



## **BRIDGING REPORT**

**EXPLORATION LICENCE 23432**

***Burnside Project – Hayes Creek North***

**9 May 2010 to 15 January 2011**

Distribution:-

1. DOR Darwin, NT
2. Crocodile Gold Australia, Humpty Doo

Report Number: EL23432 BR2010

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## 1 EXECUTIVE SUMMARY

EL 23432 is located about 140km SE of Darwin, Northern Territory, and 3km north of Hayes Creek roadhouse on the Stuart Highway. The tenement was granted to Burnside Joint Venture, managed by Burnside Operations P/L comprising Territory Goldfields NL and Buffalo Creek Mines NL. These were wholly owned subsidiaries of GBS Gold Australia Pty Ltd. GBS Gold Australia went into voluntary administration on 15 September 2009 and Crocodile Gold Australia purchased all assets held by the previous owner on 6 November 2009.

The tenement overlies the Burrell Creek Formation of the Finnis River Group. East of the tenement is the Hayes Creek Fault, a major north east striking fracture system. The Burrell Creek Formation that forms high ground in the tenement occupies the axial zone of the fold. This is interpreted as a refolded syncline. South-east and South-west of the tenement, deformed and metamorphosed rocks of the South Alligator and Mount Partridge Groups are present, which are inter-bedded with the Zamu Dolerite.

During most of 2008, the tenement remained under voluntary administration. On the instructions of Several Administrators a technical review, tenement ranking and valuation was undertaken. This review identified the mineral potential of the project area. TMI image of the project area shows that it is characterised by the presence magnetic anomalies in the northern part of the project area. These anomalies along with geological setting provide fertile ground for the localisation of gold, uranium and base metals mineralisation.

There was no further exploration activity completed for EL23432 during the reporting period.

During the next reporting period, Crocodile Gold will conduct a regional geophysical VTEM survey and regional geochemical sampling program over the Burnside project area; this will include the area over EL23432.

## **2 INTRODUCTION**

EL 23432 is located within historically prospective region of the Pine Creek Orogen, and is surrounded by a number of gold, uranium and base metal deposits/prospects.

Crocodile Gold Australia applied for group technical reporting status on the group of tenements comprising the Burnside project area. This was approved by Department of Resources in December 2010 and the Burnside project area was given the group reporting number GR-185/11. This report has been written to bridge the gap between the previous annual report ending 9 May 2010 and the new group Technical Reporting Anniversary of 15 January 2011.

In this report, exploration activity conducted between 9 May 2010 and 15 January 2011 is documented.

## **3 LOCATION AND ACCESS**

EL 23432 is situated 140km SE of Darwin NT and 3km north of Hayes Creek Roadhouse on the Stuart Highway. The Brocks Creek exploration office lies 9km to the north, adjacent to the Darwin-Adelaide Railway. The Stuart Highway crosses to the south west of the tenement (Figure 1). Further east and north east extensive elevated outcrops and ridges of Burrell Creek Formation have been dissected by a network of creeks, which makes accessibility difficult. The tenement falls on the Pine Creek 1:250,000 sheet and on the Fenton 1:50,000 sheet. It falls within Douglas pastoral lease.

## **4 TENEMENT DETAILS**

EL23432 was granted to Territory Goldfields NL and Buffalo Creek Mines NL in equal shares, which are subsidiaries of GBS Gold Australia Pty Ltd. The licence was granted on 9 May 2003 and expired on 8 May 2011. An application for renewal was lodged on 7 April 2011. It comprises 6 blocks that cover approximately 19.32 km<sup>2</sup>.

GBS Gold Australia went into voluntary administration and as a result of that all exploration and mining assets were placed under care and maintenance. In June 2009, Crocodile Gold Australia announced to purchase all assets held by GBS Gold Australia (liquidated) in the Northern Territory. After meeting regulatory and statutory requirements all these assets including EL 23432 were transferred to Crocodile Gold Australia on 6 November 2009.

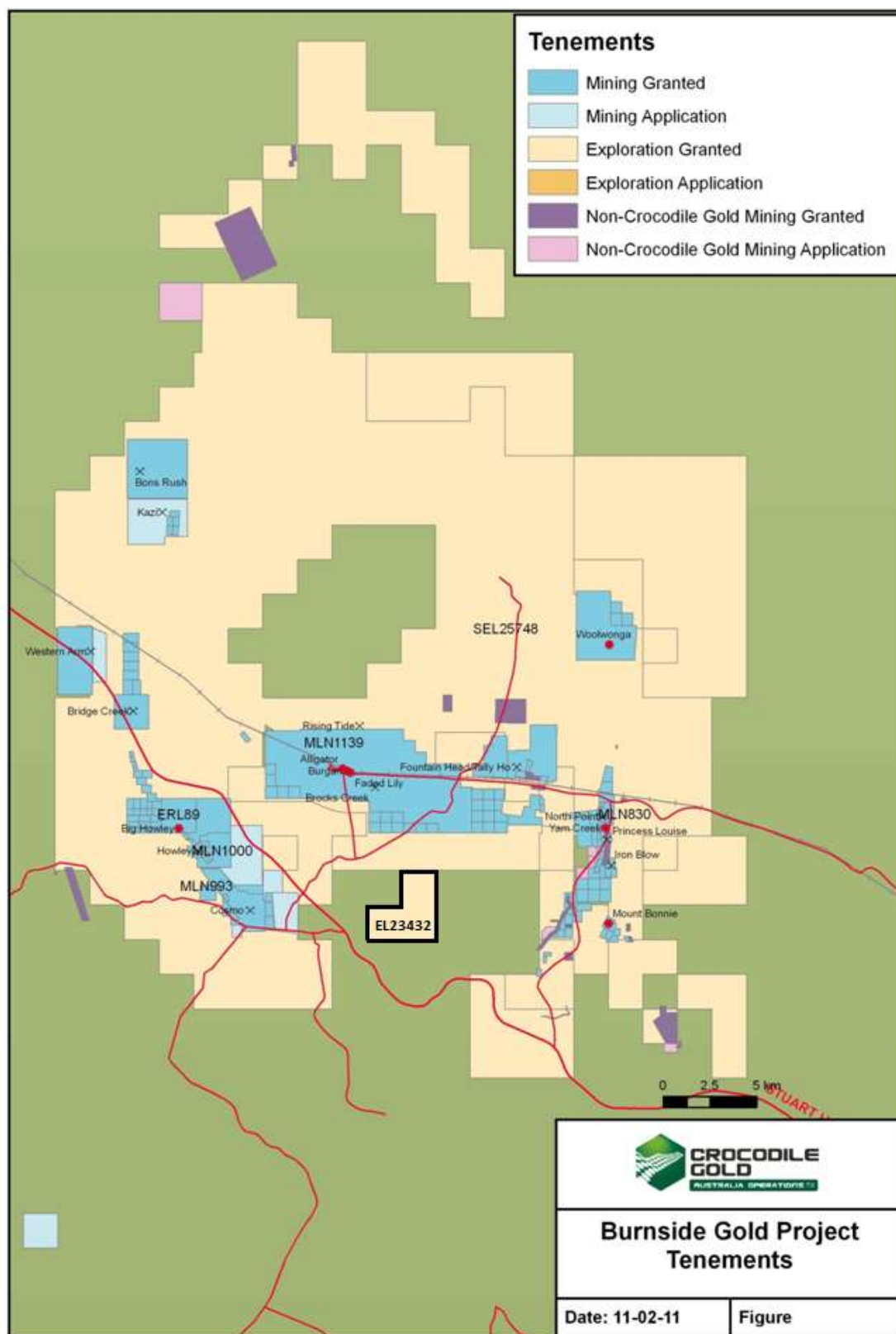


Figure 1: EL23432 Tenement Location

## 5 GEOLOGICAL SETTING

### 5.1 REGIONAL GEOLOGY

Regional geology is outlined in many publications, notably Ahmad *et al.* (1994), and Needham and Needham and Stuart-Smith (1984), and Needham *et al.* (1988). The tenement is within the Pine Creek Orogen, a folded sequence of Palaeoproterozoic pelitic and psammitic sediments, with interlayered cherty tuff units. Mafic sills of the Zamu Dolerite (~1.87Ga) intruded lower formations of the South Alligator Group.

The tenement overlies the Burrell Creek Formation sediments of the Finnis River Group (Figure 1). East of the tenement is the Hayes Creek Fault, a major north east striking fracture system. The Burrell Creek Formation that forms high ground in the tenement occupies the axial zone of the fold. This is interpreted by AGSO as a refolded syncline.

South-east and South-west of the tenement, deformed and metamorphosed rocks of the South Alligator and Mount Partridge Groups are present which are interbedded with the Zamu Dolerite. These are the Mount Bonnie Formation, Koolpin Formation, Gerowie Tuff and Wildman Siltstone.

The Depot Creek Sandstone and Stray Creek Siltstone are present south of the EL 23432.

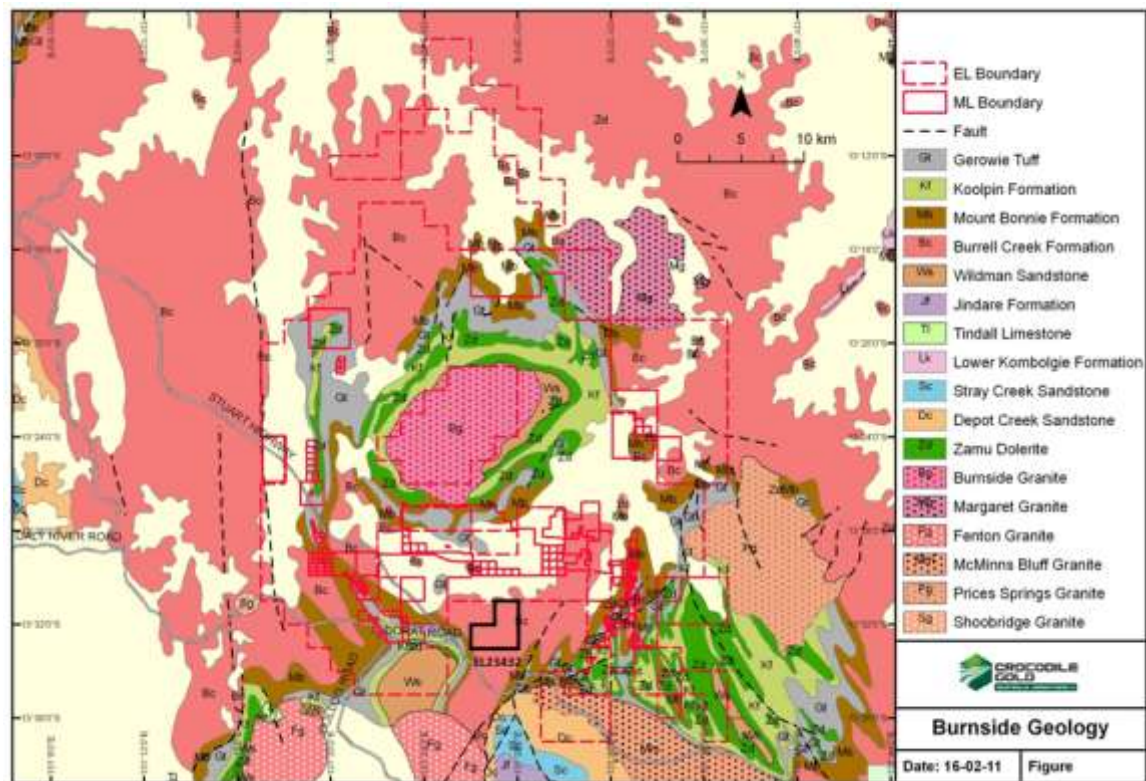


Figure 2: EL23432 Regional Geology

## 6 PREVIOUS EXPLORATION

The area covered by EL23432 has been explored in the past under several expired exploration licenses.

Placer Prospecting explored for Cu, Pb, Zn and Mo but found no economic mineralisation during their work in 1967.

CRA Exploration conducted soil sampling to the south of EL23432 found some weak Cu anomalies (around 50ppm Cu) and Sn anomalies (below 20ppm Sn). The Sn anomalies were attributed to a locally higher density of Sn-bearing quartz veins with possible contamination from the nearby Hayes Creek tin mine.

From 1983 to 1989, titleholder (Bronte Douglass) viewed the tenement as having potential for quartz-vein stockwork type gold mineralisation in Burrell Creek Formation sediments. Interpretation of Landsat imagery recorded a SE-trending anticlinal structure intersected by NE structures. Rock chip sampling did not return any anomalous results.

From 1989 to 2000 the area was explored by Billiton Australia, Solomon Pacific and Acacia Resources. Exploration activities included aeromagnetic surveys, BLEG stream sediment sampling, rock chip sampling, soil auger sampling, geological mapping and a structural review combining geophysical data, aeromagnetism and regional geology. The structural review outlined two anomalous areas. Results from soil sampling by Solomon Pacific recorded the highest value of 2ppb Au. Auger sampling by Acacia Resources recorded a result of 13ppb Au. The ground was relinquished in 2000.

During 2003, exploration work by the Burnside Joint Venture (Territory Goldfields NL and Buffalo Creek Mines) initiated another structural analysis of the tenement setting. This was put into a regional context using SPOT and Magnetic images. This work was supplemented by further interpretation during 2004-05. Results of this interpretation show the synclinal nature of the underlying geology. The area was not considered to have a high priority for exploration potential.

During most of 2008, the tenement remained under voluntary administration. A technical review, tenement ranking and valuation was completed. TMI images of the project area shows that it is characterised by the presence magnetic anomalies in the northern part of the project area. These anomalies along with geological setting provide fertile ground for the localisation of gold and uranium mineralisation.

## **7 EXPLORATION ACTIVITY 9 MAY 2010 TO 15 JANUARY 2011**

There was no further exploration conducted on EL23432 during the reporting period.

## **8 FORWARD PROGRAM YEAR ENDING 15 JANUARY 2012**

This tenement now forms part of the Burnside Exploration project for both exploration activities and for group reporting. Exploration activities for this project for the coming year will include:

- Crocodile Gold is currently looking at a large scale regional exploration push during the 2011 and 2012 seasons, including a helicopter-borne VTEM survey, region geochemical sampling and mapping, this will include areas of the Burnside project.
- Desktop review of all exploration activities conducted by Joint Venture partner Thundelarra Exploration, particularly looking at exploration for gold and base metals.
- Detailed review of all historic and recent geophysical data for the project, with the aim of generating green field targets.
- Thorough review of all geochemical data for the project area, to be used in future target generation.
- Review of targets using satellite imagery in conjunction with regional geological mapping and the latest geophysical data
- Field mapping of targets highlighted from these reviews
- RAB and RC drilling of highest ranked targets
- A review of all historic deposits noted in the MoDAT database

Through these activities Crocodile Gold will target mainly gold and base metal targets in the Burnside Project area to add to existing mineral resources. By identifying additional deposits in this project area the economic viability of this project area can be assured.

Some of the regional geophysical survey and geochemical sampling programs to be conducted over the Burnside project will fall inside the EL23432 tenement.

A minimum budget of \$20,000 has been proposed for EL23432.



## 9 REFERENCES

Ahmad, M., Wygralak, A.S., Ferenczi, P.A., and Bajwah, Z.U. 1993. Explanatory Notes and Mineral Deposit Data Sheets. *1:250,000 Metallogenic Map Series*, Department of Mines and Energy, Northern Territory Geological Survey

Needham, R.S and Stuart-Smith, P.G., 1984. Geology of the Pine Creek Geosyncline, Northern Territory – 1:500,000 scale map. Bureau of Mineral Resources, Australia.

Needham, R.S., Stuart-Smith, P.G., and Page, R.W., 1988. Tectonic evolution of the Pine Creek Inlier, Northern Territory. *Precambrian Research* 40/41, pp 543-564.

Shaw, J 2005. Annual Exploration Report EL2342 “Hayes Creek North” Year Ending 8<sup>th</sup> May 2005. Harmony Gold (unpubl). *Northern Territory Geological Survey Company Report CR2005-0138*.