EL 5954 BENDA BLUFF
ARNHEM LAND, NT

ANNUAL REPORT

ON EXPLORATION ACTIVITIES
YEAR FIVE OF TENURE
29 March 2003 – 28 March 2004

submitted by

GRAVITY CAPITAL LIMITED
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on behalf of
Diamond Mines Australia Pty Ltd
and
Rio Tinto Exploration Pty Ltd

EL 5954 ‘Benda Bluff’
Holder: Rio Tinto Exploration Pty Ltd
Grant Date: 29 March 1999
1:250,000 sheet : SD5310 URAPUNGA
Minerals Sought: diamonds, base metals
SUMMARY

EL 5954 forms part of a farmin agreement between Rio Tinto Exploration Pty Ltd (“Rio Tinto”) and Diamond Mines Australia Pty Ltd (“DMA”) covering numerous Rio Tinto-controlled tenements and applications in the Northern Territory. Under this agreement, DMA will conduct predominantly diamond exploration over the tenements and will utilise the newly-developed Falcon™ airborne gravity gradiometer system, which has been shown to be very effective in detecting kimberlite pipes.

Gravity Capital Ltd is managing the farmin arrangement for Diamond Mines Australia and owns 40% of DMA.

During the past year of tenure, a review of historic exploration data, including considerable surface sampling focussed on diamonds, was conducted by Gravity and numerous anomalous results were noted.

On this basis, a Falcon™ survey was planned to cover much of EL 5954 and parts of the neighbouring tenement EL5953 “Mt Lean”, which is also included in the Rio Tinto-DMA farmin arrangement. The survey was conducted in November-December 2003 and results were received by Gravity Capital in March 2004. Interpretation and exploration targeting were in progress at the time of this report.

Expenditure on the tenement during the reporting period totalled $496,593.
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INTRODUCTION

EL 5954 was granted to Rio Tinto Exploration Pty Ltd (“Rio Tinto”) on 29 March 1999. Since that time, Rio Tinto has established the diamond prospectivity of the area with helicopter-supported surface sampling. During 2002, Rio Tinto was entered into negotiation with Gravity Capital Limited (“Gravity”) concerning the deployment of the Falcon™ airborne gravity gradiometer system over Rio Tinto’s diamond tenements in northern Australia. The Falcon™ system is a unique exploration tool developed by BHP Billiton and it has particular application in diamond exploration.

BHP Billiton and Gravity concluded an arrangement on Falcon™ deployment in Australia during the year (ASX announcement 01/07/2003) and then Gravity formed a farmin joint venture, through its 40%-owned associated company, Diamond Mines Australia Pty Ltd (“DMA”) with Rio Tinto Exploration, concerning the diamond and base metal exploration over a large number of Rio Tinto-controlled tenements in the Northern Territory (ASX announcement 25/07/2003). EL 5954 and the neighbouring EL 5953 “Mt Lean” form part of the DMA-Rio Tinto joint venture.

On the basis of these agreements, Gravity (on behalf of DMA) commenced diamond exploration in the Northern Territory during July 2003.

In essence, the agreements provide for DMA to deploy the Falcon™ system and earn an interest in any discovery. BHP Billiton retains a right to buy into DMA’s interest in any discovery. Gravity is managing all exploration for DMA.

The flying program was planned to cover parts of EL 5954 and the neighbouring EL 5953, focused on areas of strongly anomalous diamond indicator mineral sampling results, obtained from Rio Tinto’s prior work.

While the principal target in the area is diamonds, some interest is also directed toward base metal deposits.

LOCATION AND ACCESS

EL 5954 is located in an isolated area within the freehold Arnhem Land Aboriginal Land Trust, Northern Territory (figure 1). Access to the area is via the Central Arnhem Highway that passes through the Bulman Zn-Pb district which lies 35 km northwest of the EL. Rio Tinto has only accessed the project area by helicopter.
GEOLOGICAL SETTING and ECONOMIC POTENTIAL

EL 5954 Benda Bluff lies within the Urapunga Tectonic Ridge in the central McArthur Basin. The Urapunga Tectonic Ridge comprises an east-west striking fault zone that separates the Walker and Batten Troughs.

The McArthur Basin locally comprises three major middle Proterozoic sedimentary sequences, termed the Vizard Group (1650 to 1630 Ma), Nathan Group (1620 to 1590 Ma) and Roper Group (post 1550 Ma). Sediments may attain an aggregate thickness of 2 km within the tenement area.

Sedimentary rocks of the Roper Group dominate basement exposure within EL 5954. The Roper Group within EL 5954 comprises six main subdivisions: the Limmen Sandstone, Mainoru Formation, Crawford Formation, Abner Sandstone, Corcoran Formation and Bessie Creek Sandstone (Dunn, 1963). These unconformably overlie the Nathan Group.

The Roper Group is interpreted to comprise repeated coarsening upward or shoaling sequences dominated by shelfal shale and marginal marine sandstone deposits. Sandstone architectures are progradational in character. Palaeocurrent data suggest provenance of sand from the south and south-west.

Sediments within EL 5954 are only gently folded, with bed dips rarely exceeding 20°. Sediments are pervasively cut by north-south, north-east and north-west faults. At least two discrete episodes of post-Roper Group fault activation and coincident folding can be distinguished from geologic maps.

Roper Group sediments are intruded by a number of dolerite sills, varying up to 50 m thick. Dolerite sill intrusion post dates Roper Group deposition but predates folding and faulting. Significant mineralisation is not known to occur within or near to the tenements but the region in general lies within the ‘Microdiamond Field’ on the ‘Northern Australian Craton’ and is considered to be prospective for diamonds.

PREVIOUS EXPLORATION

Early accounts of land to the north of Ngukurr describe a remote environment rarely traversed by Europeans (Hall, 1956). For this reason, it is likely that the area of EL 5954 Benda Bluff was never prospected prior to modern times.

The first systematic exploration of the area within EL 5954 was conducted by Western Nuclear between 1965 and 1969 (CR69/51). Airborne magnetic, electromagnetic and radiometric data and stream sediment samples were collected over most of EL 5954. Follow-up of geophysical and geological anomalies failed to identify significant mineralisation.

Between 1989 and 1991 Stockdale conducted programs of loam and stream sediment sampling to the south of EL 5954 (CR92/075). Sampling failed to identify significant diamond indicator or base metal anomalies.

Exploration carried out by Rio Tinto in its first year of tenure consisted of reconnaissance heavy mineral gravel sampling at an average density of 1:20-25 km², followed by a campaign of infill sampling. Reconnaissance stream sediment and soil sampling for base metals was also completed.
Exploration activities completed in subsequent years consisted solely of follow-up gravel sampling for diamonds. A total of 32 gravel samples were collected within EL 5954 during September 2000. The samples comprised 40 kg of sediment sieved to minus 1mm. Sampling was conducted by two teams of 3-4 workers, supported by helicopter. Each team collected 4-5 samples per day.

Gravel samples were submitted to the Rio Tinto Belmont Mineral Processing Laboratory to observe for all indicator minerals to a minimum 0.2mm fraction.

The following results were achieved:

- Multiple chromite grains recovered from several samples (5489903, 5489904, 5489915, 5489956, 5489953). Insufficient grains are available to allow a definitive interpretation, however it appears that the chromites are of crustal origin.

- Single chromite grains recovered from several samples (5489919, 5489957, 5489961, 5489962, 5489965). These grains also appear to be of crustal origin.

Single macro diamond recovered from sample 5489953 (white, irregular, inclusion free).

During 2002 Rio Tinto assessed the status of its extensive diamond exploration tenement holdings around Australia. EL 5953 and the contiguous EL 5954 were selected for divestment and discussions were initiated with various interested parties.

**WORK COMPLETED IN YEAR 4**

As mentioned above, an agreement covering much of the Rio Tinto-controlled diamond exploration tenements in northern Australia was finalised in July 2003 between Rio Tinto and DMA. Review of available geophysical and geochemical data was carried out by Gravity (managing the project on behalf of DMA) and this confirmed considerable potential for diamondiferous kimberlites. EL 5954 and part of the neighbouring tenement EL 5954 which form part of the Gravity Capital – Diamond Mines Australia – Rio Tinto “Northern Australia Diamonds” Joint Venture were confirmed to contain numerous microdiamonds and kimberlitic indicator minerals.

On this basis, a Falcon™ airborne gravity gradiometer survey was planned and completed in December 2003. Field survey work was done by Fugro Airborne Surveys under a contract with BHP Billiton, with whom Gravity Capital has the Falcon™ deployment agreement.

The Falcon™ system records gravity gradient data via a system of accelerometers. This gradient data is transformed to produce the vertical gravity gradient (‘Gdd’) which approximates the first vertical derivative of the vertical component of the gravity field. An integral transformation on Gdd is applied to generate ‘Gd’, which approximates the vertical component of the gravity field itself. Conventional total magnetic intensity is also acquired as is laser scanner data, which is used to construct a very accurate (1m vertical resolution) digital elevation model.

The Falcon™ system was developed by BHP Billiton in the late 1990s and has since shown a remarkable ability to detect kimberlite pipes.

The survey was flown on north-south oriented lines, 100m apart at a height of 80m above ground level. Coverage of just over 400 km² within the tenement comprising a total of approximately 4,400 line kilometres was acquired.
Data was processed by BHP Billiton’s Falcon Operations Group and delivered to Gravity Capital in March 2004.

Interpretation and exploration targeting from the data is in progress.

Images of the data are presented in figures 3(Gdd), 4(Gd), 5(magnetics) and 6(Digital Elevation Model). The digital data and acquisition/processing report will be lodged DBIRD in due course.

ENVIRONMENT AND REHABILITATION

No requirement for rehabilitation arose during the reporting period as no on ground field work was carried out.
CONCLUSIONS AND RECOMMENDATIONS

EL 5954 lies within an area of anomalous kimberlitic indicator sampling results. Most of the tenement area has been flown with the Falcon™ system airborne gravity gradiometer system and results have recently been received. Interpretation should be complete before the commencement of the 2004 field season and it is anticipated that target areas warranting ground testing will eventuate.

Recommendations for detailed exploration will be based on the interpretation of the Falcon™ data.

PROPOSED EXPLORATION BUDGET

- Falcon™ Survey interpretation and processing costs $15,000
- Field support & logistics $20,000
- Sampling and sample analysis costs $35,000
- Personnel costs $20,000
- Office support, computing, cartography $10,000
- Administration, legal, overhead $25,000

**TOTAL** $125,000

EXPENDITURE STATEMENT

- Legal/Tenement administration costs $27,150
- Professional personnel costs $11,600
- Falcon™ Survey costs $441,760
- Data processing / computing costs $1,224
- Cartography $832
- Travel and accommodation costs $2,822
- Administration/overhead $11,205

**TOTAL** $496,593
Figure 1

Arnhem Project Area

EL5954
Location Map

Legend

- EL5954
- Other local tenements included in the Rio-DMA Joint Venture

Diamond Mines Australia

Project Location

NORTHERN ARNHEM ELA's IN MORATORIUM

ARNHEM PROJECT BENDA-MT LEAN EL's

White Star Landing
Ramingining
Old Arafura
Mirngadja Village

Mountain Valley

Bulman Zn-PB District

Scale: 1:1000000

0 12.5 25 50
kilometres
Arnhem Project Data
EL5954
Falcon™ Survey Area
Vertical Gravity Gradient (Gdd)
(data range 120 eo)

Diamond Mines
Australia

Projection: Longitude / Latitude (NAD 83)

Author: D Isles
Office: West Perth
Workspace: EL5954 report 2004 03
Scale: 1/20000
Projection: Longitude / Latitude (NAD 83)

Figure 3

Date: 20/5/2004
0 2.5 5 10
Kilometres