EL 22339 ROPER VALLEY
Hodgson Basin Region, NT

RELINQUISHMENT REPORT
ON BLOCKS DROPPED AT THE CONCLUSION OF
YEAR THREE OF TENURE
PERIOD ENDING 24 FEBRUARY 2005

Submitted by

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On behalf of
Diamond Mines Australia Pty Ltd
And
Ashton Exploration Australia Pty Ltd

EL 22339 ‘Roper Valley’
Holder: Ashton Exploration Australia Pty Ltd
Grant Date: 25 February 2002
1:250,000 Sheet : Urapunga
Minerals Sought: diamonds, base metals
SUMMARY

EL 22339 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 is conducting predominantly diamond exploration over the tenements and is utilising the newly-developed Falcon™ airborne gravity gradiometer system, which has been shown to be very effective in detecting kimberlite pipes.

Gravity Diamonds Ltd is managing the farmin arrangement for Diamond Mines Australia which is a wholly owned subsidiary of Gravity.

During the first year of tenure, Rio Tinto conducted a thorough review of historic exploration data, including considerable surface sampling focussed on diamonds, and recommended divestment of the tenement. The timing of the divestment arrangement with DMA during year two of tenure precluded the instigation of field exploration activities during 2003.

Gravity Diamonds conducted extensive field based programmes during the 2004 field season. These work programmes focussed on a number of targets defined by the Falcon™ airborne gravity gradiometer surveys within the Larrimah area located approximately 70km south west of EL 22339. Work included heavy mineral drainage, loam, conventional surface geochemical sampling and drilling.

Due to exploration prioritisation on Larrimah project area the planned exploration on EL 22339 during the 2004 field season was postponed. No on-ground work was completed in the tenement during year 3.

This Report is in respect of the forty-one (41) blocks relinquished from EL 22339 at the conclusion of Year 3.
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INTRODUCTION

EL 22339 was granted to Ashton Exploration Australia Pty Ltd, a wholly owned subsidiary of the Rio Tinto Group (“Rio Tinto”), on 25 February 2002. Rio Tinto was at that time in negotiation with Gravity Capital Limited (“Gravity”) renamed Gravity Diamonds Ltd, 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 BHPB and it has particular application in diamond exploration.

BHPB and Gravity concluded an arrangement on Falcon™ deployment in Australia during 2003 and then formed a farmin joint venture, through its wholly owned subsidiary, 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.

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

The flying program carried out in 2003 was focussed on areas of strongly anomalous diamond indicator mineral sampling results, obtained from Rio Tinto. Surveys were conducted in the McArthur, Victoria River and Arnhem Land regions of NT as well as in the Hodgson Basin which is the general locality of EL 22339. EL 22339 was not covered in the Hodgson River survey, the closest flying being at Larrimah some 70 kilometres to the south west.

During 2004 the main focus of exploration in the Hodgson region was ground follow-up of kimberlite targets generated by the Falcon survey at Larrimah.

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

LOCATION AND ACCESS

EL 22339 “Roper Valley” is located 200km east of Katherine on the old Roper Valley Station (now PPL1161, Namul Namul) in the southern part if the Urapunga 1:250,000 sheet area in the northeast of the Northern Territory. Access is via the Stuart Highway from Katherine to Mataranka and then eastwards along the Roper Highway that passes through the project area. Roper Valley Homestead lies just to the east of the EL. A road from Roper Valley Homestead to Roper Police Station (near Urapunga) passes through the center of the EL. Miniyeri Aboriginal Community is located about 40km to the south of the EL.
GEOLOGICAL SETTING AND ECONOMIC POTENTIAL

EL 22339 lies within the Bauhinia Shelf of the Proterozoic McArthur Basin. The geology within and around the EL is dominated by 1400Ma to 1000Ma Roper Group sediments intruded by sills of Derim Derim Dolerite. The EL parallels the hinge of a regional ENE-WSW trending syncline that has been overprinted by N-S structures. The NE half of the EL is dominated by Roper Group (Maiwok Subgroup) sandstones, siltstones, mudstones folded into an anticlinal dome referred to here as the “Mt Fisher dome”. A tributary draining the Mt Fisher dome contains a diamond occurrence. The Mt Fisher dome is traversed by a N-S trending axial fault. This fault parallels a N-S fault associated with the Packsaddle-Blackjack kimberlites 15km to the west and the Strangeways Fault 30km to the west. As mentioned previously the Mt Fisher Dome structure displays a remarkable similarity to the small domal structure intruded by the Packsaddle kimberlite.

The SW half of the EL is dominated by a large, outcropping synclinal sill of Derim Derim Dolerite in places overlain by the last remaining remnants of Roper Group preserved from erosion. A number of N-S trending faults traverse the area and two of these define the east and west margins of the large dolerite sill. A tributary draining one of the Roper Group remnants in the hinge of the syncline contains a diamond.

PREVIOUS EXPLORATION

In the late 1980’s Stockdale discovered two, small, low grade diamondiferous kimberlitic dykes (Packsaddle and Blackjack) located 13km and 8km to the east of EL 22339, respectively. The dykes reportedly shed kimberlitic chromite into drainages.

Ashton had previously explored the area covered by EL 22339 for diamonds during the 1980’s. They had collected 17 stream gravel samples at intervals of approximately 5km along the length of the tenement. Two of the 17 samples contained microdiamonds. No other indicator minerals were identified.

Tributaries sourced from the Blackjack kimberlite area drain through the SW corner of the Roper Valley EL. Within the EL, three stream gravel samples tested the drainage basin containing the kimberlite, but none contain any indicator minerals. The nearest two samples are about 8km from the kimberlite. This suggests that the Ashton gravel sampling may not have effectively tested the EL for smaller, outcropping kimberlite diatremes/dykes. The sampling interval would, however, be expected to have identified any large, outcropping diamondiferous kimberlitic intrusion or cluster of intrusions.

Ashton’s sampling results suggest that no large diamondiferous kimberlitic intrusions are outcropping within the tenement; however, a large kimberlite buried beneath Quaternary alluvium/colluvium (and not shedding indicator minerals into recent drainages) cannot be discounted.

During year one of the current tenure, Rio Tinto completed a thorough review of the geology, geomorphology and sampling data and this is documented in Rio’s 2003 report to the Department of Business, Industry & Resource Development.
During year 2, Gravity Diamonds completed an assessment of the compilation work carried by Rio Tinto and concluded that the area was not of sufficient priority to warrant a Falcon™ survey in the initial stages of the DMA-Rio Tinto farm-in arrangement.

**WORK COMPLETED ON RELINQUISHED BLOCKS**

Gravity Diamonds conducted extensive field based programmes in the Northern Territory during the 2004 field season particularly in ground testing of kimberlite targets generated by the Falcon surveys flown in 2003. These work programmes focussed on a number of targets defined by the Falcon™ airborne gravity gradiometer surveys within the Larrimah area located to the south west of EL 22339. Work included heavy mineral drainage, loam, conventional surface geochemical sampling and substantial drilling.

Due to exploration prioritisation on the Larrimah area the proposed exploration on EL 22339 during the 2004 field season was postponed pending the results from Larrimah. No on-ground work was completed in the tenement during year 3.

**ENVIRONMENT AND REHABILITATION**

There was no rehabilitation required on the blocks relinquished from EL 22339.

**CONCLUSIONS AND RECOMMENDATIONS**

EL 22339 lies within an area generally held to be prospective for diamonds. Its proximity to the Blackjack and Packsaddle kimberlite occurrences make it a priority for further exploration. However, the results of work carried out in the Larrimah area, south west of EL 22339, downgraded the south western section of EL 22339 and that section was relinquished at the conclusion of Year 3.
EL22339 "Roper Valley"
Regional Geology and Sampling

Figure 2

Date: 3/13/05
Author: D Isles
Office: West Perth
Workspace: EL22339 report 2005-02
Drawing model: nicolcad
Scale: 1:300000
Projection: MGA Zone 53 (GDA 94)

Distances are in kilometres.