



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

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A member of the Rio Tinto Group

Seventh Annual Report  
for the Period Ending 15 May 2003,  
EL 9058 Nimue,  
Northern Territory,  
Australia

**Exploration Report No. 26157**

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**LIST OF PLANS**

<b><u>Plan No.</u></b>	<b><u>Title</u></b>	<b><u>Scale</u></b>
WAp45179	Tenement Location	1:500 000

## **1 SUMMARY**

EL 9058 Nimue is located 20km south east of the Merlin diamond mine in the McArthur River Region in the Northern Territory.

The geology is dominated by Palaeoproterozoic Tawallah Group within the "Foelschse Inlier" of the McArthur Basin. The Palaeoproterozoic sediments are overlain by Cambrian Bukalara Sandstone of the Georgina Basin and outlying remnants of Cretaceous Dunmarra Basin sediment. Outcrops of Tawallah Group and Bukalara Sandstone dominate in the east and west of the tenement, respectively.

Previous exploration identified clusters of chromite, micro diamonds and macro diamonds within the tenement. These were followed up with EM-34 and ground magnetic surveys. Various prioritised geophysical anomalies were tested with RAB drilling but no kimberlites were intersected. Chromite and micro diamonds returned from processed rock samples suggest that the indicator mineral clusters might be derived from secondary sources, i.e., Proterozoic and Cretaceous sediments.

During the previous reporting period RTE completed a detailed helicopter-borne Hummingbird EM survey that covered the entire tenement. None of the EM resistivity features were considered to represent "large" kimberlite diatremes.

During the current reporting period no field-based exploration was completed. Divestment of the EL along with the Merlin Diamond Mine was unsuccessful. The EL is currently the subject of separate divestment negotiations along other "near mine" tenements. Commercial negotiations were being held with an interested party regarding the "near mine" tenement.

## **2 CONCLUSIONS AND RECOMMENDATIONS**

As no new data has been acquired there are no new conclusions or recommendations.

### **3 INTRODUCTION**

Ashton Mining Limited applied for EL 9058 because previous diamond exploration sampling in the area had identified chromite grains in drainages and the area was considered under-explored.

EL 9058 Foelsche River South, originally consisting of 31 sub-blocks, was granted to Ashton Mining Limited on 16 May 1996 for six years. Subsequent statutory relinquishments reduced the tenement size to the current 8 sub-blocks.

Rio Tinto Exploration Pty Ltd (RTE) gained control of EL 9058 as a consequence of the Rio Tinto takeover of Ashton in late 2000. In 2001 RTE changed the tenement name to "Nimue" because Ashton's name created confusion with RTE's own EL 8068 Foelsche River South. In 2002 RTE was granted an extension to EL 9058 for two years up until 15 May 2004.

EL 9058 is located 20km southeast of the Merlin diamond mine and kimberlite field in the McArthur River Region of the Northern Territory (Plan WAp45179). EL 9058 lies 40km to the northeast of Kiana Station homestead.

The original 31 sub-block tenement was centered on a drainage catchment at the head of the Foelsche River, which drains towards the northeast. Two 50% statutory tenement reductions in 1998 and 1999 reduced the tenement to an 8 sub-block tenement centered on the upper reaches of the drainage catchment in the south.

During 2002 RTE reassessed its mineral exploration tenement holdings throughout Australia, including a large amount of diamond exploration tenement inherited from the takeover of Ashton in 2000. During 2002 and 2003, RTE held negotiations with interested parties regarding the divestment package that included the Merlin Diamond ML and a group of "near mine" tenements that included EL 9058. RTE did not received an acceptable offer regarding the Merlin diamond mine and "near mine" tenement package. RTE subsequently decided to divest the "near mine" tenements separately from the Merlin Diamond Mine ML. Discussions with various interested parties regarding the "near mine" tenement divestment package are in progress.

#### 4 TENEMENT DETAILS

Table 1: Tenement Details

Name	Tenement No.	Grant Date	Relinquish ment Date	Sub-Blocks	Area (km <sup>2</sup> )
Nimue (formerly Foelsche River South)	EL 9058	16 May 1996	15 May 2004	8	26

#### 5 GEOLOGY

The geology of EL 9058 is dominated by Palaeoproterozoic Tawallah Group sedimentary sequences within the "Foelschse Inlier". The Palaeoproterozoic sediments are overlain by Cambrian Bukalara Sandstone of the Georgina Basin and localised outliers of Cretaceous sediment belonging to the Dunmarra Basin. Outcrops of Tawallah Group and Bukalara Sandstone dominate in the east and west of the tenement, respectively.

Clusters of kimberlite indicator minerals within EL 9058 might be derived from secondary sources. Chromite grains have been extracted from a coarse-grained "volcanic" clast hosted by Proterozoic-aged "sandy tuff" sediment. A micro diamond was extracted from a conglomeratic Cretaceous unit.

#### 6 LIST OF WORK COMPLETED WITHIN EL 9058

##### **1996-1997 (Ashton)**

- Previous exploration data review.
- Aerial photograph geological study (1:10,000 scale).
- 37 gravel samples.
- 13 loam samples.
- 1 x 50t bulk gravel sample.
- 2 rock samples to test their potential as secondary sources for indicator minerals.
- EM-34 survey covering 500m by 300m.
- Nine RAB drill holes, totaling 213m. 11 spoil samples.
- Five soil geochemical samples.
- 32 "geochemical" samples.

##### **1997-1998 (Ashton)**

- 11 gravel samples.

**1998-1999 (Ashton)**

- 2 gravel samples.
- EM-34 Survey covering 1000m by 650m area.
- Ground magnetic survey (39 line km) covering 950m<sup>2</sup> area (of EM-34 survey area).
- 2 RAB drill holes.

**1999-2000 (Ashton)**

- Geological reconnaissance.

**2000-2001 (Ashton-RTE)**

- 3 x 10t bulk gravel samples.
- 2 rock samples to test their potential as secondary sources for indicator minerals.

**2001-2002 (RTE)**

- Airborne Hummingbird EM survey over entire EL.
- Environmental assessment of tenement.
- Divestment negotiations.

**2002-2003 (RTE)**

- Divestment in progress.

**7 SUMMARY OF PREVIOUS EXPLORATION RESULTS FOR EL 9058**

Previous sampling (loam, gravel and bulk gravel) identified abundant chromite (some of “kimberlitic” origin) and a few micro diamonds and macro diamonds associated with the drainage catchment. The largest macro diamond was a 0.333 ct stone.

Two small areas associated with anomalous concentrations of indicator minerals were followed up with EM-34 surveys (+/- ground magnetic surveys). Some limited geochemical sampling failed to recognize any anomalous geochemistry that was considered sourced from kimberlite.

Various geophysical anomalies were tested with RAB drill holes, but none intersected kimberlitic material.

A rock sample of Proterozoic sedimentary rock containing clasts of coarse-grained volcanic rock (“sandy tuff”) yielded a significant number of chromite grains. A rock sample of poorly sorted Cretaceous conglomerate yielded a single micro diamond.

These two units have been suggested to be secondary source rocks for the indicator minerals within the tenement.

A helicopter-borne Hummingbird EM (HEM) survey was completed in September 2001 that covered the entire EL 9058 at 100m flight line spacing and 30m terrain clearance. RTE did not identify any anomalies within the HEM data considered worthy of follow up for large kimberlite diatremes. The HEM data is interpreted to map lithological domains, geological contacts and structures.

## **8 EXPLORATION COMPLETED DURING CURRENT REPORTING PERIOD**

No field-based exploration work was carried out within EL 5098 Nimue during the current reporting period.

## **9 ENVIRONMENT**

No environmental or rehabilitation issues were current for EL 9058 for the reporting period. RTE has completed an environmental assessment of EL 9058 by checking reported sites of disturbance (tracks and drill pads) by Ashton Mining. It was found Ashton adhered to their policy of rehabilitating access tracks, sample sites and drill hole sites within the guidelines set by the NT DME prior to their takeover by Rio Tinto. No work completed by RTE with respect to EL 9058 has disturbed the environment or required rehabilitation.



## 10 EXPENDITURE STATEMENT

The exploration expenditure attributed to EL 5098 Nimue during the current reporting period is listed below.

Description	Amount (\$)
Cont Exploration- Ext	11.25
Payroll & Benefits	3,639.15
Computing Services	186.89
Sundry Prof & Other	172.74
Travel & Accomodation	354.64
Rent & Property	282.54
Gen Office Supp & Comm	139.62
Recoveries & Income	12.93
Indirect Costs	950.24
Total	<b>5,750.00</b>

Cumulative exploration expenditure on the tenement from 16 May 1996 to 15 May 2003 is \$213,336.

## 11 PROPOSED EXPLORATION

The proposed exploration for EL 5098 for the next reporting period by the new managers of the project is as follows:

- Finalise all commercial aspects of divestment package with RTE.
- Review all previous exploration data and identify targets for follow up.
- Geological reconnaissance of identified targets.
- Reconnaissance sampling of prioritised targets.
- Depending on results, ground geophysical surveys of prioritised targets.
- Depending on results, reconnaissance drilling of the highest priority targets.

## REFERENCES

Note: Reports in order of year of compilation.

Bishop S.R., 2002. Sixth Annual Report for the Period Ending 15 May 2002, EL 9058 Nimue, Northern Territory, Australia. RTE Report No. 25473.

Johnson D.M., 2001. EL 9058 Foelsche River South, Annual Report for the Year Ending 15<sup>th</sup> May 2001. Rio Tinto Exploration Exploration Report No. 24532.

Thompson B., 2000. Annual Report, Exploration Licence 9058 "Foelsche River South", 16<sup>th</sup> May 1999 to 15<sup>th</sup> May 2000. Ashton Mining Limited.

Lewis S.J., 1999. Annual Report, Exploration Licence 9058 "Foelsche River South", 16<sup>th</sup> May 1998 to 15<sup>th</sup> May 1999.

Thompson B.J., 1998. Annual Report, Exploration Licence 9058 "Foelsche River South", 16<sup>th</sup> May 1997 to 15<sup>th</sup> May 1998.

Thompson B.J., 1997. Annual Report, Exploration Licence 9058 "Foelsche River South", 16<sup>th</sup> May 1996 to 15<sup>th</sup> May 1997.

## LOCALITY

Bauhinia Downs	SE53-03	1:250 000
Robinson River	SE53-04	1:250 000
Glyde	6164	1:100 000
Foelsche	6264	1:100,000

## DESCRIPTOR

Seventh annual report for EL 9058 Nimue by Rio Tinto Exploration Pty Ltd. No field-based exploration was completed during the period. During the period EL 9058 was repackaged and offered for divestment separately from the Merlin Diamond Mine. The divestment is in progress.

## **KEYWORDS**

Bukalara Sandstone, Cambrian, Chromite, Conglomerate, Cretaceous, Diamond, Divestment, Dunmarra Basin, Foelsche River, Georgina Basin, Indicator mineral, McArthur Basin, Merlin Diamond Mine, Palaeoproterozoic, Tawallah Group, Volcanic