

Rio Tinto Exploration Pty. Limited

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A member of the Rio Tinto Group

EL 7217 Kilgour

Final Report 10th January 1994 to 9th January 2001

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Map Sheet: SE53-03 BAUHINIA DOWNS

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Exploration Report No. **24534**

ABSTRACT

This report details the exploration programme undertaken by Ashton Mining Limited within Exploration Licence 7217 between 10th January 1994 to 9th January 2001.

In the years from 1994 to 1998, the field programme undertaken consisted entirely of stream sampling. No positive results were reported.

During the 1999 field programme, the tenement was partially covered by an airborne EM survey, which was being conducted over the adjoining Merlin tenements. No significant anomalies were highlighted.

In the final year of tenure, the tenement was subject to a regional aeromagnetic survey, as part of a more regional survey. No significant anomalies were highlighted. In addition, a 50 tonne bulk sample was taken from Wilkinson Creek, close to the southern boundary of the tenement. This sample was taken to test the Wilkinson catchment, which lies to the south of, and outside the tenement boundary. This sample reported 75 diamonds of commercial size, totaling 5.335 carats and 144 chromite indicator minerals, suggesting a primary source lying within the Wilkinson Creek catchment but outside the boundary of EL 7217.

The results of the diamond exploration over six years indicates little likelihood of a primary diamond source within EL 7217, despite the results of the bulk sample taken during the 2000 programme. Hence, no further exploration is recommended and the tenement has been surrendered.

Exploration expenditure for EL 7217 during the reporting period amounted to \$ 203,672, with \$ 83,245 being spent in the final year of tenure.

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LIST OF PLANS

NTd 6858	EL 7217 Kilgour Location and Access	1 : 500,000
NTd 6859	EL 7217 Kilgour 2000 Bulk Gravel Sample Location	1 : 100,000
NTd 6852	EL 7217 Kilgour Aeromagnetic Survey Flight Lines	1 : 25,000
NTd 6853	EL 7217 Kilgour Aeromagnetic Survey TMI Contours	1 : 25,000

LIST OF APPENDICES

Appendix I Sample Results – Final Year

Appendix II Statement of Expenditure

1. INTRODUCTION

This report details exploration activities carried out by Ashton Mining Limited over Exploration Licence 7217 during the period 10th January 1994 to 9th January, 2001. Ashton Mining entered into an agreement with MIM Exploration Ltd on the 7th September, 1994 enabling Ashton to carry out its search for diamond bearing intrusives within the licence. This agreement is referred to as the Robinson River Joint Venture.

Exploration licence 7217 was granted to MIM Exploration on the 10th January, 1991 for a period of six years. In 1997, a renewal of the licence was granted for an additional two years, with the licence expiring on the 10th January, 1999. A second renewal application was submitted, extending the life of the licence to the year 2001.

EL 7217 originally covered an area of 474 blocks, however through statutory reductions, now comprises 18 blocks. A history of the tenement reductions is provided in Table 1.

Table 1
Tenement History

Licence	Block s 1991	Block s 1992	Block s 1993	Block s 1994	Block s 1995	Block s 1996	Blocks 1997 -2001
EL 7217	474	474	237	119	60	30	18 Licence Renewed

EL 7217 is situated within the savanna hinterland of the Gulf of Carpentaria in the central-eastern zone of the Northern Territory. The licence area is approximately 100km south of the township of Borroloola and is less than 3km from the nearest kimberlite pipes located at the Merlin mine. The tenement is situated on the Bauhinia Downs (SE53-03) 1:250,000 map sheet and the Glyde 1:100,000 map sheet, as illustrated in Figure 1.

Access to the area, which is located on the Spring Creek South pastoral lease, is provided by secondary tracks from the Merlin mine. The region is situated in strongly dissected gorge country with Bukalara Sandstone outcrop prevalent throughout the entire tenement. Numerous high-energy creeks flow through the area, with many of them draining from the Merlin plateau to the north.

A statement of expenditure is included in this report.

2. CONCLUSIONS AND RECOMMENDATIONS

Although commercial diamonds are hosted by several drainages within the tenement area, these relate to sources outside the tenement. No kimberlite-like responses have been identified from both heli-EM and aeromagnetic surveys. As it is believed that the tenement has little potential to host diamond bearing pipes, it is recommended that no further exploration be undertaken.

3. PREVIOUS EXPLORATION

3.1. Exploration on current tenement

1994 Program

Prior to commencing field work, a comprehensive data review of previous exploration and open file results in the tenement area was undertaken. This

highlighted areas that had not been adequately explored and sample locations were selected and plotted on the relevant 1:100,000 map sheet. EL 7217's close proximity to the Merlin tenements made this area highly prospective for diamond exploration.

In the first sampling programme, twenty-five stream samples were collected from the licence. Samples were dispatched to Ashton's Perth laboratory for routine microdiamond and indicator mineral analysis. Results were pending at the end of this reporting period.

As part of Ashton's ongoing exploration programme within adjoining tenement EL 6424, now held under title of SEL 8630, a small portion of an airborne DIGHEM survey and a ground EM-34 survey encroached on the northern boundary of EL 7217. No targets were selected within the licence.

Sample locations and geophysical data can be referenced in the annual report for EL 7217 for the period 10th January 1994 to 9th January 1995.

1995 Program

In the second year of tenure, results for samples collected in the previous year were made available late in the reporting period, delaying the implementation of a follow-up sampling programme. Of the twenty-five samples, only one sample produced a positive result, reporting one microdiamond. Sample results can be referenced in the relevant statutory report.

1996 Program

Due to the lack of positive results received from reconnaissance sampling, additional sampling was conducted to test under sampled drainages. Twelve

stream samples, consisting of 2 bags each, were collected. Laboratory processing also returned negative results for all of the samples but one, which reported a single microdiamond.

The location of these samples can be referenced in the annual report for EL 7217 for the period 10th January 1996 to 9th January 1997; report number 52048.

1997 Program

The proposed programme for this year was deferred due to work and expenditure commitments afforded to high priority exploration areas in the Batten region, including the Merlin prospect.

1998 Program

In the 1998 field season, four stream samples were collected from an area where commercial diamonds had previously been recovered from bulk gravel samples. The purpose of this was aimed at identifying indicator minerals that, if present, would indicate a local source for the diamonds, which previously were thought to source from the Merlin field of kimberlites. A fifth sample was also collected to follow-up a nearby positive result. All samples were dispatched to Ashton's Perth laboratory for routine microdiamond and indicator mineral analysis. One sample was processed, reporting a single chromite grain, considered low priority.

The location of these samples can be referenced in the annual report for EL 7217 for the period 10th January 1998 to 9th January 1999; report number 52327.

1999 Program

In 1999, laboratory processing was completed on the four remaining samples collected in the previous year. All reported negative indicating that the previously recovered macrodiamonds from this drainage were likely derived from the Merlin kimberlite pipes, and not sourced from a more proximal intrusive body.

An airborne EM and magnetics survey, flown to extend the geophysical database around Merlin, covered 12.95km² of the northern portion of EL 7217. Interpretation of the data was undertaken inhouse by Ashton Mining geophysical staff. A total of eight discrete EM anomalies were identified based mainly upon similarities between the conductivity signature of the selected targets and that of the known kimberlite pipes at Merlin. Observations made during the preliminary investigation suggested the targets were unlikely associated with a kimberlite body. It was noted that many of the targets were covered by unconsolidated, surficial sand and often occurred at the intersection of deeply incised creeks within areas of abundant Bukalara sandstone outcrop.

Geophysical data can be sourced from the annual report for EL 7217 for the period 10th January 1999 to 9th January 2000; report number 52425.

4. EXPLORATION COMPLETED DURING REPORTING PERIOD

Exploration activities completed during the reporting period consisted of follow-up gravel sampling and an aeromagnetic survey.

4.1. Bulk Samples

To test areas to the south of the tenement, a 50 tonne bulk sample was

excavated from Wilkinson Creek, close to the southern boundary of the exploration licence. Access was achieved from the Kiana access road, some 20km to the south. The sample was excavated using a front-end loader and trucked to Ashton Mining's HMS plant situated at Cape Crawford for processing.

The recovery of 75 commercial diamonds, associated with 144 chromite, is very encouraging and suggests a primary diamond source within the catchment of Wilkinson Creek. A full listing of results for this sample is provided in Appendix 2. The location is shown in Figure 2.

4.2. Aeromagnetic Survey

Exploration licence 7217 was covered by part of a much larger aeromagnetic survey, which was flown in mid 2000 by World Geoscience. This survey was aimed at identifying kimberlite-like responses, which could lead to the identification of kimberlite pipes.

The results of the aeromagnetic survey are presented within this report as Plans Ntd 6852 (airborne flight lines) & Ntd 6853 (TMI contour plot).

Interpretation of the airborne data was undertaken in-house by Ashton Mining geophysical staff. Although no kimberlite responses were identified within the licence area, four targets were selected for field investigation. The geologist's observations for each target is provided below:

GMGWN011 (637010mE 8130738mN)

The centre of this anomaly is on the edge of sand accumulation built up at the junction of a tributary with the Glyde River. The location suggests a

source within the sediment deposited due to a change in flow conditions caused by the two drainages interaction and resulting in a build-up of iron rich material.

GMGWN12 (636802mE 8129576mN)

Similar situation to GMGWN11. Anomaly is most likely due to a deposition of iron-rich sediment at the junction of two drainages where the flow is interrupted.

GMGWN19 (641404mE 8127700mN)

This anomaly is an area of almost total outcropping Bukalara sandstone. A small depression less than 20m in diameter is located at the target with no fracturing observed around the margins. A small hole was dug in the centre of the target showing a sequence of sand and pisolitic material. These pisolites are most likely the cause of the magnetic anomaly.

GMGWN20 (644501mE 8130476mN)

Cretaceous quartzite is in area. Over the target is a slight 1m high rise with ferricrete development over some Bukalara sandstone outcrop. Some quartzite over the target also. The magnetic anomaly is entirely due to the ferricrete development over the anomaly. There is minor pisolitic scree in the area. The Bukalara outcrop eliminates the target.

5. LABORATORY PROCEDURES

All of the samples collected during the various work programs conducted in EL 7217 were processed and observed at the Ashton Mining laboratory in Perth. Initial sample preparation involves concentration of the heavy mineral fraction by Wilfley Table and various liquid separation techniques. The heavy liquid used in the procedure is tetrabromoethane, which has a specific gravity of 2.96. The recovered concentrate is then screened into various size fractions and further sorted by magnetic and electrostatic separation methods. A

comprehensive grain-by-grain examination is then performed on the – 1.0mm+0.3mm fraction with the aid of a variable objective binocular microscope. Kimberlite indicator grains that may occur within the sample are then identified and recovered for further study.

6. REHABILITATION

Environmental disturbance was minimised during the bulk sampling operations by strict adherence to the Ashton Mining field policy. The construction of the access road was carried out with the aid of a Samsung front-end-loader. This assisted in minimising the environmental impact by ensuring that vegetation was cleared blade-up to preserve grass, shrub, and topsoil cover and not create deep, permanent windrows. Detours were created to by-pass extensive areas of dense vegetation cover and large individual trees. All debris heaps were also flattened and dispersed and it is anticipated that rapid revegetation will be assisted by wet season conditions.

Following the excavation of the bulk sample the over-size gravel was re-distributed within each site in order to create a suitable trap for future sediment. The access cut that was made into the creek bank was also smoothed and re-filled where possible, and any existing debris piles were dispersed. The progress of natural revegetation is expected to be rapid due to the high volume of water carried by the streams during the wet season.

7 EXPLORATION EXPENDITURE

Exploration expenditure for the period 10th January, 1994 to 9th January, 2001 amounted to \$ 203,672. A detailed breakdown of expenditure is given in Appendix 3.

8 KEYWORDS

Diamonds; Proterozoic; Auvergne Group; Antrim Plateau Volcanics; Gravel Sampling

9 LOCALITY

Bauhinia Downs	SE53-03	1:250,000
Glyde	6164	1:100,000

10 LIST OF DPO's

NA

11 DESCRIPTOR

Final report for EL 7217. Bulk gravel samples. Aeromag survey

APPENDIX I

Sample Results – Final Year

APPENDIX II

Statement of Expenditure

STATEMENT OF EXPENDITURE

EXPLORATION LICENCE 7217

Final Report

For the period

10th January, 1994 to 9th January, 2001

Geoscientist/Professional Staff	32,034
Field Support/Office Staff	42,610
Other Contractors	3,562
Travel/Accommodation/Meals	19,118
Field Supplies	4,094
Operating Costs	875
Equipment	27,686
Vehicles	14,686
Freight/Storage	4,369
Helicopter Charter	14,877
Fixed Wing Air Charter	791
Geophysics	12,684
Data Acquisition/Research	160
Drafting/Computing	2,062
Laboratory	5,226
Other	323
Sub-Total	185,157
Overheads	18,515
Total:	\$ 203,672