BURNSIDE OPERATIONS P/L

ANNUAL EXPLORATION REPORT
EL23540

“SAUNDERS CREEK”

YEAR ENDING 16\textsuperscript{th} February 2005

BURRUNDIE 1:50,000 SHEET

Distribution:-

1. DBIRD Darwin NT
2. Northern Gold NL Perth
3. Burnside Operations P/L Brocks Creek
4. Harmony Gold (Australia) Perth

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SUMMARY

EL23540 is located 150km SE of Darwin, NT and 20km ESE of Brocks Creek.

The tenement is subject to the Burnside Joint Venture, managed by Burnside Operations P/L comprising Territory Goldfields NL and Buffalo Creek Mines NL. The latter are subsidiaries of Northern Gold NL and Harmony Gold (Australia) P/L respectively.

The licence encompasses a suite of metasedimentary rocks that are part of the Pine Creek Geosyncline sequence and lies just east of the gold and base metal mineralised localities of Iron Blow and Yam Creek.

This is the second year of the licence and the annual expenditure was set at $1,100.00.

The joint venture has been actively exploring the Burnside region since its formation in April 2002. Work to date has been focused on establishing open pit resources through RC drilling at Yam Creek, Mottrams, Chinese South, Fountain Head, Cosmo Howley, and Woolwonga. Underground development and diamond drilling has been carried out at the Zapopan Mine. Development ore was treated at Union Reefs mill.

Work on EL23540 has been subordinate to activity on other JV tenements as the emphasis has been on establishing gold resources at established mineralised prospects.

A large volume of unsorted hard copy archive of historic exploration data from Dominion Mining Ltd and Territory Goldfields NL exists at the Brocks Creek library. Sorting and shelving of this material has commenced.

The database validation and review of geochemical records in the area of EL23540 commenced during 2004. Conclusions have not been reached as yet. With reporting, the expenditure on geological activity amounted to $1,150.00.
1. **INTRODUCTION**

EL23540 (Saunders Creek) was applied for to cover vacant ground east of Yam Creek and Iron Blow, and lies on the west flank of the Burrundie Dome.

The Burnside Joint Venturers comprising Buffalo Creek Mines NL and Territory Goldfields NL have other mineral assets in the immediate area: at Mt Bonnie to the south west and along the Yam Creek-Golden Dyke trend that lies just west of the EL.

Since April 2002 the joint venture has carried out extensive drilling programs on joint venture tenements in the Burnside region and developed the Zapopan underground mine in 2003. RC drilling programs have also been carried out at Princess Louise and North Point, along the Yam Creek trend.

This report deals with exploration activity carried out during the year ending 16th February 2005.

2. **TENURE DETAILS**

EL23540 was granted on 17th February 2003 and expires on 16th February 2009. It comprises five blocks that cover approximately 16.1 sq. km.

It forms part of the eastern boundary of tenement holdings comprising the Burnside Joint Venture and is registered in the names of Territory Goldfields NL and Buffalo Creek Mines NL in equal shares. It is unencumbered by third party tenements.

The expenditure covenant set for the year ending 16th February 2005 was $1,100.00.

3. **LOCATION AND ACCESS**

EL23540 is situated 150km SE of Darwin NT and 5km SE of Grove Hill on the Darwin-Adelaide railway.

Access to the tenement is via the Stuart Highway, thence north via the Grove Hill unsealed road that passes west of the tenement. Access can be gained via bush tracks that peel off north from the Mt Bonnie access road, towards Iron Blow. Alternatively tracks lead into the tenement south from the railway line east of Grove Hill. The location may be seen on Figs. 1, 2. The headwaters of the Margaret River and Saunders Creek pass through the tenement and flow northwards.

The tenement falls on the Pine Creek 1:250,000 sheet and on the Burrundie 1:50,000 sheet. The tenement also is within the Douglas Pastoral Lease.

Apart from the course of Saunders Creek that passes through the eastern half of the ground, outcrops occur through much of the tenement, comprising undulating hills and ridges of low to moderate relief. The western sector of the ground in particular host units of the Zamu Dolerite and Gerowie Tuff and is the most elevated and dissected.
The eastern half of the tenement is more topographically subdued and is affected by Saunders Creek and its black soil alluvial deposits.

4. GEOLOGICAL SETTING

4.1 Regional Geology

EL23540 is situated within the Pine Creek Geosyncline, a tightly folded sequence of Lower Proterozoic rocks, 10km to 14km in thickness, laid down on a rifted granitic Archaean basement during the interval ~2.2-1.87Ga. The sequence is dominated by pelitic and psammitic (continental shelf shallow marine) sediments with locally significant inter-layered cherty tuff units. Pre-orogenic mafic sills of the Zamu Dolerite event (~1.87Ga) intruded the lower formations of the South Alligator Group.

During the Top End Orogeny (Nimbuwah Event ~1.87-1.85Ga) the sequence was tightly folded, faulted and pervasively altered with metamorphic grade averaging greenschist facies with phyllite in sheared zones.

The Cullen intrusive event introduced a suite of fractionated calc-alkaline granitic batholiths into the sequence in the period ~1.84-1.80Ga. These high temperature I-type intrusives induced strong contact metamorphic aureoles ranging up to (garnet) amphibolite facies, and created regionally extensive biotite and andalusite hornfels facies.

Less deformed Middle and Late Proterozoic clastic rocks and volcanics have an unconformable relationship to the older sequences. Flat lying Palaeozoic and Mesozoic strata along with Cainozoic sediments and proto-laterite cementation overlie parts of the Pine Creek Geosyncline lithologies. Recent scree deposits sometimes with proto-laterite cement occupy the lower hill slopes while fluviatile sands, gravels and black soil deposits mask the river/creek flats areas.

There is a tendency for gold mineralisation to be focused in anticlinal settings within strata of the South Alligator Group and lower parts of the Finniss River Group. This sequence evolved from initial low energy shallow basinal sedimentation to higher energy deeper water flysch facies. Dated at ~1740Ga (Sener 2004) the gold events post dated the Pine Creek Orogeny and Cullen intrusive events and has favoured suitable litho-structural sites in the biotite-hornfels contact facies.

4.2 Local Geology

The tenement encloses a sequence of South Alligator Group sediments that lie on the northern sector of the Burrundie Dome. The Margaret Syncline lies to the west and separates the Burrundie Dome from the Yam Creek sequence. To the east of the tenement the irregular, and perhaps shallow west-dipping Prices Creek Granite contact, terminates the South Alligator strata.
Within the tenement the South Alligator Group is represented by Koolpin Formation and Gerowie Tuff, both of which were extensively intruded and concordantly dilated by sills of Zamu Dolerite. All were tightly folded on NNW striking axes during the Pine Creek Orogeny. The folds plunge shallowly to the NNW and locally, in the centre of the tenement, have undergone strike faulting perhaps as a result of axial failure.

4.3 Mineralisation and Prospectivity

The region has been prospected for gold and has most likely been the subject of soil, stream and rock chip sampling by previous explorers. The structural setting appears favourable for gold, particularly in the region of strike faulting in the centre of the tenement.

The abundance of Koolpin Formation comprising mudstone-siltstone-ocher-BIF lithologies, interfolded with Zamu Dolerite has many similarities to host sequences at Golden Dyke-Langleys, Davies, Afgans Gully and Good Shepherd to the south west and at Cosmo Howley some 20km to the west.

The Iron Blow Cu-Pb-Zn-Au deposit lies within Mt Bonnie Formation rocks about 2km west of the tenement. The Pickfords Pb deposit lies 600m south of the tenement within the axial zone of a faulted fold.

The axial zone faulting coincides with a change in outcrop abundance, with poorer exposure to the east, in association with the Saunders Creek drainage system. In terms of localisation of mineralisation, the part played by subordinate late stage fracture sets striking WNW is thought to be relevant in this region. These can be traced on SPOT imagery passing through the vicinity of Yam Creek MCN828 and Iron Blow open pit and progressing ESE across the EL.

As a working hypothesis, the intersection of these fractures, particularly the set marked in red, with favourable lithologies within the strike faulted zone, as well as their continuation under alluvial cover further to the east, could be areas to target for initial reconnaissance exploration for gold and base metals.

In the region of the Saunders Creek valley in the eastern half of the tenement, it is inferred that the Prices Creek Granite may underlie the Koolpin-Zamu sequence at no great depth. In this event it conceptually could have activated hydrothermal fluids along favoured fracture sets where they could have interacted with compatible lithological units. On the other hand the level of thermal alteration facies could either favour or negate the prospectivity.

5.0 PREVIOUS EXPLORATION

The area surrounding EL23540 has been explored on a regional basis by Euralba Mining, Geopeko, Dominion Mining Ltd and Zapopan NL. Stream sediment sampling and rock chip work is thought to have been carried out though evidence has yet to be found in the data base held by the Burnside JV. Northern Gold NL and
Territory Goldfields have conducted work in the vicinity of Iron Blow and Mt Bonnie North where anomalous rock chips were reported. To date there is no evidence that gold anomalism has been detected by previous explorers within EL23540.

6. **EXPLORATION YEAR ENDED 16TH FEBRUARY 2005**

During 2004 exploration work was focused in the vicinity of the Cosmo Howley mine where diamond core drilling and resource modelling was undertaken on the Howley Deeps project. The Zapopan underground resource and workings were kept on care and maintenance. The nearby Princess Louise and North Point gold resources were both the subject of technical reviews during the year.

The Brocks Creek mill was sold to Tanami Gold NL in August 2004 and at the same time the Burnside JV purchased the mill and tenements at Union Reefs. This change in infrastructure location and specifications has required that all gold assets within the JV be re-ranked and the better ones prepared for possible start up. The focus on proven gold assets that could support a renewal of mining in the area has had the effect of deferring more basic grass roots activity on ground such as EL23540.

Nevertheless understanding of the tenement will be advanced by compiling and accessing historic data dating back to the early 1990s. This work was initiated during 2004-05 and the archive hard copy data at Brocks Creek has been unpacked, sorted and shelved in readiness for further researches. This archive report material contains the results of work in the region carried out by Geopeko and Dominion Mining Ltd in the 1990s.

In addition to the above, work has commenced on accessing and validating the geochemical database for the Burnside Region. Data covering the area of EL23540 has been identified but no conclusion have been reached at this stage of the work.

The cost of this activity and reporting was $1,150.00.

7. **FORWARD PROGRAM YEAR ENDING 16TH FEB. 2006**

It is desirable to identify details of previous exploration work in the tenement before embarking on significant new field work. A combination of database compilation and interpretation together with field reconnaissance base on the findings is required.

It is planned to complete the validation and sorting of this data and to compile any relevant geochemical, geological or drilling information. The cost of this work with reporting is expected to be $950.00.
8. REFERENCES
