BURNSIDE OPERATIONS P/L

ANNUAL EXPLORATION REPORT
EL23541

“Howley East”

YEAR ENDING 16th February 2004

BURRENDE 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

EL23541 is located 130km SE of Darwin, NT and 5km west of Brocks Creek siding on the Darwin-Adelaide railway.

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 between the gold mining centres of Brocks Creek and Cosmo Howley.

This is the first year following grant of the licence and the annual expenditure was set at $2,500.00.

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, Cosmo Howley, and Woolwonga. Underground development and diamond drilling has been carried out at the Zapopan Mine.

Work on EL23541 has been subordinate to activity on other JV tenements as the emphasis has been on establishing gold resources at established mineralised prospects. Expenditure during 2003 was related to a remote sensing study and reporting. This amounted to $550.00.

A large volume of unsorted historic exploration data exists at the Brocks Creek library. Sorting and collation of this data in 2004-05 will advance the state of understanding of the tenement’s prospectivity. This work is costed at $700.00.
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1.0 INTRODUCTION

EL23541 (Howley East) was applied for to cover vacant ground east of the Cosmo Howley gold mineralised trend. The tenement has just completed its first anniversary since grant.

The Burnside Joint Venturers comprising Buffalo Creek Mines NL and Territory Goldfields NL have other mineral assets in the immediate area.

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.

This report deals with exploration activity carried out on EL23541 during the year ending 16th February 2004.

2.0 TENURE DETAILS

EL23541 was granted on 17th February 2003 and expires on 16th February 2009. It comprises one block that covers approximately 3.22 sq. km.

It is registered in the names of Territory Goldfields NL and Buffalo Creek Mines NL in equal shares. It is unencumbered by third party tenements but is transected by the Stuart Highway. It was previously held by other parties as EL9658.

The expenditure covenant set for this, the first year, was $2,500.

3.0 LOCATION AND ACCESS

EL23541 is situated 130km SE of Darwin NT and 5km SW of Brocks Creek siding on the Darwin-Alice Springs railway. Brocks Creek is also the location of a gold treatment plant owned by the Burnside Joint Venture and is close to the Zapopan underground mine development.

The Stuart Highway crosses the block north west to south east and most areas of the tenement are thus easily accessible. The location may be seen on Figs. 1, 2, and 3. The block is drained by the headwaters of Howley Creek.

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.

Low subdued outcrops of siltstone and greywacke occur through much of the tenement which has good dry season access. The ephemeral headwaters of Howley Creek pass through the block.
4.0 GEOLOGICAL SETTING

4.1 Regional Geology

EL23541 is situated within the Pine Creek Geosyncline, a tightly folded sequence of fine to coarse grained clastic basinal sediments of Lower Proterozoic age.

The sequence has been regionally metamorphosed to greenschist facies and has been intruded by late syn-orogenic to post orogenic granitoid intrusions. These intrusions imparted thermal contact metamorphic and metasomatic effects and contributed to the deposition of a range of economic minerals in structurally permissive sites.

Within the region there is a tendency for gold mineralisation to be focused in anticlines within strata of the South Alligator Group and lower parts of the Finnis River Group. This sequence evolved from initial low energy shallow euxinic basinal sedimentation to higher energy deeper water flysch facies. A water-lain tuffaceous component is present and the prospective sequence has been intruded by concordant pre orogenic mafic sills.

Less deformed Middle Proterozoic sedimentary and volcanic sequences unconformably overlie the Lower Proterozoic. Adjacent to the Daly River Basin, Cambo-Ordovician lavas and sediments onlap the older sequences. Cretaceous arenaceous strata are locally preserved as hill cappings.

Cainozoic to Recent erosion of the cratonised basement has resulted in the formation of hills and ridges alternating with talus and clay-sand alluvial deposits occupying river flats and flood plains.

4.2 Local Geology

The tenement encloses a sequence of South Alligator Group sediments that in broad terms lie on the north-eastern limb of the Howley Anticline, a regional upright arcuate fold with the eastern limb generally steeper than the western.

Within the tenement the South Alligator Group is represented by low outcrops of Mt Bonnie Formation in the south west and Burrell Creek Formation in the north east. (AGSO plan Fig. 5) The contact between the two strikes about 40 degrees magnetic.

The magnetic image, Fig.4, shows that some structural complexity is present. The tenement occupies a zone of structural convergence where a strong NNW late stage fault intersects 40 degree striking magnetic units. The latter appear to represent the product of crustal shortening with
directed pressure from the SW creating imbricated SW dipping thrust slices of Mt Bonnie Fm and Burrell Creek Formation.

4.3 Mineralisation and Prospectivity

At this point in time the author is not aware of mineralised occurrences within EL23541. The interpreted structural complexity with NNW faulting intersecting thrust slices of Mt Bonnie Formation and Burrell Creek Formation may be prospective. See Fig. 5. In addition, subtle NE striking cross fractures are believed to have been relevant in localising gold mineralisation at Cosmo Howley and Chinese South. Some of these fractures, including the ‘Cosmo suture’ cross EL23541.

5.0 PREVIOUS EXPLORATION

At the time of writing the author has no knowledge of the extent or type of exploration previously carried out over EL23541. The data held in the library at Brocks Creek office could well hold records relevant to the history of the tenement. It is proposed that this data be accessed during 2004.

6.0 EXPLORATION DURING 2003

During 2003, the first year of grant of the tenement, exploration work was focused in the vicinity of the Zapopan mine and at Cosmo Howley. In those areas gold deposits with the scope for development are being drill evaluated to increase the known resource base to feed a central treatment plant. In 2003, with the poor gold price in Australian dollar terms, it has been deemed prudent to focus on known resources as a priority.

During the year work on EL23541 comprised a remote sensing study and report writing. The plans supporting this study are Figs. 3, 4, and 5. The cost of this study was $550.00.

7.0 FORWARD PROGRAM 2004

It is desirable to identify details of previous exploration work in the tenement before embarking on significant new field work. The Brocks Creek technical library is thought to contain the relevant information, particularly that collected by Dominion Mining and Northern Gold NL.

It is planned to access this data and compile any geochemical, geological or drilling information. Geological traverses and rock chips are also recommended. The cost of this work is expected to be $700.00
8.0 REFERENCES