



## **Rio Tinto Exploration Pty. Limited**

ABN 76 000 057 125 / ACN 000 057 125

A member of the Rio Tinto Group

First Annual Report  
for the Period Ending 23 August 2003,  
EL 10427 Spellesie Creek, EL 10428 Lancewood Creek 2,  
and EL 10436 Top Spring,  
McArthur Diamonds Programme,  
Bauhinia Downs SE 53-03, Wallhallow SE 53-07,  
Northern Territory,  
Australia

**Exploration Report No. 26176**

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## **SUMMARY OF ACTIVITIES**

EL 10427 Spellesie Creek, EL 10428 Lancewood Creek 2 and EL 10436 Top Spring comprise part of Rio Tinto Exploration's McArthur Diamonds Project located within the McArthur Basin, Northern Territory, Australia. The three EL's were granted in July 2002.

During the current reporting period RTE completed a review of all available previous exploration, geomorphological, geological and geophysical data. Following the review RTE decided to divest the McArthur Diamonds Project. RTE's exploration data was packaged and presented to interested resource companies. At the time of completion of this report the divestment was being finalised with a selected joint venture partner.

Both CRA Exploration and Ashton Mining had previously explored the areas now covered by the three EL's. Surface sampling had identified macrodiamonds, microdiamonds and other indicator mineral occurrences and clusters. Ashton had followed up a substantial diamond anomaly at Ivanhoe Prospect but drilling of indicator mineral, geochemical and geophysical anomalies had not identified any kimberlitic intrusions. Various other indicator mineral anomalies within the three EL's have not been followed up in much detail.

Geomorphology appears to have had a particularly strong influence on diamond exploration results in the region. There is a relationship between the location of kimberlitic diatremes and major diamond prospects and the outer margin of an intermediate level plateau. The three EL's reported here overlie this intermediate plateau.

The McArthur Diamonds Project tenements overlie the Batten Trough and Wearyan Shelf of the Mesoproterozoic McArthur Basin. Major faults associated with kimberlite fields in the region are interpreted to pass through the McArthur Diamonds Project area. Many of the major diamond prospects identified within the project area are located along, or proximal to, these major faults and/or their interpreted intersections or splays. Within the three EL's there are similar prospective regional structural relationships.

Kimberlitic intrusions and diatremes in the McArthur Basin region are commonly located proximal to major geophysical domain contacts probably mapping major, deep-seated structures. The three EL's being reported here contain gravity and magnetic patterns and lineament trends that potentially represent favourable tectono-structural settings that control the locations of kimberlitic intrusions and other breccia pipes in the McArthur Basin.

**VERIFICATION LISTING**

Exploration Work Type	File Name	Format
<b>Office Studies</b>		
Literature search		
Database compilation		
Computer modelling		
Reprocessing of data		
General research		
Report preparation	26176 McArthur West.pdf	.pdf
Other (specify)	WAp45678.pdf (Tenement Location Plan)	.pdf
<b>Airborne Exploration Surveys</b>		
Aeromagnetics		
Radiometrics		
Electromagnetics		
Gravity		
Digital terrain modelling		
Other (specify)		
<b>Remote Sensing</b>		
Aerial photography		
LANDSAT		
SPOT		
MSS		
Radar		
Other (specify)		
<b>Ground Exploration Surveys</b>		
<b>Geological Mapping</b>		
Regional		
Reconnaissance		
Prospect		
Underground		
Costean		
<b>Ground Geophysics</b>		
Radiometrics		
Magnetics		
Gravity		
Digital terrain modelling		
Electromagnetics		
SP/AP/EP		
IP		
AMT		
Resistivity		
Complex resistivity		
Seismic reflection		
Seismic refraction		
Well logging		
Geophysical interpretation		
Other (specify)		
<b>Geochemical Surveying</b>		
Drill sample		
Stream sediment		
Soil		
Rock chip		
Regolith		
Water		
Biogeochemistry		
Isotope		
Whole rock		
Mineral analysis		
Other (specify)		
<b>Drilling</b>		
Aircore		
Auger		
Diamond		
Reverse circulation		
Rotary air blast		
Rotary percussion		
Tungsten carbide bit (coring)		
Groundwater drilling		
All drilling		
<b>File Verification Listing (this table)</b>	26176 McArthur West V.pdf	.pdf