, Pb, Sb, Sn & Zn).

#### 4.2.2 Surface Samples

Soil sampling programmes using an empirical pattern within prospective areas were undertaken in the tenement of Emma. Surface samples were analysed at Newmonts Welshpool Lab.

1431 BLEG T samples were collected with in the Emma EL on a one kilometre and 250 metre triangular grid during October.

Assays from Emma programme have been returned from Newmonts Welshpool Lab. The second round of BLEG T data has so far generated 2 coherent gold anomalies located within the original Priority 1 target area. These are now referred to as Pharaoh and Khepri.

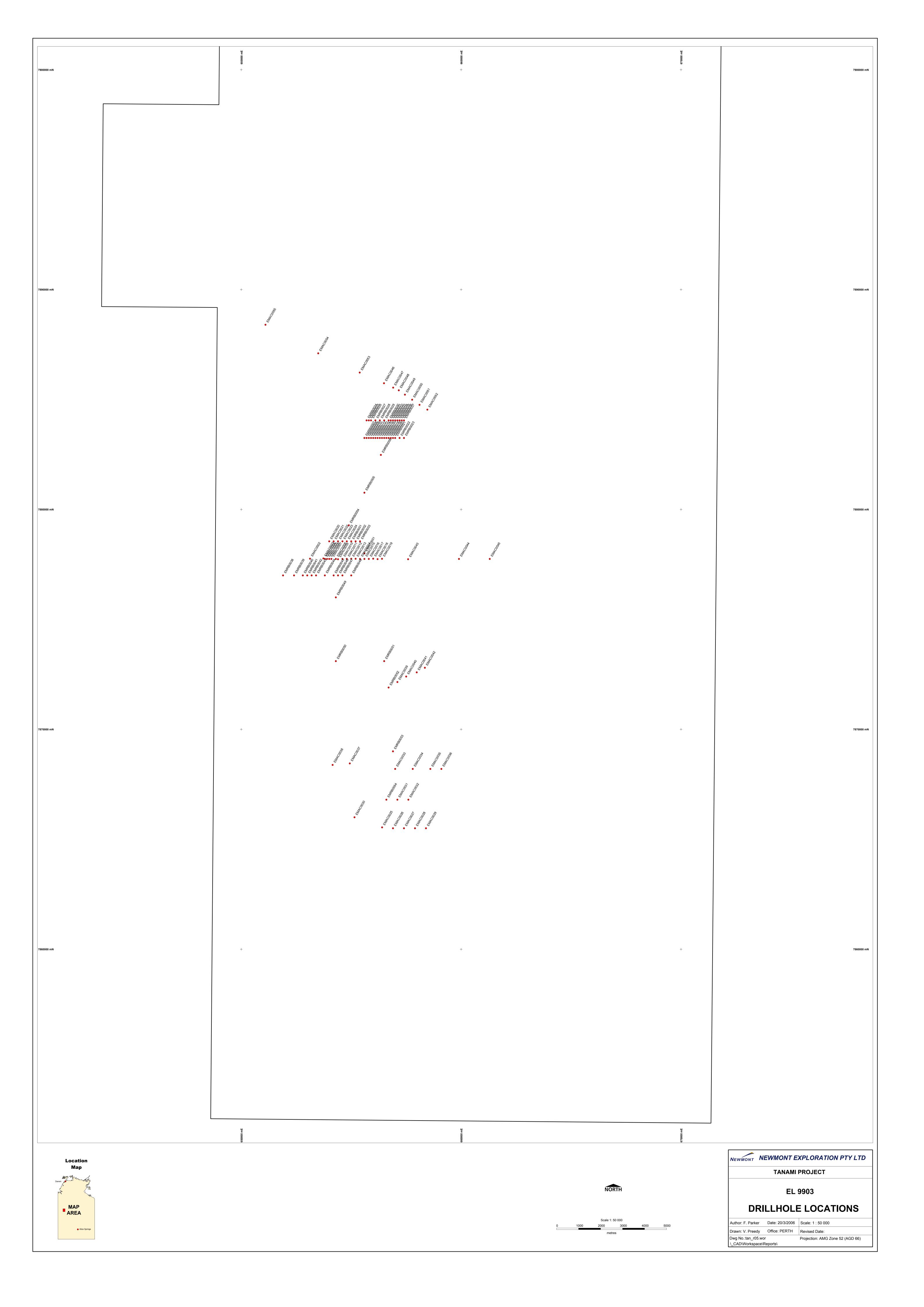
The Pharaoh anomaly has returned a peak BLEG T value of 20ppb Au and is well supported by a cluster of +5ppb Au. Background BLEG T gold in this region has been loosely categorised as being between 0.5-5ppb Au, but is more commonly constrained between 2-4ppb Au.

The Khepri anomaly has returned a maximum BLEG T value of 15pbb Au, and again is well supported by +5ppb Au.

The area is subject to aeolian sediments (unknown thickness) overlying interpreted folded sediments adjacent to granitoid.

### 4.3 EXPLORATION FOR 1st JANUARY 2005 TO 23rd December 2005

During April 2005 A RAB/Aircore drilling program was conducted with the aim of testing the Pharoah and Kephri anomalies generated by the BLEG T sampling program conducted in late 2004. The program comprised 9 lines of drilling spaced at 400 x 100m and 800 x 100m. The best result returned was 20ppb from a transported/bedrock interface and the best bedrock result was 17 ppb. Details of drilling results are presented in Appendix 1.



#### **5.0 REFERENCES**

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