

## **FINAL REPORT FOR EL 23887 (RAWLINS EAST)**

for the period  
**26/05/2004 to 27/01/2009**

**Barrow Creek JV  
NORTHERN TERRITORY**

Volume 1 of 1

**1:250,000 SHEET:** Lander River SF53-01

**1:100,000 SHEET:** Jarrah Jarrah 5556

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**TENEMENT HOLDERS:** Newmont Tanami Pty Ltd

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## SUMMARY

This report is the Final report for EL 23887 (Rawlins East) and, as such, describes the exploration activity pertaining to all exploration on the licence from the 26th May 2004 to the 27th January 2009. The tenement was part of an area covered by the Barrow Creek Joint Venture (BCJV) between Newmont Tanami Pty Ltd (Newmont) who are managers of the joint venture and Yuendumu Mining Company NL (YMC). The BCJV tenements are located approximately 300km north of Alice Springs, and are being explored for economic gold mineralisation.

The tenements were included in Newmont's Tanami Regional Framework study, which highlighted the prospectivity of the area. A detailed helicopter borne gravity survey was conducted in late 2006 and a 100m line spacing airmag survey was completed over portions of EL 23887 in July 2007. Reconnaissance RAB holes were drilled along access tracks in the west of the leases during May 2006.

A comprehensive regional reconnaissance BLEG sampling program was carried out during the reporting period with a limited number of Lag samples taken as well.

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## 1. INTRODUCTION

This document is the Final report for EL 23887 (Rawlins East) for the Barrow Creek JV Project (BCJV) and as such describes the exploration activities within the tenement covering the period 14th July 2004 through to the 27<sup>th</sup> January 2009.

As Newmont Tanami Pty Ltd has been granted the new SEL26825 covering the area of EL23887, it is important that all data supplied in this report remains confidential until any replacement tenure is relinquished.

## 2. TENEMENT DETAILS

A summary of the details of EL 23887 is listed in Table 1. As the tenement falls within the BCJV Area of Interest, it was included under the Joint Venture Agreement. The present breakdown between the BCJV partners is as follows:

EL 23887	Newmont Tanami Pty Limited	85%
	Yuendumu Mining Company NL	15%

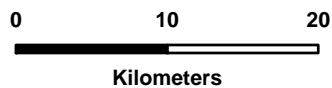
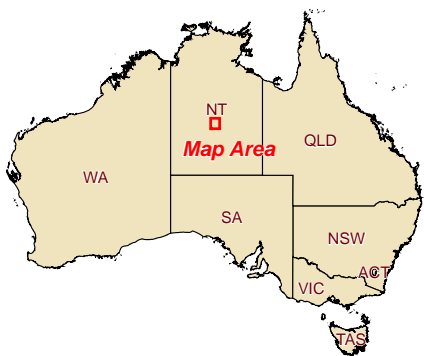
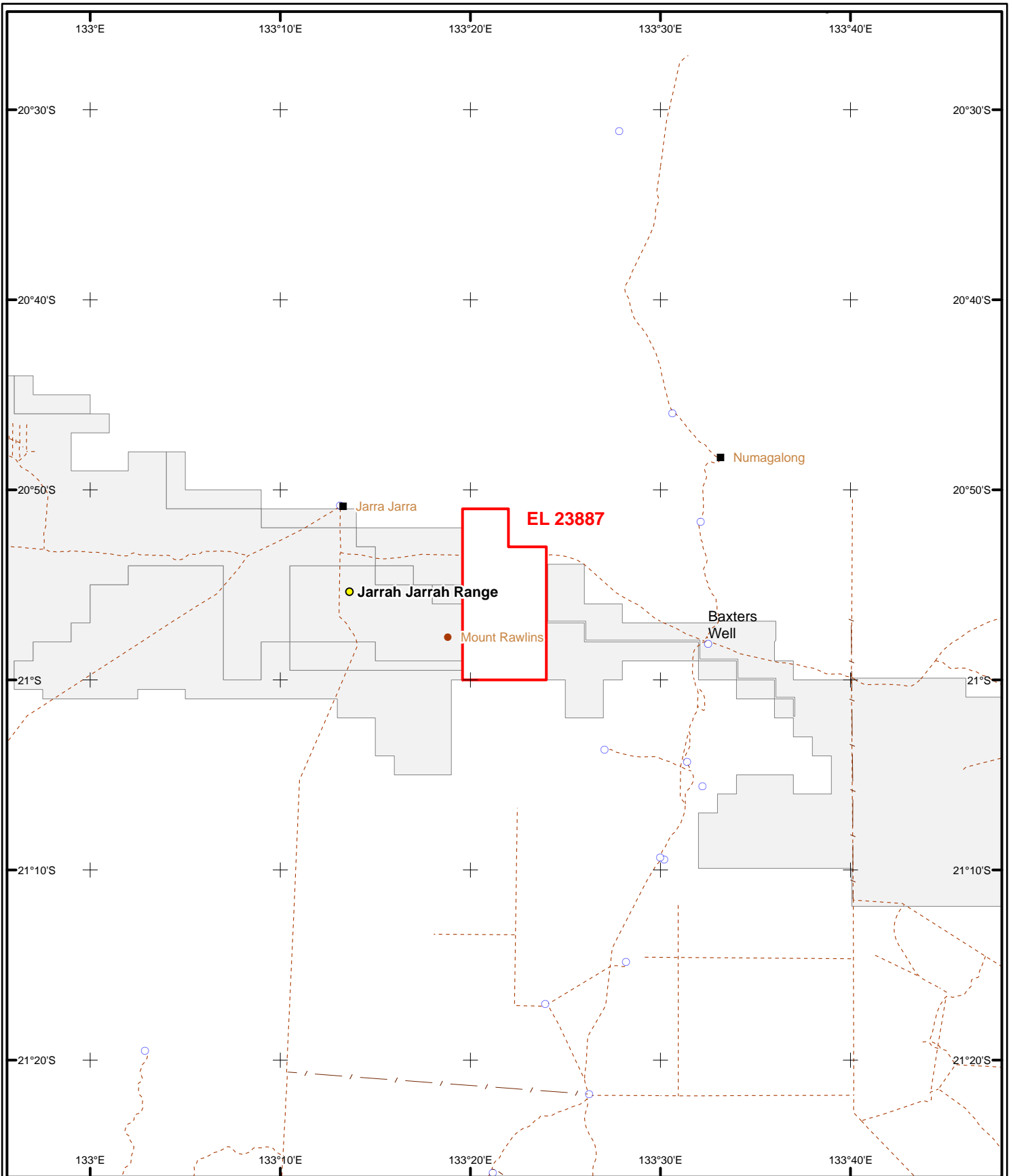
**Table 1 Tenement Details**

Licence	Grant Date	Blocks/Area	Expiry
EL 23887	26/05/2004	41/115	25/05/2010

## 3. LOCATION AND ACCESS

EL 23887 is located approximately 300km north of Alice Springs and between 20 to 85km north to northwest of Barrow Creek. Access from Barrow Creek is via the Stuart Highway to the north and then using the Ali Curung to Jarra Jarra track. During the reporting period Newmont graded much of the Ali Curung to Jarra Jarra track as some sections had fallen into a poor state of repair. The tenement is located on the Stirling and Neutral Junction Stations (NT Portion 655 & 3375 respectively).

**Figure 1 Location and Access**



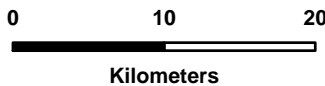
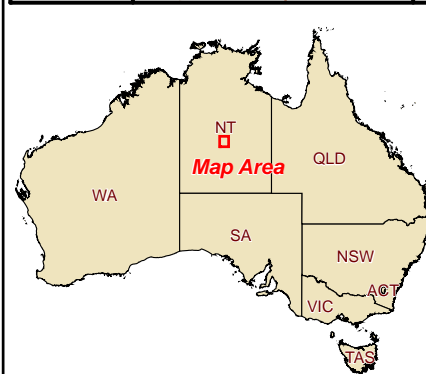
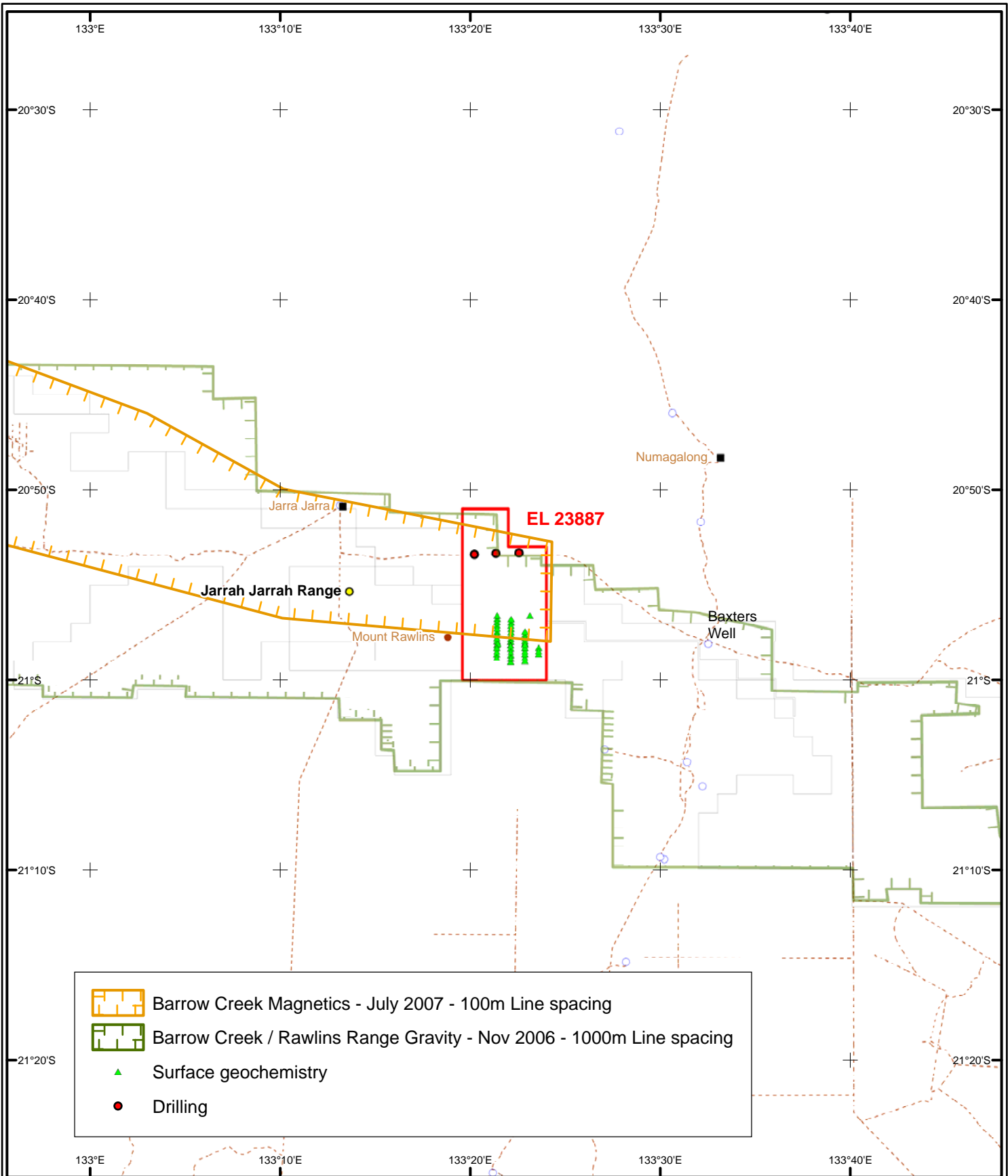
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**Barrow Creek Project**

**EL 23887**

**LOCATION AND ACCESS**

Author: M. Eisenlohr	Scale: 1:500 000
Drawn: V. Preedy	Date: Apr 2009
File: TAN_Lnd_Ten_A4_EL23887Access.mxd Projection: Lat/Long (GDA 94) \AUS\NT\Tanami_Tenements\MXD\Reports\TAN_Lnd_Ten_EL23887\	



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**EL 23887**

**EXPLORATION INDEX**

Author: M. Eisenlohr	Scale: 1:500 000
Drawn: V. Preedy	Date: Apr 2009
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#### **4. PREVIOUS EXPLORATION**

##### **4.1 Previous Exploration by Other Companies**

Exploration at Barrow Creek has historically been largely for base metals, gold and Sn/W/Ta deposits. Within the Crawford, Osborne and Watt Range areas, numerous copper workings can be found, including Home of Bullion and Petricks. The area to the south of the Crawford Range has been the site of the majority of tin, tungsten and tantalum workings, most being small, low tonnage operations.

Kewanee Australia Pty Ltd undertook a broad exploration program between 1970 and 1974 within the Crawford-Osborne Range area. Several targets were delineated by a combination of airborne magnetics, radiometrics and EM survey techniques. Targets generated by this method were followed up with geological mapping, sampling and a combination of percussion, reverse circulation and diamond drilling. This work delineated a sub-economic Cu-Ni resource (Prospect D), but grade was considered too low to warrant further investigation, and the ground was relinquished in 1973.

Limited exploration was conducted by Australis Mining NL during 1969, for base metal potential in the Crawford Range area. Pegmatites, granites and metadolerites were targeted with disappointing results.

More recently, Aberfoyle Ltd has explored firstly for base metal mineralisation and later gold mineralisation in the Home of Bullion area.

##### **4.2 Previous Exploration by Newmont Tanami Pty Ltd**

Newmont (and its precursor companies) has had an exploration presence in the Barrow Creek area since 1988. Work over this time has included reconnaissance programs comprising soil sampling, and vacuum and RAB drilling as well as detailed aeromagnetic/radiometric surveys, regional ground-based gravity surveys and detailed regional regolith mapping. Detailed prospect evaluation work has also been conducted, including reverse circulation and diamond drilling as well as prospect-based IP surveys.

In 1999, although no exploration activities were permitted, an extensive program was undertaken to rehabilitate sites of previous exploration drilling activities. Except for a few diamond holes, PVC collars were cut back below the surface and sealed with concrete plugs.

Newmont developed the Tanami Regional Framework Study during 2005 / 2006 to identify prospective regions and target areas. The study highlighted the Barrow Creek – Rawlins Range region which includes EL 23887.

A detailed helicopter borne gravity survey was conducted in late 2006 and a 100 m line spacing aeromagnetic survey was completed over portions of EL 23887 in July 2007. Reconnaissance RAB holes were drilled along access tracks in the west of the leases during May 2007.

## 5. GEOLOGY

### 5.1 Regional Geology

The oldest exposed basement in central Australia comprises metamorphic and igneous rocks of the Arunta Inlier (Haines et al., 1991). Rocks of the Arunta Inlier are interpreted as being at least partly correlative with sedimentary and volcanic sequences of the adjacent Tennant Creek and Granites-Tanami Inliers.

The Arunta Inlier (Early-Middle Proterozoic) is characterised by metamorphosed sedimentary and igneous rocks of low to medium pressure facies. Deformation and regional metamorphism to upper greenschist facies took place between 1810-1750 Ma (Black, 1981). Shaw and Stewart (1975) established three broad stratigraphic subdivisions based on facies assemblages and lithological correlations. From oldest to youngest, these subdivisions are named Division 1, 2 and 3. Using this model defined by Shaw and Stewart (1975), the orthogneiss east of Osborne Range, the calc-silicate rocks west of Crawford Range and the Bullion Schist would be included in Division 2, and the Ledan Schist in Division 3 of the Arunta Inlier.

Unconformably overlying these rocks are the Hatches Creek Group sediments and volcanics. Blake et al. (1987) formally subdivided the Group into the Ooradidgee, Wauchope and Hanlon Subgroups, comprising a total of 20 Formations and two Members. The Hatches Creek Group is a folded sequence of shallow-water sediments with interbedded volcanic units which reach thicknesses of at least 10,000 metres.

The sedimentary rocks include ridge-forming quartzites, feldspathic, lithic and minor conglomeratic arenites and friable arenite, siltstone, shale and carbonate. The Ooradidgee Subgroup consists mainly of fluvial sedimentary and sub-aerial volcanic rocks which partly interfinger. The Wauchope Subgroup is characterised by large volumes of volcanic and sedimentary rocks, probably both marine and fluvial in origin. The Hanlon Subgroup may be entirely marine and lacks volcanic units (Blake et al., 1987).

Deformation and regional metamorphism took place between 1810-1750 Ma (Black, 1981). Folding was about NW trending axes while metamorphism to upper greenschist facies took place. Later intrusion of both the Arunta basement and the Hatches Creek Group by granitoids of the Barrow Creek Granitic Complex took place around 1660 Ma (Blake et al., 1987). Contact metamorphism and metasomatism are often observed.

Sedimentation associated with the Georgina Basin commenced during the Late Proterozoic with the Amesbury Quartzite and was terminated during the Early Devonian after deposition of the Dulcie Sandstone. The Georgina Basin sequence was mildly affected by the Carboniferous Alice Springs Orogeny.

A long erosional period followed with subsequent deep weathering during the Tertiary produced silcrete and ferricrete horizons. A veneer of Quaternary sands and soils overlays much of the area, except where recent and active alluvial sedimentation is present.



## **5.2 Local Geology**

The surface geology within EL 23887 ranges from outcrop to thick cover in washout areas, and on average comprises 4-5m of soil cover. In the western area thick alluvial sediments are derived from the associated floodplains and palaeo-channels of the northward flowing Hanson River that flows through the licence. Cover in these areas can be >30m.

The dominant rock types include quartz-biotite schists and quartz arenites to the north, interpreted to be part of the Gwynne Sandstone and Illoquara Sandstone, along with tuffaceous siltstones and arenites of the Strzelecki Volcanics (all formations within the Wauchope subgroup of the Hatches Creek Group). Minor granite intrusions occur throughout the area. A strong NW-SE foliation is observed in the region paralleled by numerous quartz veins.

Cambrian Wiso Basin sedimentary rocks occur in the extreme north of EL23887.

## **6. WORK CARRIED OUT**

### **6.1 Regional BLEG sampling**

The main focus of Newmont's exploration during the period has been to gather regional geochemical data sets. An area of BLEG A sampling in EL23887 was carried out on lines 1280 m apart with a sample spacing of 320 m. Further to the West in Newmont's Rawlins Range tenements a line spacing of 2560m has been shown to readily define mineralised areas. Deep filled palaeo-drainage features meant, that surface sampling was not always suitable, so that those areas interpreted to contain >15 m of transported cover were not BLEG sampled.

A very slow sample turn around time was experienced during the program and the decision was made to submit a trial batch of samples for the faster BLEG T method. Duplicate material was collected on three lines to allow for better comparison of results elsewhere in the region. Problems with fines and clays in the sampled material caused up to 40% of the analyses to fail in the first batch and a revised BLEG T2 method, which involved the screening out of the <600 micron fraction, was trialled on surplus material. Correlation proved to be good and the batch showed only a 5% failure rate. All BLEG T samples are on the 2560m line spacing and 320m sample spacing.

Both the BLEG A and BLEG T sample prep methods are proprietary to Newmont with the work being carried out at Newmont's laboratory at Welshpool in Perth WA.

### **6.2 Reconnaissance Lag sampling**

Reconnaissance Lag sampling was opportunistic where suitable >5 mm material was found during routine BLEG sampling.

**Table 2      Number of samples taken**

<b>Licence</b>	<b>Lag</b>	<b>BLEG</b>	<b>Soil</b>
EL 23887	7	41	41

### **6.3      Regolith mapping**

Regolith mapping showed that the geochemical anomalies coincide with erosional or subcropping areas such the anomalies most likely reflect a proximal bedrock source. Interpretation is ongoing, the final regolith map was not yet available during the time of writing.

### **6.4      Geophysics**

An outcome of the Tanami Framework Study completed during the middle of 2006 was the need for improved gravity and magnetic coverage over the Barrow Creek/Rawlins Range package of tenements.

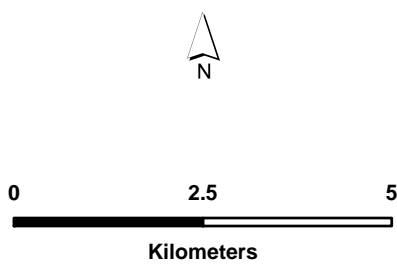
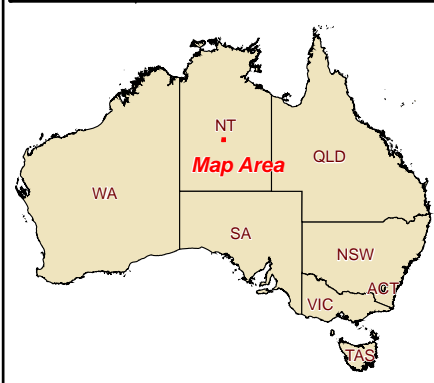
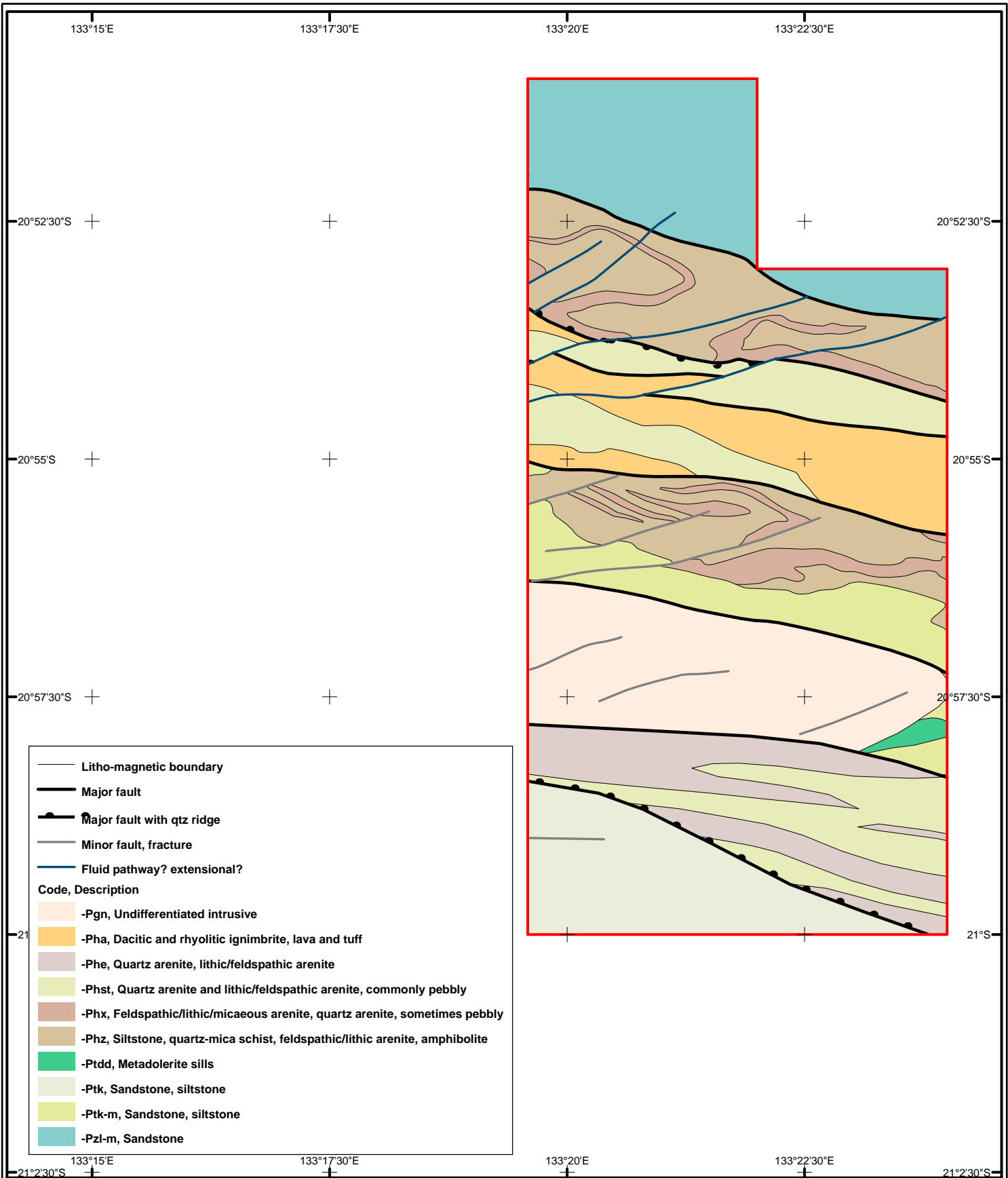
A helicopter assisted ground gravity survey was carried out during November 2006, and in July 2007 an aerial magnetic and radiometric survey was flown over the western Rawlins Range tenements. Data was submitted in the previous reporting period.

A detailed geological interpretation of the geophysical data has now been completed and will be used to aid in defining prospectivity of the region particularly in areas of deeper cover where surface geochemical sampling is not appropriate.

**Figure 3      Geology**

**Figure 4      Geochemistry**

**Figure 5      Drilling**



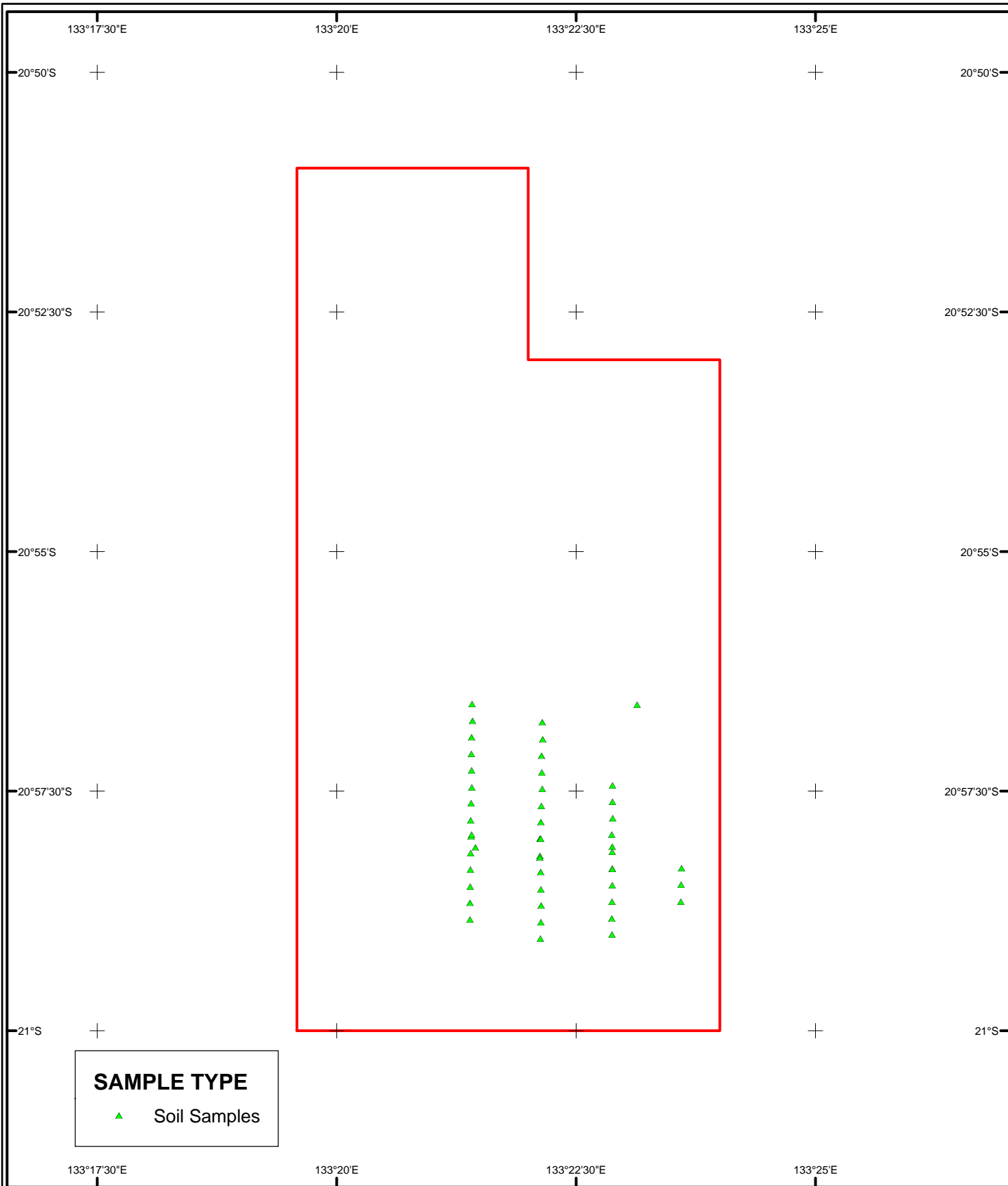
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**Barrow Creek Project**

**EL 23887**

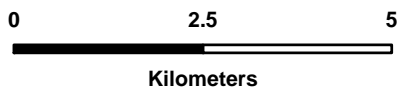
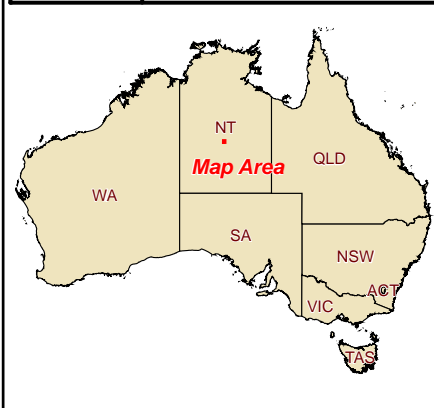
**INTERPRETED GEOLOGY**

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Drawn: V. Preedy	Date: Apr 2009
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**SAMPLE TYPE**

▲ Soil Samples



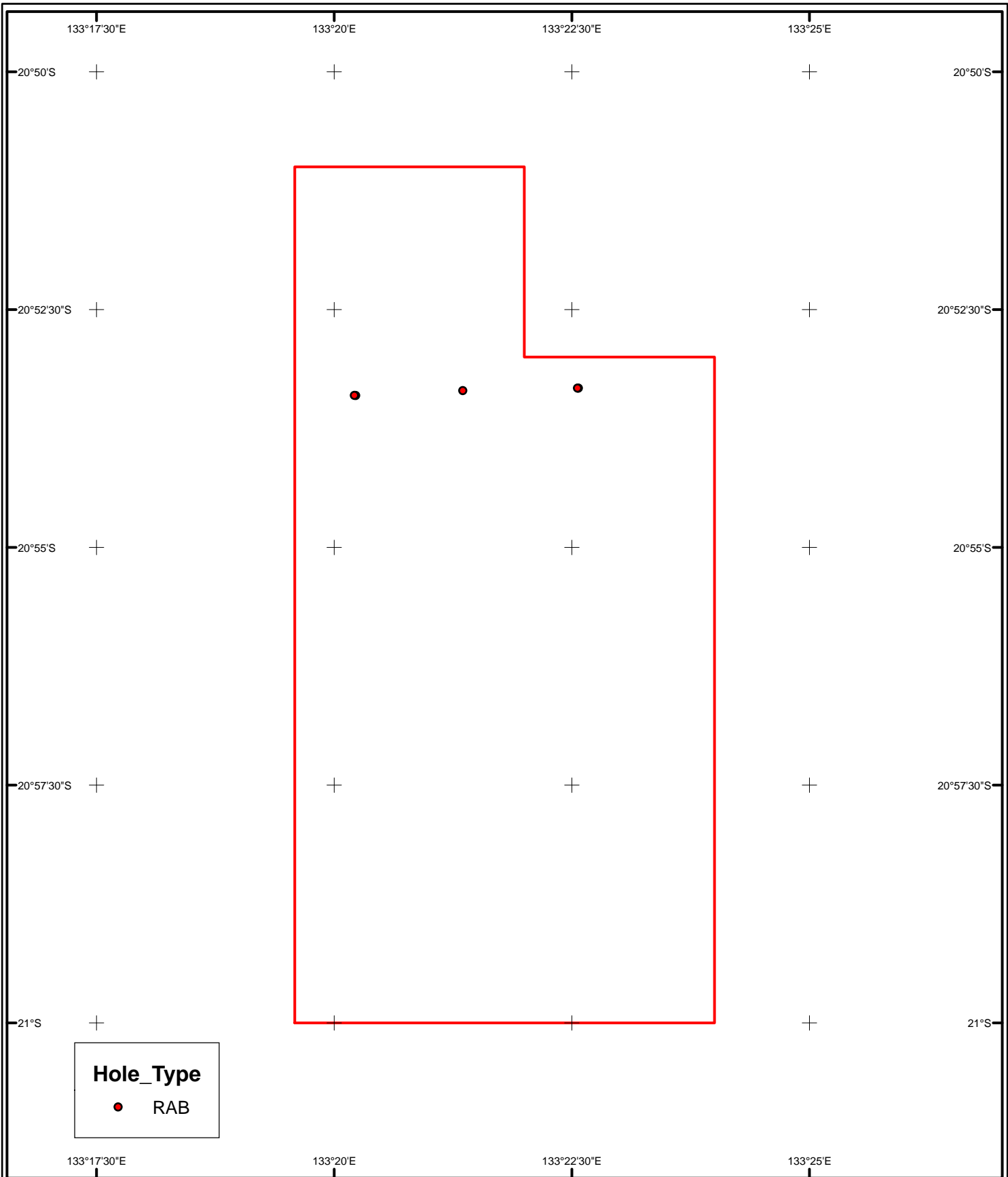
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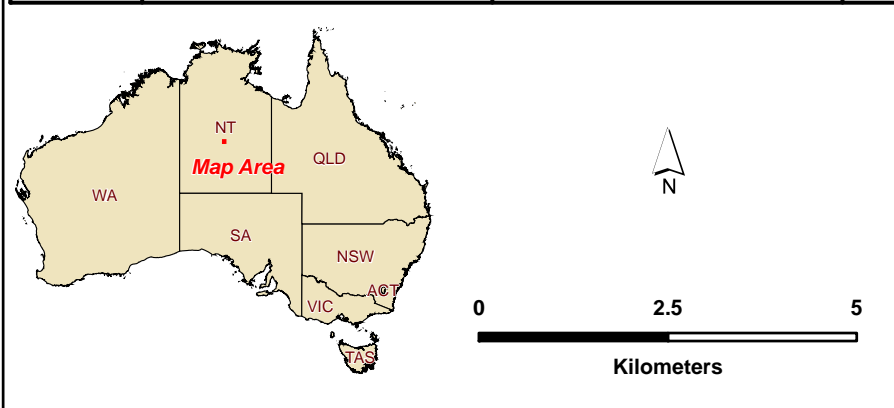
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Author: M. Eisenlohr	Scale: 1:100 000
Drawn: V. Preedy	Date: Apr 2009
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**Hole\_Type**

- RAB



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**DRILLHOLE LOCATION**

Author: M. Eisenlohr	Scale: 1:100 000
Drawn: V. Preedy	Date: Apr 2009
File: TAN_Lnd_Ten_A4_EL23887Drilling.mxd Projection: Lat/Long (GDA 94) \AUS\NT\Tanami_Tenements\MXD\Reports\TAN_Lnd_Ten_EL23887\	

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Whittaker, E.J 2002. Report for the Barrow Creek Project Covering the 2001 Field Season. Newmont NFM Ltd. Newmont RN: 29466.

## BIBLIOGRAPHIC DATA SHEET

<b>HOLDER</b>	<b>Newmont Tanami Pty Ltd</b>	
<b>PROJECT</b>	<b>Rawlins East – Barrow Creek</b>	
<b>TENEMENT</b>	<b>EL 23887</b>	
<b>REPORT NUMBER</b>	<b>CR 34165</b>	
<b>DATE</b>	<b>April 2009</b>	
<b>AUTHORS</b>	<b>P. Pring M. Eisenlohr</b>	
<b>STATE</b>	<b>NT</b>	
<b>LATITUDE</b>	<b>-20°50' to -21°00'</b>	
<b>LONGITUDE</b>	<b>133°19' to 133°24'</b>	
<b>1:250 000 SHEET</b>	<b>Lander River</b>	<b>SF53-01</b>
<b>1:100 000 SHEET</b>	<b>Jarrah Jarrah</b>	<b>5556</b>
<b>COMMODITY</b>	<b>Gold</b>	
<b>KEYWORDS</b>	<b>Drilling, Geochemistry, Gravity, Magnetics</b>	

**VERIFICATION LISTING FORM**

Exploration Work Type	File Name	Format
Office Studies		
Literature search		
Database compilation		
Computer modelling		
Reprocessing of data		
General research		
Report preparation	<a href="#">EL23887 FR CR34165.pdf</a>	pdf
Other (specify)		
Airborne Exploration Surveys		
Aeromagnetics	<a href="#">EL23887_MagRad.dat</a> <a href="#">EL23887_MagRad.dfn</a>	
Radiometrics		
Electromagnetics		
Gravity		
Digital terrain modelling		
Other (specify)		
Remote Sensing		
Aerial photography		
LANDSAT		
SPOT		
MSS		
Radar		
Other (specify)		
Ground Exploration Surveys		
Geological Mapping		
Regional		
Reconnaissance		
Prospect		
Underground		
Costean		
Ground Geophysics		
Radiometrics		
Magnetics		
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Digital terrain modelling		
Electromagnetics		
SP/AP/EP		
IP		
AMT		



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Seismic reflection		
Seismic refraction		
Well logging		
Geophysical interpretation		
Geochemical Surveying		
Drill sample		
Stream sediment		
Soil	<a href="#">EL23887_Geochem_AQUAREGIA.txt</a> <a href="#">EL23887_Geochem_BLEG.txt</a>	Txt
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Water		
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Mineral analysis		
All Drilling		
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