Burnside Operations P/L

ANNUAL EXPLORATION REPORT
RHODES PROSPECT
MLN414 - 418

YEAR ENDING 31ST DECEMBER 2002

Burnside (14/2-II) 1:50,000 sheet

Title Holder: - Northern Gold N.L.

Distribution: DBIRD	**Darwin NT**
Northern Gold NL	**Perth WA**
Burnside Operations P/L	**Brocks Creek**
Burnside Operations P/L	**Perth WA**

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SUMMARY

MLNs 414 - 418 cover the Rhodes gold prospect, 2.5km northeast of Mount Paqualin, and 16km NW of Brocks Creek mill, on the Burnside (14/2-II) 1:50,000 sheet.

RC drilling programs by WMC and later by Northern Gold NL outlined shallow west dipping gold mineralisation hosted by Zamu Dolerite on the western limb of a north trending anticline in Gerowie Tuff Formation. This resource was globally estimated (1997) to total 700,000t @ 1.80g Au/t.

The tenements were incorporated into the Burnside Joint Venture in April 2002 and since then have been subjected to reviews and project ranking.

The expenditure for 2002 totalled $1,150.

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1.0 INTRODUCTION

This report deals with exploration activity on MLNs 414 – 418 during the year ended 31st December 2002. The tenements enclose the Rhodes gold prospect and are located approximately 25 kilometres SE of Adelaide River. NT.

The report includes a summary of local geology and outlines previous exploration activity on the tenements. Expenditures and future work proposed are included.

2.0 TENEMENT DETAILS and ACCESS

The 5 contiguous mineral leases, covering an area totaling 75 hectares, lie between latitudes 13°20'30" south and 13°21'30" south and longitudes 131°20' east and 131°21' east (Figure 1). The tenements are situated within the Mount Ringwood Pastoral Lease, PL 718.

Mineral Leases North 414 to 418 were granted to W.R. Grace Australia Ltd. on the 8th of February 1978. The titles were transferred to R. Edwards in 1993. Northern Gold N.L. and Camelot Northern Territory Limited, formerly Reynolds N.T., acquired the tenements in 1995 by exercising the option agreement. The mineral leases were renewed on the 17th of May 1999, for a period expiring on the 31st of December 2003.

Access is via the Stuart Highway to Bridge Creek, thence northwards along existing haul roads and station tracks. Access requires four wheel drive vehicles and is restricted to the dry season. During the wet season much of the ground in the area becomes inundated, and creek flow rates are high. There are no permanent creek crossings in this area.

3.0 GEOLOGY

3.1 Regional Geology

The Rhodes group tenements are situated within the Pine Creek Geosyncline, a tightly folded sequence of fine to coarse grained clastic basinal sediments of Lower Proterozoic age.

In the report area 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. Granitoids, their apophyses and cupolas, are believed to underlie large portions of the area.

There is a tendency for gold mineralisation to be focused in anticlines 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. A water-lain tuffaceous component is present and the prospective sequence has been intruded by pre orogenic mafic sills.

Less deformed Middle Proterozoic sedimentary and volcanic sequences unconformably overlie the Lower Proterozoic. In the region, Cambo-Ordovician lavas and sediments of the Daly River Group, as well as Cretaceous strata, onlap the older sequences.

Cainozoic sediments, laterite and Recent alluvium may obscure parts of the Pine Creek Geosyncline lithologies.

3.2 Local Geology

Outcrop within the lease boundaries is very poor due to extensive black soil and creek alluvium. Interpretation from more regional studies, and supported by drilling, shows that the Gerowie Tuff of the South Alligator Group underlies much of the area. This unit has been intruded by mafic sills and folded into north trending structures.

Gold mineralisation at the Rhodes Prospect is hosted within quartz veining and brecciation in Zamu Dolerite, adjacent to the contact with carbonaceous sediments of the Gerowie Tuff Formation. This setting lies on the western limb of a north trending anticline.

4.0 PREVIOUS EXPLORATION

The Rhodes Prospect, was previously managed by Western Mining Corporation (WMC) and W. R. Grace Australia Ltd., as part of the Mount Ringwood Joint Venture.

The prospect was then known as Quest 155. Numerous areas of anomalous gold mineralisation were identified within the region. Results from the exploration completed are reported in Hancock and Muir, **1987**.

Northern Gold N.L. conducted RC drilling programs during **1994** and **1995**, and baseline surveys between **1992** and **1995**.

During **1996**, Northern Gold N.L. completed RC drilling, resource evaluations, metallurgical testwork and an MMI geochemical soil sampling program.

The drilling was undertaken in order to determine the extent and style of bedrock mineralisation around the previous drilling. The drilling program consisted of 21 RC drill holes for a total of 2,620 metres. Samples were sent to Assaycorp in Pine Creek for Fire Assay Au analysis.

Metallurgical test work was carried out on some of the RC drilling samples. A summary of results is shown below.

Table 1 **Metallurgical Test Work Summary**

Ore/Test No.	Grind P80 Target	NaCN Used kg/t	Leach Residue Au g/t	Au Extraction %	Calc'd Head Au g/t
RO 31 Test H5055	106	1.81	0.288	90.25	2.95
RO 42 Test H5056	106	1.42	0.383	87.39	3.04

An orientation survey was completed over the Rhodes Prospect in May 1996, to assess the potential of the geochemical mobile metal ion "MMI" soil sampling technique. Approximately 500 grams of soil, sieved to a -5 millimetre size fraction, was collected every five metres along two 100 metre spaced lines. A total of 102 samples were collected and submitted to Analabs, in Perth, W. A., for "MMI-B" Au, Ag, Co, Ni, Pd analysis, and "MMI-A" Cd, Cu, Pb and Zn analysis. The MMI soil sampling program was successful in highlighting the position of the Rhodes gold deposit. Distinct and coincident anomalies were obtained for the elements Au, Cu, Zn, Co, and Cd and to a lesser extent Ni and Pb. No significant response ratio values were reported for Pd.

During July **1996** and February **1997**, resource estimates were calculated for the Rhodes Prospect. These are reported in Farrelly, 1996 and 1997.

Summary of Estimate 1996, Rhodes Resource

15 g/t Cut

Classification	Tonnes	Grade
Measured	552,680	2.59 g/t Au
Indicated	30,830	2.93 g/t Au
Inferred	0	0
Total	**583,510**	**2.61**

The update in early 1997 is more fully described below.

Rhodes Deposit, 1997 Block Model Resource

The drill data was plotted as northing cross sections, at 20m intervals, with an extra section defined at the 68,400mN to accommodate some drilling off section. A mineralised envelope was interpreted onto these sections on the basis of lithology and gold grade.

The lode zones, in general, lie within a dolerite sill, and strike north and dip west between 10^{o} and 45^{o}. The lodes have a curved nature, probably related to an elliptical dolerite-tuff contact. These mineralised lenses were extrapolated up to 10m either side of the section, and are referred to as the lodes 101, 102, 103, 104, 105, and 106. Further drilling is required to close out the mineralisation along strike, and more particularly, at depth.

The strike and dip of these interpreted lode zones were measured, and the deposit was divided into domains of similar trend. This resulted in 35 different domains, each requiring different anisotropic parameters for grade modeling.

Three models were generated, using successively larger search ellipses. These models represent measured, indicated, and inferred confidence levels. The measured model used a strike search of 30 metres north and south of the block center, 8m across strike, and 25m down dip. Only resource blocks with a minimum of 25 % falling within the interpreted geological solid were attributed grade. The indicated model used searches of 45m, 35m, and 16m respectively.

Summary of Estimate 1997, Rhodes Resource

Rhodes resource above 0.70 g/t Au:

Classification	Tonnes	g/t Au Cut(15) g/t
Measured	768,340	1.87
Indicated	2,810	3.87
Total	**771,150**	**1.88**

In **1999** Northern Gold N.L. completed a review of the sub-surface gold geochemistry at the Rhodes Prospect, utilising all available drilling and surface geochemical data. The results from this study will be used to aid in the evaluation of target size characteristics for planning of regional and infill RC/RAB style drill programs.

During **2000** Northern Gold N.L. contracted Arnhem Exploration Services to complete an infill BLEG soil sampling program over the tenement group.

Samples, consisting of approximately 4 kilograms of soil, sieved to a -5 millimetre size fraction, were collected at 40m intervals along six, 200m spaced lines. A total of 77, B-horizon, soil samples, including duplicates, were submitted to Assaycorp, in Pine Creek, for analysis of Au, using low level fire assay technique, and Ag, As, Cu, Pb and Zn, using MA4/G400M/ICP-MS analytical method.

The soil sampling program outlined a north northeast trending soil anomaly, within the north and west of the area sampled. The peak results returned were 250 ppb Au, 110 ppb Au and 80 ppb Au.

In **2001** the tenements were subjected to geological review and ranking exercises.

5.0 EXPLORATION ACTIVITY DURING 2002

In **April 2002** the tenements were incorporated into the Burnside Joint Venture under the management of Burnside Operations P/L. The objective of the joint venture is to define gold ores within the JV tenements and process them at the jointly owned Brocks Creek plant.

The new joint venture managers reviewed all resources within the JV tenements to rank available prospects.

Exploration Expenditure on reviews during the year amounted to $1,150.00.

6.0 PROPOSED EXPLORATION 2003

With the refurbishment of the Cosmo Howley exploration and mining camp facilities and those of the Brocks Creek office and workshop, plans are well advanced to bring the Brocks Creek mill into production, initially using Zapopan underground ore as feedstock.

Open pit mine material has been the subject of resource definition drilling and economic studies during 2002 and this will continue through 2003 to supplement planned production.

The Rhodes resource will be revisited as part of this ongoing search for mill feed and during 2003 will be subject to further optimization to place it in the appropriate priority ranking.

Expenditure on this optimisation is costed at $2,800.00

7.0 REFERENCES

FARRELLY, C., (1996). Ore Resource Estimate, July 1996 Northern Gold N.L. Internal Report.

FARRELLY, C., (1997). Ore Resource Estimate, February 1997 Northern Gold N.L. Internal Report.

GLASSOCK, M., (1997). Rhodes Annual Exploration Report to 31/12/96, MLNs 414 - 418. Unpublished report by Northern Gold N.L. for the Northern Territory Department of Mines and Energy.

HANCOCK, S. L. & MUIR, R. M., (1987). Mount Ringwood Joint Venture Second Annual Report: MLN 414 - 418, "Quest 155", for period 17/02/68 - 16/02/87. Northern Territory Department of Mines and Energy Open File Report.

MOTTRAM, N., (1999). MLNs 414 - 418, Rhodes, 1998 Annual Report to 31/12/98. Unpublished report by Northern Gold N.L. for the NTDME.

MOTTRAM, N., (2000). MLNs 414 - 418, Rhodes, 1999 Annual Report to the 31st of December 1999. Unpublished report on behalf of Northern Gold N.L. for the NTDME.

MOTTRAM, N., (2001). MLNs 414 - 418, Rhodes, 2000 Annual Report to the 31st of December 2000. Unpublished report on behalf of Northern Gold N.L. for the NTDME.

SOCIC, N., (1998). MLNs 414 - 418, Rhodes, 1997 Annual Report to 31/12/97. Unpublished report by Northern Gold N.L. for the NTDME.