

Appendix B

EPBC Referral

Referral of proposed action

Project title

MATILDA MINERALS LTD
AIRCRAFT LANDING AREA – ANDRANANGOO CREEK WEST,
MELVILLE ISLAND

1 Contacts

1.1 Referring party

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1.2 Responsible party

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1.3 Proponent

AS ABOVE

2 Summary of proposed action

- 2.1 **Short description** The Andranangoo Creek West and Lethbridge Bay West Mineral Sands Mining Project, located on Melville Island, received bilateral approval in July 2006 (EPBC 2005/2155). Matilda now proposes to construct an aircraft landing area (ALA) at the Andranangoo Mine Site parallel to the existing access road to the mine site.

2.2	Latitude and longitude		Latitude			Longitude		
		location point	degrees	Minutes	seconds	degrees	minutes	seconds
		SW Corner	130	49	49	11	22	40
		SE Corner	130	49	54	11	22	42
		NE Corner	130	50	20	11	22	00
		NW Corner	130	50	16	11	21	58

The Andranangoo Creek West Mine Site is located on the northern coast of Melville Island, part of the Tiwi Islands approximately 60km north of Darwin. Figures 1 and 2 below detail the mine site location and proposed ALA.

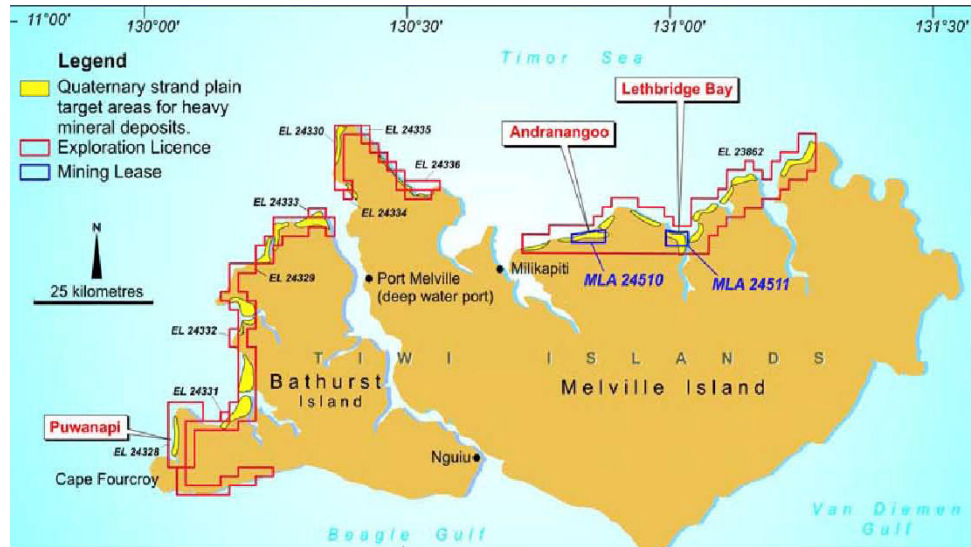


Figure 1: Location of Tenements on the Tiwi Islands

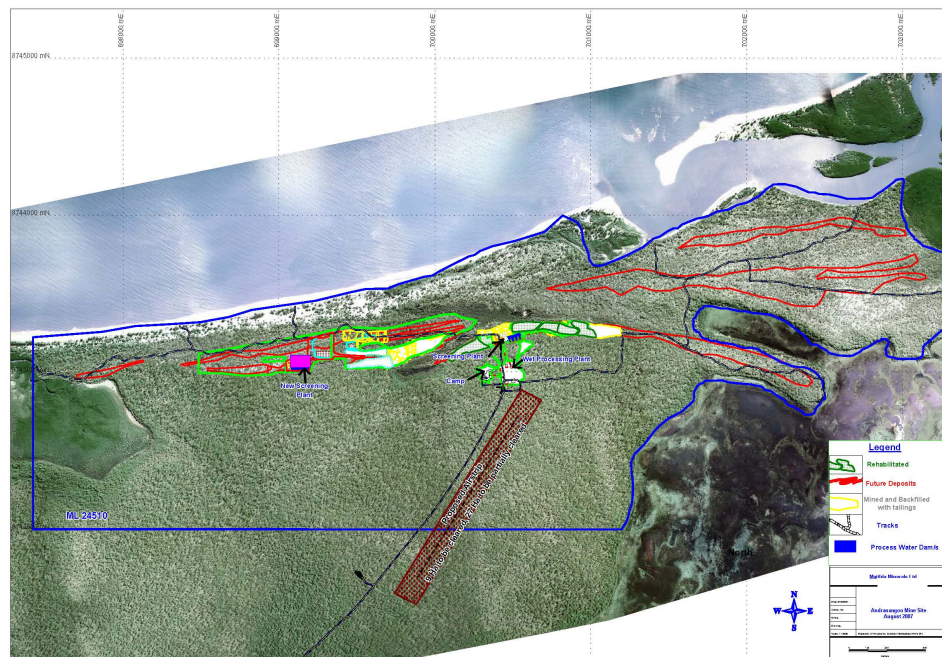


Figure 2: Proposed Location of Aircraft Landing Area at Andranangoo Creek

2.4	Size of the development footprint or work area (hectares)	The area to be completely cleared for the runway, runway strip, and fly-over areas measures 60m x 1500m (9 Ha). The approach and take-off areas at either end will measure 900m long and up to 150 m wide, will only be partially cleared. These areas will be cleared of tall vegetation only, on a slope of 3.3% from the ends of the runway. Based on recent vegetation surveys, the partially cleared area comprises approximately 9.45 Ha at each end of the ALA (19 Ha total). All other vegetation will remain, including <i>Cycas armstrongii</i> (listed as Vulnerable under the Northern Territory <i>Territory Parks and Wildlife Conservation Act 2000</i> but is not listed under the <i>EPBC Act 1999</i>). No further clearing is required for access roads, storage areas, or any other infrastructure. Therefore, the proposed ALA represents 9 Ha completely cleared and approximately 19 Ha (maximum of 27 Ha) partially cleared.	
2.5	Street address of the site	Andranangoo Creek West Mine Site Melville Island, Tiwi Islands Northern Territory	
2.6	Lot description	AS ABOVE, NO LOT NUMBER	
2.7	Local Government Area and Council contact (if known)	Tiwi Island Local Government Tiwi Land Council – contact Mr John Hicks, Secretary/Chief Executive Officer The traditional owners of the largest amount of land in which the mineral leases occur are the Yimpinari Traditional Owners, one of eight Traditional Owner groups located on the Tiwi Islands.	
2.8	Project life	<u>Mine Site:</u> The estimated life-of-mine at Andranangoo Creek is approximately three to three and a half years. The estimated life-of-mine at Lethbridge Bay West is approximately six months, subject to subsequent exploration. Upon completion of mining the Traditional Owners have the option to retain the mining camp facilities or Matilda will deep rip and seed for area for rehabilitation. <u>ALA:</u> Matilda has consulted and received full support from the Tiwi Land Council (TLC), the Traditional Owners and the Tiwi Island Local Government (TILG) for the proposed ALA. It is proposed that, similar to the camp, upon completion of mining there will be the option for the Traditional Owners to retain the ALA or Matilda will deep rip and seed for rehabilitation. The Traditional Owners have expressed their support for the project and intention to retain the ALA (together with the camp) for future business opportunities (such as a fishing or ecotourism lodge).	
2.9	Alternatives	☐	No
		☒	Yes, complete section 3.2
2.10	State assessment	☐	No
		☒	Yes, complete Section 3.5
2.11	Component of larger action	☐	No
		☒	Yes, complete Section 3.6

3 Detailed project description

3.1 Description of proposal

The proposed action will involve the construction and operation of an ALA as described below:

Construction

The ALA will be constructed according to the dimensions and requirements specified in the Civil Aviation Safety Authority's (CASA) Civil Aviation Advisory Publication (CAAP) No 92-1 Guidelines for Aeroplane Landing Areas (Figure 3).

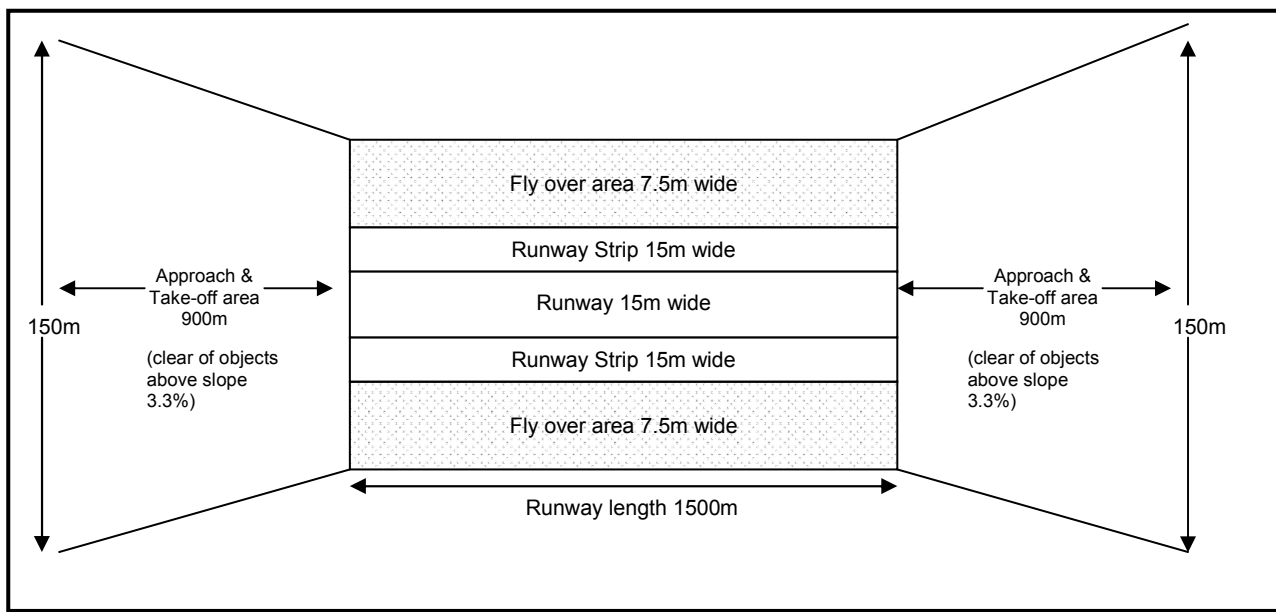


Figure 3: Airstrip Dimensions

The runway, runway strip and fly over areas (60m x 1500m) will be cleared of all vegetation and surfaced with compacted gravel. The approach and take-off areas at each end of the runway will be cleared only of vegetation over approximately 1.5m in height to allow clearance above slope of 3.3%. Based on recent vegetation surveys, the partially cleared area comprises approximately 9.45 Ha at each end of the ALA (19 Ha total). Therefore, the proposed ALA represents 9 Ha completely cleared and approximately 19 Ha (maximum of 27 Ha) partially cleared.

Although not mandatory for an ALA intended only for private transportation and charter operations by an aircraft with a maximum take-off weight of 5,700kg (a 9-seater aircraft), standard aerodrome markings and lighting will be installed at the ALA to facilitate safe landing and take-off.

No further infrastructure will be constructed.

It will not be necessary to construct hydrocarbon storage facilities because aircraft refuelling will be conducted in Darwin prior to arriving at the site. No other hazardous goods will be stored at the ALA.

It will not be necessary to construct access roads as the proposed ALA runs parallel to the current road that services the mine site. The proposed ALA is within walking distance to the camp and plant.

Operation

The proposed ALA will be serviced by charter aircraft from Darwin for the purpose of transporting personnel, visitors and supplies to Matilda's mineral sands operation. Typically, charter aircraft would operate from the proposed ALA 3 to 5 times per week depending on Matilda's requirements.

The ALA will also be used for the evacuation of personnel in the case of medical or other emergencies.

The ALA will also be available for use by the Tiwi people by arrangement or in case of emergency.

3.2 Alternative locations, time frames or activities that form part of the referred action

Alternate localities have not been proposed because this is the most feasible location as it is:

- in close proximity to the mine;
- on flat, elevated land; and
- on well draining upland lateritic country.

Currently the closest airstrip (Pickertaramoor) is approximately 50 kilometres from site, comprising a two hour round trip during the dry season and up to six hours during the wet season. During the wet season, due to poor drainage at Pickertaramoor, sometimes Matilda was required to land at Milikapiti airstrip, located approximately 130 kilometres from site.

3.3 Previously considered alternatives and the 'do nothing' case

The alternatives considered are described in Attachment A "Decision Matrix".

As a result of this comparison, the preferred option is the construction of an ALA for the following reasons:

Safety of Operations

- Enhanced safety at the site due to the ability to evacuate personnel by fixed wing aircraft. Evacuation by a helicopter suitable for medical evacuation cannot be guaranteed by the Northern Territory Aerial Medical Service;
- Direct-flight access will reduce travel times for crew changes which will reduce effects of worker fatigue, decreasing the risk of potentially unsafe working conditions and decrease risk of automobile accident.

Efficiency to Mine Operations

- Greater efficiency due to decreased fuel usage, shorter travel times, and less wear and tear on vehicles;
- Employees, parts, equipment and food supplies arrive at site more quickly and efficiently (less fuel usage and greenhouse gas emissions).

Environmental impacts and legacies

- While some clearing is necessary to establish the ALA, reductions in fossil fuel use and greenhouse gas emissions are anticipated by eliminating 1-2 vehicles driving 2-6 hours at an average of four times per week;
- Furthermore, the reduction in transporting fuel to site;
- There is also less risk of spreading weeds by eliminating the need to drive through documented weed-infested areas near Pickertaramoor; and
- Decreased erosion and sedimentation as a result of decreased road usage during the wet season.

3.4 Context, planning framework and state/local government requirements

The Andranangoo Creek West and Lethbridge Bay West Mineral Sands Mining Project received bilateral approval in July 2006 (EPBC 2005/2155).

Matilda currently operates according to a Mine Management Plan (MMP) that was approved by the NT Department of Primary Industry, Fisheries and Mines (Authorisation Number 0245-04). The MMP includes a series of Environmental Management Plans (EMPs) that cover all aspects of

exploration, mining and production activities at the site. These EMPs will be implemented for the proposed ALA to ensure effective mitigation of the environmental impacts associated with the airstrip.

At the request of NT Environmental Protection Agency (EPA), Matilda is currently completing a Public Environmental Report (PER) for the proposed ALA.

There is no requirement for the Civil Aviation Safety Authority (CASA) to sanction the establishment of an ALA if the ALA is intended only for private transportation and charter operations by an aircraft with a maximum take-off weight of 5,700kg (a 9-seater aircraft). Under Civil Aviation Regulation 92, it is the responsibility of the pilot to determine whether an ALA is suitable for the landing and taking-off of aircraft. CASA's Civil Aviation Advisory Publication (CAAP) No 92-1(1) sets down guidelines for pilots to determine the suitability of an ALA, with parameters including:

- Physical characteristics (including runway width, length, longitudinal slope and transverse slope);
- Geographic location;
- Runway surface; and
- Markers and lighting.

Matilda will ensure that the ALA is constructed in accordance with CAAP No 92-1(1).

Matilda met with TILG in September 2007 and received support for the proposed ALA; there are no local government requirements.

3.5 Environmental impact assessments under Commonwealth, state or territory legislation

The NT EPA determined that Matilda's request to construct and operate the ALA should be assessed at the level of PER. Matilda is currently preparing the PER document to submit to the EPA.

To date, the following consultation has been conducted:

Tiwi Land Council

Matilda has consulted with the TLC during TLC meetings that include the Traditional Owners for the area on numerous occasions, as detailed below. During each meeting the TLC and Traditional Owners have stated and reaffirmed their support for the proposed ALA.

- Matilda initiated community consultation with the TLC during a meeting on 21 June 2006 and received a letter detailing 'unequivocal support' for the proposed ALA from the TLC on 7 July 2006 (provided as Appendix A). The ALA will be available for use by the Traditional Owners following decommissioning of the minesite by Matilda.
- Matilda again presented a description of the proposed ALA project and status at the TLC Natural Resource Management meeting on 13 August 2007;
- Matilda presented a description of the proposed ALA project and status to a full TLC meeting at the Matilda Minerals Andranangoo Mine Site 11 September 2007. Two NT EPA representatives were present for the meeting.

NT Government

Matilda consulted a NT government assessment working group on 15 August 2007. In addition, Matilda sent letters to numerous NT government departments detailing project information and offering an additional briefing (none were requested).

Melville Island Residents and Business'

Matilda consulted with the Melville Island Lodge (Fishing Charter) on 13 August 2007 and held a community meeting in Milikapiti on 12 September 2007.

Tiwi Island Local Government

Matilda met with TILG in September 2007 and received support for the proposed ALA; there are no local government requirements.

CASA

Matilda consulted Mr David Parker from CASA Darwin who recommended that, in addition to compliance with CAAP No 92-1(1), Matilda engage an Aerodrome Consultant, Mr Peter Rohrlach of Aerodrome Services NT Pty Ltd, to assess the orientation of the ALA.

Aerodrome Consultant

Mr Peter Rohrlach from Aerodrome Services NT Pty Ltd was requested to comment on the orientation of the airstrip. Mr Rohrlach reported that the north east/south west orientation of the airstrip was suitable.

Direct Air Charter

Proposed construction details have been reviewed and approved by Matilda Minerals charter services provider, Direct Air Charter, to ensure it meets their pilots' requirements.

3.6 A staged development or component of a larger project

This current application pertains to a proposed ALA which is part of the Andranangoo Creek West and Lethbridge Bay West Mineral Sands Mining Project that received bilateral approval in July 2006 (EPBC 2005/2155).

4 Affected environment

A copy of the EPBC Act Protected Matters Search undertaken as a reference to assist in preparing this referral is contained in Attachment C.

4.1 Matters of national environmental significance

4.1 (a) World Heritage Properties

There are no World Heritage Properties in the vicinity of the proposed ALA.

4.1 (b) National Heritage Places

There are no Natural Heritage Places in the vicinity of the proposed ALA.

4.1 (c) Wetlands of International Significance (Ramsar)

There are no Wetlands of International Significance (Ramsar) in the vicinity of the proposed ALA.

4.1 (d) Listed threatened species and ecological communities

There are no Threatened Ecological Communities occurring within the proposed ALA.

Sixteen Threatened Species are listed in the EPBC Act as possibly occurring within the vicinity of the proposed ALA. These species are presented in Table 1.

Table 1: Threatened Species that may occur within the Search Area

Birds		
<i>Erythrotriorchis radiatus</i> * Red Goshawk	Vulnerable	Species or species habitat likely to occur within area
<i>Melanodryas cucullata melvillensis</i> * Hooded Robin (Tiwi Islands)	Endangered	Species or species habitat may occur within area
<i>Tyto novaehollandiae melvillensis</i> * Masked Owl (Tiwi Islands)	Endangered	Species or species habitat likely to occur within area
Mammals		
<i>Megaptera novaeangliae</i> * Humpback Whale	Vulnerable	Species or species habitat likely to occur within area
<i>Sminthopsis butleri</i> * Butler's Dunnart	Vulnerable	Species or species habitat may occur within area
<i>Xeromys myoides</i> * Water Mouse, False Water Rat	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
<i>Caretta caretta</i> * Loggerhead Turtle	Endangered	Species or species habitat may occur within area
<i>Chelonia mydas</i> * Green Turtle	Vulnerable	Species or species habitat may occur within area
<i>Dermochelys coriacea</i> * Leathery Turtle, Leatherback Turtle, Luth	Vulnerable	Species or species habitat may occur within area
<i>Eretmochelys imbricata</i> * Hawksbill Turtle	Vulnerable	Species or species habitat may occur within area
<i>Lepidochelys olivacea</i> * Pacific Ridley, Olive Ridley	Endangered	Species or species habitat may occur within area
<i>Natator depressus</i> *	Vulnerable	Breeding likely to occur within area

Flatback Turtle		
Sharks		
<i>Rhincodon typus</i> * Whale Shark	Vulnerable	Species or species habitat may occur within area
Plants		
<i>Typhonium jonesii</i> * a herb	Endangered	Species or species habitat may occur within area
<i>Typhonium mirabile</i> * a herb	Endangered	Species or species habitat may occur within area
<i>Xylopia</i> sp. <i>Melville Island (J.Russell-Smith 2148) NT Herbarium</i> * a shrub	Endangered	Species or species habitat may occur within area

A fauna survey of the proposed ALA site was conducted by Indicus Biological Consultants (Indicus) in September 2006, specifically targeting species listed as threatened under the EPBC Act: Butler's Dunnart, Hooded Robin, Masked Owl and Red Goshawk (Attachment D). None of these species were recorded during the survey; however one Masked Owl was incidentally recorded adjacent to the site. No roosting or nesting sites were identified in the vicinity of the ALA.

Other fauna species listed in the EPBC Database that may occur with the vicinity of the proposed ALA; include the Loggerhead Turtle, Green Turtle, Leatherback Turtle, Hawksbill Turtle, Olive Ridley Turtle, Flatback Turtle, Humpback Whale, Whale Shark and Water Mouse (False Water Rat). As Matilda proposes to construct the ALA approximately 800m from the shoreline, none of these species are expected to be impacted by proposed construction and operation of the ALA.

Vegetation surveys were conducted on the proposed ALA site in October 2006 and May 2007. None of the three EPBC listed species were identified during the surveys. The results of the vegetation surveys are provided as Attachment E.

4.1 (e) Listed migratory species

The EPBC database lists 30 Migratory Species that may occur within the vicinity of the proposed ALA. These species are presented in Table 2.

Table 2: Migratory Species that may occur within the Search Area

Birds		
<i>Coracina tenuirostris melvillensis</i> Melville Cicadabird	Migratory	Species or species habitat may occur within area
<i>Haliaeetus leucogaster</i> White-bellied Sea-Eagle	Migratory	Species or species habitat likely to occur within area
<i>Hirundo rustica</i> Barn Swallow	Migratory	Species or species habitat may occur within area
<i>Merops ornatus</i> * Rainbow Bee-eater	Migratory	Species or species habitat may occur within area
<i>Rhipidura rufifrons</i> Rufous Fantail	Migratory	Species or species habitat may occur within area
Migratory Wetland Species		
Birds		
<i>Ardea alba</i> Great Egret, White Egret	Migratory	Species or species habitat may occur within area

<u>Ardea ibis</u> Cattle Egret	Migratory	Species or species habitat may occur within area
<u>Charadrius veredus</u> Oriental Plover, Oriental Dotterel	Migratory	Species or species habitat may occur within area
<u>Glareola maldivarum</u> Oriental Pratincole	Migratory	Species or species habitat may occur within area
<u>Numenius minutus</u> Little Curlew, Little Whimbrel	Migratory	Species or species habitat may occur within area
Migratory Marine Birds		
<u>Apus pacificus</u> Fork-tailed Swift	Migratory	Species or species habitat may occur within area
<u>Ardea alba</u> Great Egret, White Egret	Migratory	Species or species habitat may occur within area
<u>Ardea ibis</u> Cattle Egret	Migratory	Species or species habitat may occur within area
<u>Calonectris leucomelas</u> Streaked Shearwater	Migratory	Species or species habitat may occur within area
<u>Puffinus leucomelas</u> Streaked Shearwater	Migratory	Species or species habitat may occur within area
Migratory Marine Species		
Mammals		
<u>Balaenoptera edeni</u> Bryde's Whale	Migratory	Species or species habitat may occur within area
<u>Dugong dugong</u> Dugong	Migratory	Species or species habitat likely to occur within area
<u>Megaptera novaeangliae</u> * Humpback Whale	Migratory	Species or species habitat likely to occur within area
<u>Orcaella brevirostris</u> Irrawaddy Dolphin	Migratory	Species or species habitat may occur within area
<u>Orcinus orca</u> Killer Whale, Orca	Migratory	Species or species habitat may occur within area
<u>Sousa chinensis</u> Indo-Pacific Humpback Dolphin	Migratory	Species or species habitat may occur within area
<u>Tursiops aduncus (Arafura/Timor Sea populations)</u> Spotted Bottlenose Dolphin (Arafura/Timor Sea populations)	Migratory	Species or species habitat likely to occur within area
Reptiles		
<u>Caretta caretta</u> * Loggerhead Turtle	Migratory	Species or species habitat may occur within area
<u>Chelonia mydas</u> * Green Turtle	Migratory	Species or species habitat may occur within area
<u>Crocodylus porosus</u> Estuarine Crocodile, Salt-water Crocodile	Migratory	Species or species habitat likely to occur within area
<u>Dermochelys coriacea</u> * Leathery Turtle, Leatherback Turtle, Luth	Migratory	Species or species habitat may occur within area
<u>Eretmochelys imbricata</u> * Hawksbill Turtle	Migratory	Species or species habitat may occur within area
<u>Lepidochelys olivacea</u> * Pacific Ridley, Olive Ridley	Migratory	Species or species habitat may occur within area

<i>Natator depressus</i> * Flatback Turtle	Migratory	Breeding likely to occur within area
Sharks		
<i>Rhincodon typus</i> Whale Shark	Migratory	Species or species habitat may occur within area

Construction and operation of the proposed ALA is not expected to impact significantly on the habitat of terrestrial or wetland migratory species. Results of the fauna survey conducted by Indicus in September 2006 concluded that the area to be cleared for the proposed ALA represents a very small proportion of the open forest vegetation community that is widespread on the Tiwi Islands and across the Top End. Further, it was concluded that clearing will not significantly affect the conservation status of species recorded at the site (Indicus 2006). Management actions recommended by Indicus have been incorporated into the ALA EMP (refer Section 6).

As discussed above, the site of the proposed ALA is over 800m from the shoreline, therefore it is not anticipated that construction and operation of the ALA will impact upon migratory marine species. In addition, the proposed ALA is located approximately 600 metres from Andranangoo Spring and 900 metres from a wetland and therefore not expected to impact species within these habitats.

4.1 (f) Nuclear actions

There are no nuclear actions associated with the proposed ALA.

4.1 (g) Commonwealth marine areas

There are no Commonwealth Marine Areas within the proposed ALA. The proposed ALA lies approximately 1km from a Commonwealth Marine Area however the proposed activities are anticipated to have little to no impact on the marine environment.

4.2 Important or unique aspects of the environment, if relevant

4.2 (a) Soil and vegetation characteristics

Geology and Soil Characteristics

The oldest rocks underlying the Tiwi Islands are Proterozoic basement rocks comprising igneous and metamorphic rocks. The Cretaceous Mullaman Beds overlie the basement and are comprised of sandstone and shale of about 100 m thickness. Overlying the Mullaman Beds is the Wangarlu Member that is comprised predominantly of mudstone and is approximately 500 m thick. This is the oldest rock type on the Tiwi Islands that outcrops on the surface.

Overlying the Wangarlu Mudstone Member is the Moonkinu Member that comprises a very fine to fine-grained sandstone with interbeds of grey carbonaceous mudstone and siltstone. There is a sandstone horizon within the Moonkinu Member that is considered to be a regional confined aquifer.

Overlying the Cretaceous Moonkinu Member is the Tertiary Van Diemen Sandstone. This formation comprises a friable, white to yellow, medium to coarse-grained quartzose sandstone with subordinate intercalations of grey carbonaceous mudstone and siltstone of fluvial to paralic derivation.

The Van Diemen Sandstone broadly dips very shallowly to the north, becoming thicker in the process, with the unit exposed over a 60 m vertical interval at Cape Van Diemen at the extreme north-western tip of Melville Island (Matilda 2006b).

Unconsolidated Quarternary fluvial, paralic, deltaic and littoral deposits, overlie both the Moonkina Member and Van Diemen Sandstone. The most economically significant of these are the Pleistocene age littoral quartzose sands associated with the palaeo-shoreline.

Holocene (recent) littoral deposits have accumulated along the present coast line, variously abutting or transgressing the Cretaceous, Tertiary and Pleistocene deposits (Matilda 2006b).

The proposed ALA location is in an upland lateritic area with good internal drainage.

Vegetation Characteristics

Vegetation surveys of the proposed ALA site were conducted a Flora Consultant in October 2006 and May 2007 (Attachment E). Vegetation in the vicinity of the proposed ALA comprises Eucalyptus-dominated woodland to open woodland community and is characteristic of extensive areas of upland terrain on Melville and Bathurst Islands. No drainage features traverse the site and the vegetation is fairly uniform throughout (Metcalf 2007).

One listed threatened species, *Cycas armstrongii*, was recorded at the proposed ALA site. This species is listed as vulnerable under Territory Parks and Wildlife Conservation Act 2000 but is not listed under the EPBC Act 1999 and is recorded as being locally common. Matilda has been issued with a Permit to Take Wildlife for Commercial Purposes to remove this species. *Cycas armstrongii* will be relocated to add to the visual amenity of the camp or made available to the local community for the nursery or for sale to collectors/nurseries for income to the local economy.

No plant species listed under Northern Territory conservation legislation (other than *Cycas armstrongii*) or the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 were recorded on the proposed ALA site.

Management actions recommended by the Flora Consultant have been incorporated into the ALA EMP (refer Section 6).

4.2 (b) Water flows, including rivers, creeks and impoundments

The Andranangoo mining area and proposed ALA is located within the Andranangoo Creek Catchment. The Andranangoo catchment covers some 538 km² and extends about 45 km south of the Andranangoo Prospect.

Stream flows are greatest during monsoonal seasons when precipitation is greatest. Many springs dry up by the end of the dry season on the southern side of Melville Island, however spot flow measurements in the upper portion of Andranangoo Creek in the late dry season in 2001 indicated a flow of 347 L/s (Haig et al).

The mining activities at Andranangoo Creek West are located predominantly within a natural drainage line north of a scarp at an elevation of about 2 to 3 m AHD. Drainage migrates westward towards wetlands/damplands and tidal mangroves associated with the Andranangoo Creek, located approximately 500 m from the eastern most mining block. A ridge of coastal dunes at an elevation of about 4 to 5 m AHD inhibits drainage northward towards the coast.

The location of the proposed ALA is on relatively flat ground in an area of good internal drainage, up-gradient of mining activities. Appropriate drainage design will be incorporated into ALA construction.

The proposed ALA is located approximately 600 metres east of Andranangoo Spring and 900 metres west of a wetland. Depth to water in the vicinity of the proposed ALA is approximately 4.5 to 5.5 metres below ground surface.

4.2 (c) Outstanding natural features, including caves

There are no outstanding natural features in the vicinity of the proposed ALA.

4.2 (d) Gradient

The topography of the islands is characterised by relatively low relief, dominated by partially dissected plateaux rising to 100 m above sea level, interspersed with broad valleys, riverine

lagoons and estuarine tidal flats. The coastline varies from more exposed low cliffs and beaches to large estuaries and extensive tidal flats (Matilda 2006b).

The location of the proposed ALA is on relatively flat ground at approximately 10 metres above mean sea level.

4.2 (e) Buildings or other infrastructure

No additional infrastructure will be constructed associated with the proposed ALA.

Currently, the mine site consists of camp and plant areas. The camp consists of a mess area and accommodation for 30 personnel and visitors. The plant area consists of generator, processing plant, heavy mineral concentrate storage area, fuel storage isotainers, workshops and offices.

The current mine site is serviced by a haul road that runs parallel to the proposed ALA.

4.2 (f) Marine areas

The mine site and proposed ALA is located on the northern coastal verge of Melville Island which is bound by the Timor Sea. The location of the proposed ALA is over 800m south of the high water mark, well outside the 200m buffer zone applicable under EPC/23004/2155.

4.2 (g) Kinds of fauna

As discussed in Section 4.1(d) a fauna survey of the proposed ALA site was conducted in September 2006, specifically targeting species listed as threatened under the EPBC Act. None of these species were recorded during the survey, however one Masked Owl was incidentally recorded adjacent to the site.

A total of six mammal species, 30 bird species and 10 reptile species were recorded during the survey. Three significant species were recorded at the site (Brush-tailed Rabbit Rat, Rainbow Bee-Eater and Leaden Flycatcher). However, no significant roosting, nesting or breeding sites were located during the site visit (Indicus 2006).

The only introduced species recorded was the Asian Water Buffalo which is common on the Tiwi Islands and hunted by the traditional owners.

4.2 (h) Current state of the environment

The proposed ALA site is currently covered by native vegetation (see section 4.2(a)) and is located outside of the planned mining area.

The project area has been historically disturbed by the introduction of feral animals such as water buffalo and horses, as described in the EIS (Matilda 2006a). Several areas across Melville Island, such as Pickertaramoor, the location of the currently utilised airstrip, have been identified as being infested with weeds. Matilda is implementing a Pests, Weeds and Diseases EMP for the current sand mining project, and working with the TLC and existing businesses on the island to minimise the introduction and spread of pests, weeds and diseases. This program will be expanded to include the ALA.

The current sand mining site is located approximately 300m down-gradient of the proposed ALA and is being progressively mined and rehabilitated; Matilda is committed to achieving best practice in rehabilitation and environmental management.

4.2 (i) Commonwealth Heritage Places and places on the Register of the National Estate

There are no Commonwealth Heritage Places in the vicinity of the proposed ALA. There are no places listed on the Register of the National Estate in the vicinity of the proposed ALA.

4.2 (j) Known Indigenous heritage values

No Aboriginal archaeological sites were recorded at the proposed ALA site during a site survey conducted on 28 November 2006. Further, there are no Aboriginal archaeological sites listed on the Archaeological Sites Register held at the NT Heritage Conservation Services or any of the registers held by the Commonwealth Government (Crasswaller 2006). Matilda has applied for an Aboriginal Protection Areas Authority Permit and Traditional Owners have confirmed that there are no archaeological sites within the proposed ALA area.

Should any examples of aboriginal archaeology be identified through the construction of the ALA, work will stop immediately and the Site Manager and Tiwi Land Council will be notified.

4.2 (k) Other important or unique values of the environment

There are no other identified important or unique values.

4.2 (l) Tenure of the action area (eg freehold, leasehold)

The tenure of the mine site and proposed ALA is Aboriginal freehold held by the Tiwi Aboriginal Land Trust.

The mine site lies within Mining Lease Application (MLA) 24510 within Exploration Licence (EL) 23862.

The proposed ALA lies within ML24510 extending beyond the lease to the south for approximately 300m but within EL23862.

4.2 (m) Existing land uses

The proposed ALA would be a component of the Andranangoo Creek West mine site.

In addition to mining, the land is utilised by the Tiwi peoples of the Tiwi Islands who live a semi-traditional lifestyle. The area is used for hunting and fishing, the products of which include wallabies, magpie geese, buffalo, wild pigs, turtles, dugong, fish and shellfish.

A forestry industry, relying on both endemic and introduced species, has been operating for many years across the island. There are two fishing charter companies operating on the island.

4.2 (n) Proposed land uses

The proposed ALA will be used approximately 3-5 times per week to access the mine site and as required in case of emergency.

When the mine site is decommissioned, there will be an option for the Traditional Owners to retain the mining camp. The use will be determined by the Traditional Owners however potential uses include fishing charters or ecotourism, thus becoming an economic opportunity which would also create jobs. The ALA will then add value to the site as it will allow tourists to access the site without the necessity of a round trip of 3-6 hours between the site and an alternative airstrip, and decreased response time in the event of an emergency. Consultation with the Traditional Owners, TILG and TLC indicates they are very supportive of the airstrip being constructed.

5 Nature and extent of likely impacts

5.1 Likely impacts on matters of national environmental significance (NES)

5.1 (a) Likely impact on the world heritage values of a declared World Heritage property

No direct or indirect impacts on a declared World Heritage property

5.1 (b) Likely impact on the heritage values of a listed National Heritage place

No direct or indirect impacts on a listed National Heritage place

5.1 (c) Likely impact on the ecological character of a declared Ramsar wetland

No direct or indirect impact on a declared Ramsar wetland

5.1 (d) Likely impact on the members of a listed threatened species or ecological community, or their habitat

As a result of the fauna survey conducted in September 2006, it was concluded that the area to be cleared for the ALA represents a very small proportion of the open forest vegetation community that is widespread on the Tiwi Islands and across the Top End. Further, it was concluded that clearing will not significantly affect the conservation status of species recorded at the site (Indicus 2006).

Management actions recommended by an independent fauna consultant have been incorporated into the ALA EMP (Refer Section 6).

The proposed activities may potentially result in the introduction of exotic fauna species. The Pests, Weeds and Diseases EMP will be implemented to minimise the risk of introduction and spread of pests, weeds and diseases, in addition to island-wide management plans currently being developed in collaboration with the TLC.

5.1 (e) Likely impact on the members of a listed migratory species or their habitat

Listed migratory species or their habitat are not expected to be adversely affected by the proposed ALA because, as discussed previously, the amount of clearing required represents a very small proportion of the open forest vegetation community that is widespread on the Tiwi Islands and across the Top End. The site of the proposed ALA is located on free-draining soil up-gradient of wetlands and damplands in the area.

5.1 (f) Likely impact on the environment in part of the Commonwealth marine area

No direct or indirect impact on a Commonwealth marine area as the proposed ALA is located more than 800m from the beach high water mark.

5.2 Likely impacts for nuclear actions, actions affecting Commonwealth land or actions taken by the Commonwealth

The project is not a nuclear action or an action taken by the Commonwealth.

6 Measures to avoid or reduce impacts

Aircraft Landing Area Environmental Management Plan

Objectives and Targets	To prevent impact from construction and operation of the Aircraft Landing Area (ALA) on environmental and heritage values of the Tiwi Islands.
Actions	During construction: • Ensure clearing is kept to a minimum and limited to the dimensions required to comply with CAAP 92-1(1). A handheld GPS tracker will be used to facilitate clearing; • Harvest specimens of <i>Cycas armstrongii</i> for transplantation in Tiwi Island community areas and possible sale to collectors/ nurseries in the Northern Territory. All proceeds of the sale of <i>Cycas armstrongii</i> will belong to the people of the Tiwi Islands; • Avoid widespread dumping of sand/soil and other materials from clearing activities by designating 2 to 3 areas for cleared materials. This will aid in maintaining the ecological values of remnant vegetation; and • Construct appropriate drainage to minimise the potential for erosion and sediment. During operation: • Ensure that weeds, pests and diseases are not introduced by implementing relevant actions from the Weeds, Pests and Diseases EMP; • Install cane toad traps in conjunction with Tiwi Land Council; • Protect groundwater by implementing actions contained within the Hydrocarbons and Hazardous Substances EMP. If aviation fuel is to be stored temporarily at the site, amount to be less than 400 litres (2 x 200litre drums) stored in portable bunds. Take precautions when refuelling and ensure spill material is available; • Ensure that all litter is deposited in designated areas within the camp area and not left around the airstrip; • Ensure appropriate fire fighting equipment is available at all times; and • Monitor drainage to ensure the potential for soil erosion is minimised.
Responsibility	Environmental Manager
Monitoring	• Include ALA in site biannual weed monitoring program. • Monitor ALA fire fighting equipment.
Reporting	The results of Matilda's monitoring programs will be documented in Matilda's Annual Report of performance against the MMP.
Corrective Actions	The following constitute an incident or failure to comply: • Unauthorised disturbance of vegetation outside of the designated area; • Evidence of weed infestation or feral pest presence; and • Release of fuels or chemicals to the environment.
Relevant Legislation and Standards	Civil Aviation Authority – Civil Aviation Advisory Publication Number 92-1(1) Guidelines for Aeroplane Landing Areas

7 Conclusion on the likelihood of significant impacts

Do you **THINK** your proposed action is likely to have significant impacts?

- | | |
|-------------------------------------|---------------------------|
| ☒ | No, complete section 7.1 |
| ☐ | Yes, complete Section 7.2 |

7.1 Proposed action is NOT LIKELY to have significant impacts

Key reasons

In considering significant impact criteria outlined in the *EPBC Act Policy Statement 1.1 Significant Impact Guidelines Matters of National Environmental Significance* (Commonwealth of Australia 2006), Matilda considers that the proposed ALA will not have a significant impact on any matters of NES.

- There are no World Heritage areas in the vicinity of the proposed ALA
- There are no National Heritage Places in the vicinity of the proposed ALA
- There are no Wetlands of International Importance in the vicinity of the proposed ALA
- There are no Nuclear Actions associated with the proposed ALA
- The proposed ALA is located 800m away from a Commonwealth Marine Area
- Listed Threatened Species and Communities - There are no listed Threatened Ecological Communities in the vicinity of the proposed ALA. No listed threatened species were recorded during the fauna survey conducted in September 2006, further, as discussed in Section 5.1(d) proposed construction and operation of the ALA is not expected to significantly impact on listed threatened species or their habitat because the area to be cleared for the ALA represents a very small proportion of the open forest vegetation community that is widespread on the Tiwi Islands and across the Top End. Therefore clearing will not significantly affect the conservation status of species recorded at the site.
- Listed Migratory Species - Listed migratory species or their habitat are not expected to be adversely affected by the proposed ALA because, as discussed previously, the amount of clearing required represents a very small proportion of the open forest vegetation community that is widespread on the Tiwi Islands and across the Top End. The site of the proposed ALA is located on free-draining soil up-gradient of wetlands and damplands in the area.

7.2 Proposed action is LIKELY to have significant impacts

Matters likely to be impacted

- | | |
|--------------------------|--|
| ☐ | sections 12 and 15A (World Heritage) |
| ☐ | sections 15B and 15C (National Heritage places) |
| ☐ | sections 16 and 17B (Wetlands of international importance) |
| ☐ | sections 18 and 18A (Listed threatened species and communities) |
| ☐ | sections 20 and 20A (Listed migratory species) |
| ☐ | sections 21 and 22A (Protection of the environment from nuclear actions) |
| ☐ | sections 23 and 24A (Marine environment) |
| ☐ | sections 26 and 27A (Protection of the environment from actions involving Commonwealth land) |
| ☐ | section 28 (Protection of the environment from Commonwealth actions) |

Key reasons

Not applicable

8 Assessment approach under the EPBC Act

Level of assessment

☐	Bilateral Agreement applies
☐	Accredited assessment
☒	Assessment on referral information
☐	Preliminary information
☐	Public Environment Report
☐	Environmental Impact Statement
☐	Commission of Inquiry
☐	No comment/Not sure

Key reasons

Matilda does not consider the proposed construction of the ALA to be a controlled action requiring further assessment under the EPBC Act. As described in Section 7.1, no Matters of NES are likely to be significantly affected by the proposed action. As required by the NT EPA, Matilda is currently completing a PER for the proposed ALA project.

9 Environmental history of the responsible party

		Yes	No
9.1	Does the party taking the action have a satisfactory record of responsible environmental management? If Yes, provide details The current Andranangoo Creek West and Lethbridge Bay West Mineral Sands Mining Project is Matilda's first project. Mining and production commenced in late 2006 and employs 2 qualified and experienced Environmental Scientists and an Environmental Officer who are implementing a suite of environmental management plans with the objective of achieving best practice in environmental management for the project, including the proposed ALA. Matilda has completed and submitted all compliance report (Territory and Federal) to date.	✓	
9.2	Is the party taking the action subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources? If Yes, provide details The project has been referred to the Northern Territory EPA who has determined that it should be assessed at the level of PER.	✓	
9.3	For an action for which a person has applied for a permit under the EPBC Act, is the person making the application subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources? If Yes, provide details N/A		✓
9.4	If the party taking the action is a corporation, will the action be taken in accordance with the corporation's environmental policy and planning framework? If Yes, provide details of environmental policy and planning framework Matilda has developed a comprehensive Health, Safety, Environment & Community (HSEC) Management System based on ISO14001, the international standard for environmental management systems, to facilitate the identification and management of our HSEC risks. The HSEC Management System has a suite of policies relating to the management of environmental, health and safety and community issues.	✓	

10 Information sources and attachments

10.1 References

Crassweller, C. (2006) Archaeological Survey of the Proposed Airstrip at Andranangoo Mine Site, Melville Island, NT – A report prepared for URS Pty Ltd.

Haig, T., Knapton, A. and Matsuyama, A., 2003, Water Resources of the Tiwi Islands: Main Report, Volume 1, Report number 26-2003D, Department of Infrastructure, Planning and Environment, Northern Territory Government, August 2003

Indicus Biological Consultants (2006) Fauna Survey of the Proposed Airstrip at Andranangoo Creek West (Matilda Minerals), Melville Island.

Matilda Minerals Ltd (2006a) Andranangoo Creek West and Lethbridge Bay West Mineral Sands Mining Project Draft Environmental Impact Statement – A report prepared by URS Pty Ltd (available to the public)

Matilda Minerals Ltd (2006b) Mine Management Plan Andranangoo Creek West and Lethbridge Bay West Mineral Sands Mining Project – A report prepared by URS Pty Ltd (available to the public)

Metcalf, K. (2007) Matilda Minerals Tiwi Islands Project Andranangoo Prospect Aircraft Landing Area – Flora – A report prepared for URS Pty Ltd and Matilda Minerals

10.2 Reliability of information

Source of the information:

Information was gathered from a variety of sources including the Northern Territory Government databases, Commonwealth Government databases; personal communication with Matilda, TLC and NT Government personnel and surveys by local reputable and experienced environmental and archaeological practitioners, who are referenced throughout the document.

How recent the information is:

The following specific surveys were commissioned:

- A fauna survey was undertaken in September 2006;
- A flora survey was undertaken in September 2006 and May 2007; and
- An Aboriginal Heritage Survey was conducted in November 2006.

How the reliability of the information was tested:

Data gathered from the NT and Commonwealth Government and information gained from Matilda was assumed to be reliable; data collected by consultants was in most cases verified by industry sources.

Uncertainties in the information:

The reliability of Government-provided data is assumed; all other data was sourced from its origins and significant uncertainties in the quality of the data are not anticipated.

10.3 Attachments

You must attach	figures, maps or aerial photographs showing the project locality (section 2)	X
	figures, maps or aerial photographs showing the location of the project in respect to any matters of national environmental significance or important features of the environments (section 4)	
If relevant, attach	copies of any state or local government approvals and consent conditions (section 3.4)	
	copies of any completed assessments to meet state or local government approvals and outcomes of public consultations, if available (section 3.5)	
	copies of any flora and fauna investigations and surveys (section 4)	X
	technical reports relevant to the assessment of impacts on protected matters and that support the arguments and conclusions in the referral (section 4 and 5)	
	report(s) on any public consultations undertaken, including with Indigenous Stakeholders (section 4)	X

11 Signatures and declarations

Project title

- 11.1 **Party who prepared the referral** I declare that the information contained in this form is, to my knowledge, true and not misleading. I request that the person named in 11.3 below (if any) be designated as the proponent for the action.

Signature



20 September 2007

Date

Tina Girard, Environmental Manager, Matilda Minerals Ltd

Full name

- 11.2 **Party who is responsible for action** I declare that the information contained in this form is, to my knowledge, true and not misleading.

Signature



20 September 2007

Date

Bruce Maluish, Managing Director, Matilda Minerals Ltd

Full name

- 11.3 **Proponent (complete only if different from 11.2)** I, being the person nominated in Section 1.3 of this referral form as the nominated proponent (or agent acting on behalf of), agree to be designated as the proponent for the action described above if it is decided that the action requires approval under Part 9 of the EPBC Act.

Signature

Date

Full Name

If the referring party is a small business (fewer than 20 employees), estimate the time, in hours and minutes, to complete this form (include your time reading the instructions, working on the questions and obtaining the information and time spent by all employees in collecting and providing this information).

Hours	Minutes
40	

ATTACHMENT A

DECISION MATRIX

Attachment A

Decision Matrix – Alternatives

The following transportation options have been assessed in terms of transport from Darwin to the Andrangoo Mine Site:

- Fixed wing aircraft to existing aircraft landing areas (ALAs), drive to Andranangoo ('do-nothing' option);
- Fixed wing aircraft direct to Andranangoo ALA;
- Helicopter to Andranangoo;
- Boat travel to Andranangoo; and
- Sea plane to Andranangoo.

Transport arrangements were evaluated in terms of routine and emergency travel.

Assessment of Alternatives – Best Practice Technology

A best practice technology (BPT) assessment of the various alternatives for transport to Andranangoo was completed as part of the Public Environmental Review (PER) requested by NT EPA, to incorporate a wide variety of values and derive a result that "optimises" environmental protection, when considered among social, economic and other factors. The five criteria against which each alternative is assessed are as follows:

- Environmental best practice – the level of environmental protection, and the environmental costs or benefits incurred;
- Cost-effectiveness – the costs of implementation, when compared with the level of environmental protection achieved by that option;
- Practicality and effectiveness – how that option contributes to efficiencies in the associated business;
- Maintenance and liability – the age of any equipment or facility employed may affect its integrity and contribute to a higher environmental risk. Environmental protection measures that require ongoing maintenance or upgrades would score lower in this criteria; and
- Social factors – consideration of the views of the regional community. For example, a technology that improves the level of environmental protection may also have negative social consequences, in terms of employment or access to recreation by the local community.

Each option was assessed against the five criteria described above, and a three-scale performance ranking was applied where a score of 1 is "poor"; 2 is "fair"; and 3 is "good". By adding the scores from all five criteria, a total performance ranking was derived and a "preferred" option was obtained.

The BPT assessment for the transport options to the Andranangoo mine site is presented below.

It is noted that on the basis of this BPT assessment, the proposed construction of the ALA and retention of the ALA after mining is the preferred option. This is closely followed by construction of the ALA and rehabilitation after mining and then direct helicopter transport to the mine site.

The existing situation (existing ALA's plus road transport), boat transport and sea plane transport were the lower rated of the six options.

Attachment A

Decision Matrix – Alternatives

Table 3-1 Best practice technology for transport options to Andranangoo mine site (Scoring: 1 = poor, 2 = fair, 3 = good)

Environmental Best Practice	Cost	Practicality and Effectiveness	Maintenance and Liability	Social Factors	Total Ranking (/15)
Construction of Andranangoo ALA for mine transport, and option for Tiwi people to retain after mining					
2 – requires land clearing and ongoing management for weeds and erosion	3 – construction and operation more cost effective than current cross-island travel. Minimal ongoing maintenance that is within the current demonstrated capacity of TLC/TILG.	3 – direct routine and emergency transport to mine site with minimal travel time. Provides a long term asset to the Tiwi people.	2 – ongoing operation and maintenance of ALA required.	3 – potential for business development using the ALA after mining ceases and reduces the risk (in case of emergency) to current businesses operating on the island.	13
Construction of Andranangoo ALA for mine transport, and rehabilitation after mining					
3 – requires temporary land clearing that could be returned to natural state within relatively short timeframe	2 – construction and operation more cost effective than current cross-island travel. Rehabilitation costs are additional but can be incorporated into existing program.	2 – direct routine and emergency transport to mine site with minimal travel time. Not available for future use to the Tiwi people.	3 – ongoing operation and maintenance of ALA required during operation, no long-term maintenance required after rehabilitation	2 – in the long term, no increased value to the business potential for Andranangoo and increases health and safety risks to the community in case of emergency.	12
Flight to existing ALA's, road transport to Andranangoo ("do-nothing" option)					
1 – requires no land clearing; however contributes to increased wear on roads (erosion), risk of weed spread and elevated greenhouse gas emissions	1 – high ongoing costs to Matilda in fuel and personnel travel time	1 – long travel time, wet season road closure issues, not a reliable emergency option	2 – ongoing maintenance to roads and vehicles required	2 – no increased value to the long term business potential for Andranangoo	7
Helicopter transport to Andranangoo					
2 – requires no land clearing; however results in maximum greenhouse gas emissions	1 – very high ongoing costs, especially for larger groups of people, or volumes of supplies	2 – direct to mine site with minimal travel time; reliable option in wet season, but poor reliability in case of emergency	3 – minimal maintenance of helipad during operation, no long-term maintenance required after rehabilitation	2 – no increased value to the long term business potential for Andranangoo	10
Boat or Barge transport to Andranangoo					
1 – requires construction of barge landing in turtle-nesting habitat; potential to require long-term dredging.	1 – high costs of travel time and costs of construction for barge landing and maintenance.	1 – access subject to tides, there is a long travel time and the option is not feasible in case of emergency.	1 – ongoing maintenance to barge landing area required in a sensitive area	1 – no increased value to the long term business potential for Andranangoo	5

Attachment A

Decision Matrix – Alternatives

Table 3-2 cont: Best practice technology for transport options to Andranangoo mine site (Scoring: 1 = poor, 2 = fair, 3 = good)

Environmental Best Practice	Cost	Practicality and Effectiveness	Maintenance and Liability	Social Factors	Total Ranking (/15)
Seaplane transport to Andranangoo					
1 – requires construction of access facilities, increased access tracks to coastline in turtle-nesting habitat or creekline in tidally influenced mud flats	1 – high hire costs and low availability of seaplane	1 – low availability of sea planes; access subject to tides, weather and water conditions; not a reliable option in case of emergency.	1 – ongoing maintenance of access area required in a sensitive area	2 – no long term business potential for Andranangoo.	6

ATTACHMENT B

APPROVAL LETTER FROM TIWI LAND COUNCIL

Managers:
Nguiu: (08) 8978 3755
Pirlangimpi: (08) 8978 3788
Milikapiti: (08) 8970 9152

Marine Rangers:
Pirlangimpi: (08) 8978 3788
Milikapiti: (08) 8970 9152



13 JUL 2006

All correspondence to:
The Chairman
PO Box 38545
Winnellie NT 0821
Tel: (08) 8981 4898
Fax: (08) 8981 4282

File: 17-30-4: 17-30-6

Mr. Bruce Maluish,
Director Operations.
Matilda Minerals.
50 Ord Street.
WEST PERTH. WA. 6005.

Dear Bruce,

Re: Goose Creek Airstrip.

Thank you for our meeting 21 June and your verbal request to locate an airstrip adjacent to the Goose Creek Road should the Landowners wish you to do that.

The matter has been discussed at a number of meetings. Our meeting 157 of 5th July last resolved that, upon the advice of the landowning Trustee and a significant majority of landowners, there is unequivocal support for your construction of an airstrip as you have indicated and planned. We understand this airstrip will not be subject to rehabilitation requirements but will, however be required to meet ALA conditions that you would know of as a Licensed Pilot yourself.

Kate will be able to assist with drainage and design suggestions and we would ask that you keep her briefed about the site and construction works that will become a landowners asset. Geminex locally can supply windsocks and other airport equipment that you may require.

Best wishes with your developments and operations.

Regards,

John.S.Hicks
Secretary/CEO.

7th July 2006.



ATTACHMENT C

EPBC PROTECTED MATTERS SEARCH



Australian Government

Department of the Environment and Water Resources

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Protected Matters Search Tool

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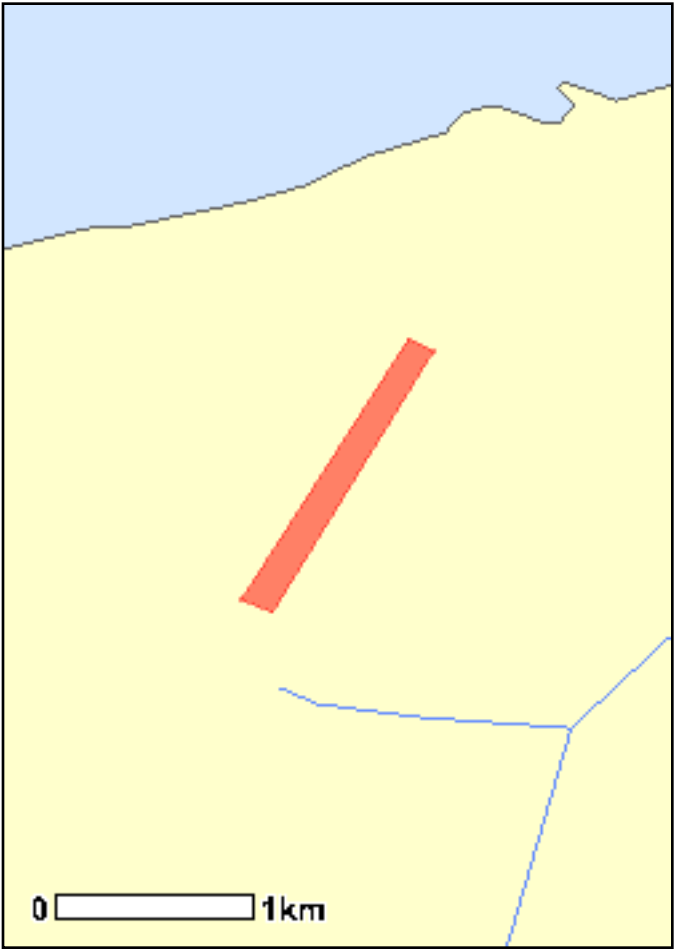
EPBC Act Protected Matters Report

23 July 2007 15:30

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Information on the coverage of this report and qualifications on data supporting this report are contained in the [caveat](#) at the end of the report.

You may wish to print this report for reference before moving to other pages or websites.

The Australian Natural Resources Atlas at <http://www.environment.gov.au/atlas> may provide further environmental information relevant to your selected area. Information about the EPBC Act including significance guidelines, forms and application process details can be found at <http://www.environment.gov.au/epbc/assessmentsapprovals/index.html>



This map may contain data which are
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Search Type: Area

Buffer: 1 km

Coordinates: -11.37777,130.8302, -11.37833,130.8316, -11.36666,130.8388, -
11.36611,130.8377



[Summary](#)[Details](#)

- [Matters of NES](#)

Report Contents: • [Other matters protected by the EPBC Act](#)

- [Extra Information](#)

[Caveat](#)[Acknowledgments](#)

Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance - see <http://www.environment.gov.au/epbc/assessmentsapprovals/guidelines/index.html>.

World Heritage Properties: None

National Heritage Places: None

**Wetlands of International Significance:
(Ramsar Sites)** None

Commonwealth Marine Areas: None

Threatened Ecological Communities: None

[Threatened Species:](#) 16

[Migratory Species:](#) 30

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place and the heritage values of a place on the Register of the National Estate. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage/index.html>.

Please note that the current dataset on Commonwealth land is not complete. Further information on Commonwealth land would need to be obtained from relevant sources including Commonwealth agencies, local agencies, and land tenure maps.

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species. Information on EPBC Act permit requirements and application forms can be found at <http://www.environment.gov.au/epbc/permits/index.html>.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Places on the RNE:	None
<u>Listed Marine Species:</u>	64
<u>Whales and Other Cetaceans:</u>	11
Critical Habitats:	None
Commonwealth Reserves:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	None
Other Commonwealth Reserves:	None
Regional Forest Agreements:	None

Details

Matters of National Environmental Significance

Threatened Species [Dataset Information]	Status	Type of Presence
Birds		
Erythrotriorchis radiatus *	Vulnerable	Species or species habitat likely to occur within area
Red Goshawk		
Melanodryas cucullata melvillensis *	Endangered	Species or species habitat may occur within area
Hooded Robin (Tiwi Islands)		
Tyto novaehollandiae melvillensis *	Endangered	Species or species habitat likely to occur within area
Masked Owl (Tiwi Islands)		
Mammals		
Megaptera novaeangliae *	Vulnerable	Species or species habitat likely to occur within area
Humpback Whale		
Sminthopsis butleri *	Vulnerable	Species or species habitat may occur within area
Butler's Dunnart		

[Xeromys](#)
[myoides](#) *

Water Mouse, False Water Rat

Vulnerable Species or species
 habitat likely to
 occur within area

Reptiles

[Caretta](#)
[caretta](#) *

Loggerhead Turtle

Endangered Species or species
 habitat may occur
 within area

[Chelonia mydas](#)
 *

Green Turtle

Vulnerable Species or species
 habitat may occur
 within area

[Dermochelys](#)
[coriacea](#) *

Leathery Turtle, Leatherback Turtle, Luth

Vulnerable Species or species
 habitat may occur
 within area

[Eretmochelys](#)
[imbricata](#) *

Hawksbill Turtle

Vulnerable Species or species
 habitat may occur
 within area

[Lepidochelys](#)
[olivacea](#) *

Pacific Ridley, Olive Ridley

Endangered Species or species
 habitat may occur
 within area

[Natator](#)
[depressus](#) *

Flatback Turtle

Vulnerable Breeding likely to
 occur within area

Sharks

[Rhincodon](#)
[typus](#) *

Whale Shark

Vulnerable Species or species
 habitat may occur
 within area

Plants

[Typhonium](#)
[jonesii](#) *

a herb

Endangered Species or species
 habitat may occur
 within area

[Typhonium](#)
[mirabile](#) *

a herb

Endangered Species or species
 habitat may occur
 within area

<u><i>Xylopia sp.</i></u>	Endangered	Species or species habitat may occur within area
<u><i>Melville</i></u>		
<u><i>Island (J.</i></u>		
<u><i>Russell-Smith</i></u>		
<u><i>2148) NT</i></u>		
<u><i>Herbarium</i></u> *		
a shrub		

Migratory Species [[Dataset Information](#)]

Status

Type of Presence

Migratory Terrestrial Species

Birds

<u><i>Coracina</i></u>	Migratory	Species or species habitat may occur within area
<u><i>tenuirostris</i></u>		
<u><i>melvillensis</i></u>		
Melville Cicadabird		
<u><i>Haliaeetus</i></u>	Migratory	Species or species habitat likely to occur within area
<u><i>leucogaster</i></u>		
White-bellied Sea-Eagle		
<u><i>Hirundo</i></u>	Migratory	Species or species habitat may occur within area
<u><i>rustica</i></u>		
Barn Swallow		
<u><i>Merops ornatus</i></u>	Migratory	Species or species habitat may occur within area
*		
Rainbow Bee-eater		
<u><i>Rhipidura</i></u>	Migratory	Species or species habitat may occur within area
<u><i>rufifrons</i></u>		
Rufous Fantail		

Migratory Wetland Species

Birds

<u><i>Ardea alba</i></u>	Migratory	Species or species habitat may occur within area
Great Egret, White Egret		
<u><i>Ardea ibis</i></u>	Migratory	Species or species habitat may occur within area
Cattle Egret		

<u>Charadrius veredus</u> Oriental Plover, Oriental Dotterel	Migratory	Species or species habitat may occur within area
<u>Glareola maldivarum</u> Oriental Pratincole	Migratory	Species or species habitat may occur within area
<u>Numenius minutus</u> Little Curlew, Little Whimbrel	Migratory	Species or species habitat may occur within area
Migratory Marine Birds		
<u>Apus pacificus</u> Fork-tailed Swift	Migratory	Species or species habitat may occur within area
<u>Ardea alba</u> Great Egret, White Egret	Migratory	Species or species habitat may occur within area
<u>Ardea ibis</u> Cattle Egret	Migratory	Species or species habitat may occur within area
<u>Calonectris leucomelas</u> Streaked Shearwater	Migratory	Species or species habitat may occur within area
<u>Puffinus leucomelas</u> Streaked Shearwater	Migratory	Species or species habitat may occur within area
Migratory Marine Species		
Mammals		
<u>Balaenoptera edeni</u> Bryde's Whale	Migratory	Species or species habitat may occur within area
<u>Dugong dugon</u> Dugong	Migratory	Species or species habitat likely to occur within area

<u>Megaptera</u> <u>novaeangliae</u> *	Migratory	Species or species habitat likely to occur within area
Humpback Whale		
<u>Orcaella</u> <u>brevirostris</u>	Migratory	Species or species habitat may occur within area
Irrawaddy Dolphin		
<u>Orcinus orca</u>	Migratory	Species or species habitat may occur within area
Killer Whale, Orca		
<u>Sousa</u> <u>chinensis</u>	Migratory	Species or species habitat may occur within area
Indo-Pacific Humpback Dolphin		
<u>Tursiops</u> <u>aduncus</u> <u>(Arafura/Timor</u> <u>Sea</u> <u>populations)</u>	Migratory	Species or species habitat likely to occur within area
Spotted Bottlenose Dolphin (Arafura/Timor Sea populations)		
Reptiles		
<u>Caretta</u> <u>caretta</u> *	Migratory	Species or species habitat may occur within area
Loggerhead Turtle		
<u>Chelonia mydas</u> *	Migratory	Species or species habitat may occur within area
Green Turtle		
<u>Crocodylus</u> <u>porosus</u>	Migratory	Species or species habitat likely to occur within area
Estuarine Crocodile, Salt-water Crocodile		
<u>Dermochelys</u> <u>coriacea</u> *	Migratory	Species or species habitat may occur within area
Leathery Turtle, Leatherback Turtle, Luth		
<u>Eretmochelys</u> <u>imbricata</u> *	Migratory	Species or species habitat may occur within area
Hawksbill Turtle		

<u>Lepidochelys</u> <u>olivacea</u> *	Migratory	Species or species habitat may occur within area
Pacific Ridley, Olive Ridley		
<u>Natator</u> <u>depressus</u> *	Migratory	Breeding likely to occur within area
Flatback Turtle		
Sharks		
<u>Rhincodon</u> <u>typus</u>	Migratory	Species or species habitat may occur within area
Whale Shark		

Other Matters Protected by the EPBC Act

Listed Marine Species [Dataset Information]	Status	Type of Presence
Birds		
<u>Apus pacificus</u> Fork-tailed Swift	Listed - overfly marine area	Species or species habitat may occur within area
<u>Ardea alba</u> Great Egret, White Egret	Listed - overfly marine area	Species or species habitat may occur within area
<u>Ardea ibis</u> Cattle Egret	Listed - overfly marine area	Species or species habitat may occur within area
<u>Calonectris</u> <u>leucomelas</u> Streaked Shearwater	Listed	Species or species habitat may occur within area
<u>Charadrius</u> <u>veredus</u> Oriental Plover, Oriental Dotterel	Listed - overfly marine area	Species or species habitat may occur within area

<u>Glareola</u> <u>maldivarum</u> Oriental Pratincole	Listed - overfly marine area	Species or species habitat may occur within area
<u>Haliaeetus</u> <u>leucogaster</u> White-bellied Sea-Eagle	Listed	Species or species habitat likely to occur within area
<u>Hirundo</u> <u>rustica</u> Barn Swallow	Listed - overfly marine area	Species or species habitat may occur within area
<u>Merops</u> <u>ornatus</u> *	Listed - overfly marine area	Species or species habitat may occur within area
<u>Numenius</u> <u>minutus</u> Little Curlew, Little Whimbrel	Listed - overfly marine area	Species or species habitat may occur within area
<u>Rhipidura</u> <u>rufifrons</u> Rufous Fantail	Listed - overfly marine area	Species or species habitat may occur within area
Mammals		
<u>Dugong dugon</u> Dugong	Listed	Species or species habitat likely to occur within area
Ray-finned fishes		
<u>Campichthys</u> <u>tricarinatus</u> Three-keel Pipefish	Listed	Species or species habitat may occur within area
<u>Choeroichthys</u> <u>brachysoma</u> Pacific Short-bodied Pipefish, Short-bodied Pipefish	Listed	Species or species habitat may occur within area
<u>Choeroichthys</u> <u>suillus</u> Pig-snouted Pipefish	Listed	Species or species habitat may occur within area

<u>Corythoichthys</u> <u>amplexus</u> Fijian Banded Pipefish, Brown-banded Pipefish	Listed	Species or species habitat may occur within area
<u>Corythoichthys</u> <u>flavofasciatus</u> Yellow-banded Pipefish, Network Pipefish	Listed	Species or species habitat may occur within area
<u>Corythoichthys</u> <u>haematopterus</u> Reef-top Pipefish	Listed	Species or species habitat may occur within area
<u>Corythoichthys</u> <u>schultzi</u> Schultz's Pipefish	Listed	Species or species habitat may occur within area
<u>Doryrhamphus</u> <u>excisus</u> Indian Blue-stripe Pipefish, Blue-stripe Pipefish	Listed	Species or species habitat may occur within area
<u>Doryrhamphus</u> <u>janssi</u> Cleaner Pipefish, Janss' Pipefish	Listed	Species or species habitat may occur within area
<u>Festucalex</u> <u>cinctus</u> Girdled Pipefish	Listed	Species or species habitat may occur within area
<u>Halicampus</u> <u>brocki</u> Brock's Pipefish	Listed	Species or species habitat may occur within area
<u>Halicampus</u> <u>dunckeri</u> Red-hair Pipefish, Duncker's Pipefish	Listed	Species or species habitat may occur within area
<u>Halicampus</u> <u>grayi</u> Mud Pipefish, Gray's Pipefish	Listed	Species or species habitat may occur within area
<u>Halicampus</u> <u>spinirostris</u> Spiny-snout Pipefish	Listed	Species or species habitat may occur within area

<u><i>Haliichthys taeniophorus</i></u> Ribboned Seadragon, Ribboned Pipefish	Listed	Species or species habitat may occur within area
<u><i>Hippichthys cyanospilos</i></u> Blue-speckled Pipefish, Blue-spotted Pipefish	Listed	Species or species habitat may occur within area
<u><i>Hippichthys parvicarinatus</i></u> Short-keeled Pipefish	Listed	Species or species habitat may occur within area
<u><i>Hippichthys penicillus</i></u> Beady Pipefish, Steep-nosed Pipefish	Listed	Species or species habitat may occur within area
<u><i>Hippocampus histrix</i></u> Spiny Seahorse	Listed	Species or species habitat may occur within area
<u><i>Hippocampus kuda</i></u> Spotted Seahorse, Yellow Seahorse	Listed	Species or species habitat may occur within area
<u><i>Hippocampus planifrons</i></u> Flat-face Seahorse	Listed	Species or species habitat may occur within area
<u><i>Hippocampus spinosissimus</i></u> Hedgehog Seahorse	Listed	Species or species habitat may occur within area
<u><i>Micrognathus micronotopterus</i></u> Tidepool Pipefish	Listed	Species or species habitat may occur within area
<u><i>Solegnathus hardwickii</i></u> Pipehorse	Listed	Species or species habitat may occur within area
<u><i>Solegnathus lettiensis</i></u> Indonesian Pipefish, Gunther's Pipehorse	Listed	Species or species habitat may occur within area

<u>Trachyrhamphus bicoarctatus</u> Bend Stick Pipefish, Short-tailed Pipefish	Listed	Species or species habitat may occur within area
<u>Trachyrhamphus longirostris</u> Long-nosed Pipefish, Straight Stick Pipefish	Listed	Species or species habitat may occur within area
Reptiles		
<u>Acalyptophis peronii</u> Horned Seasnake	Listed	Species or species habitat may occur within area
<u>Aipysurus duboisii</u> Dubois' Seasnake	Listed	Species or species habitat may occur within area
<u>Aipysurus eydouxii</u> Spine-tailed Seasnake	Listed	Species or species habitat may occur within area
<u>Aipysurus laevis</u> Olive Seasnake	Listed	Species or species habitat may occur within area
<u>Astrotia stokesii</u> Stokes' Seasnake	Listed	Species or species habitat may occur within area
<u>Caretta caretta</u> * Loggerhead Turtle	Listed	Species or species habitat may occur within area
<u>Chelonia mydas</u> * Green Turtle	Listed	Species or species habitat may occur within area
<u>Crocodylus porosus</u> Estuarine Crocodile, Salt-water Crocodile	Listed	Species or species habitat likely to occur within area
<u>Dermochelys coriacea</u> * Leathery Turtle, Leatherback Turtle, Luth	Listed	Species or species habitat may occur within area

<u>Disteira kingii</u> Spectacled Seasnake	Listed	Species or species habitat may occur within area
<u>Disteira major</u> Olive-headed Seasnake	Listed	Species or species habitat may occur within area
<u>Enhydrina schistosa</u> Beaked Seasnake	Listed	Species or species habitat may occur within area
<u>Eretmochelys imbricata</u> * Hawksbill Turtle	Listed	Species or species habitat may occur within area
<u>Hydrophis atriceps</u> Black-headed Seasnake	Listed	Species or species habitat may occur within area
<u>Hydrophis coggeri</u> Slender-necked Seasnake	Listed	Species or species habitat may occur within area
<u>Hydrophis elegans</u> Elegant Seasnake	Listed	Species or species habitat may occur within area
<u>Hydrophis inornatus</u> Plain Seasnake	Listed	Species or species habitat may occur within area
<u>Hydrophis mcdowelli</u>	Listed	Species or species habitat may occur within area
<u>Hydrophis ornatus</u> a seasnake	Listed	Species or species habitat may occur within area
<u>Hydrophis pacificus</u> Large-headed Seasnake	Listed	Species or species habitat may occur within area

<u>Lapemis</u> <u>hardwickii</u> Spine-bellied Seasnake	Listed	Species or species habitat may occur within area
<u>Lepidochelys</u> <u>olivacea</u> *	Listed	Species or species habitat may occur within area
Pacific Ridley, Olive Ridley		
<u>Natator</u> <u>depressus</u> *	Listed	Breeding likely to occur within area
Flatback Turtle		
<u>Parahydrophis</u> <u>mertoni</u> Northern Mangrove Seasnake	Listed	Species or species habitat may occur within area
<u>Pelamis</u> <u>platurus</u> Yellow-bellied Seasnake	Listed	Species or species habitat may occur within area
Whales and Other Cetaceans [Dataset Information]	Status	Type of Presence
<u>Balaenoptera</u> <u>edeni</u> Bryde's Whale	Cetacean	Species or species habitat may occur within area
<u>Delphinus</u> <u>delphis</u> Common Dolphin	Cetacean	Species or species habitat may occur within area
<u>Grampus</u> <u>griseus</u> Risso's Dolphin, Grampus	Cetacean	Species or species habitat may occur within area
<u>Megaptera</u> <u>novaeangliae</u> *	Cetacean	Species or species habitat likely to occur within area
Humpback Whale		
<u>Orcaella</u> <u>brevirostris</u> Irrawaddy Dolphin	Cetacean	Species or species habitat may occur within area
<u>Orcinus orca</u> Killer Whale, Orca	Cetacean	Species or species habitat may occur within area

<u>Sousa chinensis</u> Indo-Pacific Humpback Dolphin	Cetacean	Species or species habitat may occur within area
<u>Stenella attenuata</u> Spotted Dolphin, Pantropical Spotted Dolphin	Cetacean	Species or species habitat may occur within area
<u>Tursiops aduncus (Arafura/Timor Sea populations)</u> Spotted Bottlenose Dolphin (Arafura/Timor Sea populations)	Cetacean	Species or species habitat likely to occur within area
<u>Tursiops aduncus</u> Spotted Bottlenose Dolphin	Cetacean	Species or species habitat likely to occur within area
<u>Tursiops truncatus s. str.</u> Bottlenose Dolphin	Cetacean	Species or species habitat may occur within area

Caveat

The information presented in this report has been provided by a range of data sources as [acknowledged](#) at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the *Environment Protection and Biodiversity Conservation Act 1999*. It holds mapped locations of World Heritage and Register of National Estate properties, Wetlands of International Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under "type of presence". For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Only selected species covered by the [migratory](#) and [marine](#) provisions of the Act have been mapped.

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as [extinct or considered as vagrants](#)
- some species and ecological communities that have only recently been listed
- [some terrestrial species](#) that overfly the Commonwealth marine area
- migratory species that are very [widespread, vagrant, or only occur in small numbers](#).

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites;
- seals which have only been mapped for breeding sites near the Australian continent.

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Acknowledgments

This database has been compiled from a range of data sources. The Department acknowledges the following custodians who have contributed valuable data and advice:

- [New South Wales National Parks and Wildlife Service](#)
- [Department of Sustainability and Environment, Victoria](#)
- [Department of Primary Industries, Water and Environment, Tasmania](#)
- [Department of Environment and Heritage, South Australia Planning SA](#)
- [Parks and Wildlife Commission of the Northern Territory](#)
- [Environmental Protection Agency, Queensland](#)
- [Birds Australia](#)
- [Australian Bird and Bat Banding Scheme](#)
- [Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [Queensland Herbarium](#)
- [National Herbarium of NSW](#)
- [Royal Botanic Gardens and National Herbarium of Victoria](#)
- [Tasmanian Herbarium](#)
- [State Herbarium of South Australia](#)
- [Northern Territory Herbarium](#)
- [Western Australian Herbarium](#)
- [Australian National Herbarium, Atherton and Canberra](#)
- [University of New England](#)
- Other groups and individuals

[ANUcliM Version 1.8](#), [Centre for Resource and Environmental Studies](#), [Australian National University](#) was used extensively for the production of draft maps of species distribution. Environment Australia is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

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Last updated:

[Department of the Environment and Water Resources](#)

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ATTACHMENT D

FAUNA SURVEY REPORT

(Submitted to Department of Environment and Water Resources with EPBC Referral form, please see Appendix E of this PER for full report)

ATTACHMENT E

VEGETATION SURVEY REPORT

(Submitted to Department of Environment and Water Resources with EPBC Referral form, please see Appendix D of this PER for full report)



8 October 2007

Chris Murphy
EIA Governance Section
Department of Environment and Water Resources
GPO Box 787
Canberra, ACT 2601

Dear Mr. Murphy:

Re: EPBC Application Reference 2007/3743, Tiwi Islands Sand Mining Project (EPBC 2005/2155)

Matilda Minerals Limited (Matilda) referred a proposal to construct an Aircraft Landing Area (ALA) at the Andranangoo Mine Site on Melville Island of the Tiwi Island Group, Northern Territory (NT) for consideration under the *Environment Protection and Biodiversity Conservation Act* (1999) on 20 October 2007.

Following submission, Matilda has been working with its consultant to finalise the Public Environmental Review requested by the NT Environmental Protection Authority for the proposed ALA. During this process it has come to our attention that there was a miscalculation of Greenhouse Gas emissions (absence of accounting for land clearing) in the 20 October submission and therefore Matilda would like to clarify to avoid any misrepresentation. It is noted that the errata information does not pertain to any factors that may influence the decision on whether or not the project is a proposed action.

The modifications are detailed below and provided as attachments in terms of:

Attachment A: Amendments as tracked changes

Attachment B: Modified document reflecting amendments.

Please do not hesitate to contact me if you require any further information.

Yours sincerely

Tina Girard
Environmental Manager

Encl: Attachments A and B

**ATTACHMENT A:
AMENDMENTS AS TRACKED CHANGES
EPBC Application Reference 2007/3743**

The ALA will also be used for the evacuation of personnel in the case of medical or other emergencies.

The ALA will also be available for use by the Tiwi people by arrangement or in case of emergency.

3.2 Alternative locations, time frames or activities that form part of the referred action

Alternate locations have not been proposed because this is the most feasible location as it is:

- in close proximity to the mine;
- on flat, elevated land; and
- on well draining upland lateritic country.

Currently the closest airstrip (Pickertaramoor) is approximately 50 kilometres from site, comprising a two hour round trip during the dry season and up to six hours during the wet season. During the wet season, due to poor drainage at Pickertaramoor, sometimes Matilda was required to land at Milikapiti airstrip, located approximately 130 kilometres from site.

3.3 Previously considered alternatives and the 'do nothing' case

The alternatives considered are described in Attachment A "Decision Matrix".

As a result of this comparison, the preferred option is the construction of an ALA for the following reasons:

Safety of Operations

- Enhanced safety at the site due to the ability to evacuate personnel by fixed wing aircraft. Evacuation by a helicopter suitable for medical evacuation cannot be guaranteed by the Northern Territory Aerial Medical Service;
- Direct-flight access will reduce travel times for crew changes which will reduce effects of worker fatigue, decreasing the risk of potentially unsafe working conditions and decrease risk of automobile accident.

Efficiency to Mine Operations

- Greater efficiency due to decreased fuel usage, shorter travel times, and less wear and tear on vehicles;
- Employees, parts, equipment and food supplies arrive at site more quickly and efficiently (less fuel usage).

Deleted: and greenhouse gas emissions

Environmental impacts and legacies

- While some clearing is necessary to establish the ALA, reductions in fossil fuel use are anticipated by eliminating 1-2 vehicles driving 2-6 hours at an average of four times per week;
- Furthermore, the reduction in transporting fuel to site;
- There is also less risk of spreading weeds by eliminating the need to drive through documented weed-infested areas near Pickertaramoor; and
- Decreased erosion and sedimentation as a result of decreased road usage during the wet season.

Deleted: and greenhouse gas emissions

3.4 Context, planning framework and state/local government requirements

The Andranangoo Creek West and Lethbridge Bay West Mineral Sands Mining Project received bilateral approval in July 2006 (EPBC 2005/2155).

Matilda currently operates according to a Mine Management Plan (MMP) that was approved by the NT Department of Primary Industry, Fisheries and Mines (Authorisation Number 0245-04). The MMP includes a series of Environmental Management Plans (EMPs) that cover all aspects of

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ATTACHMENT A

DECISION MATRIX

Attachment A Decision Matrix – Alternatives

Table 3-1 Best practice technology for transport options to Andranangoo mine site (Scoring: 1 = poor, 2 = fair, 3 = good)

Environmental Best Practice	Cost	Practicality and Effectiveness	Maintenance and Liability	Social Factors	Total Ranking (/15)
Construction of Andranangoo ALA for mine transport, and option for Tiwi people to retain after mining					
2 – requires land clearing and ongoing management for weeds and erosion	3 – construction and operation more cost effective than current cross-island travel. Minimal ongoing maintenance that is within the current demonstrated capacity of TLC/TILG.	3 – direct routine and emergency transport to mine site with minimal travel time. Provides a long term asset to the Tiwi people.	2 – ongoing operation and maintenance of ALA required.	3 – potential for business development using the ALA after mining ceases and reduces the risk (in case of emergency) to current businesses operating on the island.	13
Construction of Andranangoo ALA for mine transport, and rehabilitation after mining					
3 – requires temporary land clearing that could be returned to natural state within relatively short timeframe	2 – construction and operation more cost effective than current cross-island travel. Rehabilitation costs are additional but can be incorporated into existing program.	2 – direct routine and emergency transport to mine site with minimal travel time. Not available for future use to the Tiwi people.	3 – ongoing operation and maintenance of ALA required during operation, no long-term maintenance required after rehabilitation	2 – in the long term, no increased value to the business potential for Andranangoo and increases health and safety risks to the community in case of emergency.	12
Flight to existing ALA's, road transport to Andranangoo ("do-nothing" option)					
1 – requires no land clearing; however contributes to increased wear on roads (erosion), risk of weed spread	1 – high ongoing costs to Matilda in fuel and personnel travel time	1 – long travel time, wet season road closure issues, not a reliable emergency option	2 – ongoing maintenance to roads and vehicles required	2 – no increased value to the long term business potential for Andranangoo	8
Helicopter transport to Andranangoo					
2 – requires no land clearing	1 – very high ongoing costs, especially for larger groups of people, or volumes of supplies	2 – direct to mine site with minimal travel time; reliable option in wet season, but poor reliability in case of emergency	3 – minimal maintenance of helipad during operation, no long-term maintenance required after rehabilitation	2 – no increased value to the long term business potential for Andranangoo	11
Boat or Barge transport to Andranangoo					
1 – requires construction of barge landing in turtle-nesting habitat; potential to require long-term dredging.	1 – high costs of travel time and costs of construction for barge landing and maintenance.	1 – access subject to tides, there is a long travel time and the option is not feasible in case of emergency.	1 – ongoing maintenance to barge landing area required in a sensitive area	1 – no increased value to the long term business potential for Andranangoo	5

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Attachment A

Decision Matrix – Alternatives

Table 3-2 cont: Best practice technology for transport options to Andranangoo mine site (Scoring: 1 = poor, 2 = fair, 3 = good)

Environmental Best Practice	Cost	Practicality and Effectiveness	Maintenance and Liability	Social Factors	Total Ranking (/15)
Seaplane transport to Andranangoo					
1 – requires construction of access facilities, increased access tracks to coastline in turtle-nesting habitat or creekline in tidally influenced mud flats	1 – high hire costs and low availability of seaplane	1 – low availability of sea planes; access subject to tides, weather and water conditions; not a reliable option in case of emergency.	1 – ongoing maintenance of access area required in a sensitive area	2 – no long term business potential for Andranangoo.	6

**ATTACHMENT B:
MODIFIED DOCUMENT REFLECTING AMENDMENTS
EPBC Application Reference 2007/3743**

The ALA will also be used for the evacuation of personnel in the case of medical or other emergencies.

The ALA will also be available for use by the Tiwi people by arrangement or in case of emergency.

3.2 Alternative locations, time frames or activities that form part of the referred action

Alternate locatives have not been proposed because this is the most feasible location as it is:

- in close proximity to the mine;
- on flat, elevated land; and
- on well draining upland lateritic country.

Currently the closest airstrip (Pickertaramoor) is approximately 50 kilometres from site, comprising a two hour round trip during the dry season and up to six hours during the wet season. During the wet season, due to poor drainage at Pickertaramoor, sometimes Matilda was required to land at Milikapiti airstrip, located approximately 130 kilometres from site.

3.3 Previously considered alternatives and the 'do nothing' case

The alternatives considered are described in Attachment A "Decision Matrix".

As a result of this comparison, the preferred option is the construction of an ALA for the following reasons:

Safety of Operations

- Enhanced safety at the site due to the ability to evacuate personnel by fixed wing aircraft. Evacuation by a helicopter suitable for medical evacuation cannot be guaranteed by the Northern Territory Aerial Medical Service;
- Direct-flight access will reduce travel times for crew changes which will reduce effects of worker fatigue, decreasing the risk of potentially unsafe working conditions and decrease risk of automobile accident.

Efficiency to Mine Operations

- Greater efficiency due to decreased fuel usage, shorter travel times, and less wear and tear on vehicles;
- Employees, parts, equipment and food supplies arrive at site more quickly and efficiently (less fuel usage).

Environmental impacts and legacies

- While some clearing is necessary to establish the ALA, reductions in fossil fuel use are anticipated by eliminating 1-2 vehicles driving 2-6 hours at an average of four times per week;
- Furthermore, the reduction in transporting fuel to site;
- There is also less risk of spreading weeds by eliminating the need to drive through documented weed-infested areas near Pickertaramoor; and
- Decreased erosion and sedimentation as a result of decreased road usage during the wet season.

3.4 Context, planning framework and state/local government requirements

The Andranangoo Creek West and Lethbridge Bay West Mineral Sands Mining Project received bilateral approval in July 2006 (EPBC 2005/2155).

Matilda currently operates according to a Mine Management Plan (MMP) that was approved by the NT Department of Primary Industry, Fisheries and Mines (Authorisation Number 0245-04). The MMP includes a series of Environmental Management Plans (EMPs) that cover all aspects of

ATTACHMENT A

DECISION MATRIX

Attachment A Decision Matrix – Alternatives

Table 3-1 Best practice technology for transport options to Andranangoo mine site (Scoring: 1 = poor, 2 = fair, 3 = good)

Environmental Best Practice	Cost	Practicality and Effectiveness	Maintenance and Liability	Social Factors	Total Ranking (/15)
Construction of Andranangoo ALA for mine transport, and option for Tiwi people to retain after mining					
2 – requires land clearing and ongoing management for weeds and erosion	3 – construction and operation more cost effective than current cross-island travel. Minimal ongoing maintenance that is within the current demonstrated capacity of TLC/TILG.	3 – direct routine and emergency transport to mine site with minimal travel time. Provides a long term asset to the Tiwi people.	2 – ongoing operation and maintenance of ALA required.	3 – potential for business development using the ALA after mining ceases and reduces the risk (in case of emergency) to current businesses operating on the island.	13
Construction of Andranangoo ALA for mine transport, and rehabilitation after mining					
3 – requires temporary land clearing that could be returned to natural state within relatively short timeframe	2 – construction and operation more cost effective than current cross-island travel. Rehabilitation costs are additional but can be incorporated into existing program.	2 – direct routine and emergency transport to mine site with minimal travel time. Not available for future use to the Tiwi people.	3 – ongoing operation and maintenance of ALA required during operation, no long-term maintenance required after rehabilitation	2 – in the long term, no increased value to the business potential for Andranangoo and increases health and safety risks to the community in case of emergency.	12
Flight to existing ALA's, road transport to Andranangoo ("do-nothing" option)					
1 – requires no land clearing; however contributes to increased wear on roads (erosion), risk of weed spread	1 – high ongoing costs to Matilda in fuel and personnel travel time	1 – long travel time, wet season road closure issues, not a reliable emergency option	2 – ongoing maintenance to roads and vehicles required	2 – no increased value to the long term business potential for Andranangoo	8
Helicopter transport to Andranangoo					
2 – requires no land clearing	1 – very high ongoing costs, especially for larger groups of people, or volumes of supplies	2 – direct to mine site with minimal travel time; reliable option in wet season, but poor reliability in case of emergency	3 – minimal maintenance of helipad during operation, no long-term maintenance required after rehabilitation	2 – no increased value to the long term business potential for Andranangoo	11
Boat or Barge transport to Andranangoo					
1 – requires construction of barge landing in turtle-nesting habitat; potential to require long-term dredging.	1 – high costs of travel time and costs of construction for barge landing and maintenance.	1 – access subject to tides, there is a long travel time and the option is not feasible in case of emergency.	1 – ongoing maintenance to barge landing area required in a sensitive area	1 – no increased value to the long term business potential for Andranangoo	5

Attachment A

Decision Matrix – Alternatives

Table 3-2 cont: Best practice technology for transport options to Andranangoo mine site (Scoring: 1 = poor, 2 = fair, 3 = good)

Environmental Best Practice	Cost	Practicality and Effectiveness	Maintenance and Liability	Social Factors	Total Ranking (/15)
Seaplane transport to Andranangoo					
1 – requires construction of access facilities, increased access tracks to coastline in turtle-nesting habitat or creekline in tidally influenced mud flats	1 – high hire costs and low availability of seaplane	1 – low availability of sea planes; access subject to tides, weather and water conditions; not a reliable option in case of emergency.	1 – ongoing maintenance of access area required in a sensitive area	2 – no long term business potential for Andranangoo.	6