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<th>Plan No.</th>
<th>Title</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>pAl07_014</td>
<td>Tenement Location Plan</td>
<td>1:200 000</td>
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</tbody>
</table>
1. **SUMMARY**

Exploration Licence (EL) 22413 Baiguridji River was applied for by Rio Tinto Exploration Pty Limited (RTE) on the 11th of February 2000 and was granted on 18th May 2006. RTE is the sole manager and operator of this tenement. The original tenement application covered an area of 117 km² (35 sub blocks) of which only 66.9 km² (20 sub blocks) was granted. The remainder of the application area was rejected. EL 22413 is located 150 km southwest of Nhulunbuy, east Arnhem Land, and consequently is processed under the Aboriginal Land Rights Act 1975 (ALRA).

This first annual report describes the exploration completed during the first year of the tenement and includes geologic and previous exploration reviews, land access negotiations and work programme development and meetings. EL 22413 forms part of the 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.
- Work programme development.
- Completion of consultation meetings.

Carrying out the work programme was deferred due to the consultation meetings being completed in late September 2006, by which time the field season was rapidly closing. Mapping, access track construction and drilling will be conducted in year two (2007).

2. **CONCLUSIONS AND RECOMMENDATIONS**

Reviews, work programme and consultation meetings are complete. Following these processes, access tracks have been planned to drill areas prospective for bauxite. Due to consultation meeting and field season timing access track construction and drilling has been postponed until year two (2007).

3. **INTRODUCTION**

EL 22413 Baiguridji River was applied for by Rio Tinto Exploration Pty Limited (RTE) on the 11th of February 2000 and was granted on 18th May 2006. RTE is the sole manager and operator of this tenement. The original tenement application covered an area of 117 km² of which only 66.9 km² was granted. The remainder of the application area was rejected. The tenement is located 150 km 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 pAl07_014 for tenement locality.

All exploration was completed in accordance with a DPIFM lodged and approved Mine Management Plan (Fry & Hartshorn 2006).
Table 1: Tenement Details

<table>
<thead>
<tr>
<th>Tenement No.</th>
<th>Tenement Name</th>
<th>Owner/ship</th>
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<th>Grant Date</th>
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<th>Blocks Granted</th>
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<td>RTE</td>
<td>11/2/2000</td>
<td>18/05/2006</td>
<td>35</td>
<td>20</td>
</tr>
</tbody>
</table>

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 k 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 Carpenteria 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 a central and critical factor for mineralization. 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 15-20 km extrapolation across strike.
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.
- Completion of consultation meetings and site clearance surveys.
- Interpretation of existing TM data.
- Work programme development

8.1 **TM DATA INTERPRETATION AND DIGITAL TERRAIN DATA**

Thematic Mapper and digital terrain data sets were used to define the size of the potential bauxite target area. Subtle plateaus which extend from the Frederick Hills can be observed on the digital terrain model of the region. The lower flats between the coast and the subtle plateaus are also of interest.

9. **ENVIRONMENT**

No work was carried out upon EL 22413, as such all exploration was completed in accordance with a DPIFM lodged and approved Mine Management Plan (Fry & Hartshorn 2006) (Appendix 1).

10. **EXPLORATION EXPENDITURE**

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

11. **PROPOSED EXPLORATION**

Mapping, access track construction, drilling on these access tracks and stream sediment sampling will be undertaken in year two.

Proposed expenditure for the year will be $50,000 comprising:

- Mapping
- Access Track construction
- Auger or Aircore drilling
- Stream sediment sampling
REFERENCES


LOCALITY

Blue Mud Bay
SD 5307
1:250 000

DESCRIPTOR

Annual Report for the Period Ending 17th May 2007 for EL 22413 Baiguridji River, Australia Zinc/Bauxite Project, Northern Territory, located within Arnhem Land, Northern Territory, Australia. Exploration activities consisted of reviews of previous work, geology and geomorphology, land access negotiations and work programme development.

KEYWORDS

Zinc, bauxite, subtle plateau, Coastal Plain, Baiguridji River