



Rio Tinto Exploration Pty. Limited

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A member of the Rio Tinto Group

Annual Report
For the Period 18 May 2007 to 17 May 2008
EL 22413 Baiguridji River
Blue Mud Bay SD 5307
Northern Territory

Exploration Report No. 28252

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1	Aircore Drilling Results	BaiguridjiRiver_2007_A_02_drillcollars.txt BaiguridjiRiver_2007_A_03_lithology.txt BaiguridjiRiver_2007_A_04_downholegeochem.txt

LIST OF PLANS

Plan No.	Title	Scale
pAI07_014	Tenement Location Plan	1:200 000
pAI08_009	Exploration Summary Plan	1:75 000

1. SUMMARY

Exploration Licence (EL) 22413 Baiguridji River was applied for by Rio Tinto Exploration Pty Limited (RTX) on 11 February 2000 and was granted on 18 May 2006. RTX is the sole manager and operator of this tenement. The original tenement application covered an area of 117km² (35 sub blocks) of which only 66.9km² (20 sub blocks) gained consent. The remainder of the application area did not gain consent, and was subsequently relinquished. EL 22413 is located 150km southwest of Nhulunbuy, east Arnhem Land, and consequently is processed under the Aboriginal Land Rights Act 1975 (ALRA).

This second annual report describes the exploration completed during the second year of the tenement, however this is the first year of ground work and included access track improvement and an aircore drill programme. EL 22413 forms part of a larger contiguous tenement package in east Arnhem Land, which is prospective for bauxite and base metals.

EL 22413 covers part of the subtle plateaus south of the Frederick Hills, and east of the Mitchell Ranges. This area has undergone a similar geomorphological history to that of the Cato Plateau, which is a known area of bauxite mineralisation of similar style to the nearby world class Gove deposit. The area is also considered prospective for base metal mineralisation similar to that of McArthur River (HYC) in the McArthur Basin. Diamonds are a subsidiary target.

Exploration was focused on:

- Review of previous exploration.
- Review of geology and geomorphology.
- Access track improvement
- Geologic Reconnaissance
- Aircore drill programme (five holes for 24m).

2. CONCLUSIONS AND RECOMMENDATIONS

Track conditions restricted the field work to the north east corner of the tenement. As a result only five of the 34 planned holes were drilled. Results from these holes were not encouraging.

It is recommended that the approved work programme be completed in the next reporting period.

3. INTRODUCTION

EL 22413 Baiguridji River was applied for by Rio Tinto Exploration Pty Limited (RTX) on 11 February 2000 and was granted on 18 May 2006. RTX is the sole manager and operator of this tenement. The original tenement application covered an area of 117km² (35 sub blocks) of which only 66.9km² (20 sub blocks) gained consent. The remainder of the application area did not gain consent, and was subsequently relinquished. The tenement is located 150km southwest of Nhulunbuy, east Arnhem Land and consequently is processed under the Aboriginal Land Rights Act 1975 (ALRA).

Tenement details are included in Table 1 below. See plan pAI07_014 for tenement locality.

All exploration was completed in accordance with a Department of Primary Industry, Fisheries & Mines (DPIFM) lodged and approved Mine Management Plan (Fry & Hartshorn 2006).

Table 1: Tenement Details

Tenement No.	Tenement Name	Owner/ship	Application Date	Grant Date	Blocks Applied For	Blocks Granted
EL22413	Baiguridji River	RTX	11/2/2000	18/05/2006	35	20

4. PREVIOUS EXPLORATION

BHP explored the region for both bauxite and manganese mineralisation in the mid to late 1960's (Chestnut et al. 1968). As part of this work an exploration track was established which lies to the eastern edge of EL 22413.

5. GEOMORPHOLOGY

EL 22413 is situated exclusively within the "Coastal Plain", one of the three major physiographic regions of the Blue Mud Bay 1:250 000 map sheet, defined and delineated by Plumb & Roberts (1965, 1992) (Haines et al. 1999). The Coastal Plain is a region of low relief adjacent to the Arafura Sea's west coast, and comprises tidal flats, coastal dunes and undifferentiated plains. The Baiguridji River represents the primary water course within the boundary of EL 22413, and flows southeast to the northern shore of Blue Mud Bay, where it joins the eastward flowing Koolatong River at an area of tidal flats. This region witnesses sustained rainfall throughout the wet season (late October- early May), and is at risk to tropical cyclones during this time. The influence of the southeasterly trade winds blowing across the Gulf of Carpentaria interacting with the Parsons Range causes rainfall to continue across this region well into the dry season in comparison with other areas in the Northern Territory.

A high rate of water percolation through a bauxite protolith is considered a central and critical factor for mineralisation. The Coastal Plain east of the Parsons and Mitchell Ranges is a desirable exploration area due to this extended wet season, in comparison to other areas of the Northern Territory with proven bauxite resources.

6. GEOLOGY

Cainozoic sediments dominate the surface geology of EL 22413. These cover sediments are comprised of variably consolidated gravels, sands, silts and clays. Significant areas of ferricrete cover parts of EL 22413, which present as subtle plateaus, bounded by mostly N-S trending drainages.

The basement to these cover sequences is probably comprised of the Palaeoproterozoic Balma Group. The Balma Group is inferred to record the development of an east thickening half graben between the Mitchell Range Fault and the Coastal Range Fault within the widening Walker Trough. To the west of EL 22413 the youngest formation of the Balma group: the Bath Range Formation (coarse-medium sandstone incl. dolomitic sequences, cherts and tuffaceous mudstones), outcrops in a N-S trend, and dips gently to the west. To the east the Palaeoproterozoic Coast Range Sandstone (juvenile, upward fining sequence) and Jalma Formation (mature qtz sandstone) which underly the Balma Fm, outcrops in a N-SE trend, and also dips gently to the west. The majority of the formations within the Balma Group are described as recessive, and are often heavily leached and silicified. The basement therefore is highly likely to be eroded/modified Balma group, although the possibility remains that unobserved rock units or structural complexity may introduce error in this 15-20km extrapolation across strike from identified basement.

7. GEOPHYSICS

The project area is covered by a regional scale aeromagnetic and radiometric survey flown for the NTGS in 1990-93 (Haines et al., 1999). The radiometric data can be used to help distinguish between the laterite-covered areas from those of both basement and Quaternary sand cover.

8. EXPLORATION COMPLETED DURING REPORTING PERIOD

Exploration completed during the reporting year included:

- Review of previous exploration.
- Review of geology and geomorphology.
- Access track improvement
An overgrown track constructed in the 1960's by BHP was re-opened using a backhoe to clear the low scrubby re-growth.
- Aircore drill programme (five holes for 24m)

8.1 Drilling

Summary

The aircore drill programme was considerably shortened due to access issues. The programme was negative for bauxite.

Drill Targets

The Baiguridji targets are a number of topographic southern extensions of the Frederick Hills. These subtle plateaus are comprised of lateritised cover sequences of gravel, silt, clay and sand, and are considered to hold potential for bauxite mineralisation.

Drill contractor and equipment

Drilling was conducted by Wallis Drilling Pty Ltd using a Mantis 80 drill rig. This rig is built onto a six-wheel drive Toyota Landcruiser, and includes a rod rack and loader, which makes it ideal for work on narrow access tracks.

Sampling and assaying methodology

Samples were obtained with NQ sized equipment at one metre intervals (excluding those where basement was intersected) and split using a rotary cone. On occasions when the bit hit hard basement, drilling was halted, and sample taken to the final depth.

All samples were assayed at Ultratrace Laboratories in Perth, Western Australia. The assaying was conducted using XRF for whole rock analysis and gravimetric method for loss on ignition.

Lithological and assay results

See Appendix 1 for complete table of results.

The holes drilled were negative for bauxite. They have a sandy protolith interpreted to be of Recent age, and have not been intensely lateritised. Each hole was abandoned when the bit hit hard cherty siltstone/sandstone basement.

Discussion of results and implications for future exploration

Interpretation of the drill results suggests that the surface lateritic profile is very thin and developed either directly on the Proterozoic basement or very young (Recent) sediments. The

The Cretaceous unit (Yirrikala equivalents) that is considered the targeted prospective host for bauxite is not present in the limited area that was drilled during the 2007 season.

Potential for bauxite still remains in the area that was not accessible during the 2007 field season.

9. ENVIRONMENT

All work carried out upon EL 22413, was completed in accordance with a DPIFM lodged and approved Mine Management Plan (Fry & Hartshorn 2006).

10. EXPLORATION EXPENDITURE

The exploration expenditure details attributed to the project by RTX for the second year of exploration are contained in the Northern Territory Exploration Expenditure for Mineral Tenements form that is submitted with this report.

11. PROPOSED EXPLORATION

Due to access issues limiting the work completed in the last reporting period it is proposed that the rest of the approved work programme will be completed in the next reporting period.

Proposed expenditure for the year will be \$30,000 comprising:

- Mapping of the planned aircore drill hole sites.
- Access track improvement and construction
- Possible aircore drilling of the remaining planned sites

REFERENCES

- Chesnut W., Gunn M. and McGregor P., 1968. BHP Pty Ltd. Report on exploration within AP1138, Eastern Arnhem Land. Northern Territory Department of Mines and Energy, Open File Company Report CR1968-0011
- Fry K. & Hartshorn G., 2006, A.W., 2006, Mine Management Plan, EL 22413 Baiguridji River, Blue Mud Bay SD5307, Northern Territory. RTX Report Number 27618.
- Haines P.W., Rawlings D.J., Sweet I.P., Pietsch B.A., Plumb K.A., Madigan T.L. & Krassay A.A. 1999, 1:250,000 Geological Map Series Explanatory Notes BLUE MUD BAY SD53-7. Northern Territory Geological Survey, Darwin
- Pankhurst, M.J 2007 Annual Report For the Period Ending 17 May 2007, EL 22413 Baiguridji River Blue Mud Bay SD 5307, Northern Territory Exploration Report No. 28064.

LOCALITY

Blue Mud Bay	SD 5307	1:250 000
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DESCRIPTOR

Annual Report for the Period 18 May 2007 to 17 May 2008 for EL 22413 Baiguridji River, Australia Zinc/Bauxite Project, Northern Territory, located within Arnhem Land, Northern Territory, Australia. Exploration activities consisted of access track improvement and aircore drilling.

KEYWORDS

Zinc, bauxite, subtle plateau, Coastal Plain, Baiguridji River, aircore drilling.

APPENDIX 1

Aircore Drilling Results

BaiguridjiRiver_2007_A_02_drillcollars.txt

BaiguridjiRiver_2007_A_03_lithology.txt

BaiguridjiRiver_2007_A_04_downholegeochem.txt