EL 22754 COANJULA CREEK

FINAL REPORT

ON EXPLORATION ACTIVITIES

submitted by

GRAVITY DIAMONDS LIMITED
(ABN - 72 009 178 689)
Level 7, Exchange Tower
530 Little Collins Street, Melbourne, Victoria, 3000

on behalf of
Diamond Mines Australia Pty Ltd
and
Ashton Exploration Australia Pty Limited
(a wholly owned subsidiary of the Rio Tinto Group)

EL 22754 Robinson River South
Holder: Ashton Exploration Australia Pty Limited
Grant Date: 23 July 2002
Surrender Date: 18 April 2005
1:250,000 Sheet: Calvert Hills SE 53-08,
Minerals Sought: Diamonds, Base metals
SUMMARY

EL 22754 Robinson River South originally comprised part of Rio Tinto Exploration’s McArthur Diamonds Project located on the margin of the McArthur Basin, Northern Territory, Australia. The EL was granted on 23 July 2002 and subsequently formed part of a farmin agreement between Ashton Exploration Australia Pty Limited (“Ashton”) 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 utilising the newly-developed Falcon™ airborne gravity gradiometer system, which has been shown to be very effective in detecting kimberlite pipes.

Gravity Diamonds Limited (“Gravity”) is managing the farmin arrangement for Diamond Mines Australia and owns 100% of DMA.

During the first year of tenure, Ashton completed a thorough review of the geology, geomorphology, geophysics and historic sampling data. As a result of the review, Ashton proposed to divest the entire McArthur Diamond Project.

During Year 2 of the licence, a review of historic exploration data, including considerable surface sampling focussed on diamonds, was conducted by Gravity and numerous anomalous results were noted in and around the EL.

Owing to the timing of the exploration agreement between DMA and Ashton (late July 2003) field exploration under the agreement did not extend to this EL during the 2003 field season. A large Falcon™ survey was flown in the Lancewood area to the west of the EL as part of the Ashton - DMA agreement in late 2003.

A 50% reduction in the area of EL 22754 was made at the conclusion of Year 2.

Gravity handed back EL 22754 to Ashton in March 2005 because other tenements in the farmin arrangement were deemed to have much higher priority. The licence was subsequently surrendered by Ashton on 18 April 2005. There was no further work undertaken by Ashton from the time the licence was handed back in March 2005 and the date of surrender on 18 April 2005.
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INTRODUCTION

EL 22754 Robinson River South was granted on 23 July 2002 and forms part of a substantial group of tenements in the McArthur River region, controlled by various Rio Tinto Companies. During 2002, Rio Tinto entered into negotiation with Gravity Diamonds 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 100%-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 22754 together with neighbouring tenements in the McArthur River region form part of the DMA-Rio Tinto joint venture (Figure 1)

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 in year 1 of the Exploration Agreement commenced in August 2003 and was planned to cover areas of strongly anomalous diamond indicator mineral sampling results, obtained from Rio Tinto’s prior work. Subsequent flying and ground follow-up would be dependent on the results of the year 1 flying program.

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

EL 22754, although known from prior exploration to have areas with anomalous diamond samples, were not included in the top priority areas covered in the year 1 flying program.

LOCATION AND ACCESS

The EL is located in the Calvert Hills area and overlies the upper catchments of the Calvert and Robinson rivers. The licence is approximately 160 km south of Borroloola townsite, western Calvert Hills 1:250,000 map sheet (Plan WAp45677). Access is via highways 4612, 9040 and 9062 leading south from Borroloola and passing Calvert Hills Station homestead. Access within the licence is via station roads and tracks. Helicopters were used for much of the previous diamond exploration because access by station tracks is limited.

The EL is located approximately 80 km south east of the Merlin kimberlite field and mine.
GEOLOGICAL SETTING and ECONOMIC POTENTIAL

The McArthur Diamonds Project tenements overlie the Batten Trough and Wearyan Shelf of the Mesoproterozoic McArthur Basin. The N-S trending Emu Fault Zone separates the Batten Trough in the west from the Wearyan Shelf in the east.

The 1800-1400Ma stratigraphy and mineralisation of the Batten Trough, from youngest to oldest, can be summarised as follows:

- Roper Group arenites, shales, iron formations and dolerite sills.
- Nathan Group (or Mt Rigg Group) carbonates that host Zn-Pb mineralisation, eg, the Bulman Zn-Pb deposits.
- McArthur Group fine clastics and carbonates that host stratabound Zn-Pb-Ag and Cu deposits, e.g., the HYC (McArthur) Zn-Pb-Ag mine, Mariner Zn-Pb and Sly Creek Cu deposits.
- Tawallah Group arenites, black shales and basalts hosting Cu in the Redbank district and U at Westmoreland. There are also a number of Cu occurrences hosted Tawallah Group proximal to the McArthur Project area.

Mesoproterozoic outcrops within the McArthur Diamonds Project area are predominantly McArthur Group or Tawallah Group. However, within a few synclines, e.g., at Abner Range, younger Nathan Group and Roper Group are exposed.

Tawallah Group is the main suite exposed on the Wearyan Shelf. The Wearyan Shelf is characterised by Cu and U occurrences that cluster mainly along the south of the shelf. Deposits include the cluster of breccia pipe Cu deposits in the Redbank district. The pipes are circular to ovoid in plan, vary in a diameter of 50-150m, taper downwards or are irregular or branching. Some pipes coalesce at depth into a single large vent. The pipes are weathered to 60-80m depth and have overlying depressions that are infilled by lateritised Cretaceous sediment to 10-35m deep.

Many of the major diamond prospects within the McArthur Diamonds Project area are located along, or proximal to, major faults and their interpreted intersections or splays. The 14 pipes of the Merlin kimberlite field are located near to where the NW-SE trending Calvert Fault splays off the NNW-SSE trending Emu Fault Zone. The Emu Fault Zone bounds the eastern margin of the Batten Trough and the Calvert Fault traverses the Wearyan Shelf. The Emu Fault Zone extend southwards proximal to EL 22754. Splays from the fault zone passes through the EL.

Neoproterozoic (Cambrian) Georgina Basin sediments and volcanics overlie Mesoproterozoic sequences in the south and east of the McArthur Project area. The sequences are dominated by either Bukalara Sandstone in the north and east and Top Springs Limestone in the south and west. Outliers of the Neoproterozoic (Cambrian) sequences are widespread, including overlying the Abner Range syncline. The Lower Devonian kimberlite pipes of the Merlin kimberlite field intrude through Mesoproterozoic sediments and are hosted by the overlying Neoproterozoic (Cambrian) sediments.
Flat-lying Cretaceous sediments of the Dunmarra Basin form a continuous blanket in the south of the McArthur Diamonds Project area. Further north these sediments form isolated outliers overlying Cambrian, Neoproterozoic and Mesoproterozoic rocks. These outliers of thin Cretaceous sediments infill the depressions overlying weathered kimberlite diatremes in the Merlin kimberlite field, as well as karstic sinkholes in the region. The Cretaceous sediments are a potential source of secondary kimberlite indicator minerals.

Lateritisation during the Cenozoic-Quaternary was widespread but mainly affected the flat-lying blanket of Cretaceous sediments of the upper plateau. Quaternary alluvium and residual soils are pervasive in the terrane.

**PREVIOUS EXPLORATION**

Since the early 1980’s CRAE and Ashton had been exploring for diamondiferous kimberlitic diatremes in the McArthur Basin region. This exploration resulted in the discovery of the Merlin kimberlite field and two kimberlitic sandstone breccia pipes at Abner Range.

Much of the McArthur Diamonds Project area has been surveyed with airborne magnetics/radiometrics by the NTGS, CRAE, BHP, Normandy, Ashton and RTE at anywhere between 50m and 500m line spacing. The eastern McArthur Diamonds Project tenement block, that includes EL 22754, has only been surveyed with regional airborne magnetics/radiometrics with a broad line spacing.

CRAE and Ashton had collected a large number of surface samples from within the larger McArthur Diamonds Project area, however, the sampling density in EL 22754 was substantially less than for most of the project area. A large area within the EL was not tested with any form of sampling. No major diamond prospects have been identified but there are several interesting indicator mineral occurrences and clusters that remain to be followed up in greater detail.

During year 1 of tenure, Rio Tinto completed a thorough review of the geology, geomorphology, geophysics and historic sampling data in the region.

All of the data reviewed for EL 22754 is available in the public domain so will not be presented again in this report. The results of the review by Rio Tinto are described in the year 1 report on the EL. As a result of the review RTE decided to divest the entire McArthur Diamonds Project.

The main conclusions and recommendations from the RTE data review were as follows:

- The McArthur Diamonds Project area is located within a favourable tectonic terrain that contains a variety of diatreme-like breccia pipes, including diamond-bearing kimberlitic intrusions. Prospective areas within the terrain remain under explored.

- Exploration persistence in the region has resulted in the discovery of diamond-bearing kimberlitic intrusions.

- Sinkhole or crater-like depressions that overlie diatreme breccia pipes in the region are filled by Cretaceous sediments. This reduces the chances of detecting diamond-bearing kimberlites using surface sampling techniques. The kimberlites are, however, detectable using detailed geophysical surveys.
The McArthur Diamonds Project area and surrounds has a significant history of diamond exploration mainly utilising reconnaissance surface sampling. Although sampling has resulted in the discovery of some exposed kimberlitic pipes in the region it has been less successful at detecting others covered by Cretaceous sediments.

Detailed geophysical surveying methods have been under utilised in diamond exploration in the region.

There is a relationship between a particular geomorphological domain and the location of kimberlitic intrusions and major diamond prospects in the region.

While the source of some diamonds and other indicator minerals in the region can be linked to diamond-bearing kimberlite intrusions the source of many other occurrences in the region remain enigmatic.

EL 22754 contains many of the broad geomorphological, geological and geophysical characteristics common to the kimberlitic fields in the region.

WORK COMPLETED BY GRAVITY

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 potential for diamondiferous kimberlites.

The field program for year 1 of the joint venture (year 2 of the licence), which comprised flying Falcon™ airborne gravity gradiometer surveys was focussed on a number of areas to the north and west of EL 22754 and no on-ground work was completed on this licence.

A 50% reduction in the area of EL 22754 was made at the conclusion of Year 2.

Gravity handed back EL 22754 to Ashton in March 2005 because it deemed the area to be of lower priority than others in the Rio-DMA farmin arrangement, and the licence was subsequently surrendered on 18 April 2005. There was no further work undertaken by Ashton from the time the licence was handed back in March 2005 and the date of surrender on 18 April 2005.

ENVIRONMENT AND REHABILITATION

No requirement for rehabilitation arose during the term of the licence.
Figure 2
McArthur Project
EL22754
"Coanjula Creek"
Regional Geology

Legend
- EL22754 tenement

- Bukalara Sandstone
- Tawallah Group
- Mafic Volcanics
- McArthur Group
- Granite (Murphy Inlier)

Drawing located: Workplace: EL22754 report 2005 02
Projection: Longitude / Latitude (AGD 84)
Office: West Perth
Scale: 1:400000