Rio Tinto Exploration Pty. Limited

ABN 76 000 057 125 / ACN 000 057 125

A member of the Rio Tinto Group

Mine Management Plan
EL 4171 Cato River
Arnhem Bay SD5303
Northern Territory

Exploration Report No. 27632

Tenement Holder:	Rio Tinto Exploration Pty Limited
Date:	June 2006
Author:	A W Bell
Submitted:	I M Clementson
Distribution:	Department of Primary Industry, Fisheries & Mines NT Northern Land Council RTE Perth Information Centre

LIST OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

No.	Title	File Name
1	List of Environmental Procedures	Environmental Procedures List.pdf
2	EPBC Search Results	EPBC Search.PDF
		EPBC Checklist.PDF
3	Introduced Species Information	Intro Fauna.PDF
		Intro Flora.PDF
4	Threatened Species Information	Threat Fauna.PDF
		Threat Flora.PDF
5	EL 4171 Drill Hole & Sample Locations	EL4171 Locations.PDF

LIST OF PLANS

Plan No.	Title	Scale
WAp46426	EL4171 Cato River 2006 Work Programme	1: 100 000

1. SUMMARY

This Mine Management Plan (MMP) documents the proposed work activities that Rio Tinto Exploration (RTE) will carry out on Exploration Licence EL 4171 Cato River. The MMP will be the management document for all planned ground disturbance activities. The exploration programme is likely to involve work such as rock chip, stream sediment and auger/wacker sampling, mapping and aircore drilling. An Annual Environmental Report (AER) will document all ground disturbance and rehabilitation on this programme. At the cessation of the project, RTE will complete a Final Rehabilitation Report (FRR).

2. INTRODUCTION

This Mine Management Plan covers EL 4171 Cato River. RTE plan to begin the field programme during the 2006 dry season between July and November. RTE expects the programme to involve stream, rock chip, auger and wacker sampling, mapping and Aircore drilling. The project will involve up to ten personnel on-site. Other personnel may visit the site, such as safety and environmental officers.

RTE will manage environmental issues, associated with this tenement, according to the RTE Environmental Management System and guidelines set in this MMP. Relevant authorities/groups will be provided with a digital copy of the Environmental Procedures at their request.

2.1 LOCATION AND ACCESS

EL 4171 Cato River is located approximately 40 km west of Nhulunbuy in northeast Arnhem Land. Access to the tenement will be via the Stuart Highway (sealed road), and the unsealed Mainaru - Central Arnhem roads. The community of Dhalinbuy is located within the tenement.

2.2 LICENCE DETAILS

Table 1: Tenement Summary

Tenement No.	Tenement Name	Ownership	Application Date	Grant Date	No Blocks Applied	No. Blocks Granted
EL 4171	Cato River	Rio Tinto Exploration Pty Ltd	03-12-82	12/09/05	264	208

2.3 PROJECT MANAGEMENT

Project Geologist:	Greg Hartshorn
Phone:	(08) 9270 9230
Geologist:	Katrina Fry
Phone:	(08) 9270 9236
Fax:	(08) 9270 9223
Mailing Address:	PO Box 175 Belmont, WA 6984
Location Address:	37 Belmont Avenue, Belmont WA 6104

Approximately four to six RTE staff will be engaged in the programme, operated from a camp within the tenement. All personnel will have work-related transit and entry permits for the area obtained through the Northern Land Council (NLC) system of Land Access Permits prior to work commencing. RTE also wishes to employ two Traditional Owners for the programme.

Work activities will be conducted during the dry season, preferably before the end of November. The work programme detailed in Section 6.0 will take approximately 2-3 weeks to complete.

3. STAKEHOLDERS

3.1 LEASE HOLDERS

Table 2: Lease Details

Lease Name/Number	Leaseholder	Tenure Type	Contact Name	Contact Details
Arnhem Land 01646	Arnhem Land Aboriginal Land Trust	V	-	C/- Northern Land Council, 9 Rowling St, Casuarina NT 0810

3.2 NATIVE TITLE GROUPS

There are no native title claims on this tenement. The area is under freehold title in the Arnhem Land Aboriginal Land Trust.

3.2.1 Work Area Clearance

The Traditional Owners for the area will conduct work area clearance surveys over the tenement before any work commences. Any conditions resulting from the survey will be adhered to.

3.3 COMMUNITIES / INTEREST GROUPS

Table 3: Details of Community / Interest Groups

Community / Interest Group	Contact
Dhalinybuy Community	Layhapuy Home Association Inc
Dhimurru Rangers (Land Management)	Steve Roeger (08) 8987 3992 Mark Ashley (08) 8920 5198

4. REGULATORY COMPLIANCE

4.1 ENVIRONMENTAL APPROVALS

No specific environmental approvals are required for the planned work programme.

All environmental related conditions listed in the Schedule of Conditions pertaining to EL4171 will be adhered to (Section 24a Mining Act).

4.2 UTILITY SERVICES

No utility services such as power, water, telephone and gas are known to occur on the tenement apart from within the community of Dhalinybuy itself.

5. ENVIRONMENTAL FACTORS

RTE has considered environmental factors in the planning stages of exploration activities. This planning process has identified the potential impacts and likely environmental issues associated with the exploration activities in this tenement. RTE has implemented appropriate Environmental Procedures (Appendix 1) to manage these activities. RTE will conduct all its exploration activities in accordance with its Environmental Procedures.

5.1 PHYSIOGRAPHY

The northern part of the Cato River area is in the Arnhem Coast bio-region. It comprises of undifferentiated Cainozoic sand and residual soil, as well as laterite, lateritic soil, and ferruginous cemented detritus. The area is underlain by Cretaceous white and yellow sandy claystone, quartz sandstone, and ferruginous sandstone. Several outcrops of lower Proterozoic volcanics (namely felsic to intermediate extrusive/shallow-intrusive igneous rocks), shallow water sandstone and mudstone, and cobble conglomerate have been identified. The two main rivers in the area are the Cato River in the southern portion of the tenement, and the Peter John River in the northern half. Several swamplands exist on the

tenement and form part of these riverine systems. Extensive mangrove mud flats occur at the ocean inlet to these drainage lines.

The dominant vegetation type is Darwin Woollybutt/Darwin Stringybark open forest with sorghum understorey.

5.2 PREVIOUS EXPLORATION / MINING OR OTHER DISTURBANCES

BHP explored northeast Arnhem Land during 1964-1972 for sedimentary manganese in the Cretaceous Yirrkala Formation and for bauxite. Limited information (summary logs) and assay data have been located for this drilling.

In 1966, BHP constructed tracks and drilled 6 auger holes over the Cato River area to test bauxite potential. BHP also drilled 13 percussion holes for manganese.

5.3 QUARANTINE ISSUES

Table 4 lists the introduced species that have been recorded in the Arnhem Coast bio-region. These species may occur on the tenement. Of particular significance is the presence of the introduced Yellow Crazy Ant (*Anoplolepis gracilipes*). Information about the Yellow Crazy Ant is given in Appendix 3.

In addition to adhering to the Environmental Procedure, ENVT105 Quarantine, RTE will also implement the following to prevent the spread of the Yellow Crazy Ant.

1. Notify the Dhimurru Rangers (contact as per Table 3) when RTE expects to arrive at Dhalinybuy, and arrange a time to go out to site with the Rangers. This is so that RTE personnel can be taught to recognise theYellow Crazy Ant.
2. Dhimurru Rangers to survey the site and record any occurrence of the Yellow Crazy Ant, as well as any nest locations. RTE will also record the locations to avoid the nests during the programme.
3. Establish a wash-down area on the tenement. RTE will wash down all vehicles at the designated wash-down area, before departure from the tenement.
4. RTE will ensure all equipment/clothing and vehicles are free of the Yellow Crazy Ant before departure from the tenement. If the Yellow Crazy Ants are found on vehicles or equipment/clothing, insecticide spray will be used to kill the ants.
5. Personnel to report any sightings of Yellow Crazy Ant during the programme to the Dhimurru Rangers.

Table 4: Introduced Plants and Animals

Scientific Name	Common Name
Plants	
Senna alate	Candle Bush
Hyptis suaveolens	Hyptis
Jatropha gossypifolia	Bellyache Bush
Calotropis procera	Rubber Bush
Cenchrus echinatus	Mossman River Grass
Salvinia molesta	Salvinia
Stachytarpheta spp.	Snakeweeds
Senna occidentalis	Coffee Senna
Sida Acuta	Spiny head Sida
Animal	
Anoplolepis gracilipes	Yellow Crazy Ant
Bufo marinus	Cane Toad
Felis catus	Feral Cat
Sus scrofa	Feral Pig
Bubalus bubalis	Water Buffalo

5.4 SIGNIFICANT ENVIRONMENTAL ISSUES

Several protected species were identified using the Environmental Protection and Biodiversity Conservation (EPBC) Database as likely to occur on the tenement. Special management procedures for these species are not considered necessary as the nature of the work, that is, minor ground disturbance, and the implementation of RTE's existing management procedures for activities are considered adequate to minimise the potential impact on these species.

5.4.1 Conservation Areas

The EPBC search did not identify any conservation areas on the tenements. Refer to Appendix 2 for EPBC checklist and search results.

5.4.2 Heritage Sites

There are no registered sites listed on the NT register. The work programme will be presented to the Traditional Owners and approved via the NLC. Any heritage issues will be taken into account through this work approval process.

5.4.3 Protected Flora

Searches on the EPBC Database and the Parks and Wildlife Commission Database, identified one protected flora species (the Australian Arenga Palm) as likely to occur within the work area. This species is listed as vulnerable. Information on this species is attached as Appendix 4. Refer to Appendix 2 for the EPBC search results and checklist.

RTE will not implement any specific management plans for this species, as the nature of the exploration activities will not cause significant impact.

5.4.4 Protected Fauna

An initial search was conducted on the EPBC website. This search revealed several threatened species that may occur on the tenements, they are listed in Table 5.

Table 5: Protected Fauna that may occur on the Cato River Tenement.

Scientific Name	Common Name	Conservation Status
Bird		
Erythrotriorchis radiatus	Red Goshawk	Vulnerable
Insect		
Euploea alcathoe enastri	Gove Crow Butterfly	*Endangered*
Mammals		
Dasyurus hallucatus	Northern Quoll	*Endangered*
Notomys aquilo	Northern Hopping-mouse	*Vulnerable*
Xeromys myoides	Water Mouse (False Water Rat)	*Vulnerable*
Marine		
Pristis microdon	Freshwater Sawfish	*Vulnerable*

5.5 SURFACE WATER

Two river systems are located on the tenement. The Peter John River flows through the north part of the tenement. The Cato River, which is spring fed and flows all year round, intersects the southern part of the tenement.

5.6 GROUND WATER

One water bore is located within EL 4171 Cato River. This is located in the Dhalinybuy Community. If RTE intercepts an aquifer whilst drilling, RTE will record the location and report the occurrence to the NT Department of Primary Industry, Fisheries & Mines.

5.7 CONTAMINATED LAND

No contaminated land is known to occur on the tenement. If RTE locates a contaminated site, RTE will record the site and notify the NT Department of Primary Industry, Fisheries & Mines.

6. WORK PROTOCOL AND REHABILITATION

RTE will conduct its activities in accordance with the RTE Environmental Procedures. The completed EPBC Checklist for Cato River identifies the planned activities for the programme. This section addresses the impacts associated with these activities and the appropriate management techniques that RTE will implement.

The programme is likely to involve exploration activities such as:

- Auger and wacker sampling (6.3, 6.4)
- Rock chip and stream sediment sampling (6.5)
- Geological mapping (6.6)

Given the sensitivity of the environment in the Top End Coast bio-region, RTE seeks to identify any issues that may limit future exploration activities. By visiting and photographing the area prior to systematic exploration RTE will build upon this MMP, and provide a better framework for any future activities.

6.1 TRACKS

Existing access will be used where possible however some older tracks may require upgrading. RTE plans to use a backhoe or similar equipment to do this. Any ground disturbance work including the construction of new access tracks will be performed in consultation with the Traditional Owners and in accordance with the following:

Table 6: Environmental Impact Management of Tracks.

Action	Impact	Control
Construction of tracks and use of vehicles (heavy and light) on tracks	Compaction, vegetation destruction, heritage site damage, impact on local fauna / flora distribution, water and wind erosion, dust generation, river and creek bank damage	ENVT102 Ground Disturbance ENVT112 Flagging Tape

6.2 CAMPSITES

RTE will require a field campsite. This campsite should be able to accommodate up to 10 people, and will consist of a caravan and a 4x4 Truck. RTE will ascertain a suitable location of the campsite in consultation with the Traditional Owners and the Northern Land Council. RTE will construct, manage, and rehabilitate the campsite in accordance with the controls mentioned in Table 7.

Table 7: Environmental Impact Management of the Campsite.

Action	Impact	Control
Establishing and utilising an area for use as accommodation, mess, and fuel and facilities.	Compaction, vegetation destruction, heritage site damage, pollution, water and wind erosion, visually unappealing.	ENVT102 Ground Disturbance ENVT103 Camp Management ENVT104 Site Monitoring ENVT 111 hydrocarbons and Hazardous substances ENVT114 Monitoring Equipment

6.3 DRILL SITES

RTE plans to drill a traverse of auger/aircore holes (approximately 500-1000m between holes) along existing tracks within the tenement (see attached plan WAp46426 and the list of drill hole locations in Appendix 5). Two traverses of holes, along the eastern and southern border of the tenement do not have existing mapped tracks for access. Access to these holes will depend on accessibility through the bush: if the scrub is not too thick, access to these hole locations will be via light vehicle Toyota 4WD. At this stage, drill pads are not required for this work. This work is to be conducted by four-wheel drive utility mounted with a mechanical auger, or depending on contractor availability, a small high-pressure air rotary aircore drill. Wacker sampling is done using a mechanical jack-hammer to push a sample collection tube into the ground. Once hauled from the ground the sample is removed from the sample tube and collected for assay. RTE will select drill site locations in consultation with the Traditional Owners.

6.4 DRILLING

A total of 133 auger/aircore holes and 11 wacker holes are marked as possible sites for testing. Hole locations are shown on the attached plan WAp46426 and coordinates are listed in Appendix 5. Of the auger holes, 112 are planned on existing tracks and 21 are planned within 3 km of the track. The auger and wacker holes located west of the Cato River are subject to accessibility depending on the thickness of the scrub and condition of existing tracks. The auger holes are approximately 8 cm in diameter and are drilled to a depth of up to 8m. The wacker holes are approximately 6cm in diameter and drilled to a

depth of up to 8m. Depending on contractor availability a small aircore rig may be used which will drill to a depth of up to 20m. Samples from this work will be sent to the laboratory for chemical analysis. All holes would be filled in with the remaining cuttings from the drilling and the surface area rehabilitated. Only every second hole on drill traverses will be done if results are visually negative.

If results from auger and wacker samples are encouraging, a programme of wide spaced aircore drilling may be undertaken.

Table 8: Environmental Impact Management for Drilling.

Action	Impact	Control
Construction of access tracks, tyred vehicle access	Vegetation and soil disturbance Generation of dust Water and wind erosion Compaction	ENVT102 Ground Disturbance ENVT104 Site Monitoring ENVT 111 Hydrocarbons and Hazardous ENVT114 Monitoring Equipment
Auger / Aircore Drilling Wacker Sampling	Soil disturbance Water and wind erosion Generation of dust	ENVT102 Ground Disturbance ENVT104 Site Monitoring ENVT 107 Drilling ENVT 111 Hydrocarbons and Hazardous ENVT114 Monitoring Equipment

6.5 SAMPLING

At the locations shown on the attached plan WAp46426, RTE geologists plan to collect rock, soil, or stream sediment samples which will be sent to a laboratory for chemical analysis. The sample sites will be accessed by walking from the existing tracks.

A description of these sample types is provided below:

- Rock chip samples are collected from surface exposures by prising loose or chipping the rock outcrop with a geological hammer. Samples weigh approximately 1 kg and are collected in small calico bags.
- Soil samples are collected from shallow holes dug to a depth of no more than 30cm. Samples are sieved on site and dispatched to a laboratory for analysis in small paper packets (sample weight of approximately 100-200 grams). RTE does not plan to take soil samples at this stage.

- Stream sediment samples are collected from the fine-grained material deposited during the most recent flow of streams. Samples are sieved on site and dispatched to a laboratory for analysis in small paper packets (sample weight of approximately 100-200 grams).
- Gravel sediment samples are larger samples (up to 40 kg in calico bags) collected from gravel traps in creek beds. The samples test major drainages for heavy minerals indicative of diamond-bearing rocks (e.g. kimberlite) in the catchment. Approximately 26 gravel samples are planned in this programme.

RTE will conduct the sampling in accordance with the following procedures and after consultation with the Traditional Owners.

Table 9: Environmental Impact Management of Sampling.

Action	Impact	Control
Foot access Construction of access tracks, tyred vehicle access, digging of shallow (<30cm deep) trenches/pits	Compaction, minor ground (vegetation and soil) disturbance, water and wind erosion	ENVT110 Sampling ENVT102 Ground Disturbance

6.6 GEOPHYSICAL SURVEYS

Geophysical mapping is not currently planned. However, if warranted, this will be in accordance with the following:

Table 10: Environmental Impact Management of Geophysical Surveys.

Action	Impact	Control
Flying aircraft	Transient noise	ENVT101 Environmental Management Plan CREL002 Community Relations Environmental Procedure
Foot access, tyred vehicle access, construction of access tracks	Minor compaction, minor ground disturbance (soil and vegetation), minor water and wind erosion	ENVT110 Sampling ENVT102 Ground Disturbance

6.7 OTHER GROUND DISTURBING ACTIVITIES

RTE plans no other ground disturbing activities on the tenement. If other ground disturbing activities are required later, RTE will conduct the activity in accordance to the following:

Table 11: Environmental Impact Management for other Ground Disturbing Activities.

Action	Impact	Control
Constructing costeans, trenches	Water and wind erosion, trap fauna (deep shafts).	ENVT102 Ground Disturbance

6.8 HYDROCARBONS AND HAZARDOUS SUBSTANCES

The following substances are likely to be used on the programme – domestic gas, diesel, domestic cleaning products, degreaser, and engine oil. RTE will have MSD sheets on site for these substances, and any other hydrocarbon or hazardous substance not listed above. RTE will manage the substances according to:

Table 12: Environmental Impact Management for Hydrocarbons and Hazardous Substances.

Action	Impact	Control
Handling, transport, storage and use of Hydrocarbons and Hazardous Substances	Soil and vegetation contamination, ground water pollution, adversely affect fauna.	ENVT111 Hydrocarbons and Hazardous Substances; SAFE 109 Hazardous Substances (Minimum Standards), and Australia District Field Operations Hazardous Materials Procedure. SAFE129 Transportation of Dangerous Goods

6.9 FIRE MANAGEMENT

Fire is a natural part of the environment in this region. If a fire is required for some reason, RTE addresses fire management in ENVT103 Camp Management. The procedure states that RTE will:

- Contact the local authorities to ensure that no fire restrictions are in place.
- Only permit fires under carefully controlled conditions. They must be a safe distance from flammable materials, accommodation and work areas. Locate fires in a site cleared of dry vegetation with a radius of at least three meters.
- Adhere to procedures designed to minimise the risk of bushfires occurring. In the event that a fire does escape, RTE will make reasonable attempts to extinguish it without placing personal safety at risk unnecessarily. These procedures include:

- Using gas barbecues or other facilities where possible in preference to open fires.
- Ensuring that all fireplaces have a barrier made of stone or other appropriate material to act as a windbreak and to prevent dispersion of heat sources. Alternatively, they can be located within a 30 cm (or deeper) excavated depression.
- Ensuring that whenever a fire is established appropriate fire fighting equipment is available and in good working order.

- Any fire outbreaks will be reported within the RTE incident reporting system, and to relevant Government authorities.

7. SAFETY

The RTE safe systems of work are encompassed in the Australia District Field Operations Manual. The field operations manual has thirteen (13) sections; each section guides and controls a different area of the exploration operation although some areas of work are likely to be covered in more than one section.

The sections in the manual are:

1. Field Communications Manual
2. Field Emergency Manual
3. Camp Management Manual
4. General Field Manual
5. Vehicle Operation Manuals
6. Drilling Operations Manual
7. Isolation Procedure & SOP's
8. General SOP's
9. Forms & Checklists
10. Hazardous Substances Field Data
11. Field Planning Documents
12. SIOP Programme
13. Aviation Operations

A copy of RTE Australia District Field Operations manual can be supplied to relevant Government Departments on request.

DESCRIPTOR

Mine Management Plan for EL 4171 Cato River. The planned reconnaissance work programme for bauxite will comprise mapping, rock chip and stream sediment sampling, auger, wacker and aircore drill sampling.

KEYWORDS

Mine Management Plan, rehabilitation, crazy ant, ground disturbance, EL 4171, Cato River, bauxite.

APPENDIX 1

List of Environmental Procedures

Environmental Procedures List.PDF

Appendix 2

EPBC Search Results

EPBC Search.PDF

EPBC Checklist.PDF

APPENDIX 3

Introduced Species Information

Intro Fauna.PDF

Intro Flora.PDF

Appendix 4

Threatened Species Information

Threat Fauna.PDF

Threat Flora.PDF

Appendix 5

Sample & Drillhole Locations

EL4171 Locations.PDF